

ECONOMIC IMPACT OF SMALL BUSINESS DEVELOPMENT CENTER

COUNSELING ACTIVITIES IN MONTANA: 2012-2013

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EXECUTIVE SUMMARY

This report analyzes the sales and employment changes and financing obtained by a sample of established businesses and pre-ventures (persons aspiring to start a business) that received five or more hours of counseling assistance (long-term clients) from the Montana Small Business Development Center (SBDC) in 2012. The report also provides an estimate of the jobs saved and existing sales retained through SBDC counseling.

There were 63 responses to a questionnaire, a 15.6% response rate. The clients surveyed represent the entire population of long-term clients (received five hours or more of counseling) of the Montana SBDC in 2012. The sales and employment changes of the sample in 2013 (the year after receiving assistance) were compared to the average change in sales and employment of all businesses in Montana. The incremental improvement in the sample's performance, above the performance of the average Montana business, was extrapolated across the entire long-term client population to estimate the tax revenues generated through SBDC counseling. 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 Montana SBDC. Established business clients were also asked to estimate jobs and revenues saved due to the counseling services provided by the SBDC.

To gain additional insights into the value of the services offered by the Montana SBDC clients were asked to indicate the financing obtained as a direct result of SBDC assistance was analyzed.

The Montana SBDC counseled 403 long-term clients during 2012. Of these, 261 were established businesses and 142 were pre-ventures. Approximately 76% of the respondents said that the services received were beneficial. In

aggregate, the long-term clients of the Montana SBDC generated \$27.8 million in incremental sales and 661 new jobs because of SBDC counseling assistance (see Table 1). We estimate that an additional \$30.9 million in sales and 425 jobs were saved due to the counseling.

The incremental performance of established business clients yielded \$1.34 million in tax revenues. Furthermore, \$1.63 million in tax revenues were gained from pre-venture clients who started new businesses. The total amounted to approximately \$3 million tax revenues, of which \$1.25 million went to the state and \$1.72 million went to the federal government.

Compared to the total cost of operating the SBDC (\$1.3 million), the counseling provided to both established business and pre-venture clients generated \$2.29 in tax revenues in one year for every \$1 spent on the entire program. The average cost of each new job generated was \$1,966.

Furthermore, an estimated \$35.3 million in financing was obtained by clients as a result of the counseling received. This figure suggests that every dollar expended on the SBDC operation was leveraged by approximately \$27.19 in new capital raised from external sources.

TABLE 1
ESTIMATED IMPACT OF SBDC COUNSELING

	Established Firms (N = 261)	Pre-Ventures (N = 142)	All Firms (N = 403)
Aggregate sales impact	\$7,076,100	\$20,684,300	\$27,760,400
Aggregate employment impact	302 new jobs	359 new jobs	661 new jobs
Existing revenues maintained	\$30,893,800		
Existing jobs saved	425 jobs saved		
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State tax revenues generated	\$ 555,470	\$ 697,555	\$1,253,025
Federal tax revenues generated	\$ 788,364	\$ 936,038	\$1,724,402
Total tax revenues generated	\$1,343,834	\$1,633,593	\$2,977,427
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Cost of entire SBDC operation			\$1,299,773
Benefit to cost ratio	1.03/1.00	1.26/1.00	2.29/1.00
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Cost per job			\$1,966
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Cost of all counseling			\$651,186
Benefit to cost ratio	2.06/1.00	2.51/1.00	4.57/1.00
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Cost of long-term counseling	\$280,010	\$168,006	\$448,016
Benefit to cost ratio	4.80/1.00	9.72/1.00	6.65/1.00
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SBA financing clients obtained	\$12,919,500	\$1,780,900	\$14,700,400
Debt financing clients obtained	\$17,547,030	\$3,087,210	\$20,634,240
Equity clients obtained	\$ 0	\$ 0	\$ 0
Total financing	\$30,466,530	\$4,868,110	\$35,334,640
Financing Leverage	23.44/1.00	3.75/1.00	27.19/1.00

INTRODUCTION

This report describes the results of a study designed to assess the economic impact of the long-term counseling activities of the Montana Small Business Development Center (SBDC) program in 2012. Long-term clients are those who received a minimum of five hours of counseling assistance from the SBDC. The economic impact of counseling activities was analyzed by comparing clients' sales and employment changes between 2012 and 2013 with the average changes for all Montana businesses during this time period. The growth in sales and employment in excess of statewide averages was used to calculate the incremental federal and state tax revenues generated the year after counseling assistance was provided. The tax revenues generated by SBDC-counseled clients were then compared to the cost of the service to determine if it was cost effective.

To supplement this analysis, clients were also asked to estimate the jobs and revenues saved as a consequence of the counseling received. In addition to this, clients were asked to indicate the amount of debt and equity financing they were able to obtain as a direct result of the counseling received from the SBDC.

The remainder of this report describes the methodology and results of the study.

THE STUDY

In 2012 the Montana SBDC provided long-term counseling assistance to 403 clients, of whom 261 owned established small businesses and 142 were seeking to start new businesses (pre-ventures). The entire population of long-term clients was sent a questionnaire. A total of 63 clients returned usable questionnaires, a 15.6% response rate (only 7 questionnaires were returned undeliverable).¹

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 (63).
N = size of population (403).
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 (20% of s).

With a sample size of 63 and a tolerated error of 0.2 of a standard deviation, we were 91.6% confident that our sample means were no more than one-fifth 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. Statistical tests were used to compare early and late respondents 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 among early and late responding established business or pre-venture clients on any of these dimensions. Since late responders should be more similar to nonrespondents than early responders are, we conclude that there is no evidence of an upward bias on the performance data provided.

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 counselors, and (2) their willingness to recommend the SBDC to others. The results of the correlation analyses were statistically significant at the .05 level for both groups of 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. Two part-time employees were considered equivalent to one full-time employee.

The rate of growth in sales and employment for established clients was compared with the average growth of all businesses in Montana.² 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. 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 and employment of the respondents for the year counseling was received. Because Montana does not charge a tax on sales, the sales growth attributed to SBDC counseling was multiplied by the historical average return on sales for businesses in the United States (5%) and the highest marginal income tax rate on business income in the state (6%). In this way we were able to estimate the income taxes paid on business profits from increases in sales by sole proprietors.

The incremental change in employment was multiplied by the average state and median federal income taxes paid per return for the state of Montana. Federal income tax data were obtained from Table 2 of the SOI Bulletin published by the IRS (2014). Tax data for 2012, the most recent figure available, were used. The Montana SBDC supplied information on state income tax paid per return for 2013.

² Comparative data on sales were obtained from the Bureau of Economic Analysis database. Comparative data on employment were obtained from the Bureau of Labor Statistics.

Average state personal income tax payments were multiplied by the average incremental improvement in employment. 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:

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

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. 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 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.

$$\begin{array}{rcccccc} \text{Average} & & \text{X} & \text{Tax} & \text{X} & \text{Proportion of Clients} & \text{X} & \text{Total} & = & \text{Total Tax} \\ \text{Performance} & & & \text{Rate} & & \text{Satisfied w/Service} & & \text{Clients} & & \text{Revenues} \end{array}$$

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 counseling assistance. Thus, to obtain further insights we also compared the tax revenues generated by clients with the cost of counseling activities both in total and for long-term established and pre-venture clients separately. The cost of long-term counseling was estimated based on the proportion of total counseling hours devoted to those clients, per data supplied by the SBDC.

OTHER ANALYSES

Quality of Counseling 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 counseling. 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 counselors assigned to their cases as well as their working relationship with the counselors. Clients evaluated their counselor'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 counseling services. In the main, however, these questions were used to assess the reliability of the question concerning whether the SBDC's services were beneficial.

Revenue and 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. We also asked clients to estimate the amount of previous sales revenue maintained as a result of SBDC assistance.

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 counseling 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.

RESULTS

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

ESTABLISHED BUSINESSES

Quality of Counseling. Of those who provided usable responses to the service evaluation question, 71% indicated that the SBDC's services were beneficial. Furthermore, clients gave a rating of 3.91 out of a possible 5.00 on the knowledge and expertise of their counselors and a rating of 3.78 on their working relationship with the counselors (scores of 3 indicated an average rating, scores of 4 indicated an above average rating, and scores of 5 indicated an excellent rating). Finally, 79% of the responding established business clients indicated that they would recommend the SBDC's services to others.

Economic Impact Estimates. Table 2 compares the 2012 and 2013 sales and employment levels of established small business clients. Table 3 compares the SBDC clients' growth in sales and employment between 2012 and 2013 with the growth experienced by the average business in Montana. As these Tables show, SBDC clients reported an average increase in sales of \$85,421. The sales revenues of established clients increased by 9.8% compared to a 5.4% increase for Montana businesses in general. There was also an increase in the number of individuals employed by clients in 2013 compared to 2012 (9.72 versus 7.94). Employment levels of established clients increased by 22.4% compared to a 1.9% increase in employment for Montana businesses in general.

The overall impact estimate for established business clients suggests that the SBDC's services led to a tax contribution of approximately \$1.3 million. This broke down as a gain of \$0.56 million to the state government and \$0.79 million to the federal government (See Table 4).

As shown in Table 5, these tax revenues were 3% greater than the SBDC's total operating budget, 2.06 times greater than its counseling budget, and 4.80 times greater than the amount spent on long-term established clients.

Revenue and Job Retention. To supplement the impact estimates we also asked established clients if the SBDC helped them save jobs and retain existing revenues. On average, clients estimated that the SBDC program was responsible for saving \$118,367 in revenues and 1.63 full-time equivalent jobs. In total, this amounted to \$30.9 million in revenues retained and 425 jobs saved.³

Financing Obtained. According to the respondents, 24% of established business clients were assisted in preparing to seek financing. Those clients obtained an average of \$486,375 in capital, of which \$206,250 came from SBA loans, \$280,125 came from other forms of debt financing, and \$0 came from equity financing. Extrapolations indicate that clients raised \$12.92 million in SBA loans, \$17.55 million in other debt financing, and \$0 in equity financing (\$30.5 million in total) 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 23.44 to 1.00 for long-term established business clients alone.

Our estimates also suggest that of 261 established business clients, 23 received SBA loans as a consequence of SBDC long-term counseling. Furthermore, 47 clients received other loans, and 0 received equity financing.

³ It should be noted that revenues retained and jobs saved were not figured into the benefit to cost estimates. Had we done so, they would have more than offset the losses reported above.

PRE-VENTURE CLIENTS

Perceptions of the Quality of Counseling. Of the pre-venture clients who provided an evaluation of the SBDC's services, 88% felt the counseling was beneficial. In addition, clients gave a rating of 4.00 out of a possible 5.00 on their counselors' knowledge and expertise, and a rating of 4.12 on their working relationship with the counselors (scores of 3 indicated an average rating, scores of 4 indicated an above average rating, and scores of 5 indicated an excellent rating). Moreover, 88% of the responding pre-venture clients indicated that they would recommend the SBDC's services to other entrepreneurs.

Economic Impact Estimates. After adjusting for unsuccessful clients, we calculated that an average of \$165,527 in sales and 2.87 new jobs were created per pre-venture client. As Table 6 shows, these new ventures generated tax payments of approximately \$1.6 million (\$0.7 million to the state and \$0.9 million to the federal government).

When compared to the cost of the entire SBDC operation, the tax revenues from pre-venture clients generated \$1.26 for every dollar expended. Furthermore, the tax revenues generated were 2.51 times greater than the cost of the SBDC's counseling activities. Finally, the tax revenues from pre-venture clients were 9.72 times greater than the amount expended on pre-venture who received long-term counseling (see Table 7).⁴

Financing Obtained. According to the responses, 35% of all pre-venture clients received assistance from the SBDC in preparing to obtain financing. The average raised was \$35,833 in SBA loans, \$62,117 in other sources of debt financing, and \$0 in equity financing for a total of \$97,950. Extrapolating to the population suggests that a total of \$1.78 million in financing from SBA loans, \$3.09 million from other sources of debt, and \$0 in financing from

equity investors were raised. The grand total of approximately \$4.9 million in financing suggests that each tax dollar expended on the SBDC was leveraged by \$3.75 in public and private financing for new ventures.

Finally, our estimates suggest that of 142 pre-venture clients, 25 received SBA loans as a consequence of SBDC long-term counseling. We also estimate that 33 clients received other loans and 0 received equity financing.

SUMMARY AND CONCLUSIONS

Results of this study suggest that the Montana SBDC makes a contribution to the economic development of the State of Montana. Our analysis indicated that SBDC clients added \$27.8 million in incremental sales and 661 new jobs to the state. The latter number suggests that the cost of generating a new job through investment in the Montana SBDC was \$1,966 per job. Furthermore, an additional \$30.9 million in sales and 425 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-counseled clients generated a return of \$2.29 for every dollar spent on the entire SBDC operation in Montana. Furthermore, when compared to the cost of long-term counseling our estimates indicate that \$6.65 was returned for each dollar expended.

Finally, we estimate that \$35.3 million in capital was raised by clients as a direct result of the assistance of the SBDC. This suggests that each dollar expended on the Montana SBDC program was later leveraged by approximately \$27.19 in debt and equity capital.

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, factors such as social

⁴ Pre-ventures had no sales or employees at the time the counseling was received. Therefore, we did not attempt to measure revenue or job retention.

desirability bias may have inflated the estimates, or SBDC clients are especially prone to exceed sales and employment growth rates of "average" businesses in the state. 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 a reasonably accurate representation of the performance of the Montana SBDC's counseling for long term clients. 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 Montana and U.S. By assisting established small businesses improve their operations and raise capital the Montana SBDC contributes to the more efficient allocation and utilization of resources. Furthermore, these small firms provide employment opportunities for the citizens of Montana; the SBDC also helps preserve these opportunities in firms facing turnaround situations. The SBDC also plays an important role in fostering entrepreneurship through the assistance it provides to pre-venture clients. Those clients add to the economic development of Montana and the United States and, not incidentally, generate new jobs. Because the SBDC provides assistance to small business people and would-be entrepreneurs who often cannot afford the luxury and expense of a private consultant, its contributions become even more important. The evidence that its

assistance generates enough tax revenues to state and federal governments, and value and capital to its clients to provide a one-year return that exceeds the direct cost of providing the services makes the existence of the Montana SBDC program justifiable from a public policy perspective.

TABLE 2
 2012-2013 AVERAGE EMPLOYMENT OF ESTABLISHED CLIENTS
 WHO INDICATED THAT SBDC ASSISTANCE WAS VALUABLE

	2012	2013	Change
Sales	\$867,847	\$953,268	+\$85,421
Employment	7.94	9.72	+1.78

TABLE 3
 CHANGES IN EMPLOYMENT BETWEEN 2012-2013: 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	+ 9.8%	+ 5.4%	+ 4.4%	+\$38,185
Employment	+22.4%	+ 1.9%	+20.5%	+1.63 jobs

TABLE 4
 INCREMENTAL TAX REVENUES ADDED TO STATE AND FEDERAL GOVERNMENTS
 AS A RESULT OF SBDC COUNSELING 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/ Profit	38,185		.003*		.71		261		\$ 21,228
Employment	1.63		\$1772**		.71		261		<u>\$535,242</u>
									\$555,470

FEDERAL TAX REVENUES

Employment	1.63		\$2610***		.71		261		<u>\$ 788,364</u>
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TOTAL INCREMENTAL STATE AND FEDERAL TAX REVENUES \$1,343,834

* Figure represents estimated business income tax as a percentage of sales.

** Figure represents average state income tax paid per return in 2013.

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

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

Total incremental State and Federal Tax Revenues Added by Established Business Clients	\$1,343,834
Cost of operating the SBDC	\$1,299,773
Benefit to cost ratio	1.03/1.00
Cost of all counseling *	\$651,186
Benefit to cost ratio	2.06/1.00
Cost of long-term counseling provided to established business clients **	\$280,010
Benefit to cost ratio	4.80/1.00

* Approximately 50.1% of the total SBDC budget was used for counseling long and short term clients.

** Established business clients who received long-term counseling accounted for approximately 43% of the total counseling budget.

TABLE 6
 INCREMENTAL TAX REVENUES ADDED TO STATE AND FEDERAL
 GOVERNMENTS AS A RESULT OF SBDC COUNSELING 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/ Profit	165,527		.003*		.88		142		\$ 62,053
Employment	2.87		\$1772**		.88		142		<u>\$635,502</u>
									\$697,555

FEDERAL TAX REVENUES

Employment	2.87		\$2610***		.88		142		<u>\$ 936,038</u>
TOTAL INCREMENTAL STATE AND FEDERAL TAX REVENUES									\$1,633,593

* Figure represents estimated business income tax as a percentage of sales.

** Figure represents average state income tax paid per return in 2013.

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

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

Total incremental State and Federal Tax Revenues Added by Pre-Venture Clients	\$1,633,593
Cost of operating the SBDC	\$1,299,773
Benefit to cost ratio	1.26/1.00
Cost of all counseling *	\$651,186
Benefit to cost ratio	2.51/1.00
Cost of long-term counseling provided to pre-venture clients **	\$168,006
Benefit to cost ratio	9.72/1.00

* Approximately 50.1% of the total SBDC budget was used for counseling long and short term clients.

** Pre-venture clients who received long-term counseling accounted for approximately 25.8% of the total counseling budget.