

**Connecting Small Manufacturers with the Capital
Needed to Grow, Compete, and Succeed:**

***Small Manufacturers Capital Access
Inventory and Needs Assessment Report***

November 2011



Foreword

Over its 20-year history, the Manufacturing Extension Partnership (MEP)—a program of the U.S. Department of Commerce’s National Institute of Standards and Technology (NIST)— has helped U.S. manufacturers implement process improvement and cost reduction strategies to save time and money, achieve higher profits, and create and retain thousands of jobs. MEP continues to provide those services and serves as connecting point with close to 2,300 third party service providers to deliver in-depth assistance annually to thousands of manufacturers in MEP’s five strategic growth areas— technology acceleration, supplier development, sustainability, workforce, and continuous improvement.

In spring 2011, MEP commissioned an independent capital access assessment study with the support of Booz Allen Hamilton to better understand the current state of the capital marketplace and how it impacts the ability of small and medium sized enterprise (SMEs) to obtain the necessary capital to support innovation and growth. Across all stages of the businesses lifecycle, from early stage to high and steady growth, companies need reliable access to capital to fuel innovation and sustain growth. The scarcity of available capital and credit is particularly impactful on the manufacturing sector, which is very capital intensive and often requires the financing of inventories and receivables over longer periods than other sectors of the economy like software which rarely has any inventory.

National surveys of manufacturing companies have cited delayed capital investment as one of the biggest impacts of the recent recession and a constraint to future growth. While there are some places where the credit crunch has eased, securing capital for sales and growth remains a complex and frustrating process for many, even historically successful, smaller manufacturers.

This report summarizes the findings and recommendations from the environmental scan conducted during the capital access assessment project. The content of the report is not intended to provide an academic, in-depth study of the capital market. Instead, the goal of the assessment was to provide MEP a working basis for understanding the capital access challenges currently being experienced by SMEs and possible solutions for addressing these challenges. The observations and recommendations contained are the opinions of the authors (Booz Allen Hamilton project team) and are based upon the information collected through interviews with a representative set of stakeholders, existing data, and surveys conducted by the several reputable organizations referenced in this document.

Like its clients, MEP must adapt to continually improve its business model to maximize the effectiveness of its services and its impact on U.S. manufacturing and economic prosperity. The observations and recommendations contained in this study offer opportunities for MEP to explore enhanced service offerings and potential partnerships that can improve manufacturer’s ability to access the right kind of capital to sustain growth and build an enduring competitive position in today’s global economy.



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The views expressed in the paper are those of the authors and do not necessarily represent the views or recommendations of the National Institute of Standards and Technology.

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Executive Summary

Across all stages of a business's lifecycle, from early stage start-up to high growth to maturity, manufacturers need access to capital to achieve a healthy financial position that will lead to successful operation, innovation, and expansion. "Every growth strategy decision is also an investment decision."¹ Access to capital is an essential requirement that enables the stability and growth of MEP's client base—small manufacturing enterprises (SMEs) with less than 200 employees. SMEs comprise the backbone of the U.S. manufacturing industry, accounting for about half of all manufacturing jobs in the U.S.²

However, a lack of available capital has restricted the ability of many small manufacturers to grow and compete in the current business environment. Surveys of manufacturing companies and numerous stakeholder interviews conducted as part of this assessment cited delayed capital investment as the biggest impact of the 2008 recession and financial crisis, and a constraint to future growth.³ The business challenges related to accessing capital particularly impact the manufacturing sector, which is by its nature asset-intensive, requiring financing for equipment, inventory, and receivables. Furthermore, the cash conversion cycle for manufacturers is often longer than that for other types of industries, as inventory is purchased in bulk, processed through production and sold as needed to satisfy customer demand. With their liquidity tied up in inventory, finished goods and accounts receivable, manufacturers require more working capital than do other industry types. Manufacturers have historically used commercial or residential real estate, equipment, inventory and receivables as collateral to finance operations.⁴ With the well-documented depreciation in both commercial and residential real estate and the general tightening in the credit markets, even manufacturers who are performing well may experience difficulty in maintaining their existing borrowing capacity.

This Capital Access/Loan Program Assessment report seeks to better understand the current state of the capital marketplace and how it is impacting the ability of small manufacturing companies to successfully find and obtain needed capital. NIST MEP, within the U.S. Department of Commerce, commissioned Booz Allen Hamilton (BAH) to launch a Capital Access/Loan Program Assessment. This Report summarizes the findings and recommendations from BAH's environmental scan conducted during the initial phases of the Capital Access/Loan Program Assessment. The objectives of the assessment were to:

- Evaluate whether the supply of available capital is accessible to, and meeting the capital needs of small manufacturers ("the demand side");
- Catalog and analyze sources of direct and indirect capital ("the supply of capital") available to small manufacturers primarily through federal government programs, with an initial examination of state, public-private partnerships, and other sources;
- Lay the foundation for creation of possible recommendations that will assist small manufacturers in accessing the capital needed to compete in a global economy.

See Section 1.1 for a detailed description of the scope of this report and the methodology used to conduct the environmental scan and needs assessment.

Demand Findings: Small Manufacturer Capital Needs

- The most common reasons why small manufacturers currently need capital—which differ somewhat from other types of small businesses—are: (1) for working capital, which has been more difficult to obtain due to depreciating asset values or declining sales revenues, (2) to purchase machinery or equipment, (3) to expand or remodel an existing facility, or (4) to refinance or restructure their balance sheet. The primary reasons why the capital needs of small manufacturers differ from other types of small businesses are their greater need for fixed assets (e.g., machinery and equipment) and a long cash conversion cycle requiring them to have higher short-term capital needs.
- Due to the growing use of Just In Time (JIT) production and inventory strategies, smaller manufacturers are increasingly carrying the costs associated with producing and storing inventory for the larger, secondary manufacturer who often has the ability to exert more control over their supply chain and obtain capital at a lower cost.
- Some manufacturing sectors consistently have higher annual expenditures than other sectors, including petroleum, coal products, transportation, and metal manufacturers. However, the largest types of expenditures do *not* seem to vary across different manufacturing sectors, and include annual payroll, raw materials, and machinery and equipment. See Section 2 for more details on the differences in expenditures across manufacturing sectors.
- The most commonly-used type of capital by small businesses is debt, specifically business lines of credit and term loans. Small manufacturers may require higher amounts of capital due to their fixed asset financing and working capital needs.⁵ Anecdotal evidence from stakeholder interviews also reveals that many small manufacturers turn to private placements⁶ or sources of capital provided from friends and family instead of pursuing bank financing.
- Small businesses have a strong unmet demand for credit due to difficulty in accessing or qualifying for adequate financing. However, stakeholders—such as the American Bankers Association (ABA) and Federal Reserve System—have also noted an overall decline in loan demand and lower utilization of existing credit lines by businesses. These small business trends appear to also hold true for manufacturing firms based on stakeholder interviews and the literature review.
- There are certain characteristics that are common among small businesses that are more successful at qualifying for credit in today’s economy, such as evidence of strong cash flows and cash reserves. These characteristics also apply to small manufacturers.
- Small businesses may not attempt to apply for loans or other traditional forms of credit due to the perception that the availability of credit is limited. Some businesses may be averse to taking on additional debt in the current business environment. Stakeholder interviews conducted to date indicate that this finding also generally applies to small manufacturers.

See Section 2 of this report for more details on the above findings.

Supply Findings: Availability of Capital for Small Manufacturers

- Currently, 103 federal government programs administered across at least 17 departments and independent agencies offer funds for small businesses or small-to-large size manufacturers in a variety of areas including: research and development, energy efficiency, international growth, general business needs and economic development. (See Section 3 for a full listing and more details about these federal programs.)

- Of the 38 programs that target manufacturers explicitly, many are not fully accessible to small manufacturers, nor do the programs target funds directly for small and medium sized companies.
- Funds available through the 103 federal programs are primarily provided as forms of debt capital (e.g., loan guarantees) or grants, not equity capital. While most of the federal programs are provided to SMEs in the form of loan guarantees, grants, and cooperative agreements, there are five equity funds guaranteed by the federal government. The most commonly recognized federal equity programs are the Community Development Financial Institution (CDFI) and Small Business Investment Company (SBIC) funds administered by the U.S. Department of the Treasury (Treasury Department) and the U.S. Small Business Administration (SBA), respectively. Three other examples of federal equity funds are Red Planet (NASA), In-Q-Tel (CIA), and OnPoint Technologies (U.S. Army), which are aligned to the needs of these agencies.
- The government programs that are most widely recognized by the stakeholders interviewed are the SBA 7(a) Guaranteed Loan Program, the SBA 504 Fixed Asset Program, and the Export-Import Bank programs. While some challenges exist related to increasing SME and lending institution awareness of, and access to, these programs, both agencies supply a significant amount of loan guarantees and equity each year to the manufacturing sector.
- The Export-Import (Ex-Im) Bank is increasing the number of small manufacturers that use its products to expand exporting operations. Historically, Ex-Im products targeted large manufacturers and were provided through large commercial banks, instead of CDFIs or local community banks. However, Ex-Im has incorporated into its strategic plan initiatives that seek to expand the use of their products by smaller businesses, including smaller-sized manufacturers (e.g. suppliers to exporters).
- Stakeholder interviews and documents researched as part of the literature review reveal that commercial banks may have shifted away from originating smaller sized loans to loans of larger size. While this trend applies generally to small businesses, its impact on small manufacturers could result in a reduced ability to obtain financing, especially in smaller loan amounts. This may be a consequence of banks seeking to reduce the risks and administrative costs associated with smaller loans, partially as a result of recent changes in banking regulatory policy.
- Community banks and Community Development Financial Institutions (CDFIs) complement the role of the larger commercial banks in providing credit to small businesses, and serve small manufacturers in rural or underserved areas that may not have access to larger commercial banks.
- Stakeholders hold a common perception that capital is available for small businesses through lenders and investors, but accessibility has declined due to tighter lending standards and the increasing cost of capital. While banks are beginning to ease their standards, access to capital is still a concern of both lenders and small businesses.
- The availability of venture capital is greater in certain geographic areas, and may be under-utilized by small manufacturers seeking to expand. The SBICs and community development venture capital funds do seek to provide equity options to underserved areas. Additionally, there are five equity funds guaranteed by the federal government.

See Section 3 of this report for more details on the above findings.

Key Gaps and Recommendations

According to the Small Business Administration, the U.S. has one of the most developed markets for credit and capital in the world.⁷ However, might there be additional opportunities to enhance accessibility and utilization? Based on our analysis, the answer appears to be yes—in terms of aspects related to both the supply of, and the demand for capital by SMEs. For the purpose of this report, these issues have been grouped into the following areas—availability, awareness, and accessibility. Additionally, a preliminary analysis of issues related to the requirements of federal programs, and in the operational or programmatic infrastructure of MEP’s programs and centers, was conducted.

Recommendations for how MEP—in coordination with other federal, state, public-private partnership, and private sector stakeholders can address these issues (i.e. availability, awareness, and accessibility) are also proposed on the following pages. Based on the environmental scan, stakeholder interviews, and analysis of the sampled sources of capital cataloged for this report, proposed recommendations fall into three primary areas:

- 1. Business Assistance Recommendations**—Recommendations that involve the development of new or enhanced business assistance offerings that could be provided by MEP, other federal agencies, or industry associations.
- 2. Partnership and Collaboration Recommendations**—Recommendations that focus on building relationships with key stakeholders who also have an interest and role in serving SMEs through their services.
- 3. Federal Strategic and Programmatic Recommendations**—Recommendations that focus on integration of capital access strategies into existing federal programs and plans, modification of existing federal program requirements, development of communication products to raise awareness, and enhancement of MEP’s operational and functional capabilities.

For historical perspective, it is important to note that many of the awareness and accessibility issues described in this report are similar to findings in a 1993 National Research Council report entitled, “Learning to Change: Opportunities to Improve the Performance of Smaller Manufacturers.” Interestingly, despite the difference in the U.S. economic conditions between the government surpluses and economic growth figures of the 1990s compared to today’s decline in job growth and the impacts of a recent economic recession, several of the Council’s key findings and recommendations around capital access are equally relevant today. One example is their recommendation to help banks to better understand the investment needs and opportunities in the manufacturing industry, and the need to create educational programs for manufacturers and local financial institutions. See Section 4 of this report for more detailed descriptions of the Council’s report from 1993, and the gaps and recommendations summarized below.

Availability Gaps	Recommendations to Address Gaps
Limited number of federal financial assistance programs and private sources that target the specific needs of smaller manufacturers	Partnership and Collaboration Recommendation: Federal programs can review their existing authority and funding priorities to identify strategies that promote manufacturing as a program priority.

<p>Varying availability of capital sources by geographic location, and gap in <i>unsecured</i> working capital financing in amounts ranging from \$150,000 to \$500,000</p> <p><i>Secured</i> loans are more readily available for this loan range, but lenders expect priority position on business assets.</p> <p>Gap in fixed asset financing amounts between \$2 million and \$5 million, which is more applicable for larger small businesses.</p>	<p>Strategic and Programmatic Recommendation: MEP centers may benefit from additional guidance on how to engage local CDFIs, banks, and other sources of capital to build a relationship and help direct local manufacturers to relevant resources.</p> <p>Business Assistance Recommendation: MEP Centers may benefit from additional guidance on how to organize events, such as “Speed Dating Deal Day” programs, to assist small manufacturers in connecting with targeted lenders and investors.</p> <p>Partnership and Collaboration Recommendation: New federal interagency partnerships could be formed to explore the possibility of government program modifications to address funding gap between \$150,000 and \$500,000. The SBA is already attempting to address the fixed asset financing gap by recently raising their 7(a) guaranteed and 504 loan ceilings from \$2 million to \$5 million.</p> <p>MEP may want to consider additional engagement with state stakeholders to raise awareness of small manufacturer needs and to provide suggestions for how state programs can address needs (e.g., create state loan funds for manufacturers).</p>
<p>Reduced availability of private equity funds outside of specific geographies (e.g., Silicon Valley)</p>	<p>Business Assistance Recommendation: MEP may want to explore whether there has been any regional market testing to measure the willingness of investors and small manufacturers to use private equity funds that target manufacturers. MEP may also want to research available tools and assistance strategies that can be used to help SMEs learn how to approach private equity investors.</p> <p>Partnership and Collaboration Recommendation: MEP could work with partners to facilitate the establishment of private equity funds that target small manufacturers, such as a companion SBA SBIC program.</p>
<p>Varying geographic availability of federal programs (e.g., SBA, Export-Import Bank, USDA) using intermediaries at the state and local levels</p>	<p>Partnership and Collaboration Recommendation: Greater engagement with key federal program leaders and associations that represent lending and investment entities can help to increase MEP’s brand recognition and the use of its services by lenders and manufacturers.</p> <p>MEP might want to suggest among partners opportunities to streamline or reduce paperwork burden, such as through common application forms or a centralized online clearinghouse of resources.</p>

<p>Gaps in the availability of funding in specific growth phases, including start-up and mezzanine phases</p>	<p>Partnership and Collaboration Recommendation: MEP may want to explore using federal and state partnerships to develop models that bring together public and private money to fund these needs.</p> <p>Business Assistance Recommendation: MEP has the ability to engage manufacturers at these growth stages to better understand their needs and develop assistance specific to these needs.</p>
<p>Shortage of working capital in the \$150,000 - \$500,000 range and few international financing options for small manufacturers</p>	<p>Business Assistance Recommendation: MEP may want to explore resources that can provide assistance to manufacturers in cash flow management to reduce working capital requirements.</p> <p>Partnership and Collaboration Recommendation: MEP has opportunities to engage with federal stakeholders (e.g., Export-Import Bank) to encourage development of programs that fund small manufacturing export strategies.</p>
<p>Awareness Gaps</p>	<p>Recommendations</p>
<p>Need to increase small manufacturers' awareness of existing sources of capital</p>	<p>Strategic and Programmatic Recommendation: MEP could disseminate information on available capital types, sources and assistance providers through MEP Centers.</p> <p>Business Assistance Recommendation: MEP might be able to expand and adapt the initial inventory listing of providers (sources of capital) compiled under this project into a web-based diagnostic tool.</p>
<p>Need to increase small manufacturers' knowledge of how to successfully approach potential lenders and investors with well-prepared financial documentation, business plans and exit strategies</p>	<p>Business Assistance Recommendation: MEP has the opportunity to use the existing network of MEP centers to develop and deliver business assistance services focused on preparing SME's for financial discussions (e.g., templates, sample financial statements, business plan formulation, and bundled training options).</p> <p>MEP may also want to consider establishing an executive mentorship program focused on financial plan preparation or assisting manufacturers in how to effectively engage local SCORE or SBDC programs.</p>
<p>Need to increase small manufacturers' awareness of existing sources of business assistance</p>	<p>Strategic and Programmatic Recommendation: MEP might want to consider how it can disseminate a list of business assistance resources through an MEP "Clearinghouse" portal and MEP Centers.</p> <p>Business Assistance Recommendation: MEP can provide guidance to MEP Centers on how to identify and establish relationships with local business assistance organizations.</p>

<p>General misperception that not enough capital is available</p>	<p>Strategic and Programmatic Recommendation: MEP can conduct outreach campaign to increase awareness on most applicable capital sources.</p> <p>Business Assistance Recommendation: MEP can include information in its business assistance on how to identify available and applicable sources of capital and capital market trends.</p>
<p>Need to better brand and market federal programs to lenders, investors, and small manufacturers</p>	<p>Partnership and Collaboration Recommendation: MEP can include in its engagements with the state and federal program stakeholders strategies to conduct outreach campaigns to better brand federal programs and promote increased awareness among lenders and manufacturers.</p>
<p>Knowledge gap among lenders who may not fully understand how to evaluate risk or cost-saving potential in manufacturer applications due to limited understanding or experience with the manufacturing sector</p>	<p>Strategic and Programmatic Recommendation: MEP can highlight the success of individual MEP Center relationships with select lenders and trade associations to educate the lenders on manufacturer needs and improve their relationships with manufacturers.</p> <p>Business Assistance Recommendation: MEP might want to consider using market research to develop growth estimates for key sectors that can be used by small manufacturers when approaching lenders and investors. The findings could be used to analyze and evaluate the cost savings and potential efficiency gains for new technologies. Eventually, this capability might be incorporated into business assistance services provided by centers.</p>
<p>Accessibility Gaps</p>	<p>Recommendations</p>
<p>Difficulties experienced by small manufacturers in accessing federal programs due to:</p> <ol style="list-style-type: none"> 1) Challenges in navigating federal websites to find funding opportunities 2) Time consuming process to track application deadlines and complete paperwork 	<p>Business Assistance Recommendation: MEP could build on the information coming out of this project to develop a diagnostic tool that provides a guide to available federal programs.</p> <p>MEP may consider augmenting its business assistance services manufacturers with best practices for applying for federal grant programs and managing accurate financial records.</p> <p>Partnership and Collaboration Recommendation: MEP might consider collaborating with federal stakeholders to identify common areas where paperwork could be standardized or reduced.</p>
<p>Conscious choice made by small manufacturers to not take on more debt or pursue growth strategies deters some companies from accessing available financing</p>	<p>Strategic and Programmatic Recommendation: MEP may want to augment its business assistance services with more information on how companies can select the best combination of financing products given a specific capital need and evaluate the risks associated with taking additional financing.</p>
<p>Limited access to private equity investors due to lack of prepared exit strategy</p>	<p>Business Assistance Recommendation: MEP's business assistance services might expand to include information on how companies can develop exit strategies for</p>

	<p>products and approach private equity funds with the strategies.</p> <p>Partnership and Collaboration Recommendation: MEP might seek to collaborate with partners to promote establishment of a “State Cluster Manufacturing Development Private Equity Fund.”</p>
Ability of smaller manufacturers to successfully apply for the SBA’s SBIR and STTR cooperative agreement funds	<p>Partnership and Collaboration Recommendation: MEP may want to expand its engagement with the SBA to explore changes to, or expansion of, the SBA’s SBIR and STTR programs to ensure that smaller manufacturers are not placed at a competitive disadvantage to larger companies that may enjoy the backing of venture capital funds.</p>
Challenges experienced by manufacturers, especially smaller companies with less than 20 staff, in qualifying for financing due to tighter lending standards and lower risk tolerance of lenders	<p>Partnership and Collaboration Recommendation: MEP may also want to engage SBA stakeholders to collaboratively propose government lending requirements that reflect economic conditions and provide incentives for lending to qualified manufacturers (e.g., create requirements or incentives that provide support in situations where collateral has depreciated or when the forecasted liquidation value of equipment is uncertain).</p> <p>MEP may also want to consider encouraging “the Manufacturing Czar” to advocate for greater regulatory consistency and flexibility in supervision of community bank portfolios and underwriting standards.</p> <p>Business Assistance Recommendation: MEP may want to consider providing small business loan application education and assistance to manufacturers on how to successfully qualify for a loan.</p>
Difficulty in accessing federal energy efficiency and “green innovation” program funding due to cost-sharing requirement or disadvantaged status of small manufacturers in competing with larger manufacturers	<p>Partnership and Collaboration Recommendation: MEP can leverage its ongoing work with federal and state programs to raise awareness of challenges small manufacturers face in accessing existing “green innovation” grants and funding.</p> <p>Likewise, MEP might consider using its existing federal and state partnerships to develop a financing model that would bring together public and private money to fund these needs.</p>
Underutilization of federal loan guarantee programs by intermediary lenders, as measured by participation rates	<p>Strategic and Programmatic Recommendation: MEP can explore opportunities to work with the federal loan and private equity guarantee programs to conduct an education campaign to:</p> <ol style="list-style-type: none"> 1) Raise awareness of how to better evaluate risk of manufacturing companies in lending 2) Increase marketing and outreach to manufacturers
Programmatic Challenges	Recommendations
Need for federal consensus on national manufacturing strategy that can drive MEP manufacturing finance strategies	<p>MEP Strategic and Programmatic MEP may want to consider how it can use its current relationship with the National Association of Manufacturers (NAM), the Association for Manufacturing Technology (AMT),</p>

	<p>and other associations to examine and outline the impact that the access to capital issue has on U.S. manufacturing and on the US economy and its ability to create jobs. MEP could share this information with partners who administer programs.</p> <p>MEP Strategic and Programmatic Recommendation: MEP has opportunities to establish a key conduit for understanding and advocating for needs specific to small manufacturers.</p>
Need to better define MEP’s target customer base and better understand the capital-specific business assistance needs of the target customer base	<p>MEP Strategic and Programmatic Recommendation: Incorporating capital access strategies into the MEP Next Generation Strategy can enhance the effectiveness of MEP’s plans and its ability to achieve its goals.</p> <p>Business Assistance Recommendation: Conducting small manufacturer business assistance needs assessments can help ensure that lenders have enough information to allocate funding and services to the “best” client segments.</p>
Need to increase staff, or service providers, in MEP Centers who have manufacturing finance expertise	<p>MEP Strategic and Programmatic Recommendation: Providing training and support resources to MEP leaders on core financial topics can support program effectiveness.</p> <p>Business Assistance Recommendation: MEP may want to consider building a regional network of financial experts that can effectively help mentor and train manufacturers.</p>
Evaluate cost share requirements for MEP Centers	<p>MEP Strategic and Programmatic Recommendation: MEP may want to compare its non-federal cost share requirements for centers with those of other economic development programs, and consider if more flexibility is needed for centers to provide new assistance services.</p>

Additionally, specific recommendations for the federal programs most applicable to SMEs include:

Federal Agency	Recommendation
Small Business Administration	<ul style="list-style-type: none"> • MEP might consider working with its SBA partners to assess viability of expanding 504 to include early stage businesses that are in operation for less than 2 years • Likewise, MEP may also want to work with the SBA to explore ways to enhance the 7(a) guaranty available for manufacturing applicants from 85 – 90% for loans below \$150k and 75 – 85% for loans above \$150k.
A general recommendation for the federal programs below is to utilize SBA’s current guarantee process as a “best practice model” to effectively standardize program requirements and centralize underwriting.	
Export-Import Bank	<p>MEP has a variety of opportunities to work with the Ex-IM bank, egg:</p> <ul style="list-style-type: none"> • Work with Ex-Im to assess the benefits of providing a longer

	<p>repayment term for their 90 day receivable financing.</p> <ul style="list-style-type: none"> • Work with Ex-Im to evaluate the benefits of inventory financing that lasts longer than 12 months, possibly 36-60 months. • Work with Ex-Im to develop a standard procedure for financing lower dollar amounts. • Work with Ex-Im to evaluate their current “domestic content” requirement against the standard within the manufacturing industry. • Work with Ex-Im to develop programs that have a lower minimum transaction size.
<p>Department of Agriculture, Rural Development Agency</p>	<p>MEP has opportunities to work with the USDA to develop targeted marketing campaigns encompassing both local MEP centers and USDA offices, to increase awareness of the programs available.</p>

Combined, these observations and recommendations provide a comprehensive set of solutions that address the availability, accessibility, and awareness gaps related to both the supply of and demand for capital by SMEs. As the leading federal agency serving small-to-medium sized manufacturing companies, MEP is uniquely positioned to be a leader in facilitating further discussion and implementation of these recommendations.

Section

1 Background and Methodology

Manufacturing plays a vital role in the nation's economy in driving job growth, innovation and technology. The manufacturing sector accounts for roughly two-thirds of U.S. research and development expenditures, and employs more engineers and scientists than any other private sector industry.⁸ Despite these strengths, manufacturing companies face immense challenges in remaining globally competitive, keeping up with rapid technological change, and realizing cost efficiencies through green/sustainability efforts. Most recently, as a result of the economic downturn and recession, small manufacturers are having difficulty accessing the capital essential to effectively grow and compete.⁹ In several recent surveys of manufacturing executives, a majority of companies—almost three-quarters of the companies responding in one survey—cited delayed capital investment as the biggest impact of the recession and a constraint to their future growth.¹⁰

The business challenges related to accessing capital particularly impact the manufacturing sector. Unlike the service and retail industries, the manufacturing sector is capital intensive, often requiring the financing of inventory and receivables for extended periods of time. Manufacturers also have historically used commercial and residential real estate, machinery and equipment and receivables as collateral to finance operations.¹¹ With the depreciation that has occurred in real estate, even manufacturers who are performing well in the current economy may experience difficulty in maintaining their existing borrowing base. Delayed or constrained capital investment most impacts smaller-sized manufacturing companies who, according to the U.S. Small Business Administration's definition, are those companies with less than 500 employees. These small manufacturing companies comprise the backbone of the manufacturing industry, representing 98% of all manufacturing companies in the U.S., and accounting for about half of all manufacturing jobs in the U.S.¹²

To better understand the current state of the capital marketplace and how it is impacting the ability of small manufacturing companies to successfully find and obtain needed capital, the NIST Manufacturing Extension Partnership (MEP), within the U.S. Department of Commerce, commissioned Booz Allen Hamilton to conduct a Capital Access/Loan Program Assessment. The objectives of the assessment were to:

- Evaluate whether the supply of available capital is accessible to, and meeting the capital needs of (“the demand side”), small manufacturers;
- Catalog and analyze sources of direct and indirect capital (“the supply of capital”) available to small manufacturers primarily through federal government programs, with an initial examination of state, public-private partnerships, and other sources;
- Lay the foundation for creation of recommendations that assist small manufacturers in accessing the capital needed to compete in a global economy.

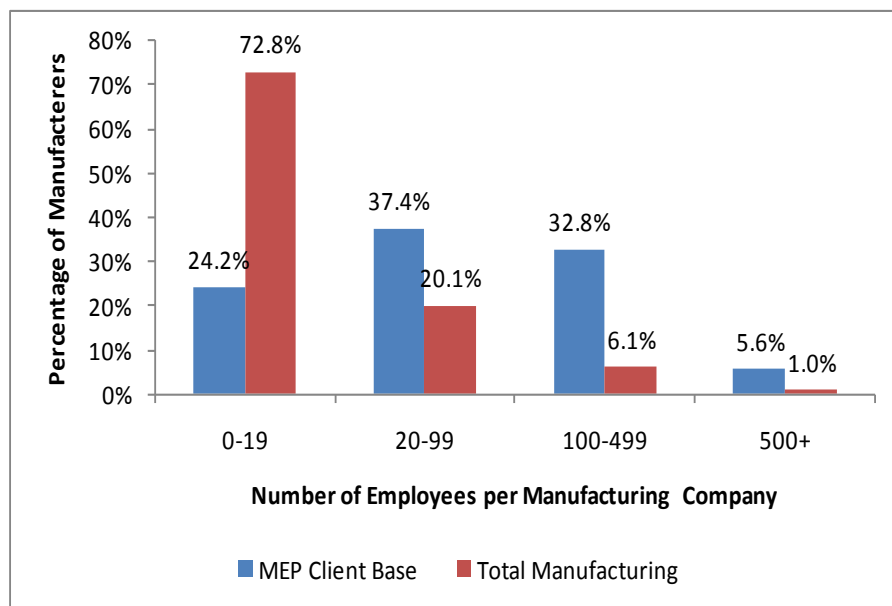
This *Capital Access Needs Assessment Report* was developed as part of the assessment and study. The report summarizes the key findings from the initial phases of the assessment, including findings on the capital needs and access barriers faced by small manufacturers and the existing capital and financing options available through the federal government and other non-federal organizations and lending institutions. The observations and recommendations are the opinions of the authors and are based on the data and information collected and analyzed in the conduct of the study.

1.1 Methodology

To determine the scope of the types of capital to be included in the assessment summarized in this report, the following criteria were used:

- Size of Manufacturing Company:** This report focuses on MEP’s target audience of small manufacturing enterprises (SMEs) with less than 200 employees, with some review of medium-sized manufacturing companies that meet the U.S. Small Business Administration definition of a small business (less than 500 employees), as shown in Figure 1;

Figure 1: MEP Client Base, as Subset of All U.S. Manufacturing Firms

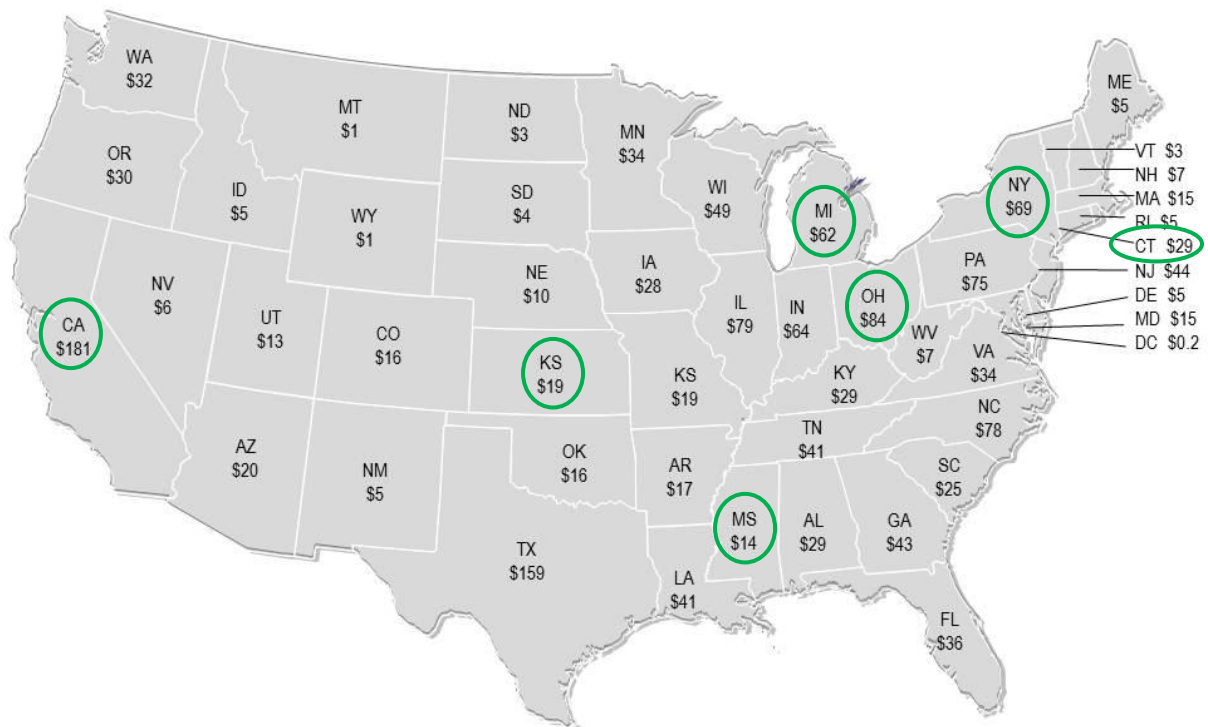


Source: U.S. Census Bureau Annual Survey of Manufacturers and MEP Program Data

- Type of Organization Providing or Guaranteeing Capital:** A wide variety of federal government financial assistance and loan guarantee programs are included in this analysis, with a limited examination of the thousands of direct and indirect sources of capital provided by non-federal entities. The non-federal entities examined include organizations that serve small businesses or manufacturers nationwide or regionally, and include those identified through the following methods:
 - A sample of leading small business lenders nationwide with total domestic assets of more than \$10 million, as identified in the February 2011 Small Business Administration (SBA) Small Business Lending report. The report provides a detailed list of the small loans held by all depository institutions in the U.S.;*¹³
 - A sample of each of the following types of lending organizations or funds that were not included in the SBA Small Business Lending report: community banks and development corporations, investment banks, small business investment companies, state and regional revolving loan funds, industrial development bonds, state capital access funds, venture capital funds, mezzanine funds, and other types of organizations or funds;*

3. *A representative sample of seven states and municipalities* that represent a geographic distribution of areas with large and small manufacturing contributions to their state economy, as provided by the Manufacturing Institute in Figure 2;¹⁴
4. *Stakeholder feedback* received from MEP field staff, the stakeholder interviews listed in Appendix A, and sources identified in the literature review.

Figure 2: Manufacturing Contribution to State Economies (in Billions)



Note: Circles indicate states analyzed as part of this report
Source: The Manufacturing Institute

- **Capital Structure/Allocation Methods:** Samples of short- and long-term capital sources from the following allocation methods
 1. *Debt and debt hybrids (i.e., term loans, lines of credit/credit cards, bonds)*—capital that has been loaned by other parties and must be repaid at a later date, usually with interest;
 2. *Equity (i.e., angel funds, private placements, venture funds, stocks)*—investments made by the owners or shareholders that usually involve transfer of ownership in a company to an investor;
 - 3.
 4. *Grants*—an award of financial assistance typically provided by the federal or state government or a non-profit organization to fund projects that meet the specified funding criteria of the grant-giving entity or donor;

5. *Leasing*—a contract or agreement in which one party gains use of an asset and the lessor is assured of regular payments for a specified amount of time;

The needs assessment was conducted using environmental scan and gap analysis methods that included:

1. **Literature Review:** A review of current, relevant literature on small business capital access in the manufacturing sector was conducted. The literature review included the results of third party manufacturer surveys and consisted of over 28 documents and resources authored by organizations, such as:
 - American Small Manufacturers Coalition
 - American Banking Association
 - Board of Governors of the Federal Reserve
 - Center for Regional Economic Competitiveness
 - Council of Development Finance Agencies
 - Export-Import Bank
 - Federal Deposit Insurance Corporation
 - Federal Reserve Bank of New York
 - The Manufacturing Institute
 - Michigan State University
 - National Association of Manufacturers
 - National Research Council
 - National Venture Capital Association
 - Pepperdine University
 - Society of Manufacturing Engineers
 - Small Business Administration
 - Small Business Development Center
 - U.S. Census Bureau
 - U.S. Department of Agriculture
 - U.S. Department of Defense
 - U.S. Department of Energy
 - U.S. Government Accountability Office
 - U.S. Office of Management and Budget
 - U.S. Treasury
 - University of Hartford
 - A representative sample of other federal and state-specific resources
2. **Stakeholder Interviews:** A representative sample of about 30 organizations that provide services to manufacturers was selected and prioritized for interviews. Additionally, a focus group was held at the 2011 MEP Annual Conference in Orlando, Florida. The stakeholders included representatives from federal and state government programs, lending and financial institutions, manufacturing companies, and public-private partnerships (e.g., select MEP Centers). MEP, supported by Booz Allen Hamilton, worked with selected stakeholders throughout this assessment to identify sources, needs, and solutions. See Appendix A for a full list of stakeholders interviewed for the version of this report.

Data Collection and Analysis Methods: A core set of discussion topics was discussed with stakeholders, including: (1) the accessibility or frequency of utilization of the source of capital, (2) the level of awareness of the existence of the source of capital, and (3) the applicability or effectiveness of the source in addressing the needs of small manufacturers. Additionally, a data analysis framework and business rules for matching capital sources with common capital needs were created. (For example, the use of term loans as a financing solution that manufacturing firms can use to meet needs for new machinery or equipment.) See Appendix D for a list of the business rules used to develop this report. This framework could be used by MEP in the future to develop diagnostic assistance tools for manufacturers and expand the number of sources in the inventory after this initial assessment is complete.

2 Small Manufacturer Capital Needs

The capital needs of small manufacturing firms—also referred to in this report as the demand for capital—that are most common across all stages of business growth are summarized in this section. Key findings from the environmental scan and stakeholder interviews are also described.

Note: The following findings are focused primarily on small business trends, because there is a limited availability of data that is specific to small manufacturer capital needs. Because 98% of all manufacturing firms in the U.S. are small businesses, research and stakeholder interviews showed that capital access small business trends also apply generally to small manufacturers. Differences in capital needs between small manufacturers and other types of small businesses are called out when applicable. Data gaps were supplemented through stakeholder interviews and literature reviews.

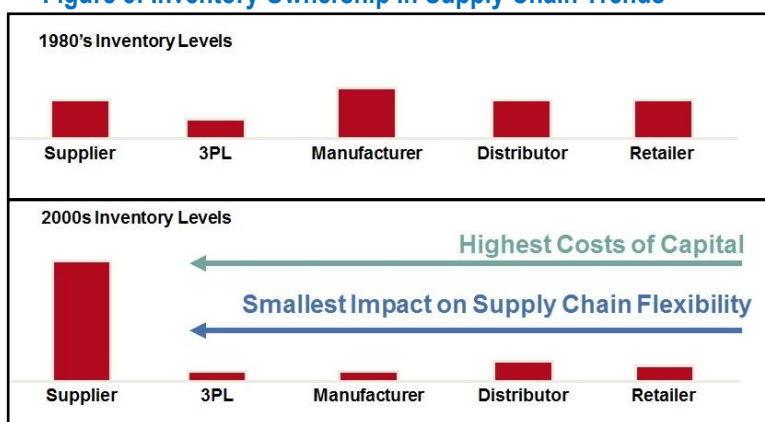
2.1 Key Findings

An environmental scan for the most common reasons why manufacturing firms across multiple industry sectors require capital revealed six key findings.

- The most common reasons why small manufacturers currently need capital—which differ somewhat from other types of small businesses—are:** (1) to fill a shortfall in working capital which has been more difficult to obtain due to depreciating asset values or declining sales revenues, (2) to purchase machinery or equipment, (3) to expand or remodel an existing facility, or (4) refinancing and capital restructuring. The primary reasons why small manufacturer capital needs differ from other types of small businesses are their greater need for capital intense fixed assets (e.g., machinery) and a high cash conversion cycle requiring them to have higher short-term capital options and equipment with flexible terms. See Section 2.2 for common small manufacturer capital needs.

Due to growing use of Just In Time (JIT) production and inventory strategies, smaller manufacturers on the front end of the production chain are increasingly carrying the costs associated with storing inventory and finished goods, so as to ensure uninterrupted supply to the larger, secondary manufacturers who often have more control over their supply chain and generally lower costs of capital. Until the late 1990s, many manufacturers purchased and carried the cost of their own inventory of

Figure 3: Inventory Ownership in Supply Chain Trends



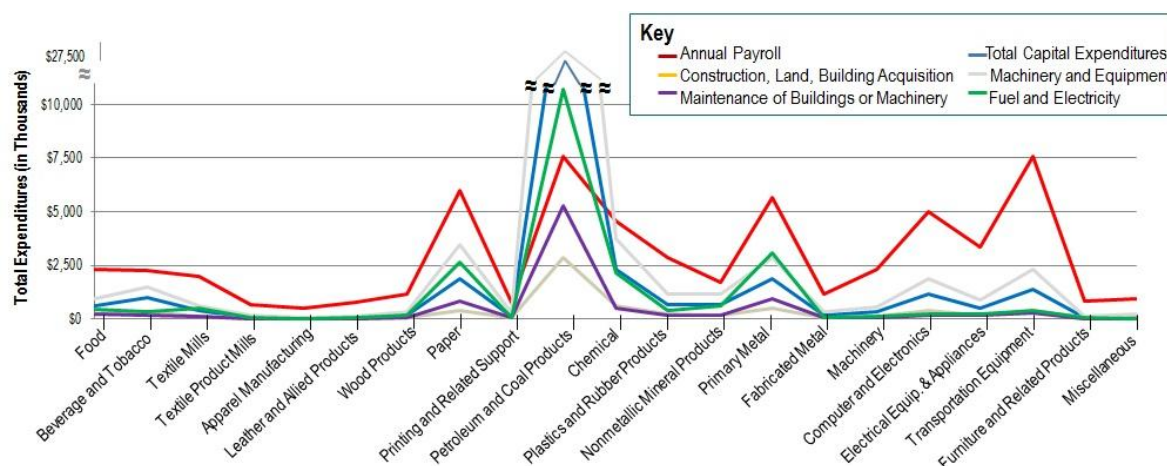
Source: Tatum, Inventory Ownership Alternative

components and raw materials needed for operations. However, the growing trend is that larger, secondary manufacturers now require their suppliers to carry their inventory costs, as

depicted in Figure 3. For example, the primary manufacturer produces the goods needed by the secondary manufacturer and delivers them to a warehouse for storage until the buyer requests them. In this scenario, the supplier often retains the cost associated with carrying the goods on its own balance sheet. When the secondary manufacturer buys the goods, they are often paid for on a 30 to 90 day basis, which leads the primary manufacturer to have a high cash conversion cycle. This practice results in an increased return on assets for the OEM, with the primary manufacturer bearing the financial burden associated with the secondary manufacturer's inventory.

- **Some manufacturing sectors do consistently have higher annual expenditures than other sectors. However, the largest types of expenditures do *not* seem to vary across different manufacturing sectors.**
 - Based on a U.S. Census Annual Survey of Manufacturers, the manufacturing sectors with the *highest annual expenditures per company are petroleum and coal products, transportation equipment, primary metal, and paper manufacturing*, as shown in Figure 4.¹⁵ The sectors with the lowest expenditures are manufacturers of apparel, textiles, leather, and furniture.
 - *Annual payroll and machinery and equipment constitute the largest expenses for manufacturers across most industries*, confirmed through U.S. Census data on manufacturers and stakeholder interviews.¹⁶
 - According to a national survey of manufacturers in 2011, *manufacturing executives are most concerned about the rising costs of commodity raw materials and employee benefits*. While many manufacturers report improved operational efficiencies that have driven down costs over the past three years, many manufacturers have not been able to drive down their conversion costs enough to absorb these raw material price increases.¹⁷

Figure 4: Sample of Large and Small Sized Manufacturers' Demand for Capital Measured by Expenditures



Source: U.S. Census Annual Manufacturing 2007 Survey. Expenditure totals may be skewed toward large manufacturers' costs as census data is based upon a sample of 18% of all manufacturers, and does not include manufacturers with less than five employees who were generally not included in the survey.

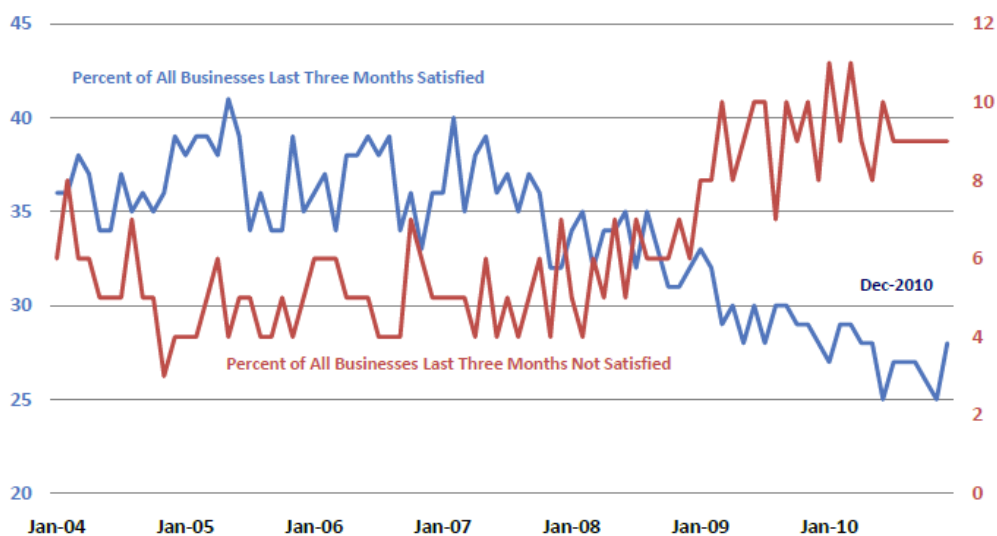
- **The most commonly used types of capital by small businesses are debt capital, specifically term loans and lines of credit. Small manufacturers may require higher amounts of capital due to their higher fixed asset financing needs and working capital needs.**¹⁸ Anecdotal evidence from stakeholder interviews also revealed that many small

manufacturers turn to private placements¹⁹ or sources of capital provided through friends and family.

- *Debt is the most frequently accessed external source of capital for small businesses with 45% saying that they have accessed it in 2010.*²⁰
- According to the January 2011 Senior Loan Officer Opinion Survey, the *demand for Commercial and Industrial (C&I) loans is starting to increase from the steep decline in demand in December 2010.* However, this increase in demand is still much lower from small firms than the demand from middle-market and large firms.
- **Small businesses have a strong unmet demand for credit due to difficulty in accessing or qualifying for adequate financing. However, stakeholders—such as the American Bankers Association (ABA) and Federal Reserve System—have also noted an overall decline in loan demand and lower utilization of existing credit lines by businesses. These small business trends appear to hold true for manufacturing firms based on stakeholder interviews and the literature review.**
 - *According to the Federal Reserve Bank of New York, a direct measure of the demand for credit by small businesses is the number of businesses that applied for credit. A Small Business Finance Poll of small business owners conducted in July 2010 suggested a relatively strong demand. About 60% of the 426 respondents attempted to borrow in the first half of 2010. Of these 60% of respondents that applied for credit, only about half were successful obtaining at least one credit product that met their credit needs.*²¹
 - The National Federation of Independent Business (NFIB) 2010 survey found that 41% of its small business respondents were unable to access adequate financing, up from 22% in 2008. For example, poll evidence found that a 63% denial rate for a business line of credit, which was one of the most frequently requested credit product by small businesses in their survey.²² *Of direct relevance to the manufacturing sector, NFIB found that products that require collateral, with the exception of vehicle or equipment financing, were more difficult for applicants to obtain in an environment of depressed asset and real estate values.*
 - Across all U.S. businesses, the January 2011 quarterly *Senior Loan Officers Opinion Survey on Bank Lending Practices* showed a weakened demand for small commercial and industrial loans since 2007. These figures were more pronounced in the early months of 2009, with the majority of senior officers reporting no change in demand since then.
 - According to the American Bankers Association, *business confidence is slowly rebounding from early 2009. Yet, many businesses either do not want to take on additional debt or are not in a position to do so, possibly due to a decline in sales or their customer base.*²³ Additionally, the Federal Reserve System found a sharp decline in the number of Commercial & Industrial (C&I) loans between 2009 and 2010.
 - According to the Federal Reserve and the NFIB, anecdotal evidence shows that supply is not meeting demand for small business credit from the borrower's perspective, as illustrated in Figure 5.
- **There are certain characteristics that are common among small business who are more successful at qualifying for credit in today's economy, such as evidence of strong cash flows and cash reserves. These characteristics would also apply to small manufacturers.**

- The “keys to credit success” identified by Federal Reserve Bank research included: (1) business longevity of at least five years, (2) ability to demonstrate a capacity to generate positive sales/revenue growth, or (3) ability to use retained earnings to fund their needs.²⁴
- *Many of the organizations interviewed for this assessment offer products and assistance that small manufacturers and the MEP Centers could use to learn about how to successfully approach lenders.* The American Bankers Association provides “tip sheets” with suggestions for how to prepare to meet with a lender and improve their financial qualifications on their website at:
http://www.aba.com/Press+Room/PR_Small_Business_troubledtimestips.htm.
- According to ABA, *one of the more important things small manufacturers can do is to build a relationship with their banker/lender prior to applying for a loan.* They should also seek out banks that evaluate lending decisions using traditional underwriting instead of a scoring method. Credit scoring is a mathematical approach to lending, and uses statistical models to assess a borrower’s credit worthiness based upon their credit history and current credit status. In traditional underwriting, lending decisions are made by an underwriter rather than a model, and may reflect additional considerations that would not be captured by the scoring model. The scoring model is typically more conservative in its approach to evaluating risk.

Figure 5: Percent of Small Businesses Saying That Borrowing Needs Are Satisfied

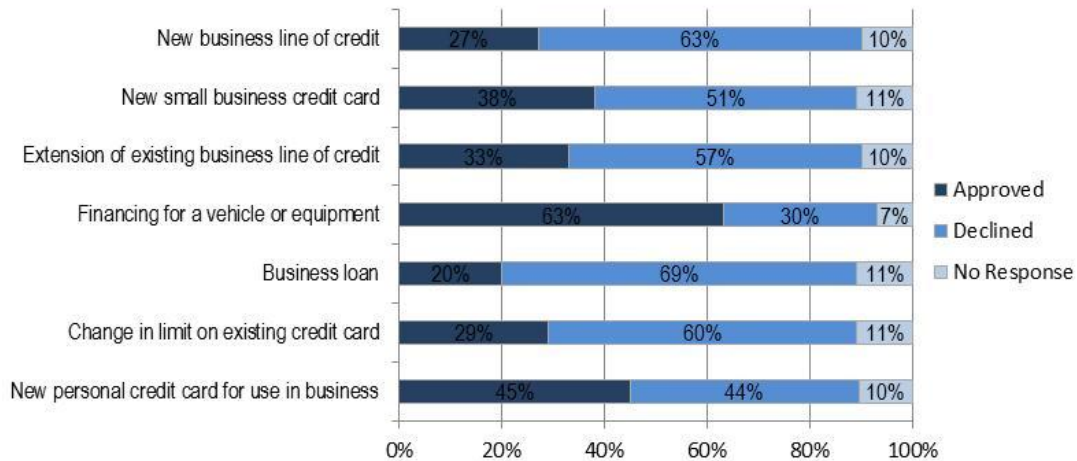


Source: Federal Reserve System and NFIB

- **Small businesses may not attempt to apply for loans or credit due to perceptions that the availability of credit is limited or a risk aversion to taking on additional debt in the current business environment. Stakeholder interviews conducted to date concur that this finding also generally applies to small manufacturers.**
 - The National Federation of Independent Businesses (NFIB) and Federal Reserve Bank both found that *a sizable percentage of small businesses (between 37 and 40% in their most recent 2010 surveys) are not applying for credit.* Some reasons cited by respondents include: (1) need for capital was obtained from friends and family or retained business earnings, (2) perception that they would not qualify for financing, preventing them from applying, (3) the application processes and paperwork, especially for government sponsored programs, was too burdensome.²⁵

- Themes across stakeholder interviews reveal that *some manufacturers may be reluctant to seek sources of equity capital based on the risk of losing control of their business and the high cost of capital.*
- A sample of the reasons why small businesses nationwide requested financing, and whether the business was approved for the financing, is provided in Figure 6.

Figure 6: Sample of Small Business Requests for Financing



Source: Federal Reserve System

2.2 Capital Access/Loan Program Needs Analyses

The business challenges related to accessing capital are particularly impactful on the manufacturing sector. The manufacturing sector is capital intensive and often requires the financing of inventory and receivables over extended periods of time. Additionally, many larger manufacturers manage their working capital needs by using “Just in Time” (JIT) production strategies to forecast and reduce the cost associated with carrying inventory instead of “stocking up.” While JIT strategies may help the larger manufacturer reduce the costs of carrying inventory, they tend to push a larger amount of the financial burden to their supplier, which is often a smaller company. As a result, the larger, secondary manufacturer has more control over their supply chain than does the small manufacturer that supplies them. Manufacturers also historically have used commercial and residential real estate, machinery, equipment, inventory and receivables as collateral to finance operations.²⁶ Because of the downturn in real estate values across the nation, even small manufacturers who are performing well in the current economy may experience difficulty in maintaining their existing borrowing base as a result of depressed asset values and lower revenue or margin levels.

Table 1 lists nine capital needs common to a typical small business. However, SMEs have a higher degree for about half of these conditions due to their unique capital needs.

Table 1: Common Small Manufacturer Capital Needs

Small Manufacturer Capital Needs	Degree of Need?	Small Manufacturer Capital Needs	Degree of Need?
1. New Construction		6. Research & Development/ Innovation (e.g., Prototypes, Proof of Concept)	

2. Expansion/ Land or Building Acquisition		7. Working Capital (e.g., Inventory /Accounts Receivable)	Yes
3. Facility Improvements / Remodeling	Yes	8. Refinancing / Capital Restructuring	Yes
4. Leasehold Improvements		9. Other Types of International Growth	
5. Machinery and Equipment	Yes		

Research shows that capital needs do vary based on the capital structure of the manufacturing firm at different stages of growth. Capital structure can be described as the mix of debt and equity used by firms to finance their long-term (fixed) assets. The capital structure of a small manufacturing firm may differ from small businesses in other sectors of the economy. One study found no significant differences between manufacturing and non-manufacturing firms in how likely each was to have a loan. But, small manufacturing firms were more likely to have a lease, equipment loan, or a loan from stockholders than other non-manufacturing small businesses.²⁷ This may be because manufacturing firms are more likely to have assets that can be used for collateral in securing long-term financing.

Allen Berger and Gregory Udell established a theory of small business finance. This life-cycle theory draws a connection between the various growth stages of a business and the types of capital required.²⁸ As a business moves through its growth stages, its capital needs will change. The business will need to allocate its capital to cover different types of expenses, which may in turn necessitate different levels and types of financing. These phases are described below and in the following Figure 7.

- **Seed:** During the seed stage, a business is usually in the initial planning stages. The business most likely has not yet established any commercial options, and does not have a revenue stream. Businesses in this stage typically require a modest amount of capital to finance needs such as product development, market research, and business plan development.
- **Start-Up:** Businesses in this stage have begun to build their operations and may have some customers, but are not yet widely selling their product in the marketplace. They are continuing to focus on product development and initial marketing efforts. Capital is needed during this period to finance continued research and development, purchase or lease machinery and equipment, make property improvements, and fund working capital needs.
- **Growth:** Growth stage businesses have made it past the initial hurdles and are turning a profit. Typically, customers and sales are increasing and revenues are strong. Businesses in this stage are focused on growing their operations and making them more efficient. They are likely to have high capital demands and will need funds to acquire land, buildings, machinery, and equipment, to finance additional working capital needs, and for continued research and development.
- **Mature – Established:** Businesses in this stage are mature and have an established customer base. Sales are stable and exhibit manageable growth. The business will generally be focused on improvement and productivity, and will be looking to improve its business to better compete in the market.
- **Mature – Expansion:** During this stage, businesses will be looking to gain larger market share and find new revenue and profit channels. They will likely be expanding into new

markets and product lines, and may need additional money for property, equipment, refinancing, and working capital needs.

- Revitalization:** This stage applies to companies who are underperforming and/or stagnating. It is also applicable to companies who are in crisis mode and are hemorrhaging cash, eroding profit margins and experiencing decreased sales and increased costs. These businesses will need to evaluate their existing business plans and develop new strategies.

Figure 7: Change in Small Manufacturer Capital Needs by Phases of Business Maturity

Small Manufacturer Capital Needs	Stage of Business Growth or Maturity					
	Seed	Start Up	Growth	Mature - Established	Mature - Expansion	Revitalization
Construction, Land, or Building Acquisition	1	1	4	4	5	4
Facility Improvements, Remodeling	1	1	4	4	5	4
Leasehold improvements	5	4	3	1	1	1
Machinery and Equipment	1	5	4	4	4	4
Research and Development, Innovation	5	5	4	2	3	4
Inventory, Accounts Receivable, Working Capital	1	5	5	4	5	5
Refinancing, Capital Restructuring			1	3	4	5
Other Types of International Growth			1	1	1	1

Key: Degree of Need	Low	1	Medium / High	4
	Low / Medium	2	High	5
	Medium	3	N/A	

3

Availability of Capital for Small Manufacturers

The primary sources of available capital—the supply side of the capital access question—that are most applicable to small manufacturers are summarized in Section 3. The focus is on federal government programs that serve as a direct provider or guarantor of funds, with a limited examination of a sample of sources of capital provided by non-federal entities. While the majority of capital provided to SMEs comes from the private sector, many manufacturers utilize federal government programs at some stage of their growth cycles, and often rely on these programs prior to accessing private sources of capital. Additionally, findings based on the analysis of the sources of capital cataloged as part of the Capital Access/Loan Program Assessment environmental scan, including examples of private sources, are discussed.

Note: The section is intended to supplement the MEP Quick Reference Guide to Growth Financing, 5th Edition. Refer to the guide for more detailed profiles of the sources of capital introduced in this section. It is anticipated that should MEP implement a key recommendation of this report, the working inventory amassed through this assessment and study would eventually be incorporated into a working tool to assist manufacturers' needs to finance their specific growth strategies.

Note: The following findings are focused primarily on small business trends, because there is a limited availability of data that is specific to small manufacturer capital needs. Because 98% of all manufacturing firms in the U.S. are small businesses, research and stakeholder interviews showed that capital access small business trends also apply generally to small manufacturers. Differences in capital needs between small manufacturers and other types of small businesses are called out when applicable. Data gaps were supplemented through stakeholder interviews and literature reviews.

3.1 Key Findings

Based on an environmental scan of available federal government programs and sources of capital nationwide, trends exist in the availability of capital and the allocation of existing capital by lenders, investors, and governmental programs.

- **Currently, 103 federal government programs administered across at least 17 departments and independent agencies offer funds for small businesses or small-to-large size manufacturers in a variety of areas** including, research and development, energy efficiency, international growth, business financial needs and or economic development.
 - *Of these 103 federal programs, 38 programs target manufacturers explicitly through their program's purpose or eligibility criteria.* Most of these 38 programs are Department of Energy grants awarded primarily to larger-sized manufacturers or cooperative agreements awarded through SBA's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.
- **Of the 38 programs that target manufacturers explicitly, many of these programs are not fully accessible to small manufacturers, nor do these programs target funds directly to SMEs.**
 - *According to stakeholder interviews, larger-sized manufacturers often have a competitive advantage over SMEs in competing for the energy efficiency and energy-related manufacturing grants provided by the Department of Energy.*

- *Historically, the Export-Import Bank's (Ex-Im) products are provided through large commercial banks, instead of CDFIs or local community banks, and have targeted larger-sized manufacturers.*
- While the SBA's 504 fixed asset program currently offers a special feature for manufacturers that allows a higher loan amount than for other industry types, stakeholder interviews and SBA data analyzed showed that *SMEs and intermediary lenders are not fully utilizing the 504 program*, primarily due to the perception that additional paperwork is associated with federal loan guarantees, or that there is a higher cost of capital associated with these loans (it should be noted that neither of these perceptions are accurate). An additional reason that 504 is not fully utilized by SMEs is that they lack awareness that the 504 program is a viable alternative source for fixed asset financing.
- Proposed legislative changes to SBA's SBIR and STTR programs have been cited as potentially placing smaller manufacturers at a competitive disadvantage to larger companies who may have backing from venture capital funds.
- **Funds provided through the 103 federal programs are primarily provided as forms of debt capital (e.g., loan guarantees) or grants, not equity capital.** While most of the federal programs are provided to SMEs in the form of loan guarantees, grants, or cooperative agreements, there are five equity funds guaranteed by the federal government. The most commonly recognized federal equity programs are the Community Development Financial Institution (CDFI) and Small Business Investment Company (SBIC), funds, administered by the U.S. Department of the Treasury and U.S. Small Business Administration (SBA), respectively. Three other examples of federal equity funds are Red Planet (NASA), In-Q-Tel (CIA), and OnPoint Technologies (US Army). These three funds are aligned to meet the needs of these agencies.

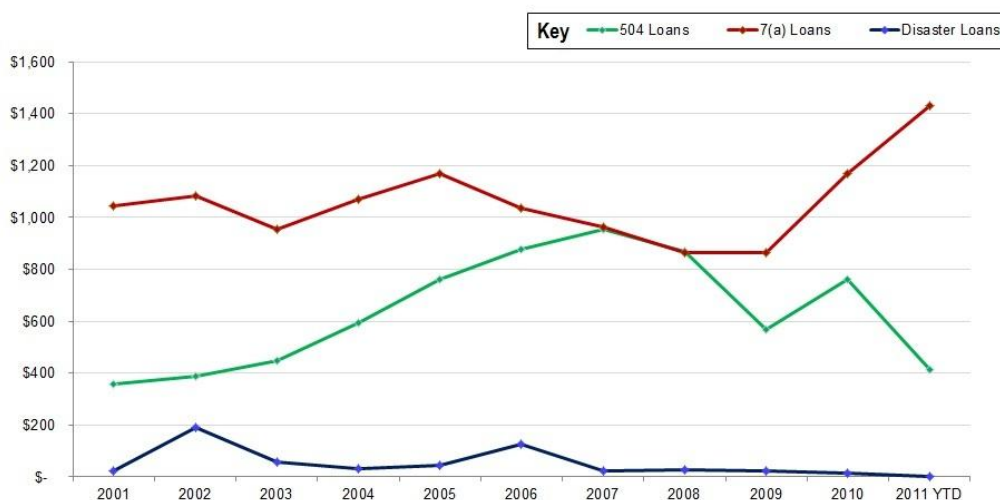
Legislative authority for administering these 103 programs is spread across seventeen federal departments or independent agencies. However, four departments administer the majority of these programs that are most applicable to small manufacturers, including:

- *U.S. Small Business Administration* (20 programs with a funding range up to \$5 million available for some loan programs);
- *The Small Business Innovation Research (SBIR) Program and the Small Business Technology Transfer (STTR) Program*, which are administered by the Small Business Administration Office of Technology, are two competitive programs that target small, high-tech, innovative businesses. These two programs comprise a significant part of the federal government's research and development effort to drive innovation. Administered by SBA, eleven federal departments provide SBIR programs, and five departments participate in the STTR programs. Together, the SBIR and STTR programs award approximately \$2.5 billion to small high-tech businesses each year;
- *U.S. Department of Agriculture Rural Development Agency (USDA)* (11 programs with a funding range up to \$25 million available per loan);
- *U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE) Agency* and programs sponsored through the National Labs (17 programs with a funding range up to \$500 million available per loan);
- *U.S. Department of Defense (DOD)* (5 primary programs, in addition to the numerous types of DOD, SBIR and STTR-related programs);
- *At least 13 other departments and independent agencies provide additional programs that are applicable to small manufacturers depending on their size, product line, or growth*

strategy, such as the: Department of the Treasury, Export-Import Bank (Ex-Im Bank), Department of Housing and Urban Development (HUD), Department of Commerce, International Trade Administration and Economic Development Administration, National Science Foundation, and National Institute of Health. See Section 3.2.2 and the Appendix for a full list of the federal departments providing funds cataloged as part of this assessment.

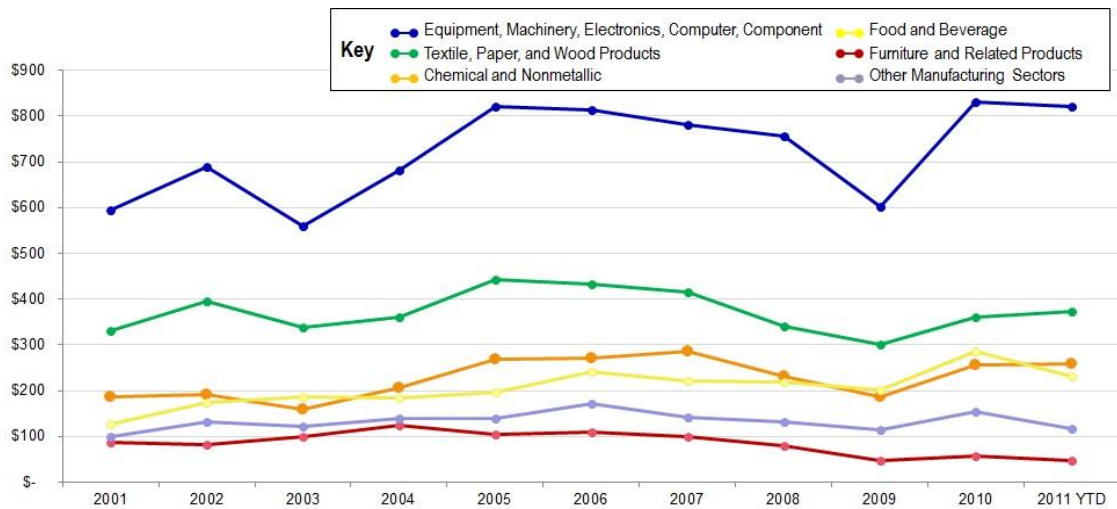
- **The government programs that are most widely recognized by the stakeholders interviewed are the SBA 7(a) Guaranteed Loan Program, the SBA 504 Fixed Asset Program, and the Export-Import Bank programs. While challenges exist related to increasing lending institution participation in and SME awareness and access to, these programs, both agencies supply a significant amount of loan guarantees and equity each year to the manufacturing sector.**
 - *Small manufacturers are one of the primary industries using the available SBA and Export-Import Bank loan issuances each year. For example, over a quarter of both SBA and Export-Import Bank loan issuances and guarantees are provided to customers in the manufacturing sector. Further, between 20% and 25% of the capital provided by the SBA’s SBIC program—one of the primary government programs providing private equity funding—is used by small manufacturing companies.*
 - SBA 7(a) loans made to manufacturers have increased by 66%, while SBA 504 loans have declined by 52% since 2008, as shown in Figure 8.
 - The manufacturing sectors with the highest SBA loan volume are the equipment, machinery, electronics, and components sectors, as shown in Figure 9.
 - According to a November 2010 Federal Reserve Bank report, the SBA loan guarantee product is well-established in the financial arena, and their volume has grown in the past decade. “The SBA’s business loan portfolio of roughly 240,000 loans was worth about \$60 billion in 2004, making it the largest single financial backer of small businesses in the United States. To place this amount in perspective, consider that in June 2004 commercial banks reported a total of about \$522 billion dollars of small business loans outstanding.”²⁹

Figure 8: Trends in Key SBA Loan Guarantees to Small Manufacturers (2001-2010)



Source: Based on data provided by the U.S. Small Business Administration

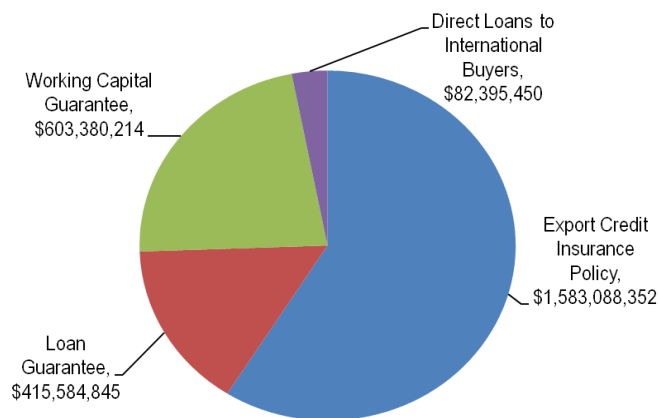
Figure 9: Key SBA Loan Guarantees To Manufacturer Industry Sectors by NAICS Code (2001-2010)*



Source: Based on data provided by the U.S. Small Business Administration

- The Export-Import (Ex-Im) Bank is increasing the number of small manufacturers that use its products to expand exporting operations.** Historically, the Export-Import Bank’s products were provided through large commercial banks instead of CDFIs or local community banks, and have targeted large manufacturers. However, Ex-Im has incorporated initiatives into its strategic plan that seek to expand the use of their products by smaller businesses, including smaller-sized manufacturers (e.g. suppliers to exporters). Ex-Im issuances to small businesses reached over \$5 billion in FY 2010; 20% of total Ex-Im issuances are to small businesses, which is an all-time high. As shown by FY 2010 YTD data in Figure 10, small businesses utilize the Export Credit Insurance product over other Ex-Im products, primarily due to ease of access of the insurance program.

Figure 10: Export-Import Bank Issuances to Small Businesses FY 2010 YTD



Source: Based on data provided by the Export-Import Bank

- **Stakeholder interviews and documents researched as part of the literature reviews revealed that commercial banks may have shifted away from originating smaller sized loans to loans with larger amounts.** While this trend applies generally to small businesses, its impact on small manufacturers could result in a reduced ability to obtain financing, especially in smaller loan amounts. This may be a consequence of banks seeking to reduce the risks and the administrative costs associated with smaller loans, partially as a result of recent changes in banking regulatory policy.
 - *Lending of both micro small business loans (\$100,000 or less) and macro small business loans (between \$100,000 and \$1 million) declined substantially in 2009, as shown in Figure 3. The value and number of micro loans declined the most, declining by 43 percent from 2008 to 2009. The value and number of macro loans were down by 24 percent and 20 percent, respectively.³⁰ In a sample of the top 25 lenders to small businesses, 21 out of 25 of the top small business lenders provided over 50% of their total loans as macro loans according to FDIC Call Report and CRA data;*
 - *The largest lenders—those with assets exceeding \$10 billion—continued to dominate the small business loan market. Lenders with total assets of \$50 billion or more have continued to increase their market share of small business lending.³¹ Comments from stakeholders seem to imply that bank are trying reduce costs and gain a competitive advantage and a bigger share of the small business market by bundling lending products with other financial solutions such as cash and credit management, payroll processing, and treasury services. Further analysis is needed to determine if small business borrowers are moving from traditional relationship lending with smaller lenders to the larger lenders, especially for loans of \$100,000 or less;*
 - *A study of small business needs in Northern Michigan found that the number and outstanding amounts of commercial and industrial (C&I) loans to small businesses with original amounts between \$250,001 and \$1,000,000 increased slightly between 2007 and 2010. However, the number and amounts of outstanding loans with original amounts less than \$250,000 decreased significantly.³²*
 - *While limited data exists on the use of capital specifically by small manufacturers, a report by Morgan Stanley Research found that less than 1 percent of capital market financing in the U.S., including both equity and loans, is used by businesses with less than \$25 million in revenue.*
- **Community banks and Community Development Financial Institutions (CDFIs) complement the role of the larger commercial banks** in providing credit to small businesses, and serve small manufacturers in rural or underserved areas that may not have access to larger commercial banks.
 - *Small businesses for the most part borrow locally in their own communities or in communities within close proximity.³³ However, stakeholder interviews revealed that small manufacturers may not be aware of their local CDFIs, or local CDFIs may find it currently too expensive to market their products directly to manufacturers.³⁴*
- **Stakeholders hold a common perception that capital is available for small businesses through lenders and investors, but accessibility has declined due to tighter lending standards and the increasing cost of capital.** While banks are beginning to ease their standards, access to capital is still a concern of both lenders and small businesses.
 - *The American Banking Association (ABA) found that overall loan volume has remained stable over the last year, with the initiation of roughly \$1.7 trillion in new lending over*

the 12 months ending September 2010. However, bank regulators have cautioned banks to be conservative in underwriting many types of business loans and to ensure that they have sufficient collateral and capital reserves for existing loans. ABA found that banks are under pressure from examiners to decrease risk and increase the loss reserves for riskier deals. Also, many banks may now require their customers to obtain updated appraisals, which may result in a liquidity issue for small manufacturers if the appraised value has decreased;³⁵

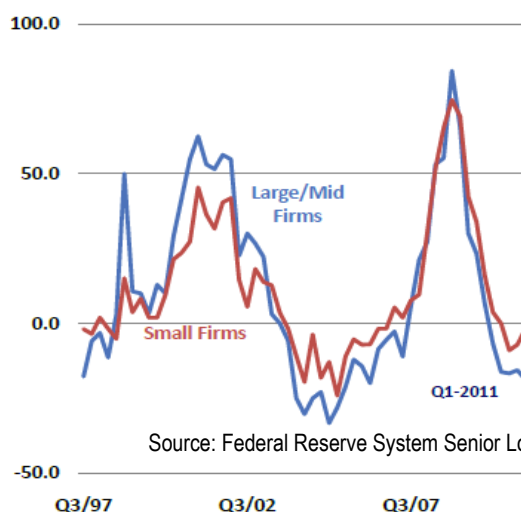
- The January 2011 Senior Loan Officers Opinion Survey on Bank Lending Practices showed a continued tightening of lending standards for small commercial and industrial loans since 2007, as shown in Figure 11.³⁶ This trend was more pronounced in the early months of 2009, with the majority of senior officers reporting no change in standards or demand since then;

The percentage of small business owners who reported being negatively affected by their ability to access capital eased slightly between July and December 2009, but still remained high, at 78 percent. By the end of 2009, about one-third—35 percent—of small business owners were subject to a decrease in their lines of credit or credit cards, down from 38 percent in July 2009;³⁷

- Based on our sample inventory of sources of capital described in this report, there may be more providers of long-term investments than shorter-term working capital. Seventy five percent of sampled sources for this assessment provide funding for long-term investments. About 50 percent of the sources provide financing for working capital, including several SBA programs that address this need for increased working capital financing. If this trend is representative of nationwide providers, it may be due to the ability of companies to use assets as collateral to secure long-term financing, which may not hold true for working capital. Local or regional economic development providers may also prefer capital investments that are more likely to create jobs;
- Access to available capital may be easier for small manufacturers, compared to other small businesses, because manufacturers typically are more able to use equipment, inventory, and property as collateral. The challenge is that the capital needs of manufacturers are also higher than many small businesses in other sectors. Compared to other industries, the manufacturing sector more frequently uses loans;³⁸
- **The availability of venture capital is greater in certain geographic areas, and may be under-utilized by small manufacturers seeking to expand. The SBICs and community development venture capital funds do seek to provide equity options to underserved areas. Additionally, there are five equity funds guaranteed by the federal government.**

- Many venture capital firms are regionally focused or target a specific type of technology or product (e.g., manufacturers of medical devices or information technology products). For example, a large percentage of venture capital financing is regionally concentrated in areas such as the Silicon Valley or the Boston/New York corridor. Figure 12

Figure 11: Percent of Banks Tightening C&I Loans

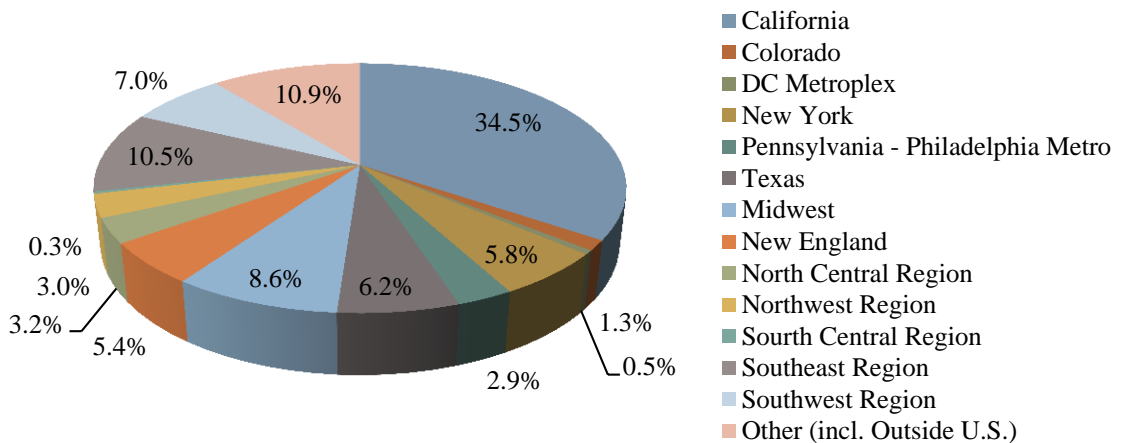


Source: Federal Reserve System Senior Loan Officer Survey

provides a breakdown of the geographic location of venture capital companies nationwide;

- *Companies located in rural areas may have limited access to venture capital.* However, community development venture capital funds and small business investment companies (in contrast to commercial venture capital funds) that target underserved areas of capital for small businesses do exist. Examples would be investments invested in places like rural Kentucky, the Mississippi River Delta, and Macedonia;³⁹
- *The utilization of venture capital by small businesses is much lower than other types of capital.* Nationwide, there were a total of 1,215 venture capital deals in 2009 that invested \$6,865,811,400 in U.S. businesses (the percent of this total that applies to small manufacturers was not available).⁴⁰ Some stakeholder interviews revealed that venture capital and angel investors may sometimes be hesitant to invest in manufacturers based on the lack of exit strategies.

Figure 12: Geographic Location of Venture Capital Companies



Source: Pepperdine Private Capital Markets Survey

3.2 Capital Access/Loan Program Inventory Analyses

The inventory listing of providers (sources of capital) sampled and collected through this assessment and study was analyzed and summarized here. Our environmental scan resulted in the identification of 509 sampled sources of capital that target small businesses or small manufacturers.

Note: *The statistics provided below only represent the sources sampled as part of this assessment, and cannot be extrapolated as indicators of all sources of capital and financing options nationwide.*

- **About 30% of all sampled sources, or 103 sources, were federal programs** that fund small businesses or manufacturers, either as a direct provider (e.g., most commonly through a grant or cooperative agreement) or indirectly as a guarantor working through an intermediary.
- **The 406 non-federal sources sampled provide a small, but representative cross-section of the thousands of private sector, state and local capital providers.** For private sources of capital, the analysis focused on identifying the largest nationwide providers of capital to small businesses based on asset size of lending portfolio (e.g. Bank of America, Wells Fargo) or sources that are specifically relevant to the manufacturing sector (e.g. leasing companies). While there was a large variation in the number and type of capital sources available from region-to-region, our sample indicates that there is a broad range of state and private sector providers of capital to small businesses and manufacturers.

- Seventy five percent of sampled sources provide funding for long-term investments. Approximately 50 percent of the sources provide financing for working capital.
- Almost 50 percent of sampled sources provide primarily term debt. Equity investments or grants were provided by 15 percent and 20 percent of sampled sources, respectively.

Figure 13: Sampled Inventory Sources of Capital by Funding Type

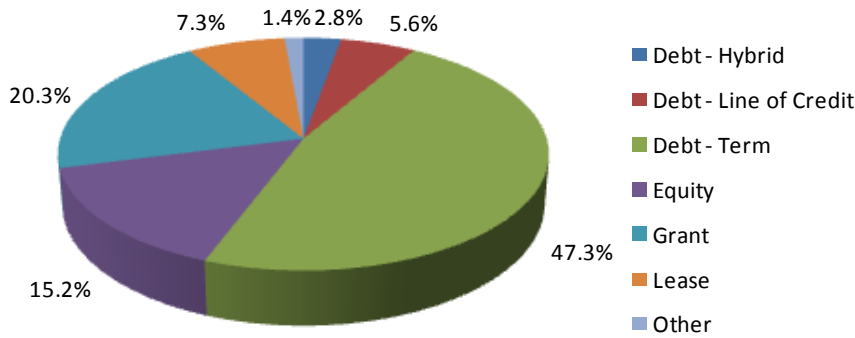
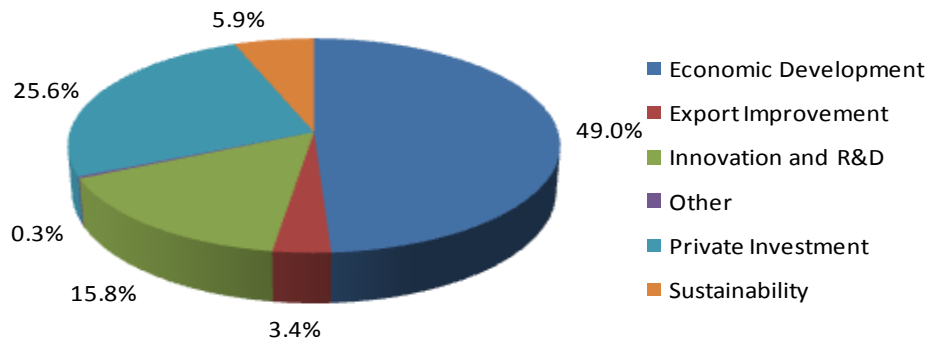


Figure 14: Sampled Inventory Sources of Capital by Program Purpose



3.2.1 Key Sources of Capital for Small Manufacturers

Within the sampled sources of capital, the most promising sources of capital that are available to small manufacturers operating within the U.S. were identified and prioritized into three tiers. The prioritization was based on the criteria listed in Table 2. The criteria assessed: (1) the underlying *quantity* of capital available to applying organizations, (2) the *ease of access* of obtaining this capital, and (3) the *applicability* of the programs to manufacturers.

Table 2: Prioritization Criteria

Tier	Criteria	Description of Criteria
1	Most Geographically	The source was generally accessible to a small manufacturer <i>located anywhere in the United States</i>

Tier	Criteria	Description of Criteria
(88 sources)	Accessible	
	Most Broadly Applicable	The source <i>applied broadly (i.e., applicable to any SME regardless of sub-sector served)</i> to the needs of small manufacturers and had a larger amount of funding available
	Most Widely Aware	The source was <i>widely known (i.e., recognized by most stakeholders interviewed or easily found through basic internet searches)</i> by stakeholders interviews, promoted nationally, or easily located based on basic searches
2 (194 sources)	Somewhat Geographically Accessible	The source was generally accessible to a small manufacturer <i>located only within a specific state or small region</i>
	Somewhat Broadly Applicable	The source applied to a <i>narrower scope of small manufacturer needs, such as only energy efficiency or research and development, or a specific sub-section of manufacturers</i>
	Somewhat Aware	The source was <i>somewhat recognized in some stakeholders interviews, or somewhat easy to locate using basic searches</i>
3 (223 sources)	Least Geographically Accessible	The source was only accessible to a small manufacturer serving a <i>very narrow segment of the industry or a specific localized geographic area, such as a municipality</i>
	Least Broadly Applicable	The source applied to a <i>very specific need within manufacturing or small business, such as nanotechnology manufacturing, or provided the smallest amount of funding</i>
	Least Aware	The source was not mentioned by stakeholders interviewed, <i>or not widely known or used</i>

Based on the criteria listed above, 88 sources of capital fall into Tier 1. The Tier 1 sources are grouped into 20 “source categories” below in Table 3. For example, all SBICs are listed as one group in Table 3.

Table 3: Top (Tier 1) Categories of Sources of Capital for Small Manufacturers (in Alphabetical Order)

Source of Capital	Direct Lender or Provider	Intermediary or Guarantor
7(a) Loan Program	Local Commercial Lending Institution	Small Business Administration
Business & Industry Guaranteed Loans	Local Commercial Lending Institution	Department of Agriculture, Rural Development

Source of Capital	Direct Lender or Provider	Intermediary or Guarantor
Certified Development Company 504 Loan Program (CDC)	Local Commercial Lending Institution	Small Business Administration
Community Express	SBA Approved Lenders	Small Business Administration
Community Development Financial Institutions	Local certified CDFI	Department of Treasury
Equity Investors	Venture Capital, Angel Investors, and Private Equity Groups	N/A
Export Express	Local Commercial Lending Institution	Small Business Administration
Export Working Capital Program	U.S. Export Assistance Centers	Small Business Administration
Industrial Development Bonds	State and Local Municipal Governments	N/A
Intermediary Relending Program	Certified Intermediary	Department of Agriculture, Rural Development
Microloan Program	Local Commercial Lending Institution	Small Business Administration
Medium Term Credit Insurance	Local Commercial Lending Institution	Export-Import Bank
Select Leasing Companies	e.g., TCF, Caterpillar	N/A
Select National Commercial Banks	e.g., Bank of America, Wells Fargo	N/A
Select Regional and Local Banks	e.g., Nara Bank, IronStone Bank	N/A
Small Business Investment Companies (SBIC)	Local SBIC	Small Business Administration
Small Business Investment Research (SBIR)/ Small Business Technology Transfer Program (STTR)	Departments of Defense, Agriculture, Energy, Homeland Security, Education, Transportation, NIH, NASA, NSF, EPA, NIST	N/A
Small Business Lending Fund	Commercial Lending Institution	Department of Treasury
State Small Business Credit Initiative – Loan	Local Lending Institutions	Department of Treasury
State Small Business Credit Initiative – Venture Capital	Local Private Equity Funds	Department of Treasury

3.2.2 Analysis of Federal Government Sources

The federal government provides a range of financial assistance to small businesses in areas that are of strategic national priority. The trends across all federal government sources are as follows:

- **The majority of federal sources in our sample provide a form of debt capital or grants, with the exception of the five equity capital programs.** CDFIs and SBICs certify and

subsidize local development-focused private equity funds. Some agencies within the federal government have developed funds that invest in technologies related to their priorities such as Red Planet, OnPoint, and In-Q-Tel for NASA, the Army, and the CIA respectively. At least one other equity capital program was administered by the federal government in the last decade, but it is not currently receiving appropriated funds—the SBA’s New Market Venture Capital Program (NMVC). Congress created the NMVC program in December 2000 to address the unmet equity needs of low-income communities through \$150 million for debenture guarantees and \$30 million for operational assistance grants. NMVC is similar to SBA’s SBIC program.

- **Over half of the federal programs cataloged in the analysis serve an innovation-related or research and development (R&D) investment purpose.** These innovation-related investments are primarily provided through funding sponsored by the eleven federal agencies that offer the SBA-sponsored SBIR/STTR programs. Grants or contracts provided by the federal government are generally more narrowly scoped to address the development of a specific technology of national interest, such as energy efficiency industrial facility upgrades.
- **The purpose of many federal government loan and equity programs is to guarantee funds provided through intermediaries, in order to promote community development or economic development.** Although the government does serve as the direct lender for a few programs, economic development support is generally provided by a private or nonprofit lending institution with a guarantee provided by the federal government. By using commercial institutions as the direct lender, the government is able to use commercial funds to leverage its available capital while transferring servicing of the loans to private sector companies. Federally supported loans are generally open to a broad range of organizations and provide more flexible lending terms. However, federal loan guarantees require the lending institution to increase the amount of paperwork and due diligence used to evaluate loans. The complexity of these programs can cause lenders to limit their participation and often only concentrate on working with one or two programs. Large banks have adapted to this burden by developing departments that focus purely on SBA loans. The primary agencies that provide loan guarantees to small businesses are the SBA and the USDA Office of Rural Development.

The list of federal sources cataloged is summarized in the following table.

Table 4: List of Federal Government Sources (Listed in Alphabetical Order)

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
Bureau of Indian Affairs	<ul style="list-style-type: none"> • Indian Loan Guaranty, Insurance, and Interest Subsidy
U.S. Department of Commerce	<ul style="list-style-type: none"> • Revolving Loan Fund • Space Coast Regional Innovation Cluster Competition • New loan guarantee program targeting SMEs (not yet appropriated), to be launched in 2011 and administered by the Economic Development Administration

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
U.S. Department of Agriculture	<ul style="list-style-type: none"> • Business & Industry (B&I) Guaranteed Loan Program • Rural Business Enterprise Grants • Small Business Innovation Research • Rural Micro-entrepreneur Assistance Program • Intermediary Relending Program • Rural Energy for America Program – Loan • Rural Energy for America Program – Grant • Rural Small Business and Entrepreneurship Loan Fund • Export Credit Guarantee Program • Facility Guarantee Program • Market Access Program
U.S Department of Defense	<ul style="list-style-type: none"> • Small Business Innovation Research • Defense Production Act Title III • Industrial Base Innovation Fund • UAVForge Manufacturing Services • In-Q-Tel • OnPoint Technologies • Strategic Technologies Grant Program (provided through Defense Advanced Research Projects Agency)
U.S. Department of Energy	<ul style="list-style-type: none"> • Small Business Innovation Research • Annual State Energy Program • Renewable Energy or Transmission Projects Using Innovative Technology • Renewable Energy Manufacturing Projects Using Commercial Technology • Geothermal Technologies Program • Waste to Profit Program • Foundational Program to Advance Cell Efficiency Grant • Property Assessed Clean Energy Programs • Better Buildings Grant Program • Solar Energy Grid Integration Systems - Advanced Concepts Grant • Advanced Hydropower Development Grant • Catalytic Upgrading of Thermochemical Intermediates to Hydrocarbons Grant • U.S. Offshore Wind: Technology Development Grant • Advanced Technology Vehicles Loan Manufacturer Program • Extreme Balance of System Hardware Cost Reductions Grant • Novel Developments in Sensors and Controls for Fossil Energy Power Generation and Fuel Production Technologies Grant • Research and Development for Hydrogen Storage Grant • Applications of Nuclear Science and Technology Initiative • Tribal Energy Program Grant

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
	<ul style="list-style-type: none"> • Rare Earth Alternatives in Critical Technologies • High Energy Advanced Thermal Storage • Plants Engineered to Replace Oil
US Department of Health and Human Services	<ul style="list-style-type: none"> • Small Business Innovation Research
U.S. Department of Housing and Urban Development	<ul style="list-style-type: none"> • Community Development Block Grants
U.S. Department of Transportation	<ul style="list-style-type: none"> • Small Business Innovation Research • Research and Demonstration Projects Supporting the Development of High Speed and Intercity Passenger Rail Service
U.S. Department of Treasury	<ul style="list-style-type: none"> • Community Development Financial Institutions • Bank Enterprise Award Program • Financial Assistance Awards • Small Business Lending Fund (launched in 2011) • State Small Business Credit Initiative (launched in 2011)
Export-Import Bank	<ul style="list-style-type: none"> • Working Capital Guarantee Program • Medium Term Credit Insurance • Competitive Financing for International Buyers • Finance Lease Guarantees • Transportation Manufacturing Export Loan
Environmental Protection Agency	<ul style="list-style-type: none"> • Small Business Innovation Research
National Aeronautics and Space Administration	<ul style="list-style-type: none"> • Small Business Innovation Research • Red Planet Capital
National Institute of Health	<ul style="list-style-type: none"> • Development and Application of PET and SPECT Imaging Ligands as Biomarkers Grant
National Institute of Standards and Technology	<ul style="list-style-type: none"> • Small Business Innovation Research • Technology Innovation Program • Measurement Science and Engineering (MSE) Research Grants Program

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
National Science Foundation	<ul style="list-style-type: none"> • Small Business Innovation Research* • Sensors and Sensing Systems Grant • Manufacturing and Construction Machines and Equipment • Manufacturing Enterprise Systems Grant • NanoManufacturing Grant • Materials Processing and Manufacturing Grant • Particulate and Multiphase Processes Grant • Fluid Dynamics Grant • Environmental Sustainability Grant • Communications, Circuits, and Sensing-Systems Grant • Energy, Power, and Adaptive Systems Grant • Energy for Sustainability Grant
Small Business Administration	<ul style="list-style-type: none"> • 7(a) Loan Program* <ul style="list-style-type: none"> ○ 7(a) Special Purpose Loan CAPLines Program - Seasonal Line Loan (SBA) ○ Employee Trusts Program ○ Export Express ○ Community Adjustment and Investment Program ○ Patriot Express Pilot Loan Initiative ○ Community Express ○ Export Working Capital Program ○ International Trade Loans • Intermediary Lending Pilot Program • Small Business Investment Companies* • Certified Development Company 504 Loan Program* • Microloan Program • Pollution Control Loans • Business Physical Disaster Loans • Economic Injury Disaster Loans • Military Reservists Economic Injury Loans • Accion USA
Tennessee Valley Authority	<ul style="list-style-type: none"> • Economic Development Funds • Special Opportunities Counties Fund
	<ul style="list-style-type: none"> •

- Reports to identify capital sources that align to specific capital needs of small manufacturers will be developed and defined during the next phase of the MEP project.

The following federal departments or agencies are the primary administrators of most of the 103 federal government sources sampled and summarized in this report. A brief description of the federal programs that are most applicable to small manufacturers is provided in Table 5.

Table 5: Detailed Description of Primary Federal Government Sources (Listed in Alphabetical Order)

<p>U.S. Department of Agriculture (USDA)</p>
<p>The Department of Agriculture (USDA) provides several financial assistance programs that are available to small businesses. The majority of these programs are provided through the USDA’s Rural Development (RD) agency. USDA RD is focused on developing the economy of rural areas throughout the U.S. For the majority of these programs, the small business must be located within rural areas with a population of less than 50,000 people.</p> <p>The primary USDA RD programs that provide assistance to small manufacturers are:</p> <ul style="list-style-type: none"> • Business & Industry (B&I) Guaranteed Loan Program: This program guarantees loans made by commercial lending institutions for amounts up to \$10 million. The B&I program guarantees loans provided by local lending institutions, and is the largest development program offered by the USDA with a program budget of \$942 million.⁴¹ The program received a one-time infusion during FY 2009 as part of the American Recovery and Reinvestment Act, but the program was undersubscribed; • Rural Business Enterprise Grants program is the largest of several USDA RD financial assistance programs that help develop the use of renewable energy or develop the economies of local communities. These grants were funded with \$39 million in FY 2011. In addition to the RD programs, USDA’s Foreign Agricultural Service provides several programs that help expand the ability of US manufacturers of food products to expand their operations.⁴²
<p>U.S. Department of Commerce (DOC)</p>
<p>The DOC International Trade Association (ITA) promotes trade and investment, and ensures fair trade through enforcement of trade laws and agreements. The ITA works to improve the global business environment to help U.S. organizations compete domestically and internationally. The ITA has a business unit that focuses exclusively on strengthening U.S. competitiveness abroad by shaping industry-specific trade policy in manufacturing and services sectors. The ITA also partners with various non-profit industry group and associations to provide funding to the:</p> <ul style="list-style-type: none"> • Market Development Cooperator Program (MDCP): MDCP awards support projects that enhance the global competitiveness of U.S. industries by offering financial and technical assistance to businesses. <p>The DOC Economic Development Administration (EDA) provides a few programs applicable to small manufacturers that promote job growth and business expansion through intergovernmental and public/private sector collaboration.</p> <ul style="list-style-type: none"> • Space Coast Regional Innovation Cluster Competition. This program designed to encourage innovation and development within the manufacturing cluster located near the Kennedy Space Center. Programs are competitively awarded based on proposal, primarily focused on the area surrounding the Kennedy Space Center; • Revolving Loan Fund Program. The Revolving Loan Fund Program provides gap financing for small businesses to expand their operations. The EDA awards competitive grants to state and local governments, private and public non-profit organizations, economic development district organizations, institutions of higher education, and Indian tribes to establish revolving loan funds (RLFs). These local RLFs, in turn, use the capital to make

loans at interest rates that are at or below market rates to local small businesses or businesses that cannot otherwise borrow capital.

U.S. Department of Defense (DOD)

DOD provides financial assistance to manufacturers through a range of programs that are designed to maintain the technological superiority of the U.S. military. DOD typically provides funding to U.S.-based manufacturers through competitively awarded grants. In addition to the DOD grants discussed in the SBIR/STTR section, they also maintain other programs such as:

- **Industrial Base Innovation Fund (IBIF):** The IBIF program provides funding for manufacturing research that address defense industrial base shortfalls especially related to surge production requirements and diminishing sources of defense material. Awards are historically made for close to \$1 million and provided as grants to large and small manufacturers;
- **In-Q-Tel and OnPoint Technologies:** In-Q-Tel and OnPoint Technologies are venture capital funds that were developed to invest in technologies related to the priorities of the CIA and US Army, respectively. These funds operate independently as standalone venture capital funds, but require continued support from the relevant agencies for continued operations;
- **Strategic Technologies Grant Fund:** The Strategic Technologies Grant Fund is operated under the supervision of the Defense Advanced Research Projects Agency and provides grants for innovative technologies that investigate innovative approaches that enable revolutionary advances in science, devices, or systems;
- **Manufacturing Technology Program (ManTech):** ManTech develops and matures key manufacturing processes to accelerate technology improvements in the acquisition and sustainment of DOD weapon systems and components. The program focuses on increasing the affordability, predictability, and reliability of performance for new technologies where investment is seen as too risky for investment without support;
- **Defense Production Act Title III:** The Defense Production Act Title III program maintains the domestic capacity to produce key technologies related to defense initiatives in the U.S. It competitively awards grants to domestic manufacturers so they can develop the production capacity for materials and technical components that can be used in a broad spectrum of defense systems.

U.S. Department of Energy (DOE)

DOE provides financial assistance and technical assistance to manufacturers interested in funding energy efficiency, renewables, and other industrial technologies that involve energy efficiency improvements or manufacturing of niche energy technologies. DOE offers about 22 programs with a funding range of up to \$500 million primarily through the Energy Efficiency and Renewable Energy (EERE) agency or the DOE National Labs. While DOE's programs are competitive, they provide a number of targeted assistance programs for manufacturers seeking to gain a competitive edge through energy efficiency improvements or technologies. In addition to the DOE grants discussed in the SBIR/STTR section the most applicable programs include:

- **State Energy Program and Energy Efficiency Community Block Grant Program:** Two flexible block grant or competitive grant programs that provide financial and technical assistance to states and local communities or companies to develop and address their energy priorities and energy efficiency needs;

- **Waste-to-Profit Program:** A program that facilitates the transformation of one company's waste, or by-product, into an industrial input for another company. This process is known as by-product synergy;
- **Renewable Energy or Transmission Projects Using Innovative Technology (1703) and Renewable Energy Manufacturing Projects Using Commercial Technology (1705):** Loan guarantee programs that fund innovative, renewable energy manufacturing projects that employ commercial technologies;
- DOE offers a number of other grants and cooperative agreements that are targeted at specific technologies, such as solar energy, automotive technologies, and hydrogen storage;
- The EERE Industrial Technologies Program (ITP) provides technical to help manufacturers learn about available energy financing mechanisms (e.g., revolving loan funds, Property Assessed Clean Energy Program), and research, develop, and deploy innovative technologies to improve their energy productivity, reduce carbon emissions, and gain a competitive edge. Some of the key EERE ITP technical assistance resources include:
 - **Save Energy Now:** A DOE technical assistance program that aids industrial plants, such as manufacturing firms, find effective ways to reduce energy use in steam and process heating so they can operate more efficiently and profitably. This effort also addresses energy-savings opportunities for compressed air, fan, motor, and pumping systems;
 - **Superior Energy Program, and other supply chain and industrial assessment forms of technical assistance:** Superior Energy Program is a certification program that provides industrial facilities with a roadmap for achieving continual improvement in energy efficiency while maintaining competitiveness. A central element of Superior Energy Performance is implementation and provision of technical assistance related to the forthcoming global energy management standard, ISO 50001, with additional requirements to achieve and document energy performance improvements;
 - **Database of State Incentives for Renewables and Efficiency (DSIRE):** DSIRE is a comprehensive source of state-specific information on utility and federal incentives that promote renewable energy and energy efficiency.

U.S. Department of Housing and Urban Development (HUD)

HUD provides a limited number of programs that are available to small manufacturers. The majority of them are administered at the state level with varying levels of assistance and accessibility.

- **Community Development Block Grants (CDBG):** CDBGs provide a source of funding for small manufacturers operating in cities and urban areas. The CDBG program is administered at the state and local level, and there are significant variations in the priorities and the types of projects that receive funding from one city to the next. While all programs must focus on providing services and economic development to persons of low or moderate income, some communities focus primarily on providing affordable housing and services directly to low income households. Other communities provide assistance to small businesses that can demonstrate that they will benefit persons of low to moderate income. Some financial assistance puts stipulations on the number of jobs created and/or the income levels of the jobs created. In FY 2010, CDBGs provided \$116 million for financial assistance to for-profit businesses;

- **Brownfields Economic Development Initiative (BEDI):** BEDI provides local governments with grants that they are able to use to sponsor local level financial assistance programs that redevelop previously used industrial or commercial sites that have been contaminated by previous use. HUD provided \$2.1 million in BEDI support during FY 2010 with several states providing matching funds.

U.S. Department of the Treasury

The Treasury has three main programs that are designed to promote small business lending: the Small Business Lending Fund, the State Small Business Credit Initiative, and the CDFI Fund. The three programs are similar in that they all distribute federal funds to third party sources such as commercial banks, community development banks, and state programs. These entities then use the funds to provide debt or equity capital to small businesses.

- **Small Business Lending Fund (SBLF):** The Small Business Lending Fund is a \$30 billion fund that was established in 2010 as part of the Small Business Jobs Act. The aim of the program is to stimulate jobs and economic growth by providing qualified community banks and community development loan funds with monies to use for small business lending. As an incentive to increase lending, the price that a bank pays for the SBLF funds will decrease as its small business lending increases. The banks can use the funds to make loans to qualified small businesses, defined as companies under \$50 million in annual revenues. A list of participating community banks is available at www.treasury.gov/SBLF;
- **State Small Business Credit Initiative (SSBCI):** The State Small Business Credit Initiative was established in 2010 as part of the Small Business Jobs Act of 2010. As of May 2011, the program is only in its initial application phase. The purpose of the program is to generate jobs by increasing the availability of financing for small businesses and small manufacturers who are creditworthy, but who do not have access to the capital that they need. SSBCI was funded with \$1.5 billion, and is expected to help spur up to \$15 billion in lending to small businesses. Each state and/or territory will establish its own program to make capital available to small businesses in the form of loans or venture capital;
- **CDFI Fund:** The CDFI Fund was established in 1994 as part of the Riegle Community Development and Regulatory Improvement Act of 1994. The CDFI Fund's mission is to expand the capacity of financial institutions to provide credit, capital, and financial services to underserved populations and communities in the United States. Through the CDFI Program, the CDFI Fund provides funds to CDFIs across the country. These funds may be used for purposes such as the promotion of economic development, the development of business and real estate, job creation, the development of affordable housing and promotion of home ownership, and the provision of community development financial services such as basic banking services, financial literacy programs, and alternatives to predatory lending.

Export-Import Bank (Ex-Im Bank)

The Export-Import Bank of the United States is the official export credit agency of the U.S. The Ex-Im Bank assists large and small businesses in financing the export of U.S. goods and services to international markets. This enables U.S. companies to turn export opportunities into sales to maintain and create U.S. jobs and contribute to a stronger national economy by providing export financing products that fill gaps in trade financing.⁴³ Ex-Im Bank provides working capital, credit

insurance, and buyer financing funds to aid businesses with trade financing:

- **Working Capital Guarantee:** Ex-Im Bank offers an up to ninety percent guarantee on loans issued by financial institutions for business export related activities. The majority of the guaranteed lending is provided to small businesses;
- **Small Business Export Credit Insurance Policy:** Ex-Im Bank offers credit insurance as a guarantee tool for small manufacturers;
- **Loan Guarantee:** Ex-Im Bank provides buyer financing to promote exporting relationships between financial institutions, small businesses and their customers. Ex-Im will provide 100% of the loan principal amount and offers competitive rates based on London Interbank Offered Bank (LIBOR). This program helps companies make exporting relationships aware that international financing is available.

Small Business Administration (SBA)

The SBA was founded in 1953 to aid, counsel, and assist the interests of small business concerns. Currently, SBA programs provide financial and management assistance to small businesses with specialized outreach to women, minorities, and armed forces veterans. The SBA recently raised their loan ceiling from \$2 million to \$5 million dollars after realizing that there was a lending gap for that particular dollar range. While participation in the programs varies by region, the SBA Small Business Development program has over nine hundred centers around the country. Technical assistance is primarily handled through their SCORE program which provides mentors from the industry. The SBA has numerous programs to aid the capital needs of small businesses:

- **7(a) Guaranteed Loan Program:** The 7(a) loans are the most basic and most used type loan of SBA's business loan programs. SBA 7(a) loans to manufacturers increased 66% between 2008 and the beginning of 2011. Small businesses apply through a participating lending institution and the SBA offers a guarantee on the loan. Funds can be used to establish a new business or to assist in the acquisition, operation, or expansion of an existing business. Within the 7(a), there are eight programs to assist a specific business need:
 1. **Special Purpose Loans Program:** The Special Purpose Loan Program was established to aid businesses that have been impacted by the North American Free Trade Agreement (NAFTA). The purpose of the program is to provide financial assistance and implement pollution control mechanisms;
 2. **CAPLines:** CAPLines is an umbrella loan program that assists small businesses to meet short-term and cyclical working capital needs. The loan program features five lines with specific regulations on the use of the funds;
 3. **Community Adjustment and Investment Program (CAIP):** CAIP was established to assist U.S. companies that conduct business in areas adversely impacted by NAFTA. The loans can be used to pay the fees on eligible loans. CAIP works with SBA to reduce borrower costs and increase the availability of these programs. The small businesses must reside in a country, or a defined area, noted as being adversely impacted by NAFTA based on the unemployment rates. There is a job component to this program that requires one job to be created for every \$70,000 SBA guaranty;
 4. **Pollution Control Loans:** The Pollution Control Loans are designed to assist businesses that are reducing their environmental impact. The program funds should be used to purchase fixed assets for the planning, design, or installation of a pollution

control facility that will prevent, reduce, abate, or control any form of pollution;

- 5. Employee Trusts:** The program was designed to provide financial assistance to Employee Stock Ownership Plans. The employee trust must be part of a plan sponsored by the employer company and qualified under regulations set by either the Internal Revenue Service Code (as an Employee Stock Ownership Plan, or ESOP) or the Department of Labor (the Employee Retirement Income Security Act, or ERISA). Applicants covered by the ERISA regulations must also secure an exemption from the Department of Labor for regulations prohibiting certain loan transactions.⁴⁴ The trust can re-lend proceeds to the business by purchasing qualified employer securities and purchase a controlling interest in the business. The maximum loan amount that SBA can guarantee is \$1.5 million. Smaller loans, that are \$150,000 or less, can be guaranteed up to eighty-five percent. For loans greater than 150,000, the SBA can guarantee up to seventy-five percent;
- 6. Express Pilot Programs:** The Express and Pilot Programs provides borrowers with streamlined and expedited loan procedures. The program is open to borrowers from particular groups, such as active duty military personnel, veterans, and borrowers from distressed communities. There are two types of 7(a) Express Pilot Programs—Community Express and Patriot Express Pilot Loan Initiative.
- 7. Export Loan Programs:** The Export Loan Programs are designed to help small business exporters to develop or expand their export activities. There are four types of 7(a) Export Loan Programs:

 - **Export Express Loan Program:** The Export Express program is available to any business that has been in operation for at least a year and can demonstrate that the loan proceeds will support export activities. As the simplest export product offered by the SBA, the program offers flexibility and a quicker turnaround time where lending institutions can use their own procedures and forms to process the applications.
 - **Export Working Capital Program (EWCP):** The Working Capital Guarantee Program is a program offered to small businesses that require working capital to meet their exporting needs. SBA works directly with the Export-Import Bank of the United States where the Export-Import Bank guarantees the loans provided to commercial lenders to help extend short-term loans to small and medium sized businesses. SBA provides lenders with up to a 90% guaranty on export loans as a credit enhancement so lenders will make the necessary export working capital available. The programs are available through a network of International Credit Officers located in U.S. Export Assistance Centers. The program offers financing for a large variety of export related expenses and has quicker processing times and lower fees.
 - **International Trade Loan Program:** The International Trade Loan Program offers term loans to businesses that plan to start or continue exporting, or that have been adversely affected by competition from imports. The proceeds of the loan must enable the borrower to be in a better position to compete. The proceeds of the funds can be used to purchase long term fixed assets and to refinance existing loans used for the same purposes. The loans are available to small businesses that are in a position to expand existing export markets or develop new markets, or that have been adversely affected by international trade and can demonstrate the funds will improve their competitive position.
 - **SBA and Ex-Im Bank Co-Guarantee Program:** This program provides working

capital loans to small business exporters through the Export Working Capital Program. The co-guarantee with Export-Import bank allows SBA to offer flexible terms, lower processing fees, and faster processing times. The working capital line cannot exceed \$2 million and the guarantee coverage is 90% of the Principal of the loan and accrued interest up to 180 days. The guarantee maturities are generally for a year where the borrower can reapply for a new guarantee at the completion of the year. The loan proceeds can be used for any general financing needs related to export.

8. Small/Rural Lender Advantage: The Small/Rural Lender Advantage initiative is designed to accommodate the loan processing needs of small communities and rural lenders by simplifying and streamlining the loan application process and procedures. The initiative promotes the economic development of local communities, specifically those facing population loss, economic dislocation, and high unemployment. The SBA offers a streamlined, simpler process for loans under \$350,000, guarantees 85% of loans under \$150,000 and 75% percent of loans over 150,000, and offers faster processing times.

- **Certified Development Company (CDC) 504 Loan Program:** The CDC/504 loan program is a long-term tool designed to encourage economic development within a community. The loan program offers long-term, fixed-rate financing to acquire major fixed assets for expansion and modernization. The funds are available to nonprofit community based lenders and private sector lenders that make loans available to eligible borrowers. Loans secured from private sector lenders are considered senior liens that cover up to fifty percent of the project cost. Loans secured from a CDC, backed with a 100% SBA guaranteed debenture, are considered junior liens that cover up to 40% of the project cost. The borrower is required to commit at least ten percent equity of the project cost. The 504 funds can be used for fixed asset projects. The project assets being financed along with personal guarantees of the principal owners are generally used as collateral. Businesses must be operated for profit and meet the SBA size standards to be eligible for the CDC/504 loan program. The SBA debenture will not exceed \$1.5 million when meeting job creation criteria or a community development goal. The debenture will not exceed \$2 million when meeting a public policy goal. The maximum debenture for small manufacturers is \$4 million where the business must create or retain at least one job per \$100,000 guaranteed by SBA and improve the local economy or achieve one or more public policy goals.
- **Microloan Program:** The Microloan Program provides small short-term loans to small businesses by making funds available to nonprofit specially designated intermediary lenders who make loans directly to eligible borrowers, which would include small manufacturers. The maximum loan amount is \$50,000 and the average loan amount is \$13,000. The proceeds of the loan can be used for working capital and purchases or fixed assets. The terms of the loan are dependent on the size, use, and needs of the borrower along with the requirements of the intermediary lender; however, the maximum term of the loan is six years.⁴⁵
- **Intermediary Lending Pilot Program:** The Intermediary Lending Pilot Program was launched as a three year pilot program as part of the Small Business Jobs Act of 2010. The pilot program will provide loans to nonprofits, which they can then lend to small businesses in amounts up to \$200,000. The program focuses on supplying capital to borrowers who are having trouble with existing financing due to issues such as declining collateral values or tighter lending standards.
- **Small Business Investment Company (SBIC).** The Small Business Investment Company program is administered through the SBA to improve and stimulate the national economy and small businesses by stimulating and supplementing the flow of private equity capital

and long term loan funds for the financing and growth of small business operations while insuring the maximum participation of private financing sources. SBICs are private owned and managed investment funds that use their own capital, and borrowed funds with a SBA guarantee, to make equity and debt investments in qualifying small businesses. The SBA does not invest directly into small businesses through SBIC, but provides funding to qualified investment management firms with expertise in certain sectors or industries.

- **Disaster Loans:** The SBA provides loans for physical and economic damage caused by a declared disaster. These three types of disaster loans are low-interest, long-term loans.
 1. **Military Reservists Economic Injury Loans:** The Military Reservist Economic Injury Disaster Loan program provides funds to help small businesses meet generally operating expenses that could have been met had an essential employee not been called to active duty. The business must not be able to fund its own recovery to be eligible for the loan program. SBA must determine if the business is able to obtain credit elsewhere from non-governmental sources without creating an undue financial hardship. The loan terms are set at a maximum of 30 years and at a maximum of \$2 million. SBA will determine the terms of each loan. The proceeds of this loan program are intended only to provide the amount of working capital needed to pay necessary obligations until operations return to normal after the essential employee is released from active military duty.⁴⁶ Additionally the SBA requires the borrowers to obtain and maintain appropriate insurance.
 2. **Economic Injury Disaster Loans:** Economic Injury Disaster loans are available for small business or private, nonprofit organization that have suffered economic injury and located in a declared disaster area. The economic injury is defined as substantial economic injury as the ability of a business to meet its obligations as they mature and to pay its general operating expenses. The loans provide working capital to assist small businesses to survive until normal operations resume after the disaster. Eligible businesses have suffered substantial economic injury resulting from a physical disaster or an agricultural production disaster. Businesses qualify once it is determined that they cannot obtain credit elsewhere. The SBA provides up to \$2 million in disaster assistance where the loan amount is based on the actual economic injury and the company's financial needs. The loan terms cannot exceed thirty years.⁴⁷
 3. **Business Physical Disaster Loans:** Business Physical Disaster Loans apply to any business that is located in a declared disaster area and has incurred damage during the disaster. The loans will help replace damaged property or restore it to its previous condition before the disaster.⁴⁸ The SBA provides up to \$2 million to the qualifying businesses and funds can be used for the repair or replacement of property, equipment, and machinery. Based on the business need, businesses have up to thirty years to repay the loan.

Small Business Administration SBIR and STTR Programs

SBA, jointly with 11 other federal departments, administers the Small Business Innovation Research (SBIR) and Small Business Technology Transfer Program (STTR). These two competitive programs target small, high-tech, innovative businesses and are a significant part of the federal government's research and development efforts. Eleven federal departments participate in the SBIR program. Five departments participate in the STTR program awarding \$2.5 billion to small high-tech businesses.

- **SBIR Program:** Eleven government agencies provide funding for federal research and development cooperative agreements for small technology oriented businesses. Manufacturers can use these funds to develop technologies, products, and services. The agencies providing SBIR funds include the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Transportation, and the Environmental Protection Agency, the National Aeronautics and Space Administration, and the National Science Foundation. The SBIR program is best suited for small technology-based companies with a committed R & D program/strategy. It is not generally a good option for individual inventors or to meet short-term funding needs;
- **STTR Program:** STTR provides funds through cooperative agreements to research and development projects between a small manufacturer and a university, federally-funding R&D center, or nonprofit research institution. STTR is a highly competitive program that reserves a specific percentage of federal R&D funding for award to small business and nonprofit research institution partners.

3.2.3 Analyses of Non-Federal Sources Serving Nationwide Customers

This section provides a summary of the 252 non-federal sources sampled that provide a representative cross-section of private sector, state and local capital providers. The most common types of non-federal sources are described as follows:

- **Commercial Banks:** Commercial banks offer one of the most widely used sources of capital. For many small manufacturers, their local lender is the first source that they turn to when they are in need of financing. Many of the larger banks have small business banking groups that are set up specifically to work with this segment of the market. Commercial banks, ranging in size from small community banks to global financial institutions, present small businesses with a variety of lending options such as term loans, lines of credit, and leasing. The bank will make lending decisions based upon a credit analysis that may include factors such as the strength of the individual company and project, guarantees and quality of security and collateral, management capability, ability to repay the loan, adequacy of working capital and degree of equity participation.

A 2011 report published by the U.S. Small Business Administration, presented data surrounding small business loan and micro-loan lending during the period from 2009 to 2010.⁴⁹ The study analyzed Call Report and CRA data, as reported by the FDIC in June 2010 and reports made under the requirements of the CRA for December 2009, respectively. The report looks at the 94 largest lenders, and ranks their small business lending (including credit card lending) based upon the ratio of small business loans to total business loans, the ratio of small business loans to total assets, the total dollar amount of small business lending by the lending institution, and the total number of small business loans, as shown in the following table.

Table 6: Top Lenders to Small Businesses Based on Call Report and CRA Data*

Small Business Loans	Micro-Business Loans (loans of \$100,000 or less)	Macro-Business Loans (loans of \$100,000 to \$1 million)
American Express Bank Federal Savings Bank	American Express Company	Synovus Financial Corp.

Ally Financial Inc.	Capital One Financial Corporation	First Citizens Bancshares Inc.
Wintrust Financial Corporation	Ally Financial Inc.	Zions Bancorporation
Capital One Financial Corporation	GE Money Bank	BB&T Corporation
BB&T Corporation	JPMorgan Chase and Company	Fulton Financial Corporation
*Note that the SBA definition of a small business (less than 500 employees) differs from the definition many banks use (revenues less than \$10 million for small businesses or between \$10 million and \$500 million for Middle Market companies).		

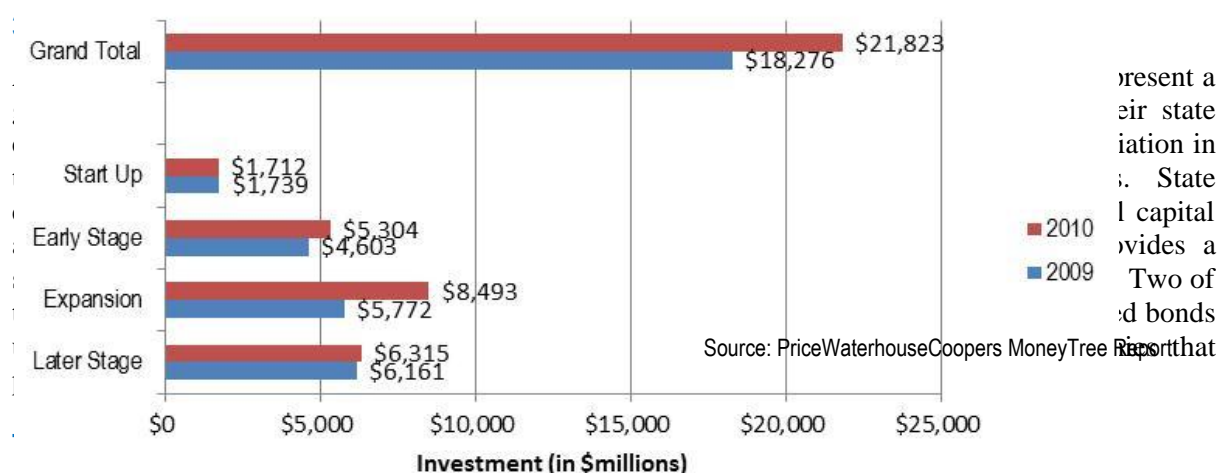
- Community Development Financial Institution (CDFI):** CDFIs are another source of capital for small businesses. CDFIs are financial institutions that provide credit, capital and financial services to underserved populations and communities in the United States. They can be in the form of a community development bank, a community development credit union, community development loan fund, a community development venture capital fund, a microenterprise development loan fund, or a community development corporation. CDFIs that are certified by the U.S. Department of the Treasury’s CDFI Fund are eligible to receive funding through certain programs sponsored by the CDFI Fund;
- Small Business Investment Company (SBIC):** See Table 5 for a description of SBICs.
- Industrial Development Revenue Bond (IDRB):** IDRB programs are another resource for manufacturers. IDRBs provide manufacturing and processing companies with low-cost, low-interest financing for capital expenditures. Eligible capital expenditures may include expenditures such as land acquisition, building construction, building renovation, and machinery and equipment purchases. IDRBs may be used to finance up to 100% of project costs. The maximum size of the issuance is unlimited if the bonds are being issued on a taxable basis, and may be up to \$10 million if they are tax-exempt. IDRBs are generally issued at the state or local level, and proceeds are then loaned to the businesses. The bonds may be held by the issuer, or sold to third party investors.
- Leasing Providers:** Small businesses can also take advantage of a variety of forms of leasing, such as capital leases, finance leases, operating leases and conditional sale leases. Leasing can be a good option for businesses that have limited capital or who need to replace their equipment on a frequent basis. Companies considering leasing options should weight the cost of capital of the lease against the cost of other financing options. Leasing may require little or no up-front cash, and makes it possible for the business to free up working capital and borrowing power. In addition to the commercial bank leasing programs, small businesses can lease equipment through other financial service providers such as independent leasing and finance companies and other financial service companies.
- Venture capital (VC):** VC is an option for manufacturers who want to enter new markets or develop new product lines. Venture capital is early-stage risk financing offered by equity funds, community development venture capital fund, small business investment companies and private individuals. Venture capital funds tend to look for characteristics such as strong management, unique technology, rapidly accelerating growth, and the potential for great profitability. In 2010, venture capitalists invested \$21.8 billion in 3,277 deals. Investments were made across a variety of industries, with software, biotechnology, industrial/energy, and medical devices and equipment coming in as the top industries.⁵⁰

Venture capital investments can take place throughout the life stages of a business, with different investors targeting different stages of life. In 2010, venture capital investments were concentrated primarily in expansion and later stages, with smaller amounts going towards the startup/seed and early stages, as shown in the following figure compiled by PriceWaterhouseCoopers, shown in Figure 15.⁵¹

- Angel Capital:** Angel capital provides an additional source of financing, usually for seed and startup expenses. Many angel investors are business people with previous successful entrepreneurial experience, who want to help other entrepreneurs get their businesses off the ground. Investments usually range from \$150,000 to \$1.5 million, and are typically made in exchange for equity in the company. Angel capital can come directly from a private individual, or indirectly via angel funds and angel networks. In 2010, the angel investor market displayed a rise in investment dollars and in the total number of investments. Investments totaled \$20.1 billion, which was a 14% increase from 2009 levels. The total number of investments increased by 8.2%, with angel funding extended to 61,900 entrepreneurial ventures.⁵²

In addition to these primary types of non-federal sources, a variety of different types of financing strategies exist that are provided primarily through local government entities, such as tax credits for research and experimentation, state and local revolving loan funds, Property Assessed Clean Energy (PACE) programs. State and local revolving loan funds are too numerous to list and this report does not address these types of financing strategies. Refer to the *MEP Quick Guide to Growth Financing*.

Figure 15: Amount of Venture Capital Investment by Phase of Business Growth



California

- Manufacturing Profile:**⁵³
 - U.S. subsidiaries support 133,700 manufacturing jobs in California;
 - Almost 9% of manufacturing jobs in California are supported by U.S. subsidiaries;
 - Top exports were machinery manufactures (\$10.7 billion) and chemical manufactures (\$10.2 billion).

- **Financing Options:** California provides lending to small businesses through several initiatives. A sample of these initiatives is described below. The California Economic Development Lending Initiative offers the Co-Lending and Commercial Real Estate Loan Program.
 - The **Co-Lending Real Estate Program** is a small business loan program that provides capital to growing businesses in both urban and rural areas that are not currently able to qualify for conventional bank financing. All small businesses are eligible for the program. The small businesses partner with member banks to fund up to 50% of the loan requirement as a subordinated debt, and the member banks fund the other 50% or more.
 - The **Commercial Real Estate Loan Program** provides real estate financing to small businesses in partnership with member banks to purchase, or for the rehabilitation of owner-occupied commercial real estate. This program expands CEDLI's ability to serve target markets which include minority businesses and underserved communities within California.

The California Industrial Development Financing Advisory Commission (CIDFAC) offers an Industrial Development Bond Financing Program.

The **Industrial Development Bonds (IDBs)** provide capital expenditure financing for manufacturing companies to purchase land, building construction and renovation, machinery and equipment. CIDFAC partners with local governments to approve the issuance of IDBs. Additionally CIDFAC has created special programs to increase access to IDB Financing. The Small Business Program (SBP) reduces the application and allocation processing time for small businesses looking for IDB financing. The State Teachers Retirement System (STRS) letter of credit allows small business to leverage the STRS strong credit rating when requesting financing from major banking institutions.

- The California Department of Resources Recycling and Recovery (CalRecycle) established the **Recycling Market Development Zone Loan Program** to help manufacturers increase their processing capabilities and create additional markets for recycled-content products. The loan program encourages recycling businesses located within California to expand existing operations and site new manufacturing facilities. The low-interest loan proceeds can be used to purchase equipment and other business expenses.

Connecticut

- There are more than 4,900 manufacturing establishments in Connecticut;
- Manufacturing jobs comprise 10.2% of total employment;
- The manufacturing sector increased by 1.2% from February 2010 to February 2011
- **Financing Options:** Connecticut offers various financing options for small businesses.
 - The Connecticut Development Authority provides direct loans and offers the **Technology Intensive Financing program**. The direct loans provide economic development and job creation in Connecticut. The funds can be used for general business purposes. The Technology Intensive Financing Program provides businesses with technology development needs financial assistance. Projects are required to contribute to Connecticut's technology and development related initiatives.

- Connecticut Innovations sponsors **the Eli Whitney, Clean Tech, Pre-Seed, and Seed Investment Funds**. The Eli Whitney Fund generally invests up to \$1 million in combination with other investors to promote innovation in technology firms in Connecticut. The Clean Tech Fund invests in seed and early-stage companies that focus on innovations that conserve energy and resources, protect the environment, or eliminate harmful waste in Connecticut. The Pre-Seed Fund provides venture capital financing for Connecticut technology companies during the pre-seed stage. The Seed Investment Fund provides financing for Connecticut technology companies during the seed stage.
- The **Community Economic Development Fund** offers both a standard loan and a Growth Your Business Loan. The Community Economic Development Fund lends directly to small businesses, in Connecticut, to revitalize distressed neighborhoods. The Grow Your Business Loan provides funds to encourage growth with existing businesses.
- Connecticut Brownfields Redevelopment Authority directly lends through the **Connecticut Brownfields Redevelopment Program**. The program provides grants to develop contaminated property, based on local government forgoing future tax revenues, within a designated Connecticut brownfield site.
- Founded in Connecticut, **Webster Bank** is a strong lender in the area and provides loans and lines of credit to small businesses to encourage economic development.

Kansas

- **Manufacturing Profile:**⁵⁴
 - Manufacturing represents approximately 12.5% of the non-payroll employment in the state of Kansas
 - Manufacturing comprises over 80% of the state's exports.
 - Manufacturing production is concentrated most heavily in aerospace and other miscellaneous transportation, with food products and machinery as the next highest sectors.
- **Financing Options:** Kansas manufacturers can access state-level funding through both public and private sources.
 - The Kansas Department of Commerce provides loan and grant programs such as the Kansas **Economic Opportunity Initiatives Fund, the Investments in Major Projects and Comprehensive Training (IMPACT) program**, and economic development grants. These programs are designed to support Kansas businesses and foster economic growth.
 - **Industrial revenue bond financing** is another option for businesses who wish to finance the acquisition and construction of industrial and commercial properties. These bonds can be issued by Kansas governmental entities that will retain ownership of the bonds and an ownership interest in the underlying properties.
 - **Mid-America Angels** and **Arbor Partners** are two examples of equity providers available to Kansas manufacturers. Both through community development venture capital funds and through other private investors serve the state.
 - **Bancorpsouth, Inc.** and **First Citizen Bancshares** are two commercial banks that

provide a number of services to Kansas small businesses. Other resources available to small businesses include loans, lines of credit, leases, and other types of financing provided by commercial and community development banks.

Michigan

- **Manufacturing Profile:**⁵⁵
 - Manufacturing represents approximately 11.9% of the non-payroll employment in the state of Michigan.
 - Manufacturing comprises almost 90% of the state's exports.
 - Manufacturing production is highly concentrated in motor vehicles and parts, with over 20% of production falling in this sector. The next highest sectors are fabricated metal products and machinery.
- **Financing Options:** Small businesses in Michigan have access to a variety of state-level financing, such as the samples listed below:
 - The **Michigan Economic Development Corporation (MEDC) programs** provide access to capital in the form of loans that are specifically tagged for small business purposes. MEDC programs include the Capital Access Program, the 21st Century Jobs Fund, the Michigan Pre-Seed Capital Fund, the Michigan Loan Participation Program, and the Michigan Collateral Support Program.
 - The **Michigan Strategic Fund (MSF)** provides another source of capital for small businesses. MFS helps manufacturers to access financing by issuing bonds through the Industrial Development Revenue Bond Program. These bonds can be used in manufacturing, not-for-profit corporation projects, and solid waste facilities to acquire land, buildings, or equipment.
 - Michigan has a variety of equity providers who invest in small businesses, such as the **Michigan Venture Capital Association**, the **Ann Arbor Angels**, the **Grand Angels**, the **Great Lakes Angels**, and **Arbor Partners**. Beringea, an international private equity firm, also provides capital to businesses through its **Invest Michigan! Growth Capital Fund**.

Other resources available to small businesses include loans, lines of credit, leases, and other types of financing provided by commercial and community development banks, non-profit entities, and public-private partnerships. Examples of these financing options include the Charter One Job Creation Loan Program, the Revolving Loan Program and Micro Revolving Loan Program from Alpena Development Corp, and the business loan programs provided by Northern Initiatives and the Northern Shores Loan Fund, Inc.

Mississippi

- **Manufacturing Profile:**⁵⁶
 - Manufacturing represents approximately 12.9% of the non-payroll employment in the state of Mississippi.
 - Manufacturing comprises over 90% of the state's exports.
 - Manufacturing production is fairly evenly spread across 10 sectors, with the top three being chemicals, petroleum and coal products, and food products.
- **Financing Options:** Mississippi has numerous of state-level financing options that are

available to small manufacturers, with many of them made available through the Mississippi Development Authority (MDA).

- The **MDA, the state's lead economic and community development agency**, provides a number of loan, micro-loan, and grant programs that are designed to aid small businesses. Among these programs are the Capital Access Contract Loan Program, the Capital Access Loan Loss Reserve Program, the Rural Impact Fund Grant Program, the Mississippi Minority Business Enterprise Loan Program, the Energy Investment Loan Program, the Existing Industry Productivity Loan Program, the Job Protection Loan Program, the Job Protection Grant Program, the CDBG Loan for Economic Development, the Business Investment Act Loan Program, and the Minority Business Micro Loan Program.
- The Mississippi Business Finance Association, a non-profit corporation focused on coordinating resources for small businesses, also provides the **Mississippi Small enterprise Development Finance Program** and assists local manufacturers in the issuance of bonds through the **Industrial Development Revenue Bond Program**.
- Equity capital is also available to Mississippi manufacturers, both through community development venture capital funds and through other private investors. **Meritus Ventures, ECD Investments Fund**, and the **Southern Appalachia Fund** are examples of equity capital providers that work with the Mississippi small business community.
- Other resources available to small businesses include loans, lines of credit, leases, and other types of financing provided by commercial and community development banks.

Ohio and Cleveland Municipality

- **Manufacturing Profile:**⁵⁷
 - Manufacturing is the largest of the 20 sectors of Ohio's economy with 15.6% of total output in 2009
 - Ohio's manufacturing sector produced \$73.5 billion worth of goods, 4.7% of national sector production in 2009, ranking it 3rd in the nation
 - Ohio ranks second in manufacturing primary and fabricated metal products, and third in producing motor vehicles and associated bodies, trailers, and parts.
- **Financing Options:** Ohio has a wide variety of financing options for small businesses along with city and municipalities within Ohio.
 - The Ohio Department of Development offers several grants and financing options. The **Research and Development Investment Loan fund** provides low-interest loans, along with tax credit incentives, to businesses competing for private sector research and development investments that create R&D capabilities and higher wage jobs. The **Clean Ohio Revitalization and Assistance Fund** assists communities to promote economic development for brownfield redevelopment targeted at abandoned or underused industrial and commercial facilities. The **Ohio Advanced Energy Fund** supports investments in renewable energy and energy efficiency projects.
 - The **Minority Business Bonding Program** is a debenture program that provides capital project financing to minority businesses. To be eligible, the businesses must be certified as a Minority Business Enterprise. The **Volume Cap Private Activity Bonds** provide tax-exempt private use bonds to fund capital projects.

- The Ohio Department of Development offers the **Rapid Outreach and Contingency grants**. Both grants provide infrastructure financing for projects to promote economic development, business expansion, and job creation. The projects must be located within the state of Ohio. The **Annual State Energy Program** provides financial and technical assistance to states through competitive grants. The loan proceeds are used for the adoption of energy efficiency, renewable energy products, and technologies.
- The **Ohio Air Quality Development Authority** encourages investment in the purchase, construction, and installation of air quality facilities. Eligible businesses must meet small business definitions and the investment improvements must meet Clean Air Act regulations to control air pollutants.

The following provide a sample of state sources and sources serving primarily the municipality of Cleveland, Ohio.

- The Ohio Development Finance Authority offers the **Port of Cleveland Development Finance Authority loan program**. The loan program provides variety of financing that are tailored to the individual business which include investment facilitation, brokerage of customized business deals, establish partnerships to assist in job creation, and community revitalization. The funds are used to purchase fixed assets for businesses in Cleveland.
- The City of Cleveland offers the **Economic Development Loan Program** to assist companies in Cleveland to grow and prosper. The proceeds of the program should be used for property and equipment purchase, new construction and related cost purchases. Additionally, the City of Cleveland offers the **Working Capital Loan Program** to assist businesses that recently had their lines of credit cut. Businesses must demonstrate that their bank has cut their line of credit in the last sixty days but they are credit worthy and have the ability to pay the debt. The **Vacant Property Initiative** provides financing to assist businesses utilize commercial and industrial properties that have been abandoned or underutilized in Cleveland.
- The **City of Cleveland also offers a fixed-rate financing program** sponsored by the Cleveland-Cuyahoga County Port Authority. The program was established to make it easier for manufacturers to access the capital market and obtain investment grade rates for loans. The proceeds of the loan can be used to purchase fixed assets for businesses located in Cuyahoga County.
- Employment Connection provides **Workforce Training Grants** to encourage the training education of employees in Cleveland.
- Cuyahoga County offers **the Cuyahoga County Tax Exempt Bond Program**. Cuyahoga County issues a private activity bond for private projects that serve a public purpose. The proceeds of the bond can be used for purchase, construction, or rehabilitation of a project and project related fees. Small businesses are required to manufacture products developed through the program for at least seven years in Cuyahoga County. **The Grow Cuyahoga County Fund partners with the Grow America Fund** to promote economic development by providing small businesses with financing to grow their businesses within Cuyahoga County.

Pennsylvania

Manufacturing Profile:⁵⁸

- The manufacturing sector is the largest contributor to Pennsylvania's economy.
- Manufacturing generates 13.6% of Pennsylvania's Gross State Product.

- Pennsylvania manufacturers sell almost \$21 billion worth of goods overseas, which represents 92% of all Pennsylvania exports.
- Manufacturing had a 100% month to month change from February to March 2011.
- Manufacturing Industry had a 5% year over year increase from first quarter 2010 to first quarter 2011.
- **Financing Options:** Pennsylvania offers numerous financing options to small businesses to encourage growth and economic development.
 - The **Ben Franklin Technology Development Authority** directly funds the Ben Franklin Technology Partners Program. The program provides funds for riskier investments in emerging tech-based businesses. The Ben Franklin Technology Development Authority partners with a Pennsylvania-based university for research and development.
 - The Pennsylvania Department of Community and Economic Development provides funds for various financing programs. The **Export Financing Program** provides funding to for-profit businesses that export products manufactured or services that originated at facilities in Pennsylvania. The **First Industries Small Business First Program** issues grants to strengthen Pennsylvania's economy. The **Industrial Sites Reuse Program** provides financing to Pennsylvania businesses to perform environmental site assessment and remediation work at former industrial sites. The **Infrastructure Development Program** for businesses to perform public and private infrastructure improvements in Pennsylvania municipalities. The **Minority Business Development Authority Program** provides direct financing to minority-owned businesses. The **Pennsylvania Economic Development Financing Authority (PEDFA)** issues bonds to provide low-interest funds to businesses in efforts to develop the Pennsylvania economy. The **Small Business First Program** provides financing for small businesses to encourage economic development.
 - The **Industrial Development Corporations** provides financing through the Department of Community and Economic Development and The Pennsylvania Industrial Development Authority (PIDA). The partnership provides funds to local industrial development corporations to support job generation initiatives.
 - The Department of Community and Economic Development offers the **Opportunity Grant Program**, which can be used in any business capacity, to create or preserve jobs within Pennsylvania.
 - **Bridgeway Capital** has partners with commercial lenders to provide growth loans to businesses within Pennsylvania. The loans are provided to companies to expand their growing businesses.
- Penn Ventures Partners sponsors the **New Markets Venture Capital Fund** which provides growth and expansion stage venture capital funds to companies in Central and Northern Pennsylvania.

4

Gap and Recommendations: Is Available Capital Meeting the Needs of Small Manufacturers?

According to the Small Business Administration, the U.S. has one of the most developed markets for credit and capital in the world.⁵⁹ But is this market meeting the funding needs of small manufacturers? This section presents findings from an analysis of whether the existing sources of capital discussed in Section 3 are meeting the needs defined in Section 2.

4.1 Key Gaps and Recommendations

Across all stages of the business lifecycle, from early stage start-up to high growth to maturity, manufacturers need access to capital to achieve a healthy financial position that will lead to successful operation, innovation, and the potential for growth. According to MEP, “every growth strategy decision is also an investment decision because growth strategies—especially ones based on product development—imply increased cost and investment for a company.”⁶⁰ As manufacturing firms progress through different lifecycle stages, their capital needs will vary. Correspondingly, the sources and types of capital that they require to support sound business operation will change. At each stage, what is critical is that the type of capital the company obtains fits their business need.

Are the challenges that small manufacturers face in accessing capital today due to a shortage in the supply of available capital? Or, is the challenge related to the SME’s unique need for capital—a demand that is somehow not consistently met by existing capital sources? Based on our analysis, the answer to both questions appears to be yes—there are issues related to both the supply of, and the demand for capital by SMEs. For the purpose of this report, these issues have been grouped into the following areas, and are described on the following pages:

- **Availability Issues**—Identified gaps in the availability of specific types of capital and financing options, or availability in certain geographic areas
- **Awareness Issues**—Identified gaps in the general awareness of available capital or financing options
- **Accessibility Issues**—Identified gaps in the accessibility of available capital or financing options
- **Federal Strategic or Programmatic Issues**—Identified gaps in the requirements of a program, or in the operational or programmatic infrastructure of MEP’s programs and centers

For historical perspective, it is important to note that many of the awareness and accessibility issues described in this report are similar to findings in a 1993 National Research Council report entitled, “Learning to Change: Opportunities to Improve the Performance of Smaller Manufacturers.” Interestingly, despite the difference in the economic conditions between the government surpluses and economic growth of the 1990s compared to today’s decline in job growth and the lingering impact of the recent recession, several of the Council’s key recommendations around capital access are equally relevant today, such as their recommendation to help banks better understand the investment needs and opportunities in the manufacturing industry and the need to create educational programs for

manufacturers and local financial institutions. For example, the Council’s report describes the capital access challenges of manufacturers in 1993 saying:

“The financial community does not readily understand manufacturing and often perceives loans for new equipment as unattractively high risk. Smaller [manufacturing] firms are unlikely to have the capabilities needed to put together proposals for funds in the format familiar to lending officers.”⁶¹

Recommendations for how MEP—in coordination with other federal, state, public-private and private sector stakeholders—might address these issues are also noted on the following pages. Based on the environmental scan, stakeholder interviews, and analysis of the sampled sources of capital cataloged for this report, proposed recommendations fall into three primary areas—business assistance recommendations, partnership and collaboration recommendations, and strategic opportunities within the federal and programmatic framework.

Again, the 1993 National Research Council report proposed recommendations that still remain relevant and applicable to addressing the current SME capital access challenge. For example, the report includes the following opportunity for improvement:

“Educational programs for manufacturers could help build their understanding of the requirements of financial institutions and help them develop justification for their capital improvements in the format and language understood by the financial community...”

Educational programs for local financial institutions could strengthen their understanding of manufacturing technologies, including the whole chain of hardware, software, training, and maintenance needed for effective implementation, as well as technology trajectories and competitive trends in specific [manufacturing] industries. Appropriate education could, for example, help overcome lenders’ reluctance to accept advanced manufacturing technology as collateral due to the perception of a limited resale market for such equipment. Such programs could also raise lenders’ appreciation of the importance of manufacturing in their communities.”⁶²

Several of the training and assistance recommendations listed below resemble the National Research Council’s report from 1993. Future refinement and action on the opportunities identified in this 2011 assessment should acknowledge the lessons learned from the Council’s report.

1. Business Assistance Recommendations—Recommendations that involve the development of new or enhanced business assistance offerings that could be provided by MEP, other federal agencies, or industry associations.

For example, MEP, and its Centers, could consider bolstering their existing portfolio of technical and business assistance offerings by incorporating capital access strategies. Most stakeholders interviewed for this report stated that many small businesses, and specifically small manufacturers, could benefit from resources that provide insight into the financial marketplace and specific information regarding credit and equity products. Areas of technical assistance that MEP could consider developing include topics or services such as:

- *How to write a business plan and prepare financial documentation* that meets the general criteria sought by lenders and private equity investors;
- *How to find and successfully apply for government loans and grants* that target small manufacturer needs;
- *A Finance 101 Toolbox (e.g., Small Business Financing Matrix and diagnostic web-based tool)* that aids small manufacturers to quickly and successfully navigate the thousands of sources of capital to find the top sources that best meet the unique needs of their

company. MEP could continue to collaborate with the organizations that are already working to develop an inventory of sources of capital and technical assistance that are applicable to MEP's clients. These organizations include: (1) U.S. Department of Energy Industrial Technologies Program, (2) Council of Development Finance Agencies, and (3) Council for Community and Economic Research;

- *Financial modeling or Enterprise Resource Planning (ERP) tools* that support SMEs in analyzing and modeling different capital structure or financing scenarios to fund a specific growth or acquisition strategy;

Additionally, MEP could develop and provide forms of technical assistance that educate small manufacturers about “alternative” sources of working capital, and when to use or not use them, such as: invoice discounting, supply-chain financing, and sale of account receivables (also known as factoring);⁶³

- *Peer-to-peer technical assistance models, such as MEP-sponsored regional forums and online collaboration mechanisms* that allow small manufacturers and lender representatives to communicate and share best practices with each other. Based on an environmental scan of about half of the MEP Center websites, many centers do publish blogs and newsletters, but do not provide an online forum for collaboration between small manufacturers and their service providers.

MEP Headquarters could work with its MEP Centers to identify and share successful collaboration examples and develop case studies to highlight successful models or stories depicting how companies succeeded in financing growth. One example provided during stakeholder interviews demonstrated collaboration between State Energy Offices and a local MEP Center on a grant application for an energy efficiency improvement funding opportunity. Another example provided through stakeholder interviews highlighted the collaboration between the local MEP Center in Tennessee and a local CDFI, Pathway Lending, to develop a loan program that addressed a specific manufacturing need in their rural area.

2. Partnership and Collaboration Recommendations—Recommendations that focus on building relationships with key stakeholders who also have an interest and role in serving SMEs through their services.

- *For example, MEP could consider facilitating interagency working group meetings, through an existing group such as the Interagency Network of Enterprise Assistance Providers (INEAP) or the Manufacturing Council,* to formally engage with the core group of federal agencies that currently administer the financial assistance programs identified in this report to collaborate on areas of shared interest (e.g., Department of Energy's energy efficiency initiatives). There are ways for governmental programs to better compliment, leverage, and facilitate private sources of capital for small manufacturers. For example, at least three federal agencies are in the early phases of developing or enhancing programs that would directly address capital access gaps relevant to small manufacturers, such as the:
 - *Department of Treasury's State Small Business Credit Initiative (SSBCI),* which is currently in its application phase and is expected to generate \$15 billion in new funding for small businesses;
 - *Export-Import Bank's new working capital program* that targets the funding gap in lending below \$500,000;

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- Potential enhancements to the *SBA 7a Caplines program* that could allow use of proceeds for financing of existing or future receivables, directly addressing the need of smaller manufacturers who are increasingly having to carry the inventory costs for the secondary manufacturers whom they supply;
 - New Department of Commerce *Economic Development Administration (EDA) loan guarantee program targeting smaller-sized manufacturers*, which is currently being considered by Congress;
 - *SBA Intermediary Lending Program*, a three-year pilot program that is currently in its application phase, will make direct loans of up to \$1 million at an interest rate of 1 percent to up to 20 nonprofit lending intermediaries. MEP Centers could collaborate and partner with their local CDFI to jointly participate in programs such as this one in the future;
 - *MEP could engage with local banks and lenders to increase their awareness of the dynamics of the manufacturing industry so that they can better assess risks and forecast manufacturers' ability to repay.* Through this outreach, MEP could work with lenders, or associations, to develop training for manufacturers and lenders who work with manufacturers. By identifying and highlighting model lenders that have successfully marketed their products to small manufacturers, MEP can better aid small manufacturers in successfully accessing needed capital.

3. Federal Strategic and Programmatic Recommendations—Recommendations that focus on integration of capital access strategies into existing federal programs and plans, suggestions for modifications to existing federal program requirements or legislation, development of communication products to raise awareness, and operational and functional capabilities related to MEP's implementation of these solutions.

For example, MEP could strengthen its capital and financing capabilities by providing finance-related training to MEP Centers. Currently, small manufacturers typically go to their local MEP Center for assistance related to lean process improvements, not for assistance related to business growth strategies or capital access.

- *Provide internal training to Center staff on the types of financing available, and teach them how to recommend different capital options to their client base.* An environmental scan of a representative geographic sample of about half of all 60 MEP Center websites revealed that the MEP Centers provide a variety of services for manufacturers, such as product development, marketing strategy assistance, leadership development, and counseling on energy and sustainability issues. However, very few of the MEP Centers included in the sample appear to offer assistance in finding capital or applying for financing. Enacting process improvements usually requires purchasing new machinery and equipment, modifying an existing facility to redesign the production process or moving to a new location that is better suited to the SME's needs. All of these activities have capital implications for the business which the MEP Center is positioned to address. If Center staff is informed about the financial options available, they could assist the SME in identifying specific capital sources to consider to facilitate implementation.

Combined, these recommendations may provide a comprehensive set of solutions that address the availability, accessibility, and awareness gaps related to both the supply of and demand for capital by SMEs.

4.1.1 Availability Gaps and Recommendations

Availability Gaps	Recommendations to Address Gaps
<p>Limited number of federal financial assistance programs, and private sources, that target the specific needs of smaller manufacturers</p>	<p>Partnership and Collaboration Recommendation: Federal programs can review their existing authority and funding priorities to identify strategies that promote manufacturing as a program priority.</p> <p>For example, collaboration with federal offices administering the Small Business Act of 2010, such as the State Small Business Credit Initiative and Small Business Lending Fund to build understanding of the capital access barriers and financial needs of small manufacturers.</p>
<p>Varying availability of capital sources by geographic location, and gap in <i>unsecured</i> working capital financing amounts from \$150,000 to \$500,000</p> <p><i>Secured</i> loans are more readily available for this loan range, but lenders expect priority position on business assets.</p> <p>Gap in fixed asset financing amounts between \$2 million and \$5 million, which is more applicable for larger small businesses.</p>	<p>Strategic and Programmatic Recommendation: MEP centers may benefit from additional guidance on how to engage local CDFIs, banks, and other sources of capital to build a relationship and help direct local manufacturers to relevant resources.</p> <p>Business Assistance Recommendation: MEP Centers may benefit from guidance on how to organize a “Speed Dating Deal Day” program to assist small manufacturers in connecting with targeted lenders and investors.</p> <p>Partnership and Collaboration Recommendation: New federal interagency partnerships could be formed to explore the possibility of program modifications to address funding gap between \$150,000 and \$500,000.</p> <p>The SBA is already attempting to address the fixed asset financing gap by recently raising their 7(a) guaranteed and 504 loan ceilings from \$2 million to \$5 million dollars.</p> <p>MEP may want to also consider additional engagement with state stakeholders to raise awareness of small manufacturer needs and discuss suggestions for how state programs can address needs (e.g., create state loan funds for manufacturers; collateral support programs could leverage funding for SMEs impacted by depreciating real estate).</p>
<p>Reduced availability of private equity funds outside of specific geographies (e.g., Silicon Valley)</p>	<p>Business Assistance Recommendation: MEP may want to explore whether there has been any market testing to gauge the willingness of investors and small manufacturers to provide private equity funds that target manufacturers. MEP may also want to research available tools and assistance strategies that can be used to help SMEs learn how to approach private equity investors.</p> <p>Partnership and Collaboration Recommendation: MEP could work with partners to facilitate the establishment of private equity funds that target small manufacturers, such as a companion SBA SBIC program.</p>

Availability Gaps	Recommendations to Address Gaps
<p>Varying geographic availability of federal programs (e.g., SBA, Export-Import Bank, USDA) using intermediaries at the state and local levels</p> <p>For example, some states such as California have a large utilization of federal capital assistance programs, such as the SBA 7(a) and 504 loans, while the availability of intermediaries that use federal capital assistance programs is much lower in other states, such as those located in the northeast region.</p>	<p>Partnership and Collaboration Recommendation: Greater engagement with key federal program leaders and associations that represent lending and investment entities can help to increase MEP’s brand recognition and the use of its services and programs by lenders and manufacturers.</p> <p>MEP might want to suggest among partners ways to streamline the application process, such as developing electronic application capability, utilizing common application forms or a centralized online clearinghouse of resources.</p>
<p>Gaps in the availability of funding in specific growth phases, including start-up and second stage/mezzanine alternatives to fund late stage product design and development</p>	<p>Partnership and Collaboration Recommendation: MEP may want to explore using federal and state partnerships to develop models that bring together public and private money to fund these needs.</p> <p>Business Assistance Recommendation: MEP has the ability to engage manufacturers at these growth stages to understand their needs and develop assistance specific to these needs.</p>
<p>Shortage of working capital and international expansion financing options for small manufacturers</p> <p>The American Bankers Association (ABA), and other stakeholders interviewed, found that many small manufacturers found the reduced access to working capital and fixed asset financing to be a major obstacle to entry or expansion of their small business.</p>	<p>Business Assistance Recommendation: MEP may want to explore resources that can provide assistance to manufacturers on cash flow management strategies to help them better manage their working capital.</p> <p>Partnership and Collaboration Recommendation: MEP has opportunities to engage federal stakeholders (e.g., Export-Import Bank) to encourage development of programs that fund small manufacturing export needs.</p>

4.1.2 Awareness Gaps and Recommendations

Awareness Gaps	Recommendations
<p>Need to increase small manufacturers’ awareness of existing sources of capital</p>	<p>Strategic and Programmatic Recommendation: MEP could disseminate information on available capital sources and assistance providers through MEP Centers; such as:</p> <ol style="list-style-type: none"> 1) Lists of local banks that have small business leasing, working capital, and asset-based lending programs, 2) Alternative or non-traditional sources of capital, such as

Awareness Gaps	Recommendations
	<p>state and federal grants, and</p> <p>3) Lists of local SBDCs, SBICs, and CDFIs</p> <p>Business Assistance Recommendation: MEP could adapt the inventory listing of providers (sources of capital) compiled under this project into a web-based diagnostic tool, in coordination with state-based organizations (e.g., C2ER, CFDA) and relevant federal agencies.</p>
<p>Need to increase small manufacturers' knowledge of how to successfully approach potential lenders and investors with well-prepared financial documentation, business plans and exit strategies</p>	<p>Business Assistance Recommendation: MEP has opportunities to use the existing network of MEP centers to develop and deliver additional business assistance services focused on preparing SME's for financial discussions (e.g., templates, sample financial statements, business plan formulation, and bundled financing options).</p> <p>MEP may also want to consider establishing an executive mentorship program to assist SME's in evaluating their capital needs or assist manufacturers in in how to effectively engage local SCORE or SBDC programs.</p>
<p>Need to increase small manufacturers' awareness of existing sources of business assistance</p>	<p>Strategic and Programmatic Recommendation: MEP might consider how it could disseminate a list of business assistance resources through an MEP "Clearinghouse" portal and MEP Centers.</p> <p>Business Assistance Recommendation: MEP can provide guidance to MEP Centers on how to identify and establish relationships with local business assistance organizations.</p>
<p>Knowledge gap among lenders who may not fully understand how to evaluate risk or cost-saving potential due to limited understanding of the manufacturing sector</p>	<p>Strategic and Programmatic Recommendation: MEP can promote MEP Center relationships with select lenders and trade associations to educate the lenders on manufacturer needs and improve their relationships with manufacturers.</p> <p>Business Assistance Recommendation: MEP might want to consider using market research to develop growth estimates for key sectors that can be used by small manufacturers when approaching lenders and investors. The findings could be used to analyze and evaluate the cost savings and potential efficiency gains for new technologies. Incorporate into business assistance services provided by centers.</p>
<p>Need to better brand and market federal programs to lenders, investors, and small manufacturers</p>	<p>Partnership and Collaboration Recommendation: MEP an use its engagements with state and federal program stakeholders to conduct outreach campaigns to better brand federal programs and promote increased awareness among lenders and manufacturers.</p>

Awareness Gaps	Recommendations
General misperception that not enough capital is available	<p>Strategic and Programmatic Recommendation: MEP can conduct an outreach campaign to increase awareness on most applicable capital sources.</p> <p>Business Assistance Recommendation: MEP can include information in its business assistance on how to identify available and applicable sources of capital and capital market trends.</p>

4.1.3 Accessibility Gaps and Recommendations

Accessibility Gaps	Recommendations
<p>Difficulties experienced by small manufacturers in accessing federal programs due to:</p> <ul style="list-style-type: none"> 3) Challenges in navigating federal websites to find funding opportunities 4) Time consuming process to track application deadlines and complete paperwork 	<p>Business Assistance Recommendation: MEP could build on the information coming out of this project to develop a diagnostic tool that provides a guide of available federal programs.</p> <p>MEP could consider augmenting its business assistance services to manufacturers with best practices for applying for federal grant programs and maintaining accurate financial records.</p> <p>Partnership and Collaboration Recommendation: MEP could collaborate with federal stakeholders to identify common areas where paperwork could be standardized or reduced.</p>
Conscious choice made by small manufacturers to not take on more debt or pursue growth financing strategies deters some companies from accessing available financing	<p>Strategic and Programmatic Recommendation: MEP might offer business assistance on how to select the best combination of financing products given a specific capital need and evaluate the risks associated with taking on additional financing.</p>
Limited access to private equity investors due to lack of prepared exit strategies	<p>Business Assistance Recommendation: MEP might provide business assistance on how to develop an exit strategy for a product and how to approach a private equity fund with the strategy.</p> <p>Partnership and Collaboration Recommendation: MEP might collaborate with partners to promote establishment of a “State Cluster Manufacturing Development Private Equity Fund.”</p>
Ability of smaller manufacturers to successfully apply for the SBA’s SBIR and STTR cooperative agreement funds	<p>Partnership and Collaboration Recommendation: MEP might want to expand its engagements with the SBA to explore changes to, or expansion of, the SBA’s SBIR and STTR program to ensure that smaller manufacturers are not placed at a competitive disadvantage to larger companies that may enjoy the backing of venture capital funds.</p>
Challenges experienced by manufacturers, especially smaller	<p>Partnership and Collaboration Recommendation: MEP may want to engage with SBA stakeholders to</p>

Accessibility Gaps	Recommendations
<p>companies with less than 20 employees, in qualifying for financing due to tighter lending standards and lower risk tolerance of lenders</p>	<p>collaboratively propose government lending requirements that reflect economic conditions and provide incentives for lending to qualified manufacturers (e.g., create requirements or incentives that provide support in situations where collateral has depreciated or when the forecasted liquidation value of equipment is uncertain).</p> <p>MEP may want to consider encouraging the “Manufacturing Czar” to advocate for greater regulatory consistency and flexibility in supervision of community bank portfolios and underwriting standards.</p> <p>Business Assistance Recommendation: MEP might want to consider providing small business loan application education and assistance to manufacturers on how to successfully qualify for a loan.</p>
<p>Difficulty in accessing federal energy efficiency and “green innovation” program funding due to cost-sharing requirement or disadvantaged status of small manufacturers in competing with larger manufacturers</p>	<p>Partnership and Collaboration Recommendation: MEP can leverage its ongoing work with federal and state programs to raise awareness of challenges small manufacturers face in accessing existing “green innovation” grants and funding.</p> <p>Likewise, MEP might consider using its existing federal and state partnerships to develop a financing model that would bring together public and private money to fund these needs.</p>
<p>Underutilization of federal loan guarantee programs by intermediary lenders, as measured by participation rates</p>	<p>Strategic and Programmatic Recommendation: MEP can explore opportunities to work with federal loan and private equity guarantee programs to conduct an education campaign to:</p> <ol style="list-style-type: none"> 1) Raise awareness of how to better evaluate risk of manufacturing companies in lending 2) Increase marketing and outreach to manufacturers <p>MEP could partner with federal programs to discuss whether the requirements and application processes across agencies can be standardized.</p>

4.1.4 Federal Strategic and Programmatic Gaps and Recommendations

Programmatic Challenges	Recommendations
<p>Need for federal consensus on national manufacturing strategy that can drive MEP manufacturing finance strategies</p>	<p>MEP Strategic and Programmatic Recommendation: MEP may want to consider how it can use its current relationship with the National Association of Manufacturers (NAM), the Association for Manufacturing Technology (AMT), and other associations to examine and outline the impact that access to capital issues have on US manufacturing and on the US economy and its ability to create jobs. MEP can share this information with partners who administer programs.</p> <p>MEP Strategic and Programmatic Recommendation: MEP has opportunities to establish itself as a key conduit for understanding and advocating for the needs specific to small manufacturers.</p>
<p>Need to better define MEP’s</p>	<p>MEP Strategic and Programmatic Recommendation:</p>

target customer base and better understand the capital access needs of the target customer base	<p>Incorporating capital access strategies into the MEP Next Generation Strategy can enhance the effectiveness of MEP's plans and abilities to achieve its goals.</p> <p>Business Assistance Recommendation: Conducting small manufacturer business assistance needs assessments can help ensure that lenders and investors have enough information to allocate funding and services to the "best" client segments.</p>
Need to increase staff, or service providers, in MEP Centers who have manufacturing finance expertise	<p>MEP Strategic and Programmatic Recommendation: Providing training and support resources to MEP leaders on core financial topics can support program effectiveness.</p> <p>Business Assistance Recommendation: MEP may want to consider using a regional network of financial experts that can effectively help mentor and train manufacturers.</p>
Evaluate cost share requirements for MEP Centers	<p>MEP Strategic and Programmatic Recommendation: MEP may want to compare its non-federal cost share requirements for centers with those of other economic development programs, and consider if more flexibility is needed for centers to provide new assistance services.</p>

Additionally, specific recommendations for the federal programs most applicable to SMEs include:

Federal Agency	Recommendation
Small Business Administration	<ul style="list-style-type: none"> • MEP might consider working with its SBA partners to assess viability of expanding 504 to include early stage businesses that are in operation for less than 2 years. • Likewise, MEP may also want to work with SBA partners to explore ways to enhance the 7(a) guaranty available for manufacturing applicants from 85 – 90% for loans below \$150k and 75 – 85% for loans above \$150k.
A general recommendation for the federal programs below is to utilize SBA's current guarantee process as a "best practice model" to effectively standardize program requirements and centralize underwriting.	
Export-Import Bank	<p>MEP has a variety of opportunities to work with the EX-IM bank e.g.:</p> <ul style="list-style-type: none"> • Work with Ex-Im to assess the benefits to providing a longer payment term for their 90 day receivable financing. • Work with Ex-Im to evaluate the benefits of inventory financing that lasts longer than 12 months, possibly 36-60 months. • Work with Ex-Im to develop a standard procedure for financing lower dollar transaction amounts. • Work with Ex-Im to evaluate their current "domestic content" requirement against the standard within the manufacturing industry. • Work with Ex-Im to develop programs that have a lower minimum transaction.
Department of Agriculture, Rural Development Agency	<ul style="list-style-type: none"> • MEP has opportunities to work with USDA to develop a targeted marketing campaign encompassing both local MEP centers and USDA offices, to increase awareness of the programs available.

Appendices

Appendix A: Stakeholder Interviews

The following table lists the stakeholder organizations interviewed as part of the MEP Capital Access/Loan Program Assessment, as of July 26, 2011.

Federal Government Stakeholders
<ul style="list-style-type: none">• National Credit Union Administration• Small Business Administration Office of Investment• Small Business Administration Office of Policy and Strategy• U.S. Department of Commerce, CommerceConnect• U.S. Department of Energy, Energy Efficiency and Renewable Energy Agency, Office of Weatherization and Intergovernmental Programs• U.S. Department of Energy, Energy Efficiency and Renewable Energy Agency, Industrial Technologies Program• U.S. Department of the Treasury, CDFI Fund• U.S. Department of the Treasury, Office of the Comptroller of the Currency• U.S. Department of the Treasury, Office of Financial Institutions• Export-Import Bank, Office of Industry Sector Development
Non-Federal Stakeholders
<ul style="list-style-type: none">• American Bankers Association, Center for Commercial Lending and Business Banking• Association for Manufacturing Technology• Atlantic Management Center, Inc. (MEP University)• Business Finance Group• Community Development Venture Capital Alliance• Council for Community and Economic Research• Council of Development Finance Agencies• Delaware Valley Industrial Resource Center (Pennsylvania MEP)• Equipment Leasing Finance Association• Independent Community Bankers of America (Focus Group)• Industrial and Technology Assistance Corporation (New York MEP)• MEP Annual Conference Focus Group, consisting of 15 MEP Centers and SME representatives• Maritime Applied Physics (Maryland MEP)• Maryland Technology Enterprise Institute (Maryland MEP)• Michigan Manufacturing Technology Center (Michigan MEP)• Michigan State University• National Association of Manufacturers• National Association of Seed and Venture Funds• National Credit Union Administration• NorTech• Pathway Lending• Rocky Mountain Bank & Trust• Seedco Financial• Small Manufacturer #1• Small Manufacturer #2• Small Manufacturer #3• Small Manufacturer #4• TechColumbus• UMD Manufacturing Assistance Program (Maryland MEP)

Appendix B: Federal Government Program List

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
Bureau of Indian Affairs	<ul style="list-style-type: none"> • Indian Loan Guaranty, Insurance, and Interest Subsidy
U.S. Department of Agriculture	<ul style="list-style-type: none"> • Business & Industry (B&I) Guaranteed Loan Program • Rural Business Enterprise Grants • Small Business Innovation Research • Rural Micro-entrepreneur Assistance Program • Intermediary Relending Program • Rural Energy for America Program – Loan • Rural Energy for America Program – Grant • Rural Small Business and Entrepreneurship Loan Fund • Export Credit Guarantee Program • Facility Guarantee Program • Market Access Program
U.S. Department of Commerce	<ul style="list-style-type: none"> • EDA Revolving Loan Fund Program • Space Coast Regional Innovation Cluster Competition • Red Planet • Proposed new loan guarantee program targeting SMEs (not yet appropriated), to be launched in 2011 and administered by the Economic Development Administration
U.S. Department of Defense	<ul style="list-style-type: none"> • Small Business Innovation Research • Defense Production Act Title III • Industrial Base Innovation Fund • UAVForge Manufacturing Services • In-Q-Tel • OnPoint Technologies • Strategic Technologies Grant Program (provided through Defense Advanced Research Projects Agency)
U.S. Department of Energy	<ul style="list-style-type: none"> • Small Business Innovation Research • Annual State Energy Program • Renewable Energy or Transmission Projects Using Innovative Technology • Renewable Energy Manufacturing Projects Using Commercial Technology • Geothermal Technologies Program

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
	<ul style="list-style-type: none"> • Waste to Profit Program • Foundational Program to Advance Cell Efficiency Grant • Property Assessed Clean Energy Programs • BetterBuildings Grant Program • Solar Energy Grid Integration Systems - Advanced Concepts Grant • Advanced Hydropower Development Grant • Catalytic Upgrading of Thermochemical Intermediates to Hydrocarbons Grant • U.S. Offshore Wind: Technology Development Grant • Advanced Technology Vehicles Loan Manufacturer Program • Extreme Balance of System Hardware Cost Reductions Grant • Novel Developments in Sensors and Controls for Fossil Energy Power Generation and Fuel Production Technologies Grant • Research and Development for Hydrogen Storage Grant • Applications of Nuclear Science and Technology Initiative • Tribal Energy Program Grant • Rare Earth Alternatives in Critical Technologies • High Energy Advanced Thermal Storage • Plants Engineered to Replace Oil
US Department of Health and Human Services	<ul style="list-style-type: none"> • Small Business Innovation Research
U.S. Department of Housing and Urban Development	<ul style="list-style-type: none"> • Community Development Block Grants
U.S. Department of Transportation	<ul style="list-style-type: none"> • Small Business Innovation Research • Research and Demonstration Projects Supporting the Development of High Speed and Intercity Passenger Rail Service
U.S. Department of Treasury	<ul style="list-style-type: none"> • Community Development Financial Institutions • Bank Enterprise Award Program • Financial Assistance Awards • Small Business Lending Fund (launched in 2011) • State Small Business Credit Initiative (launched in 2011)
Export-Import Bank	<ul style="list-style-type: none"> • Working Capital Guarantee Program • Medium Term Credit Insurance • Competitive Financing for International Buyers • Finance Lease Guarantees • Transportation Manufacturing Export Loan

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
Environmental Protection Agency	<ul style="list-style-type: none"> • Small Business Innovation Research
National Aeronautics and Space Administration	<ul style="list-style-type: none"> • Small Business Innovation Research • Red Planet Capital
National Institute of Health	<ul style="list-style-type: none"> • Development and Application of PET and SPECT Imaging Ligands as Biomarkers Grant
National Institute of Standards and Technology	<ul style="list-style-type: none"> • Small Business Innovation Research • Technology Innovation Program • Measurement Science and Engineering (MSE) Research Grants Program
National Science Foundation	<ul style="list-style-type: none"> • Small Business Innovation Research* • Sensors and Sensing Systems Grant • Manufacturing and Construction Machines and Equipment • Manufacturing Enterprise Systems Grant • NanoManufacturing Grant • Materials Processing and Manufacturing Grant • Particulate and Multiphase Processes Grant • Fluid Dynamics Grant • Environmental Sustainability Grant • Communications, Circuits, and Sensing-Systems Grant • Energy, Power, and Adaptive Systems Grant • Energy for Sustainability Grant
Small Business Administration	<ul style="list-style-type: none"> • 7(a) Loan Program* <ul style="list-style-type: none"> ○ 7(a) Special Purpose Loan CAPLines Program - Seasonal Line Loan (SBA) ○ Employee Trusts Program ○ Export Express ○ Community Adjustment and Investment Program ○ Patriot Express Pilot Loan Initiative ○ Community Express ○ Export Working Capital Program ○ International Trade Loans • Intermediary Lending Pilot Program • Small Business Investment Companies* • Certified Development Company 504 Loan Program* • Microloan Program • Pollution Control Loans • Business Physical Disaster Loans • Economic Injury Disaster Loans • Military Reservists Economic Injury Loans • Accion USA

Federal Department Administering Program	Program Name (See the Catalog of Federal Domestic Financial Assistance for program number.)
Tennessee Valley Authority	<ul style="list-style-type: none"> • Economic Development Funds • Special Opportunities Counties Fund

Appendix C: Small Business Finance Matrix Business Rules

Small Manufacturer Capital Needs	Criteria for Mapping Capital Needs to Sources Under Different Company Scenarios	Type of Capital Sources
1. Construction, Land or Building Acquisition	<ul style="list-style-type: none"> Company has a need to finance a long-term asset 	Debt – Term: Loans
	<ul style="list-style-type: none"> The need is part of a large scale capital project, and often specific to a geographic location or local need 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> N/A, unless for short-term construction with intent to transition to a permanent loan (applicable only for very limited use of line of credits for construction) 	Debt – Line of Credit
	<ul style="list-style-type: none"> Company need is a growth opportunity that can be funded through private equity (e.g., venture capital, mezzanine capital) 	Equity
	<ul style="list-style-type: none"> Company is unable to obtain debt financing, chooses to not use working capital, or has a restricted cash flow Use of building or land is shorter term 	Leasing
	<ul style="list-style-type: none"> Capital need is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant
2. Facility Improvements or Remodeling	<ul style="list-style-type: none"> Company has a need to finance a long-term asset 	Debt – Term: Loans
	<ul style="list-style-type: none"> The need is part of a large scale capital project, and often specific to a geographic location or local need 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> Company has a short-term need or is looking to fund an item with shorter useful life (typically < 3 to 5 years) 	Debt – Line of Credit
	<ul style="list-style-type: none"> Company need is a growth opportunity that can be funded through private equity (e.g., venture capital, mezzanine capital) 	Equity
	<ul style="list-style-type: none"> N/A, not a common use when the facility is owned 	Leasing
	<ul style="list-style-type: none"> Capital need is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant

3. Leasehold Improvements	<ul style="list-style-type: none"> N/A, not a common use of loans 	Debt – Term: Loans
	<ul style="list-style-type: none"> N/A, not a common use of bonds unless the facility is owned instead of leased 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> N/A, not a common use of lines of credit 	Debt – Line of Credit
	<ul style="list-style-type: none"> N/A, not a common use of equity 	Equity
	<ul style="list-style-type: none"> Company is unable to obtain debt financing, chooses to not use working capital, or has a restricted cash flow Use of building or land is shorter term 	Leasing
	<ul style="list-style-type: none"> Capital need is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant
4. Machinery and Equipment	<ul style="list-style-type: none"> Company has a need to finance a long-term asset Equipment needed has a longer useful life (> 5 years) Equipment has a high salvage value at the end of its useful life or slow depreciation Desire to take advantage of a tax benefit or incentive Company does not have enough working capital to fund a percentage of the cost that is not financed 	Debt – Term: Loans
	<ul style="list-style-type: none"> Equipment needed is part of a large scale capital project 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> Equipment needed has a shorter useful life (< 5 years) 	Debt – Line of Credit
	<ul style="list-style-type: none"> Lack of financing/debt alternatives Excess of cash flow or working capital Equipment needed is part of a large scale capital project 	Equity – Use of Working Capital
	<ul style="list-style-type: none"> Company is unable to obtain debt financing, chooses to not use working capital, or has a restricted cash flow Equipment needed has a shorter useful life (< 5 years) 	Leasing
	<ul style="list-style-type: none"> Purchase is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant

5. Research and Development or Innovation	<ul style="list-style-type: none"> N/A, not a common use of loans 	Debt – Term: Loans
	<ul style="list-style-type: none"> N/A, not a common use of bonds 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> Company has a short-term need or is looking to fund an item with shorter useful life (typically < 3 to 5 years) 	Debt – Line of Credit
	<ul style="list-style-type: none"> Company is seeking private equity to fund a new product line or research and development initiative that meets the requirements of a specific investor 	Equity
	<ul style="list-style-type: none"> N/A, while leasing is an option, it is not a common use of bonds 	Leasing
	<ul style="list-style-type: none"> Capital need is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant
6. Inventory, Accounts Receivable or Working Capital	<ul style="list-style-type: none"> Company has a need for permanent or longer-term working capital that is not revolving (typically 5 to 7 years) 	Debt – Term: Loans
	<ul style="list-style-type: none"> N/A, not a common use of bonds 	Debt – Term: Industrial Development Bond
	<ul style="list-style-type: none"> Company has a short-term need or is looking to fund an item with shorter useful life (typically < 3 to 5 years) 	Debt – Line of Credit
	<ul style="list-style-type: none"> N/A, not a common use of equity unless part of an acquisition or sell-off of ownership 	Equity
	<ul style="list-style-type: none"> N/A, not a common use of leasing 	Leasing
	<ul style="list-style-type: none"> Capital need is an eligible use of grant funds Company has financial and programmatic capability to fulfill grant requirements 	Grant

Appendix D: Technical/Business Assistance Resources*

In addition to the nationwide network of 60 MEP Centers, the following tables provide technical and business assistance resources for small businesses and manufacturing companies. For a complete list of the MEP Centers, go to: www.nist.gov/mep. *List does **not** include direct issuers of financial assistance or capital resources. This table only lists technical or business assistance (not financial assistance) resources that small manufacturers can reference when searching for sources of capital and financial assistance.

Nationwide Assistance Resources*		
Resource	Resource Description	Website
General Capital and Business Strategy Resources		
American Small Manufacturers Coalition	A trade association of manufacturing extension agents whom work to improve the innovation and productivity of America’s manufacturing community	www.smallmanufacturers.org/
Annual Survey of Manufacturers	Annual survey of U.S. manufacturing firms conducted by the U.S. Census Bureau	www.census.gov/manufacturing/a-sm/index.html
Best Manufacturing Practices Center of Excellence	A partnership between the Department of Commerce and the University of Maryland to provide technical best practices for manufacturers	www.bmpcoe.org/index.html
Booz & Co. Strategy and Business	A magazine published by a global management consulting firm that contains resources on best practices, trends, and advice in manufacturing, finance, innovation, business strategy	www.strategy-business.com
C2ER	An organization created to promote excellence in community and economic research by working to improve data availability, enhance data quality, and foster learning about regional economic analytic methods.	c2er.org/
CEO Express	Provides desktop to fast access to news and information	Go to: Small Business Link under “Business Research” www.ceoexpress.com/default.asp
Catalog of Federal Domestic Assistance	Provides a full listing of all Federal programs available to State and local governments; federally-recognized Indian tribal governments; Territories (and possessions) of the United States; domestic public, quasi- public, and private profit and nonprofit organizations and institutions; specialized groups; and individuals.	www.cfda.gov

Nationwide Assistance Resources*

Resource	Resource Description	Website
Coleman Publishing	Provides information on two key federal loans program for small businesses, the SBA 7(a) and 504 programs	www.colemanpublishing.com/
Commerce Connect	Provides direct advisory services to manufacturers and links to several development programs and grants	commerceconnect.gov/
Council of Development Finance Agencies	<p>A national association representing ~300 public, private and non-profit development entities dedicated to the advancement of development finance</p> <ul style="list-style-type: none"> • An online directory of development finance-related resources, including capital sources, tax credits, bond financing, revolving loans, and technical assistance resources • An online catalog of recommended practices and best practice case studies in development finance • A research and technical assistance program offering consulting service solely dedicated to development finance, including courses, webinars, and assistance in: revolving loans, innovative finance, venture capital, tax credits, bond financing, energy financing 	<p>Link to database: www.cdfa.net/cdfa/cdfaweb.nsf/ordsearch.html</p> <p>Link to best practices: www.cdfa.net/cdfa/cdfaweb.nsf/pages/recompact.html</p> <p>Link to technical assistance program: www.cdfa.net/cdfa/cdfaweb.nsf/pages/rtaprogram.html</p>
Database of State Incentives for Renewables and Efficiency (DSIRE)	DSIRE is a comprehensive source of state-specific information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency. Established in 1995 and funded by the U.S. Department of Energy, DSIRE is an ongoing project of the N.C. Solar Center and the Interstate Renewable Energy Council.	www.dsireusa.org/
Equipment Leasing and Finance Association	Equipment Finance 101 – an online resource designed to enhance knowledge about financing equipment and capital goods	www.elfaonline.org/pub/abtind/Fin101/
Equipment Leasing and Finance Association	Searchable database of leasing companies	www.elfaonline.org
Grants-Government	Provides small businesses with information about government grants	www.grants-government.info/index11.php
Grants.gov	A central storehouse for information on over 1,000 grant programs	www.grants.gov
Investopedia	An online dictionary of investment terms	www.investopedia.com/articles/financial-careers/09/private-equity.asp#13020995767602&clo

Nationwide Assistance Resources*

Resource	Resource Description	Website
		se
Kauffman Foundation	Provides online resources for small business owners	entreworld.org
Manufacturing.gov	Provides comprehensive and current information on issues surrounding the competitiveness of American manufacturers and service industries.	www.manufacturing.gov/
Manufacturers Alliance/MAPI	Provides manufacturers with the competitive intelligence and knowledge to make them more successful and effective, and the cutting edge research to assist them in maximizing their resources.	www.mapi.net/Pages/Default.aspx
Microcap Funding	A global financial network of investors providing assistance in accessing a broad spectrum of financing instruments tailored to a company's capital funding requirements	microcapfunding.com/financing_basics.php
National Association of Government Guaranteed Lenders (NAGGL)	Provide technical information for small businesses and financial institutions on the SBA 7(a) Loan Program	www.naggl.org/
National Association of Small Business Investment Companies	Venture capital resource	www.nasbic.org
NIST Innovation Marketplace	Provides a marketplace for companies and individuals to purchase, invest, distribute, or manufacture innovations	usainnovation.planeteureka.org/marketplace/usa/
Save Energy Now	Save Energy Now helps industrial plants, which may include manufacturing firms, find effective ways to reduce energy use in steam and process heating so they can operate more efficiently and profitably. This effort also addresses energy-savings opportunities for compressed air, fan, motor, and pumping systems.	www.eere.energy.gov/industry/saveenergynow
Senior Corps of Retired Executives (SCORE)	An association providing technical assistance and mentoring to aspiring entrepreneurs and small business owners through a nationwide network of 11,500 volunteer business counselors	www.score.org/index.html

Nationwide Assistance Resources*

Resource	Resource Description	Website
Small Business 101	Provides information and technical support for small businesses	www.smallbusiness101.com/
Small Business Notes	Provides information, resources, research, and news about starting, financing, planning, and operating a small business	www.smallbusinessnotes.com/
Small Business Owners Toolkit	Provides information and technical support for small businesses	www.toolkit.com/
SBA Manufacturing Business Guide	Provides an extensive network of programs and services dedicated to helping small manufacturers start their business, expand operations, and become profitable.	www.sba.gov/content/manufacturing
SBA Business Loans Database	Provides a searchable database of loans, grants, and other financing available to small businesses.	www.sba.gov/content/search-business-loans-grants-and-financing
SBA Online	Provides information and technical support for small businesses	www.sbaonline.sba.gov/
SBA Office of Advocacy	Provides a directory of small and micro business lenders located in their community or region	www.sba.gov/advocacy
SBA Small Business Development Centers and Information Clearinghouse (SBDCNet)	Provides management and technical assistance to current and prospective small business owners through a network of centers and a National Information Clearinghouse	www.sba.gov/content/small-business-development-centers-sbdcs Link to Clearinghouse: sbdnet.org
SBA TECH-Net	Provides technology information and resources for small high tech businesses, focused on supporting SBIR-relevant content	http://web.sba.gov/tech-net/docrootpages/index2.cfm
U.S. Treasury Office of the Comptroller of the Currency Resource Guide	Provides information on national organizations and programs that provide financial assistance to small businesses	www.occ.treas.gov/topics/community-affairs/resource-directories/small-business/index-small-business.html
US Association for Small Business and Entrepreneurship (USASBE)	Fosters business development through entrepreneurship education and research	www.usasbe.org/

Nationwide Assistance Resources*

Resource	Resource Description	Website
Early Stage, Venture Capital, and International Growth		
Community Development Venture Capital Alliance	Venture capital resource	cdvca.org/index.php?option=com_content&view=article&id=52&Itemid=58
Emerging Markets Private Equity Association	Venture capital resource	www.empea.net
Endeavor Mentor Capital Program	Provides assistance to high-impact entrepreneurs in emerging market countries by connecting them with mentorship networks and advice for entrepreneurs	www.endeavor.org
Massinvestor, Inc.	Venture capital resource	www.massinvestor.com/index.htm
National Association of Seed and Venture Funds	Venture capital resource	nasvf.org
National Business Incubation Association (NBIA)	Provides information, education, advocacy and networking resources that assist early-stage companies worldwide	www.nbia.org/
National Export Initiative	Provides links to several other resources such as Ex-Im Bank, OPIC, and SBA.	www.export.gov
National Venture Capital Association	A premier trade association that represents the U.S. venture capital industry, entrepreneurial activity and innovation	www.nvca.org/
Trade Finance Guide	Provides an overview of Letters of Credit, Ex-Im's Working Capital Loan and Working Capital Insurance	www.ita.doc.gov/media/Publications/abstract/trade_finance_guide2008desc.html
Venture Capital Institute	Provide technical assistance for small businesses and entities looking for venture capital	www.vcinstitute.org/
Venture Capital Online	An online marketplace for the venture capital and private equity industry that provides online services and tools to entrepreneurs, investors and advisors/service providers worldwide	www.vcaonline.com/

Regional/State Assistance Resources*

Resource	Resource Description	Website
General Capital and Business Strategy Resources		
Alabama	Office of Small Business Advocacy	www.alabama.gov/sliverheader/Welcome.do?url=http://www.ado.alabama.gov/content/ourpartners/AlabamaCommunities/alabamacommunities_main.aspx
Alaska	Small Business Assistance Center	www.commerce.state.ak.us/ded/dev/smallbus/home.cfm
Arizona	State incentives, programs and grants	www.azcommerce.com/BusAsst/Incentives/
Arkansas	Business Online Services	portal.arkansas.gov/business/Pages/businessServices.aspx
California	Office of Small Business Advocate	www.business.ca.gov/SmallBusiness.aspx
Colorado	Colorado Office of Economic Development and International Trade Business Finance Programs	www.colorado.gov/cs/Satellite/OEDIT/OEDIT/1165009699726
Colorado	Small Business Development Centers	www.coloradosbdc.org/
Connecticut	Connecticut Development Authority - Financing	www.ctcda.com/Financing/
Connecticut	Small business and micro-business resources	www.ct.gov/sots/cwp/view.asp?a=3175&q=391770
Delaware	Resources for business expansion and relocation	delaware.gov/egov/portal.nsf/portal/relocateexpand
District of Columbia	Resources for businesses to organize its finances and find new sources of financing	brc.dc.gov/planning/finance/finance.asp
Florida	Small business development center network	www.floridasbdc.com/Home/Location.asp
Georgia	Department of Community Affairs - Financing	www.dca.state.ga.us/economic/Financing/index.asp

Hawaii	Information on business financing	hawaii.gov/dbedt/business/find_financing/
Idaho	Information on business finance and funding	business.idaho.gov/Default.aspx?tabid=493
Illinois	Small Business Development Center – Financial Assistance	www.commerce.state.il.us/dceo/Bureaus/Entrepreneurship+and+Small+Business/Financing+Assistance/
Indiana	Business programs and initiatives	iedc.in.gov/programs-initiatives/
Iowa	Department of Economic Development - Financial Assistance	www.iowalifechanging.com/business/financial_assistance.aspx
Kansas	NetWork Kansas – Funding Options	www.networkkansas.com/entrepreneurs/funding_options/
Kentucky	Kentucky business incentives and financial programs	www.thinkkentucky.com/KYEDC
Louisiana	Search tool to find competitive business incentives	www.louisianaeconomicdevelopment.com/opportunities/incentives--programs/
Maine	Guide to Maine business resources	www.maine.gov/decd/mainebiz/publications/pdfs/pocket_guide.pdf
Maryland	Resources for businesses seeking to obtain access to capital	www.choosemaryland.org/businessresources/Pages/AccessstoCapital.aspx
Massachusetts	Information on term loans, lines of credit, equipment loans, and other assistance for small and medium manufacturing firms	www.mass.gov
Michigan	Resources for businesses who need to obtain money to start a new business or expand an existing one	www.michigan.gov/business/0,1607,7-255-52647_49817---,00.html
Michigan	Guide to Michigan small business resources	www.michiganadvantage.org/cm/files/Brochures/smallbusiness.pdf
Minnesota	Information on business financing programs	www.positivelyminnesota.com/Business/Financing_a_Business/DEED_Business_Finance_Programs/index.aspx
Mississippi	Business finance and tax information	www.mississippi.org/index.php?id=87

Mississippi	Mississippi Business Finance Corporation	www.mbfcc.com/about.html
Missouri	Financing and other business resources	www.business.mo.gov/resources.asp
Montana	Business Resources Division	businessresources.mt.gov/finance.mcp
Nebraska	Department of Economic Development – Business Development Division	www.neded.org/business
Nevada	Nevada Small Business Development Center	nsbdc.org
New Hampshire	Small business resource library	www.nhsbdc.org/resource-library/financing-a-business
New Jersey	Business financing and incentives	www.state.nj.us/njbusiness/financing/
New Mexico	New Mexico Economic Development – Financial Assistance	www.edd.state.nm.us/businessAssistance/financialAssistance/index.html
New York	Empire State Development – Division for Small Business	www.esd.ny.gov/smallbusiness.html
North Carolina	An overview of financial resources and loan programs for small businesses	www.nccommerce.com/en/BusinessServices/StartYourBusiness/SourcesOfCapital/
North Dakota	Financial resources for North Dakota businesses	www.nd.gov/category.htm?id=99
Ohio	Ohio Business Gateway	business.ohio.gov/growing/
Ohio	Small Business Development Centers	www.development.ohio.gov/Entrepreneurship/sbdc.htm
Oklahoma	Business funding resources	www.ok.gov
Oregon	Financial organizations that provide small business financial assistance	www.oregon4biz.com/Grow-Your-Business/Business-services/Small-Business-Financial-Assistance/
Pennsylvania	Financial incentives for Pennsylvania businesses	www.paopen4business.state.pa.us
Rhode Island	Financing programs provided by the Rhode Island Economic Development Corporation	www.riedc.com/business-services/financing

South Carolina	Financial services provided by the South Carolina Department of Commerce	sccommerce.com/business-services/financial-services
South Dakota	Financing and Incentive options provided by the Governor's Office of Economic development	www.sdreadytowork.com/fi/
Tennessee	Tennessee Smart Start Small Business Guide	www.state.tn.us/ecd/pdfs/SGB_smart_guide_2010.pdf
Texas	Economic Development Incentives provided by the Office of the Governor	governor.state.tx.us/ecodev/financial_resources/
Utah	Corporate incentives provided by the Utah Governor's Office of Economic Development	business.utah.gov/relocate/incentives/
Vermont	Resources, programs and services provided by the Department of Economic, Housing and Community Development	www.thinkvermont.com/
Vermont	Vermont Economic Development Authority	www.veda.org/right.php/pid/1
Virginia	Virginia Small Business Financing Authority	www.dba.virginia.gov/vsbfa.shtml
Virginia	Economic development resources provided by the Virginia Manufacturers Association	www.vamanufacturers.com/business/resources.php
Washington	Financial incentives for Washington businesses	www.choosewashington.com/business/incentives/Pages/default.aspx
West Virginia	West Virginia business assistance	wvcommerce.org
Wisconsin	Business development resources provided by the Wisconsin Department of Commerce	www.commerce.state.wi.us/BD/BD-FinAssis.html
Wisconsin	Financing resources for Wisconsin businesses	www.wisconsin.gov/state/byb/finance.html
Wyoming	Loan programs provided by the Wyoming Business Council	www.wyomingbusiness.org/financial/loan.aspx
Early Stage, Venture Capital, and International Growth		
Atlanta: Venture Forum	Trade association for private equity investors in the Southeast	www.atlantaventureforum.org
Dallas/Ft. Worth: Private Equity Forum	Forum for private equity firms and their professionals	For more information about the DFW Private Equity Forum, please contact Pam Jackson at pamela.jackson@ey.com

Connecticut: Venture Group	Professional organization that is committed to connecting venture capital professionals with high-growth emerging companies	www.ct-venture.org
Florida: Venture Forum	Advisory and support program for Florida entrepreneurial ventures	www.floridaventureforum.org
Illinois: Venture Capital Association	Advocates and facilitators for the Midwest's venture capital/private equity community	www.illinoisvc.org
Los Angeles: Venture Association	Forum for entrepreneurs and executives of middle-market companies	www.lava.org
Los Angeles/ Orange County, CA: OCTANE	Forum for Orange County technology executive leaders, entrepreneurs, investors, venture capitalists, academics and strategic advisors	www.octaneoc.org
Long Island: Capital Alliance	Forum designed to bring together members of the region's business community and provide financing options	www.licapital.org
Michigan: Venture Capital Association	Provides an online searchable database of Michigan venture capital resources and statistics	www.michiganvca.org
Minnesota: The Collaborative	Resource for Minnesota entrepreneurs, investors, teams and innovators	www.collaborative.net
Minnesota: Venture Capital Association	A non-for-profit group comprised of members whose primary activity is the management of venture capital funds and investments.	www.mnvca.org
Missouri: Venture Forum	A St. Louis metro-area resource for entrepreneurs to learn, share and network	www.missouriventureforum.org
New England: Venture Capital Association	An organization for New England venture capital investors, designed to promote venture capital investing and entrepreneurship	www.newenglandvc.org/
New Jersey: Tech Council	Provides business support, networking opportunities, information, advocacy and recognition of technology companies and their leaders	www.njtc.org
New Mexico: Venture Association	Trade association for the venture capital and private equity firms that do business in the state of New Mexico	www.nmvca.org
New York: Venture Capital Association	A community for leading venture capital and private equity professionals in the New York area	www.nyvca.org

New York: Upstate Venture Association	Works with entrepreneurs, companies seeking funding, private equity firms and professionals to improve deal flow and facilitate greater availability of capital.	www.uvany.org/
North Carolina: Council for Entrepreneurial Development	A community of people who aim to identify, enable and promote high-growth, high-impact companies and accelerate the entrepreneurial culture of the Research Triangle and North Carolina	www.cednc.org
Philadelphia: Alliance for Capital and Technologies	Resource for emerging growth companies in the information technology, clean technology and life sciences industries. Connects emerging growth companies, venture investors, professional advisors and technology-focused corporations	philadelphiapact.com/
Pittsburgh: Venture Capital Association	Works as an advocate for the venture capital industry and facilitates the flow of capital into promising ventures	www.thepvca.org
Rocky Mountain: Venture Capital Association	Regional venture capital resource serving Montana, Idaho, Wyoming, Nevada, Utah, Colorado, New Mexico, Colorado, & Arizona	www.rockymountainVCA.com
San Diego: Venture Group	Networking forum for entrepreneurs, venture capitalists and advisors in San Diego	www.sdv.org
Silicon Valley: Angels Forum	A group of high net worth private investors who invest in, mentor, and advise Silicon Valley startups	www.angelsforum.com/
Texas: Venture Capital Association	A statewide association that represents venture capital firms doing business in Texas	www.txvca.org
Washington State: Evergreen Venture Capital Association	A partnership of Washington venture capital firms. Contributes time, money and energy to local organizations to help find, educate and encourage entrepreneurs	www.evca.net
Washington, DC area: Mid-Atlantic Venture Association	An association in the mid-Atlantic region that represents private equity and venture capital firms as well as entrepreneurs and their strategic partners	www.mava.org

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