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September 29, 2008

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Overview

This report estimates the contribution to the Kalamazoo-Portage MSA's economy¹ by businesses that have received substantial assistance from Southwest Michigan First (SMF), a private, not-for-profit economic development agency serving the greater Kalamazoo region. The report examines the trends in employment, gross regional product, and wages and salaries generated by the 105 firms that SMF staff identified as receiving substantial assistance from SMF between 2000 and 2008. The estimates extend through the year 2012 in order to capture the employment projections offered by some of the assisted firms. The study also provides upper bound estimates of the benefit-cost ratio of the effectiveness of SMF on the region's economy.

Like many regional economic development organizations, SMF provides financial and technical assistance to entice businesses to locate in the region and to retain and nurture existing businesses. In addition, SMF provides assistance to new startups. SMF assists in several ways, using its own resources but more often and more extensively leveraging funding from government programs and to a lesser extent from other institutions.

- SMF helps businesses apply for and receive state and local financial incentives, such as tax abatements, job training subsidies, infrastructure investments, and low-interest loans or grants. Since SMF provides few of these incentives directly, their primary role is to help businesses through the application process and to serve as an advocate for their applications as they are processed by the state and local authorities responsible for allocating such funds.
- SMF also assists businesses in their site selection process. It provides firms with information about environmental, regulatory, and tax laws that may affect their location decisions. SMF also acts as an ombudsman in dealing with the various agencies that are responsible for granting permits.

¹ The Kalamazoo-Portage metropolitan statistical area (MSA) includes Kalamazoo and Van Buren counties.

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- SMF also assists new business startups. It helped to establish the Southwest Michigan Innovation Center, which provides office space, equipment, common areas, managerial and technical assistance to local startup companies. SMF also helps local entrepreneurs connect with funding through First Angels and the Southwest Michigan First Life Science Fund. First Angels is a network of angel investors, formed to make financial and intellectual capital available for early stage and growing entrepreneurial companies in West Michigan, primarily the Kalamazoo Region. The Southwest Michigan First Life Science Fund is a limited partnership venture fund interested in early stage life science opportunities in the region that have demonstrably viable technologies. The \$50 million fund invests primarily in early stage life science companies with a commitment to establishing a presence in southwestern Michigan. The fund's primary goal is to spur economic development and retain intellectual capital within the region. Not only does the fund provide equity investment to entrepreneurs, but it also offers support services in the areas of industry expertise, regulatory strategy, reimbursement planning, exit strategies and early stage business systems.

Questions Addressed by this Study

This study addresses two questions. The first question asks: What is the impact on the regional economy of businesses assisted by SMF? The second question is: What is the impact of SMF on the regional economy, and more specifically on the region's residents? These are two distinctly different questions. The first question addresses the magnitude of the impact of the companies assisted by SMF as measured by employment, wages and salaries, and gross regional product relative to the region's economy. It requires applying appropriate multipliers to the direct employment estimates of those firms assisted by SMF and then comparing the estimated employment impacts to baseline estimates of the economy.

The second question is more complicated and requires considerably more information, much of which is not directly observable for the Kalamazoo-Portage MSA. This question delves deeper into the effect of SMF on the regional economy and asks what would have happened to the regional economy if SMWF did not exist. It also projects what the region's future might be like without SMF. The dynamics of a regional economy, the incidence of the costs of the various financial incentives used by SMF, and the actual response of firms to the assistance complicate this estimate. Since precise measurements of these factors are not available for the Kalamazoo-Portage MSA, or for that matter any MSA, estimates of the impact of SMF, including an estimate of its return on investment, is speculative at best.

To answer the second question, the purpose of economic development activities must also be determined. Does it exist primarily to provide jobs to those residents within a specified area? Is it to expand the population of the region? Is it to replace low-paying jobs with high-paying jobs? How the organization and the community answer these questions determines the way in which the second question is addressed.

We provide an estimate of the second question primarily to provide a better understanding of the complexity of the question and to delineate the various components that are required to estimate it. We place much greater reliance on our estimates of the first question, with the caveat that

SMF staff identified the firms receiving assistance and estimated the employment impact resulting from the assistance.

Conceptual Framework for Assessing the Impact

Simply stated, economic development efforts can be thought of as having two effects on a regional economy, with various degrees of certainty. One is to retain jobs that would have otherwise disappeared. The other effect is to create jobs, through expansions, attractions, or startups, which would not have otherwise occurred. In estimating the impact on the regional economy of these two effects, one cannot simply add up the number of jobs that is expected to be gained or lost by a single firm's decision to expand or contract. Instead, one must take into account the dynamics of the regional economy and the effectiveness of the assistance and financial incentives offered businesses.

Dynamics of the Regional Economy

Jobs are not created or lost in isolation. Rather, they are part of the dynamics of a regional economy. When new jobs are created, the demand for employment increases and wages are bid up. Higher wages attract new workers into the area, but eventually the higher wages will reduce the demand for workers from its initial peak.² Estimates from national studies show that employment may be reduced by as much as 20 percent from its initial peak.³ Studies also show that not all the new jobs go to residents who lived in area before the initial jobs were created. Bartik places this ratio at around 40 percent, based on his own estimates and those of others. The 40 percent includes the fact that around 10 percent of the jobs are held by those who commute into work from outside the Kalamazoo-Portage MSA, as estimated by the REMI econometric model which is used in this study.

Effectiveness of Economic Development Initiatives

One must also take into account the effectiveness of economic development assistance. However, it is difficult to determine whether or not a firm's decision rests solely on the assistance they received or did not receive from a local economic development organization. In Kalamazoo, for instance, did the Stryker Corporation decide to build a new headquarters building and retain its headquarters in Kalamazoo only because SMF intervened, and without the intervention would Stryker have moved its headquarters outside the region? This is a difficult question to answer because business decisions are based on more than one factor.

Furthermore, economic development organizations typically use a bundle of financial incentives to attract firms to their area or to entice them to remain in the area. These incentives are administered through state and local government agencies and financed through tax revenue. Property tax abatement is a common tool to reduce a firm's cost of conducting business in an

² The response to wage rates may be offset by the desire of firms to locate near their suppliers. Expanding the cluster of firms may attract other firms related to the same cluster.

³ Analysis of the response of firms in local labor markets supports this assumption. Eberts and Stone (1992) and Blanchard and Katz (1992) find that employment stabilizes to a constant level within 10 years after a local labor market experiences a "shock." In this case, the intervention by SMF is considered a shock.

area. However, empirical studies suggest that only a small percentage of the value of the tax abatement actually affects a firm's location decision. Estimates range from 3 to 4 percent. Even if that figure underestimates the effect of tax abatement by a factor of 5 or even a factor of 10, the impact of tax abatement is far from certain. Therefore, crediting a local economic development organization with attracting firms, for example, when in reality the firm would have located in the region without its assistance introduces substantial bias into the estimates of the impact of a local economic development organization.

To illustrate how the various factors affect the impact of the local economic development organization, consider the following example. Suppose that 100 new jobs were created due to the relocation of a manufacturing plant in the area. Applying a multiplier of two to the direct employment estimates yields an initial estimate of 200 total (direct and indirect) new jobs. However, as wages are bid up, demand for labor is reduced by 20 percent, leaving 160 jobs. Furthermore, only 40 percent of the new jobs are held by workers who lived in the area before the new plant arrived. If the goal of the local economic development organization is to provide employment for its residents, this leaves a total of 64 new jobs for the region's residents. Add the uncertainty of the effectiveness of economic development efforts, and the number of jobs is even lower.

The exact adjustment factors that pertain to the Kalamazoo-Portage MSA may differ to some degree from the values used in this example. Although such information is not available, the values used in the example represent the best estimates derived from research and experience. Consequently, they provide our best approximation of the magnitude of the impact of SMF on the regional economy and will be used later in the study to illustrate how estimates of the effectiveness of SMF should be estimated.

Estimating the Effectiveness of Southwest Michigan First

To estimate the effectiveness of SMF (that is, to address the second question posed above), the employment numbers need to be converted to a monetary value to compare that with the cost of providing economic development assistance and incentives. We do this by estimating the wages and salaries associated with the new jobs created in the region. The wages and salaries can then be compared with the cost of providing services and financial incentives.

Calculating the costs is problematic, however. Calculating the direct operating costs of SMF is straightforward, but factoring in the cost of providing financial subsidies and other incentives is not. State-funded business incentives and training subsidies can be thought of as a cost at the state level; however, at the local level they can be interpreted as being grants that would have been spent elsewhere if not for the efforts of the local economic development agencies. Even the cost associated with property tax abatements is subject to debate. Some argue that the abatement does not generate a financial burden to local governments because, without the incentive, there would be no new private investment. Others argue that tax abatements are a burden because local governments do not receive from the private investment the tax revenues that are required to pay for new demands for government services.

Methodology

The most appropriate way of addressing each of the two questions posed above is to construct a counterfactual, in which we compare the economic performance of the Kalamazoo-Portage MSA where SMF is present and provides assistance to firms, with the same region at the same time but without SMF. Obviously, it is impossible to actually make this comparison since the two situations cannot occur in the same region at the same time.

However, there are other ways to construct a counterfactual. In doing so, one must be cautious about the bias that may be introduced into the analysis due to self-motivated responses or to the inability to separate economic and other factors that may affect a region's economy but have nothing to do with the presence or efforts of SMF.

One approach is to identify similar regions that do not have SMF or similar organizations and then compare the outcomes of the two sets of regions over the same time period. With this approach, it is difficult to find similar regions that do not have an economic development organization and to separate out other factors that affect the regions' economic performance. Another option is to construct a baseline projection of employment trends for the region with and without the assistance of SMF, using econometric models.

A less objective approach is to ask the firms who received assistance whether or not the assistance significantly affected their location or expansion decisions. Their response may be biased, particularly if they thought their answer may reduce the amount of financial assistance, such as tax abatements, they might receive if they claimed that it had little effect. In addition, this approach is even less able to filter out extraneous factors that affect a region's economic activity because it does not include a comparison group.

A perhaps even less objective approach and one that may be more biased is to ask the economic development organization whether or not its efforts made a substantial influence in a business's location decision. The choice of which method to use depends upon the time, resources, and access to firms and other stakeholders afforded by the scope of the study.

This study takes the approach of relying on the opinions of the SMF staff to select the firms that have received substantial assistance from SMF, the types of responses made by the firms, and the level of employment resulting from the firms' location and expansion decisions. The researchers for this study scrutinized the SMF staff's selections by asking them to explain the reasons for their opinions about the larger firms they selected. The direct employment levels associated with each of the selected firms were then compared with a baseline projection of employment in the region. While not a net impact analysis, the baseline projection provides a crude counterfactual. Comparing the baseline projection with projections that include the employment estimates of assisted firms provides a perspective on the possible magnitude of the employment associated with SMF's efforts. The study also includes the impact of wages and salaries and the gross metropolitan product in order to provide a perspective of the impacts on the broader economy.

The study then adjusts the employment effects and the associated wage and salary effects using the factors discussed above to illustrate how the initial direct estimates must be adjusted in order to provide a realistic "benefit-cost" ratio of the effectiveness of SMF on the regional economy.

Identifying Firms Substantially Influenced by Southwest Michigan First

The first step is to identify the firms in the region that were substantially influenced by assistance offered by SMF. To compile this list, the SMF staff identified firms to which they provided assistance between 2000 and 2008. We then held discussions regarding the larger firms on the list with SMF staff in order to determine the extent to which SMF had a substantial impact on that firm. The criteria for selection were subjective and based primarily on the CEO's assessment of the importance of SMF's involvement and his speculation regarding whether or not the firm's location decision would have been different without the intervention.⁴

Determining the extent to which SMF's assistance was instrumental in a firm's location and employment decisions is critical to an accurate assessment of the impact of the organization on the region's economy. However, it is extremely difficult to assess. By accepting SMF's list of firms and its estimates of the employment levels associated with these decisions, we are assuming with 100 percent certainty that the firms on the list would not have made their location or employment decisions without the assistance they received from SMF. That is, if SMF had not intervened, it is assumed that jobs would have been lost due to relocation or downsizing and jobs would not have been created due to the startups and expansions that the staff has identified. Obviously, this is a strong assumption, which is not supported by the empirical literature on the effects of economic development. We will, however, continue with this assumption for the first part of the analysis and take SMF staff's assessment of their impact at face value. However, later in the analysis we will question that assumption and show how plausible scenarios of influence, based upon more in-depth knowledge of the dynamics of local economies, could change the magnitude of SMF's effectiveness in the region.

Types of Impact

With direction from SMF's CEO, firms were categorized according to three types of responses:

- ***Retained Firms:*** Stayed in the area due, in part, to the assistance of SMF in providing assistance with arranging tax abatements and training assistance, as well as finding state-level incentives from agencies such as the Michigan Economic Development Corporation.
- ***Firm Expansion and Attraction:*** Expanded in the area with the assistance of SMF. This included companies that were directly recruited by the organization, firms that expanded or stayed in the area after receiving substantial service or assistance from the organization;
- ***Startups and Life-Science Firms:*** Started up because of the facilities and assistance provided by the Southwest Michigan Innovation Center or venture funding specific to SMF.

⁴One possible way of checking SMF's assessment of their impact on a firm's location decision would have been to ask a representative sample of firms the same question and then compare their subjective responses. While probably reducing the bias, we did not have the time or resources to pursue this approach.

Estimating the Number of Jobs Impacted by Southwest Michigan First's Assistance

The CEO also provided us with his estimates of the number of jobs retained or created by each firm as a direct result of SMF's assistance. The employment estimates appear to be based on several sources. One source is the firm's announcement of the number of jobs it expected to create as a result of its decision to locate or expand in the region. For instance, one firm in the region, MPI, had recently announced a five-year expansion plan. As part of its plan, and as part of its submission for state assistance and local tax abatement, it provided an estimate of the employment it expected at the end of the five-year plan. This estimate was used in the analysis. Another example was the decision by the Stryker Corporation to build a new headquarters building in Kalamazoo in 2004. The public announcement stated that it would create an additional 135 jobs. That number was used in the analysis. For companies that decided to stay in the Kalamazoo region instead of relocating elsewhere, the SMF's CEO used the number of people currently employed at the facilities at the time the decision was made to remain in the area. For instance, SMF's CEO indicated that because of the assistance of SMF, the Stryker Corporation decided to retain 948 jobs in the Kalamazoo area in 2004.

Projecting Employment through 2012

Since SMF wished for us to project the impact estimates through the year 2012, we had to make assumptions about the employment levels of each of the firms included in the list of those substantially assisted by SMF. We chose to take what may be described as a neutral position and assume that the jobs created or retained would stay the same throughout the remainder of the time period. Therefore, whatever employment estimate was first given for the year of the intervention remained the same each year after that through 2012.⁵ Returning to the example of the Stryker headquarters building in which the announcement of 135 jobs was made in 2004, we recorded that impact of 135 jobs in 2004 and for each year after that through 2012. This assumes that Stryker maintained that level of employment from 2004 through 2012. Obviously, it is impossible to foretell whether Stryker will actually maintain that level of employment for the remaining year of the study. For that matter, we do not know whether or not Stryker actually reached or even exceeded that level of employment for any of the years. Given the ever changing vagaries of the global business environment, it is very possible that some of the companies in this study will not reach their market goals, while some may exceed their expectations. However, one aspect of our assumption that is worth noting when interpreting the results is that employment related to SMF's assistance does not decline over the time period.

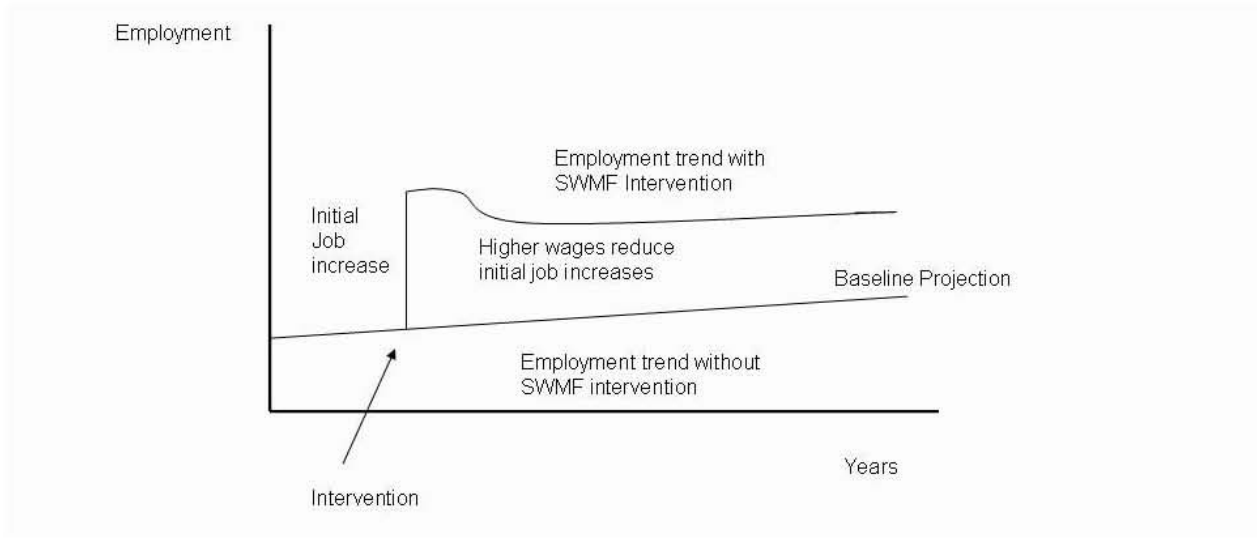
Comparing Employment Estimates to a Baseline Projection

Once the direct employment levels are recorded, we then used the Upjohn Institute's REMI model to derive a baseline projection of employment in the Kalamazoo-Portage MSA. The REMI model takes into account the dynamic nature of metropolitan labor markets in that firms

⁵ According to this assumption, the employment level would continue in perpetuity. Other assumptions could be made. One possible scenario relates to the length of duration of the employment level to the depreciation of capital. The assumption is that the initial investment supported the stated level of employment and when the capital (structures and equipment) fully depreciates, another infusion of investment is required to support employment, which may be higher or lower than the level before depending upon the amount of investment and the technology embedded in the capital.

relocate, expand, and contract. Therefore, one can interpret the REMI projection as what may happen to employment in the region in the absence of SMF.⁶ Figure 1 illustrates the exercise that we follow in comparing the baseline projection with a projection including the direct employment estimates of firms retained in the region.

Figure 1: Illustration of Comparing the Baseline Employment Projection with the Projection Including Jobs from Expansions



From Figure 1, one can see that the employment projection that does not include new jobs from expansions is lower than the one that includes the jobs that SMF indicated they had helped to create through their efforts. The difference between the two lines is the number of jobs SMF indicated they created by helping firms to expand in the region. The baseline projections provide a crude counterfactual to compare the level of employment associated with SMF’s assistance with the overall economy. The value of this approach is to compare the jobs created due to expansions with the total number of jobs in the region, as well as being able to compare the growth rates of the two scenarios.

Similar estimates are provided for employment identified as resulting from retention, relocations and the start-up of firms.

Direct and Indirect Employment Effects

In addition to the direct employment levels associated with firms receiving assistance from SMF, we also estimate the indirect employment effects. Direct employment effects are the employment estimates of the firms identified as receiving assistance. Indirect effects include the

⁶ The REMI model is driven by national forecasts, the industrial composition of the specific metro area, and an input-output model that estimates the employment multiplier. Because of this methodology, it is unlikely that the projections are capturing the impact of the assistance to firms by SMF in the Kalamazoo-Portage MSA. Therefore, comparing the baseline projections with the projections incorporating the employment levels of firms assisted by SMF provides a crude estimate of its impact on the region.

additional employment generated within the region through purchases made by these businesses and their employees (and subsequent multiplier effects). Combined, these two employment effects comprise the total employment effect of firms receiving assistance. The REMI model estimates the multiplier effects by taking into account the industries of each of the assisted firms, which offers a more accurate multiplier than obtained from most other sources.

Other Measures of Regional Economic Activity

The total employment levels derived from the methodology outlined in the previous section are used to estimate the wages and salaries generated from the job creation or retention. The earnings, when properly adjusted for inflation and discounted, are used to measure the benefits of the efforts of SMF. In addition, the gross regional product, the broadest measure of economic activity in a region, is also generated.

Estimates

Firms Identified as Receiving Substantial Assistance

Table 1 lists the companies within the Kalamazoo-Portage MSA that the SMF staff, with scrutiny from the authors of this study, identified as receiving substantial assistance from SMF. The staff identified 105 firms that received services between 2000 and 2008. The list of firms is divided into two categories.

- The first group consists of major firms, manufacturers and headquarters. Going back to 2000, this grouping represents the largest economic development projects undertaken by SMF. Firms in this category represent a variety of industries, including services, R&D, and manufacturing. Included in this category are firms located at MidLink that SMF assisted in obtaining extensive tax abatements as well as providing other types of assistance.
- The second group includes firms located primarily at the Southwest Michigan Innovation Center (SMIC), but also includes firms at M-TEC. Firms occupying the innovation center, located in Western Michigan University's Business and Technology Research Park (BTR), are primarily startup companies conducting research or small scale test production in either the pharmaceutical or biotechnology fields. SMF provides support to these firms through tax abatements and by providing below-cost high-tech facilities available at the innovation center. The earliest projects occurred in 2003, when the innovation center opened.

Table 1 Firms that have received Substantial Assistance by Southwest Michigan First

Accretive Health Air Flow Equipment Alta Resources	Erickson Flooring Esco Fabri-Kal	Kaiser Aluminum Kenco Logistics Kepco, Inc.	Quality Assured Plastics Rapid Repair Thermo Fisher Scientific
American Greetings AT&T Bell's Brewing	Fema Corp. of Michigan Flare Fittings, Inc. Flowserve Corp.	Landscape Forms Macomb Group Maggie's Catering	Schupan & Sons Aluminum Fabricating Sign Art Smiths Machine & Grinding, Inc.
Benteler Borough's Bowers Manufacturing	Fluid Process Equipment Fresh Solution Farms Georgia Pacific	MANN+HUMMEL Marketing Technology Services Megee Printing, Inc.	Stryker Corporation Stryker Headquarters Summit Polymers, Inc.
Burchett Quality Tool, Ltd. ChemLink Clifford Group	Graphics Packaging International-Mill Great Lakes Aviation Green Bay Packaging, Inc.	 Micro Machine Company Midlink Park Operations	Target Distribution Center Tekna Solutions Tourney Consulting Group
Co-Dee Stamping Contech US LLC Craft Precision, Inc.	Harrison Packing Heritage Guitar High Grade Materials Co.	MPI Research Parker Hannifin Corp. - Hydraulics Pfizer Inc.	Van Beek Nutritional W. Soule Waber Tool and Engineering
Dana Corporation Davis Creek Meat DSM Catalytica Eaton Corporation	International Component Strategies International Paper Co. International Trucking School JRS Rettenmaier	Polymer Solutions Portage Aluminum Foundry Premium Products Purity Cylinder Gases/Airway Oxygen	Weber Specialties Co. Whirlpool Wright Coating
SMIC/MTEC & Other Life Science			
ADMETRx AureoGen Biosciences Bridge Organics CeeTox Cytac Emiliem Global Clinical Connections High Throughput Screening Center	InformMed Innovative Analytics Jasper Clinic Kallexsyn Komodo Pharmaceuticals Maestro eLearning Metabolic Solutions Development Co. Micromyx	Monteris Medical NanoMed Pharmaceuticals NanoVir NephRx NephRx Corp OtoMedicine, Inc. PharmOptima	ProNAi Proteos Single Source Procurement Supply Chain Diversity Tolera Therapeutics, Inc. Venomix ZuSyn

To gain a sense of the employment numbers offered by the SMF staff, Table 2 lists the ten companies with the largest estimated employment associated with the assistance they received. The estimates range from 346 to 3,305 employees. All these companies are in the first category of major firms, manufacturers and headquarters.

Table 2: Top Ten Companies with the Largest Employment Estimates

Company Name	Employment Estimate	Company Name	Employment Estimate
MPI Research	3,305	Accretive Health	500
Stryker Corp.	1273	American Greetings	450
Target	725	Parker-Hannifin Corp	415
Eaton Corp.	600	Flowserve Corp.	405
Dana Corporation	585	Kaiser Aluminum	346

Aggregating the employment estimates for the 105 companies yields the following employment estimates for the three groups of firms from 2000 through 2012 (Table 3).

Table 3: Employment Estimates Associated with Receiving SMF Assistance

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Retained	1508	1721	1761	2124	3388	3584	4135	4533	4555	4555	4555	4555	4555
Expansion and Attraction	812	1182	1440	1615	1790	2420	2516	2746	2975	3763	5269	6529	7529
Startups and Life Science	0	5	5	182	200	224	507	759	795	795	795	795	795

From the table, it can be seen that expansion and attraction efforts are estimated to yield the highest employment effect, reaching 7,529 by 2012. Retention efforts reap the second highest estimated employment levels, followed by startups and life science firms. It should be noted that the increase in employment over time is the result of assistance taking place over time and after 2008 from expected employment increases taking effect in specific years, according to a company's expansion plan. As previously mentioned, there is no instance in which the employment estimates decline over time.

Economic Effects Associated with Southwest Michigan First Assistance

The following Table 4 summarizes the economic impact of expansions, retentions, and start-ups of the 105 companies that received substantial assistance from SMF.

In the year 2012, the 105 companies are projected to generate 25,700 jobs in the Kalamazoo-Portage MSA, of which 12,879 are direct employees of the firms receiving assistance and 12,821 are employees of other businesses in the community that are supported by the "spin-off" effect of

supplier linkages and local purchasing.⁷ Approximately 50 percent of the direct jobs will be in manufacturing. The overall employment impact is driven by an employment multiplier of 2.0, which indicates that for each new direct job created another indirect job is supported elsewhere in the community.

The bulk of the employment impact expected in 2012 is associated with the retention and attraction of large manufacturing, research, and headquarter facilities with which SMF has played some role. The total employment impact of retained companies is 11,300 jobs. Nearly all of these assisted firms are in manufacturing (97.3%), and each job retained is forecasted to support another 1.5 jobs in the area in 2012 (yielding a multiplier of 2.5). As a rule, manufacturing activities generate larger employment multipliers because they establish stronger regional supplier chains and pay slightly higher wages.

Table 4: Economic Impact in 2012 of Companies Assisted by Southwest Michigan First

	Retention	Expansion and relocation	Start-ups and life sciences	Total
Direct employment	4,555	7529	795	12,879
Manufacturing	4,433	2085	0	6,518
Percent	97.3%	27.7%	0.0%	50.6%
Total GRP (mill. chained 2000\$)	1,171	1013	94	2,278
Percent of total	9.6%	8.3%	0.8%	18.6%
Wage and salaries (Mill. Nom. \$)	743	830	71	1,644
Percent of total	9.1%	10.2%	0.9%	20.1%
Total employment impact	11,300	13100	1300	25,700
Percent of total	6.1%	7.1%	0.7%	13.9%
Multiplier	2.5	1.7	1.6	2.0

Companies that SMF has assisted in moving to and expanding in the area are expected to employ 7,529 employees in 2012. The total area-wide employment impact associated with these firms in 2012 is projected to be 13,100 jobs. It is interesting to note that many of these companies are not manufacturers. Manufacturing accounts for only 27.7 percent of the direct employment impact of these firms.

Companies associated with the SMIC and the MTEC facilities tend to be small start-up companies engaged in research activities, which limits their initial economic impact. Still, these firms are projected to generate a total of 1,300 jobs and \$71 million in wages and salaries by 2012. Most of the 795 direct jobs are expected to be in high-paid scientific research positions. Additionally, 505 jobs are expected to be generated at other firms in the metropolitan area, an estimate which is derived from an employment multiplier of 1.6.

In addition, we estimate that the resulting 25,700 jobs from all three categories will generate \$1,644 million⁸ in wages and salaries and \$2.3 billion in real Gross Regional Product (GRP in 2000 dollars) in the Kalamazoo-Portage MSA in 2012. Finally, the impact of these assisted

⁷ Some of the companies included in the indirect calculations may also receive assistance from SMF, which could lead to an overestimate of the effect of SMF's assistance.

⁸ In nominal 2012 dollars.

companies is shown as a percentage of the forecasted 2012 level of activity. They are expected to account for a 13.9 percent increase in employment, a 20 percent increase in nominal wages and salaries, and an 18.6 percent bump in real GRP. It should be noted that these increases in the three measures of economic activity are gross not net measures, which means that they do not take into account any decline in employment.

Impact Over Time

Another way of looking at the impact of the companies that have received substantial assistance from SMF is to examine how they may impact the region’s economy over time.

In Table 5 below, we present the baseline forecast for the Kalamazoo-Portage MSA from 2008 to 2012. The forecast takes into consideration the state’s struggling auto industry and assumes that the national economy will grow at a sustainable 2.8 percent annual rate during the period. The forecast calls for the area’s employment to grow at a modest average annual rate 0.2 percent, which is lower than the 0.5 percent annual rate achieved in the 2001-07 period. Nominal wages and salaries will increase at a 3.8 percent annual rate and real Gross Regional Product is expected to grow at a 1.1 percent rate. In short, the area is expected to grow at a rate below that of the nation but greater than the state as a whole.

Table 5: Alternative Growth Scenarios for the Kalamazoo-Portage MSA			
	Average Annual Rate		
Baseline Growth	2001-2007		2008-2012
Employment	0.5%		0.2%
Wages and Salaries (mill nom \$)	4.9%		3.8%
Total GRP (mill 2000 \$)	3.1%		1.1%
	Average Annual Rate		
Without retained jobs	2001-2007		2008-2012
Employment	0.2%		
Wages and Salaries (mill nom \$)	3.9%		
Total GRP (mill 2000 \$)	2.2%		
	Average Annual Rate		
Without retained jobs, expansions, relocations and startups	2001-2007		2008-2012
Employment	0.0%		
Wages and Salaries (mill nom \$)	3.1%		
Total GRP (mill 2000 \$)	1.6%		
	Average Annual Rate		
Without retained jobs, expansions, relocations and startups	2001-2007		2008-2012
Employment			0.6%
Wages and Salaries (mill nom \$)			4.6%
Total GRP (mill 2000 \$)			1.8%

If existing firms assisted by SMF did not retain their workers, the area’s employment would have grown more slowly--0.2 percent annualized rate from 2001 to 2007. The area’s growth in wages and salaries and GRP would also have been slower during the period.

If during the period 2001 to 2007, all the firms that received substantial assistance from SMF did not retain their workers or were not attracted into the area, the area's economy would have remained flat with no employment growth. GRP and wages and salaries would have continued to grow but primarily due to productivity improvements.

Finally, if the companies assisted by SMF achieve their expansion plans during the next five years, employment in the Kalamazoo-Portage MSA is expected to increase at an annualized rate of 0.6 percent. Nominal wages and salaries would grow at a 4.6 percent annualized rate, and the area's Gross Regional Product would increase by 1.8 percent annually throughout the period.

Illustrating the Appropriate Methodology for Estimating the Effectiveness of Southwest Michigan First

As outlined in the Conceptual Framework section, the effectiveness of SMF can be approximated by adjusting the employment estimates (and subsequently the wage and salary estimates) for factors relating to the dynamics and other characteristics of the region's economy. In this section, we take the estimates from the previous section, adjust them using the factors presented as approximations in the previous section, compute the cost of providing assistance to firms, and then calculate the net present value of the stream of "benefits," as measured by wages and salaries, and "costs," as measured by operating expenses of SMF and the use of financial incentives where appropriate. The importance of this section is to show that estimating the effectiveness of an economic development organization to a regional economy requires more information and a better understanding of regional economic dynamics than simply adding up the jobs estimated to be gained from economic development assistance.

As shown on Table 6, total wages and salaries generated in the Kalamazoo-Portage MSA due to the businesses assisted by SMF are forecasted to cumulate to \$10.7 billion by 2012. To estimate a measure of SMF effectiveness, we took the following steps:

- Converted the wages and salaries estimate into constant dollars;
- Accounted for the expected 20 percent reduction in the number of created and retained jobs due to higher wages being generated because of the increase in demand for workers;
- Accounted for the fact that an estimated 60 percent of the new jobs will be taken by non-residents;
- Calculated the net present value (NPV) of the net benefits of SMF efforts using a 3 percent discount rate.

The bottom line is that SMF efforts have a net present value of \$2.4 billion from 2001 to 2012 and a resulting benefit-cost ratio of 78, which suggests that every dollar spent by SMF, on average, generates \$78 in new wages and salaries for area residents.

Table 6: Estimation of Southwest Michigan First Effectiveness	
	2001-2012
Total wages & salaries (millions)	\$10,786
Constant 2001 dollars	\$9,045
Estimated Impact of higher wages	\$7,236
Estimated impact to residents	\$2,894
Cumulative Cost of SWMF (2001 \$)	\$37
Benefit-Cost	\$2,858
Net Present Value (Discounted 3%)	\$2,371
ROI (average annual rate)	146%

This estimate should be considered an upper bound of the benefit-cost ratio. It does not address the high level of uncertainty that surrounds the use of tax abatements and economic development incentives to promote business growth. As mentioned above, empirical studies suggest that only 3 to 4 percent of the value of the tax abatement affects a firm's location decision. In this analysis we chose to ignore these estimates because we did not have information on the financial structure of the SMF assistance efforts, that is what portion involved property tax abatements, MEGA grants and/or training grants. Instead, we accepted the assumption that SMF actions were entirely necessary for each of the 105 business expansions/retention projects included in this report to actually take place.

The estimate also assumes that the jobs created or retained remain in place year after year without any additional effort from SMF. The only decline in value in the benefits (as measured by wages and salaries) over time is due to the discount rate, which is assumed to be 3 percent. It could be assumed instead that jobs are related to the depreciation of plant and equipment, suggesting that new investments are required after so many years to sustain the jobs. This would reduce the stream of accumulated benefits. It was also assumed that new start-ups did not follow the usual survivorship rates that are typically found for firms in Michigan. Our estimates find that after five years only half the firms are still in business. In periods of an overall sluggish economy, as we are currently experiencing, half the firms fail by the second year.

Conclusions

From 2000 to today, Southwest Michigan First has significantly assisted 105 businesses, ranging from large manufacturers to one-person, high-tech start-ups. And, of course, this does not include the hundreds of additional firms the SMF staff works with and visits every year. These 105 firms, which were identified as having received substantial assistance by SMF, have the potential of generating a total of 25,700 jobs in the Kalamazoo-Portage MSA in 2012 and generating \$1.6 billion in additional wages and salaries

Based on the assumption that SMF's involvement with these 105 projects was absolutely necessary for their success, we estimate that every dollar spent on SMF activities has the potential of generating \$78 in wages and salaries for area residents. This estimate should be considered an upper bound, since recent research clearly shows that there remains uncertainty regarding the effectiveness of standard economic development incentives such as tax abatement and assumptions regarding the persistence of jobs over time may be generous.

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