

ECONOMIC IMPACT OF SMALL BUSINESS DEVELOPMENT CENTER

LONG-TERM CONSULTING ACTIVITIES IN PENNSYLVANIA:

2013-2014

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EXECUTIVE SUMMARY

This report analyzes the sales and employment changes of a sample of established businesses and pre-ventures (persons aspiring to start a business) that received five or more hours of consulting assistance (long-term clients) from the Pennsylvania Small Business Development Center (SBDC) in 2013.

There were 399 responses to a questionnaire, a 9.5% response rate. The clients surveyed represent the entire population of long-term clients of the Pennsylvania SBDC in 2013. The changes in sales, outsourcing, and employment for the sample in 2014 (the year after receiving assistance) were compared to the average rates of change for all businesses in Pennsylvania. The incremental improvement in the sample's performance, above the performance of the average Pennsylvania business, was extrapolated across the entire long-term client population to estimate the tax revenues generated through SBDC consulting. To be conservative, only clients who indicated that the SBDC's services were beneficial were used. The tax revenues generated by long-term clients were compared to the total cost of the Pennsylvania SBDC. Established business clients were also asked to estimate jobs saved due to the consulting services provided by the SBDC.

To gain additional insights into the value of the services offered by the Pennsylvania SBDC, we also conducted breakeven and start-up analyses as well as variety of additional investigations about the clients and their businesses.

The Pennsylvania SBDC assisted 4,185 long-term clients during 2013. Of these, 2,471 were established businesses and 1,714 were pre-ventures. Approximately 93% of the respondents said that the services received were beneficial. In aggregate, the estimates suggest that the long-term clients of the Pennsylvania SBDC generated \$185.8 million in incremental sales and increased their outsourcing to suppliers by a total of \$30.1 million. We also

estimate that these firms generated 4,657 new jobs because of SBDC consulting assistance (see Table 1) and that 5,387 jobs were saved due to the consulting.

The incremental performance of established business clients yielded \$17.69 million in tax revenues; another \$8.56 million in tax revenues were gained from pre-venture clients who started new businesses. The total amounted to \$26.25 million in tax revenues, of which approximately \$13.54 million went to the state and \$12.71 million went to the federal government.

Compared to the total cost of operating the SBDC (\$8.07 million), the consulting provided to both established business and pre-venture clients generated \$3.25 in tax revenues in one year for every \$1 spent on the entire program. The average cost of each new job generated was \$1,732.

Furthermore, an estimated \$316.3 million in financing was obtained by clients as a result of the consulting received. This figure suggests that every dollar expended on the SBDC operation was leveraged by approximately \$39.21 in new capital raised from external sources.

Finally, our analyses indicated that 46.6% of established business clients were above the breakeven point in 2014 and 24.9% were at breakeven. The corresponding numbers for pre-venture starts, in their first full year of operation, was 20.8% above breakeven and 22.6% at breakeven. The start-up analysis indicated that 66.7% of pre-venture clients stated they had started a business. Of these, 61.5% had at least one part-time employee and 52% registered sales in 2014.

TABLE 1
ESTIMATED IMPACT OF SBDC CONSULTING

	Established Firms (N = 2471)	Pre-Ventures (N = 1714)	All Firms (N = 4185)
Aggregate sales impact	\$136,423,000	\$49,381,000	\$185,804,000
Aggregate outsourcing impact	\$22,895,000	\$7,233,000	\$30,128,000
Aggregate employment impact	2964 new jobs	1693 new jobs	4657 new jobs
Existing jobs saved	5387 jobs saved		
<hr/>			
State tax revenues generated	\$ 9,603,123	\$3,937,954	\$13,541,077
Federal tax revenues generated	<u>\$ 8,087,043</u>	<u>\$4,619,682</u>	<u>\$12,706,725</u>
Total tax revenues generated	\$17,690,166	\$8,557,636	\$26,247,802
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Cost of entire SBDC operation			\$8,066,935
Benefit to cost ratio	2.19/1.00	1.06/1.00	3.25/1.00
<hr/>			
Cost per job			\$1,732
<hr/>			
Cost of all consulting			\$5,646,855
Benefit to cost ratio	3.13/1.00	1.52/1.00	4.65/1.00
<hr/>			
Cost of long-term consulting	\$3,794,687	\$1,552,885	\$5,347,572
Benefit to cost ratio	4.66/1.00	5.51/1.00	4.91/1.00
<hr/>			
SBA financing	\$ 83,228,100	\$ 24,167,400	\$107,395,500
Debt financing	\$116,246,100	\$ 49,363,200	\$165,609,300
Equity financing	<u>\$ 16,674,700</u>	<u>\$ 26,652,700</u>	<u>\$ 43,327,400</u>
Total financing	\$216,148,900	\$100,183,300	\$316,332,200
Financing Leverage	26.79/1.00	12.42/1.00	39.21/1.00

INTRODUCTION

This report describes the results of a study designed to assess the economic impact of the long-term consulting activities of the Pennsylvania Small Business Development Center (SBDC) program in 2013. Long-term clients are those who received at least five hours of assistance from the SBDC. The economic impact of consulting activities was analyzed by comparing clients' sales, outsourcing, and employment changes between 2013 and 2014 with the average changes for all Pennsylvania businesses during this time period. The growth in excess of statewide averages was used to calculate the incremental federal and state tax revenues generated the year after consulting assistance was provided. The tax revenues generated by SBDC-assisted clients were then compared to the cost of the service to determine if it was cost effective.

To supplement the analysis, clients were also asked to estimate the jobs saved as a consequence of the consulting received. In addition, clients were asked to indicate the amount of debt and equity financing they were able to obtain as a result of the consulting received from the SBDC. Finally, we also conducted breakeven and start-up analyses as well as variety of additional investigations about the clients and their businesses. The methodology and results of the study are discussed below.

THE STUDY

In 2013 the Pennsylvania SBDC provided long-term consulting assistance to 4,185 clients, of whom 2,471 owned established small businesses and 1,714 were seeking to start new businesses (pre-ventures). The entire population of long-term clients was sent a questionnaire. A total of 399 clients returned questionnaires (9.5%).¹ However, since 410 questionnaires were undeliverable, the effective sample size was 10.6%.

¹ Not all of the respondents provided usable responses to every question; therefore, the effective sample sizes for the analyses may vary.

SAMPLE SIZE

To determine if the number of responses received were statistically reliable, the following formula was used:

$$Z = [nNE^2/(Ns^2 - ns^2)]^{1/2}$$

where: n = actual sample size (399).
N = size of population (4185).
s = standard deviation of the population (standardized value = 1).
Z = confidence interval for the mean.
E = amount of error in the mean to be tolerated (10% of s).

With a sample size of 399 and a tolerated error of 0.1 of a standard deviation, we were 96% confident that our sample means were no more than one-tenth of one standard deviation from the population means.

SAMPLE VALIDATION

Statistical tests were conducted to ensure that there was a minimum likelihood of response bias and that the responses to the questionnaire were reliable. The following procedures were used.

Response Bias. Mailings by email and post of the questionnaire were conducted. ANOVA was used to compare early and late responding pre-venture or established business clients along the following dimensions: number of employees, sales revenues, financing obtained, and the evaluation of the benefits of the SBDC's services. There was no difference between early and late respondents for either established business or pre-venture clients. Since late responders could be expected to be more similar to non-respondents than early responders are, there is no evidence of an upward bias on the performance data.

Reliability. The reliability of the questionnaire was assessed by a correlation analysis comparing clients' perceptions of whether the SBDC's services were beneficial and their evaluations of (1) the quality of their consultants, and (2) their willingness to recommend the SBDC to others. The results of the correlation analyses were statistically significant at the 1% level for both pre-ventures and established business clients.

DATA ANALYSIS METHODS: ESTABLISHED BUSINESSES

The changes in sales and employment for the period before and after counseling was received were calculated for businesses receiving at least five hours of assistance. For employment both regular employees and independent contractors were considered. One full-time independent contractor was considered equivalent to one full-time employee. Two part-time employees or independent contractors were considered equivalent to one full-time employee.

The rate of growth in sales (including growth in firm revenues and outsourcing) and employment for established clients was compared with the average growth of all businesses in Pennsylvania. The difference between the growth rate of clients' businesses and that of businesses in the state was used to estimate the incremental or marginal changes in the sales and employment of the sample.² To be conservative, we chose not to impute impact to clients who did not believe they received value from the SBDC. Thus, only those who indicated that its services were beneficial were used to calculate incremental growth rates.

The incremental growth rates were multiplied by the average sales revenue, outsourcing expenditures, and employment of the respondents for the year consulting was received. The incremental changes in sales and outsourcing were then multiplied by the state sales tax rate. The state sales tax rate was reduced by 25% to reflect the fact that some businesses do not directly pay sales taxes. This adjustment was arbitrary and may still overestimate taxes paid on sales. However, it compensates for the fact that businesses are taxed in ways not measured in this study (e.g., corporate income tax rates, property taxes, etc.).

The incremental change in employment was multiplied by the median state and federal income taxes paid per return for the state of Pennsylvania.

² Estimates of comparative sales growth were made based on Bureau of Economic Analysis data. Comparative data on employment were obtained from the Bureau of Labor Statistics.

Federal income tax data were obtained from Table 2 of the *SOI Bulletin* published by the IRS (2015). Tax data for 2012, the most recent figure available, was used. Income taxes paid per return for persons of median incomes were used rather than average income taxes for all returns. This was done to better reflect the types of employment opportunities offered by responding small business owners. This again represents a conservative adjustment to the data.

The median state income taxes paid per return for 2012, the most recent year available, was estimated from data available from the Pennsylvania Department of Revenue.

The average incremental improvement in sales, outsourcing, and employment, were multiplied by the corresponding tax rates to arrive at the state value added figures. Median federal personal income tax paid per return was also multiplied by the average incremental improvement in employment. All these numbers were then multiplied by the total number of established business clients, adjusted for the proportion of the respondents who indicated the SBDC's services were beneficial. The formula for the calculations can be expressed as follows:

$$\begin{array}{cccccc} \text{Average} & & \text{X Tax Rate} & \text{X Proportion of Clients} & \text{X Total Number} & = \text{Total Tax} \\ \text{Incremental} & & & \text{Satisfied w/Service} & \text{of Clients} & \text{Revenues} \\ \text{Growth} & & & & & \end{array}$$

Job Retention. Established business clients were asked to estimate the number of full- and part-time jobs that were saved as a result of the assistance received from the SBDC. The average responses were then extrapolated to the population of established business clients.

DATA ANALYSIS METHODS: PRE-VENTURE CLIENTS

Similar procedures were used for long-term pre-venture clients, with the following exceptions. First, since pre-ventures start with no sales or employees, it is impossible to calculate a rate of growth. Thus, raw averages were used to assess economic impact. Second, the averages were adjusted to

account for the total number of pre-venture clients who failed or did not start a business.³ This adjustment was made as follows:

$$\text{Average Performance} = \text{AS} \times (\text{NS}/\text{NP})$$

where: AS = average performance (sales and employment) of successful pre-ventures
NS = number of successful pre-ventures
NP = number of pre-ventures (successful + unsuccessful)

Once this adjustment was made, the sales, outsourcing, and employment growth of pre-venture respondents was multiplied by the corresponding tax rates, the proportion of pre-ventures who judged the SBDC's services to be beneficial, and the total estimated number of pre-venture clients. This formula is shown below.

$$\text{Average Performance} \times \text{Tax Rate} \times \text{Proportion of Clients Satisfied w/Service} \times \text{Total Clients Revenues} = \text{Total Tax}$$

Start-up Analysis. Finally, an analysis of the start rate among pre-ventures was made using clients' assessments, employment and sales as indicators.

BENEFIT TO COST OF SBDC SERVICES

The benefit of the services provided by the SBDC was divided by the total cost of providing the services to arrive at a benefit-to-cost ratio. The SBDC's total operating budget was used for this calculation. This was a conservative approach since only part of the SBDC's' budget was spent on consulting assistance. Thus, to obtain further insights we also compared the tax revenues generated by clients with the cost of consulting activities both in total and for long-term established and pre-venture clients separately. The cost of long-term consulting was estimated based on the proportion of the total consulting hours devoted to those clients, per data supplied by the SBDC.

³ In addition, because pre-ventures did not have employees prior to their start-up we did not include questions on job retention for those clients.

OTHER ANALYSES

Quality of Consulting Services. Clients were asked whether the services provided by the SBDC were beneficial. This question was used to determine whether clients' performance improvements were affected by SBDC consulting. As noted above, the performance improvements of responding clients were adjusted to account for the proportion that believed the SBDC's services were beneficial when extrapolating the results to the full population of clients.

Clients were also asked to assess the knowledge and expertise of consultants assigned to their cases as well as their working relationship with the consultants. Clients evaluated their consultant's knowledge/expertise and working relationship on a five-point scale: (1) poor, (2) below average, (3) average, (4) above average, and (5) excellent. These questions provide further evidence of the quality of the consulting services. In the main, however, these questions were used to assess the reliability of the question concerning whether the SBDC's services were beneficial.

Financing. Established business and pre-venture clients were also asked to estimate the amounts of SBA guaranteed loans, other loans, and equity financing obtained directly as a consequence of SBDC consulting activities. To remain conservative, only those clients who indicated that the SBDC assisted them prepare to obtain financing were used for this analysis. Extrapolation to the entire client population was made after adjusting for the proportion of clients who indicated the SBDC assisted them raise capital.

Breakeven Analysis. Clients were asked if their business was below, at, or above the breakeven point.

Employee Benefits. Clients were asked if they offered (1) no retirement or health care benefits, (2) partial or limited benefits, or (3) full benefits to their employees.

Income and Lifestyle. Finally, we attempted to determine the extent to which clients were satisfied with their income and lifestyle as business

owners. With regard to the former, we asked whether the income they earned from their business was (1) much lower, (2) lower, (3) about what was expected, (4) higher, or (5) much higher than their expectations. With regard to the latter, clients were asked if they were (1) very dissatisfied, (2) dissatisfied, (3) neither satisfied or dissatisfied, (4) satisfied, or (5) very satisfied with their lifestyle as a business owner.

RESULTS

The results of the analysis of the consulting services provided by the Pennsylvania SBDC to established business and pre-venture clients are presented below.

ESTABLISHED BUSINESSES

Quality of Consulting. Of those who provided usable responses to the service evaluation question, 93% indicated that the SBDC's services were beneficial. Furthermore, clients gave a rating of 4.61 out of a possible 5.00 on the knowledge and expertise of their consultants and a rating of 4.58 on their working relationship with the consultants (scores of 3 indicated an average rating, scores of 4 indicated an above average rating, and scores of 5 indicated an excellent rating). Finally, 97% of the responding established business clients indicated that they would recommend the SBDC's services to others.

Breakeven Analysis. Responses indicated that 46.6% of established clients had operated above their breakeven points over the last three years and 24.9% were at breakeven levels. By contrast, 26.5% were below breakeven.

Employee Benefits. Of responding clients 8.6% indicated that they provided clients with a full retirement program, 13.8% said they provided a limited retirement program and 77.6% did not provide a retirement program.

Furthermore, 19.9% indicated that they provided employees with full health care coverage, 9.6% provided partial coverage and 70.5% provided no coverage.

Income and Lifestyle. On a 5-point scale, the average satisfaction of clients with their incomes was 2.50 with only 8.8% indicating their incomes was higher or much higher than expectations (45.9% noted that their incomes met expectations).

However, the average lifestyle rating was 3.49. Thus, 53.9% of the clients were satisfied or very satisfied with their lifestyle as a business owner; an additional 31.5% were neither satisfied nor dissatisfied.

Economic Impact Estimates. Table 2 compares the 2013 and 2014 sales and employment levels of established small business clients. Table 3 compares the SBDC clients' growth in sales and employment between 2013 and 2014 with the growth experienced by the average business in Pennsylvania. As shown, SBDC clients had an average increase in sales of \$90,821. In percentage terms this increase was larger than the change experienced by the average Pennsylvania business (11.2% versus 3.9%). Furthermore, established business clients increased their outsourcing to suppliers by an average of \$11,464, which was a 29.5% change from 2013 to 2014. Finally, there was an increase in the number of individuals employed by clients in 2014 compared to 2013 (10.09 versus 8.73). Employment levels of established clients increased by 15.6% in comparison to a 0.8% increase in employment levels for Pennsylvania businesses.

The overall impact estimate for established business clients suggests that the SBDC's services led to an incremental tax contribution of approximately \$17.7 million. This broke down as a contribution of approximately \$9.6 million to the state government and \$8.1 million to the federal government (See Table 4).

As shown in Table 5, these tax revenues were 2.19 times greater than the SBDC's total operating budget,⁴ 3.13 times greater than its consulting budget, and 4.66 times greater than the amount spent on long-term established clients.

⁴The overall benefit to cost ratio for established businesses, excluding tax revenues from outsourcing, was 2.07 to 1.00.

Job Retention. To supplement the impact estimates we also asked established clients if the SBDC helped them save jobs. On average, clients estimated that the SBDC program was responsible for saving 2.18 full-time equivalent jobs. In total, this amounted to 5,387 jobs saved.⁵

Financing Obtained. According to the respondents and SBDC data, 39% of established business clients were assisted in preparing to seek financing. Those clients obtained an average of \$224,293 in capital, of which \$86,364 came from SBA loans, \$120,626 came from other forms of debt financing, and \$17,303 came from equity financing. Extrapolations indicate that \$83.2 million in SBA loans, \$116.2 million in other debt financing, and \$16.7 million in equity financing (\$216.1 million in total) was raised by clients with the help of the SBDC. This suggests that the total expenditure of tax dollars on the SBDC were leveraged by public and private financing at a ratio of 26.79 to 1.00 for long-term established business clients alone.

Our estimates also suggest that 88 established business clients received SBA loans as a consequence of SBDC long-term consulting. Furthermore, 613 clients received other loans, and 292 received equity financing.

PRE-VENTURE CLIENTS

Perceptions of the Quality of Consulting. Of the pre-venture clients who provided an evaluation of the SBDC's services, 95% felt the consulting was beneficial. In addition, clients gave a rating of 4.51 out of a possible 5.00 on their consultants' knowledge and expertise, and a rating of 4.42 on their working relationship with the consultants (scores of 3 indicated an average rating, scores of 4 indicated an above average rating, and scores of 5 indicated an excellent rating). Moreover, 95% of the responding pre-venture clients indicated that they would recommend the SBDC's services to other entrepreneurs.

⁵ It should be noted that jobs saved were not figured into the benefit to cost estimates.

Breakeven Analysis. Responses indicated that 20.8% of pre-venture clients had exceeded their breakeven points in their first full year of operations; 22.6% achieved breakeven in the first year. By contrast, 56.6% of the clients were still below breakeven.

Employee Benefits. Of responding clients 3.2% indicated that they provided clients with a full retirement program, 3.2% said they provided a limited retirement program, and 93.7% did not provide a retirement program.

Furthermore, 4.8% indicated that they provided employees with full health care coverage, 1.6% provided partial coverage and 93.7% provided no coverage.

Income and Lifestyle. On a 5-point scale, the average satisfaction of clients with their incomes was 2.37 with only 1.9% indicating their incomes were higher or much than expectations (61.1% noted incomes met expectations).

However, the average lifestyle rating was 3.70. Thus, 55.5% of the clients were satisfied or very satisfied with their lifestyle as a business owner; an additional 40.0% were neither satisfied nor dissatisfied.

Economic Impact Estimates. After adjusting for unsuccessful clients, we calculated that an average of \$30,327 in new sales, \$4,442 in outsourcing revenues, and 1.04 new jobs were created per pre-venture client. As Table 6 shows, these new ventures generated tax payments of \$8.56 million (\$3.94 million to the state and \$4.62 million to the federal government).

When compared to the cost of the entire SBDC operation, the tax revenues from pre-venture clients generated \$1.06 for every dollar expended.⁶ Furthermore, the incremental tax revenues generated were 52% greater than the cost of the SBDC's consulting activities. Finally, the tax revenues from pre-venture clients were 5.51 times greater than the amount expended on pre-venture who received long-term consulting (see Table 7).⁷

⁶ The overall benefit to cost ratio for pre-ventures, excluding increased tax revenues from outsourcing, was 1.02 to 1.00.

⁷ Pre-ventures had no sales or employees at the time the consulting was received.

Financing Obtained. According to the responses and SBDC records, 40% of all pre-venture clients received assistance from the SBDC in preparing to obtain financing. The average raised was \$35,250 in SBA loans, \$72,000 in other sources of debt financing, and \$38,875 in equity financing for a total of \$146,125. Extrapolating to the population suggests that clients raised a total of \$24.17 million in financing from SBA loans, \$49.36 million from other sources of debt, and \$26.65 million in financing from equity investors. The grand total of approximately \$100.18 million suggests that each tax dollar expended on the SBDC was leveraged by \$12.42 in public and private financing for new ventures.

Our estimates also suggest that as a consequence of SBDC long-term consulting, 86 pre-venture clients received SBA loans, 514 received other loans, and 257 received equity financing.

Start-up Analysis. To determine the proportion of pre-venture clients who started businesses, three measures of start-up were used: (1) clients' indications of when their business started, (2) whether the clients had hired employees for the venture within one year after receiving assistance, and (3) whether the clients' ventures had generated sales within one year after receiving assistance. The results of the analysis are shown in Table 8.

Clients were asked when their business was started. We counted as non-starts those clients who indicated they had not started a business and those who failed to provide data indicating that a business was started. Using this procedure, it was determined that 66.7% of the Pennsylvania SBDC's pre-venture clients started a business, most within one year after receiving assistance.

When measuring business starts according to whether employees were hired, it was determined that 41% of all clients had started a business with at least one part-time employee within one year of receiving assistance. This means that 61.5% of all clients who indicated they started a business created new jobs within one year of receiving assistance.

We also measured the number of businesses started according to whether sales had been recorded within one year of receiving assistance. Our analysis indicates that 34.2% of the businesses of all pre-venture clients who responded to this question generated sales in 2014. Furthermore, 52% of all clients who provided the necessary data and who claimed to have started a business made sales within one year of receiving SBDC assistance.

Thus, the proportion of business starts ranged from 34.2% to 66.7% depending on the definition of start-up used. Obviously, the definitions of start-ups that rely on sales generation or job creation are more conservative. It should also be noted that the SBDC impact study relied upon sales and employment data for 2014 and therefore does not count sales generated or jobs created after that.

SUMMARY AND CONCLUSIONS

Results of this study suggest that the Pennsylvania SBDC makes an important contribution to the economic development of the State of Pennsylvania. Our analysis indicated that on an incremental basis, SBDC clients gained \$185.8 million in sales, \$30.1 million in revenues through outsourcing, and 4,657 new jobs. The latter number suggests that the cost of generating a new job through investment in the Pennsylvania SBDC was \$1,732. Furthermore, 5,387 jobs were saved because of the SBDC's interventions.

Estimates suggest that the one-year tax benefits accruing as a consequence of the performance improvements of SBDC-assisted clients generated a return of \$3.25 for every dollar spent on the entire SBDC operation in Pennsylvania.⁸ Furthermore, when compared to the cost of long-term consulting alone, our estimates indicate that \$4.91 was returned for each dollar expended.

Finally, we estimate that \$316.3 million in capital was raised by clients as a direct result of the assistance of the SBDC. This suggests that each

⁸ The overall benefit to cost ratio excluding increased tax revenues from outsourcing was 3.09 to 1.00 and the long-term benefit to cost ratio was 4.65 to 1.00.

dollar expended on the Pennsylvania SBDC program was later leveraged by approximately \$39.21 in debt and equity capital.

From all these analyses, we conclude that the Pennsylvania SBDC is both effective and efficient in the discharge of its charter. However, the numbers presented in this report are only estimates based on responses to a questionnaire. It is possible that the respondents were not representative of the population of clients, that factors such as social desirability bias may have inflated the estimates, or that SBDC clients tend to exceed the sales and employment growth rates of "average" businesses in the state for reasons unrelated to the consulting provided. It is also possible that some of the gains of the clients were not net gains to the economy.

While impact methodologies are always susceptible to such problems the tests conducted for bias and reliability suggest that the results are accurate enough to conclude that the SBDC program in Pennsylvania makes a positive contribution to the economy. Furthermore, the results must be viewed in light of the fact that they are net of all the conservative downward adjustments in performance described earlier in this report. Thus, the estimates reported herein do not consider the impact of other SBDC services, the continuing tax revenues generated by long-term clients after the year of analysis, the many failures avoided through SBDC assistance, the unviable business ideas it discouraged, nor the jobs and revenues saved. Other tax revenue sources such as corporate taxes, property taxes, unemployment taxes, social security payments, and so on are also not included in the analysis.

From a public policy standpoint, the implication of this research is that the SBDC makes a contribution to the economies of Pennsylvania and U.S. By assisting established small businesses improve their operations the Pennsylvania SBDC contributes to the more efficient allocation and utilization of resources. Furthermore, these small firms provide employment opportunities for the citizens of Pennsylvania. The SBDC also plays an important role in

fostering entrepreneurship through the assistance it provides to pre-venture clients. Those clients generate a large number of new jobs and add to the economic development of Pennsylvania and the United States. Since the SBDC provides assistance to small business owners and entrepreneurs who cannot afford a private consultant, the evidence that its assistance returns tax revenues to state and federal governments, and value to its clients that are greater than the cost of its services makes the existence of the Pennsylvania SBDC program justifiable from a public policy perspective.

TABLE 2
 2013-2014 AVERAGE EMPLOYMENT OF ESTABLISHED CLIENTS
 WHO INDICATED THAT SBDC ASSISTANCE WAS VALUABLE

	2013	2014	Change
Sales	\$813,214	\$904,035	+\$90,821
Outsourcing	\$38,919	\$50,383	+\$11,484
Employment	8.73	10.09	+ 1.36

TABLE 3
 CHANGES IN EMPLOYMENT BETWEEN 2013-2014: SBDC ESTABLISHED
 BUSINESS CLIENTS VERSUS AVERAGE STATE BUSINESS

	Average % change in small business sample	Average % change all firms in state	Average incremental change in small business sample	
			percent	aggregate
Sales	+11.2%	+ 3.9%	+ 7.3%	+\$59,365
Outsourcing	+29.5%	+ 3.9%	+25.6%	+\$9,963
Employment	+15.6%	+ 0.8%	+14.8%	+1.29 jobs

TABLE 4
 INCREMENTAL TAX REVENUES ADDED TO STATE AND FEDERAL GOVERNMENTS
 AS A RESULT OF SBDC CONSULTING OF ESTABLISHED BUSINESS CLIENTS

STATE TAX REVENUES

	Tax	X	Tax	X	% Clients	X	# of Long	=	Total Tax
	Base		Rate		Valuing		Term Clients		Revenues
					Service				Generated
Sales	59,365		.045*		.93		2471		\$ 6,139,015
Outsourcing	9,963		.045*		.93		2471		\$ 1,030,287
Employment	1.29		\$821**		.93		2471		<u>\$ 2,433,821</u>
									\$ 9,603,123

FEDERAL TAX REVENUES

Employment	0.90		\$2728***		.93		2471		<u>\$ 8,087,043</u>
TOTAL INCREMENTAL STATE AND FEDERAL TAX REVENUES									\$17,690,166

* Figure represents 75% of state sales tax rate (6%) in 2014.

** Figure represents average state income tax paid per return by persons of median incomes in 2012.

*** Figure represents average federal income tax paid per return by persons of median incomes in Pennsylvania in 2012.

TABLE 5
THE COSTS AND BENEFITS OF SBDC CONSULTING: ESTABLISHED BUSINESSES

Total incremental State and Federal Tax Revenues Added by Established Business Clients	\$17,690,166
Cost of operating the SBDC	\$8,066,935
Benefit to cost ratio	2.19/1.00
Cost of all consulting *	\$5,646,855
Benefit to cost ratio	3.13/1.00
Cost of long-term consulting provided to established business clients **	\$3,794,687
Benefit to cost ratio	4.66/1.00

* Approximately 70% of the total SBDC budget was used for consulting long- and short-term clients.

** Established business clients who received long-term consulting accounted for approximately 67.2% of the total consulting budget.

TABLE 6
 INCREMENTAL TAX REVENUES ADDED TO STATE AND FEDERAL
 GOVERNMENTS AS A RESULT OF SBDC CONSULTING OF PRE-VENTURE CLIENTS

STATE TAX REVENUES

	Tax	X	Tax	X	% Clients	X	# of Long	=	Total Tax
	Base		Rate		Valuing		Term Clients		Revenues
					Service				Generated
Sales	30,327		.045*		.95		1714		\$2,222,165
Outsourcing	4,442		.045*		.95		1714		\$ 325,481
Employment	1.04		\$821**		.95		1714		<u>\$1,390,308</u>
									\$3,612,473

FEDERAL TAX REVENUES

Employment	1.04		\$2728***		.95		1714		<u>\$4,619,682</u>
TOTAL INCREMENTAL STATE AND FEDERAL TAX REVENUES									\$8,557,636

* Figure represents 75% of state sales tax rate (6%) in 2014.

** Figure represents average state income tax paid per return by persons of median incomes in 2012.

*** Figure represents average federal income tax paid per return by persons of median incomes in Pennsylvania in 2012.

TABLE 7
THE COSTS AND BENEFITS OF SBDC CONSULTING: PRE-VENTURES

Total incremental State and Federal Tax Revenues Added by Pre-Venture Clients	\$8,557,636
Cost of operating the SBDC	\$8,066,935
Benefit to cost ratio	1.06/1.00
Cost of all consulting *	\$5,646,855
Benefit to cost ratio	1.52/1.00
Cost of long-term consulting provided to pre-venture clients **	\$1,552,885
Benefit to cost ratio	5.51/1.00

* Approximately 70% of the total SBDC budget was used for consulting long- and short-term clients.

** Pre-venture clients who received long-term consulting accounted for approximately 27.5% of the total consulting budget.

TABLE 8
BREAKDOWN OF START-UPS AMONG SBDC'S PRE-VENTURE CLIENTS

Year in which clients indicated that they started a business.

	All Pre-Venture Clients		Pre-Venture Start-ups	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Did not start a business.	26	33.3%		
Started business in 2013.	10	12.8%		19.2%
Started business in 2014.	36	46.2%		69.2%
Started business in 2015.	6	7.7%		11.5%
Total that started a business	52	66.7%		
TOTAL RESPONSES	78	100.0%		
Missing	3			

Pre-venture clients with employees in 2014.

	All Pre-Venture Clients		Pre-Venture Start-ups	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Had no employees in 2014.	46	59.0%	20	38.5%
Had at least one part-time employee in 2014.	32	41.0%	32	61.5%
TOTAL	78	100.0%	52	100.0%
Missing	3		0	

Pre-venture clients with sales in 2014.

	All Pre-Venture Clients		Pre-Venture Start-ups	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Had no sales in 2014.	50	65.8%	24	48.0%
Had sales in 2014.	26	34.2%	26	52.0%
TOTAL	76	100.0%	50	100.0%
Missing data	5		2	