

ADDISON COUNTY COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY – ECONOMIC IMPACT STUDY OF CRITICAL SECTORS

Prepared for the Addison County Economic Development Corporation

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1. Introduction

A successful CEDS process formulates and implements programs that create jobs and raise income levels, while protecting the environment and improving the quality of life.¹

Economic development, then, is about growing Addison County's business and industrial base in ways that achieve the jobs and income goals, but to the maximum extent possible minimizing adverse impacts of that growth on our environment and quality of life. In short the CEDS' goal is attracting to Addison County clean, vibrant employers who offer year-round jobs that offer excellent pay, good benefits and opportunities for advancement; and who have significant linkages to (impacts on) the County's economy.

Fine. How do we move from concept to action? Being clean is certainly a critical element of a desirable new employer's resume, but it is hardly sufficient. Is the employer in an emerging sector or a dying one? What linkages do his or her business have both upstream and downstream along supply chains and in the local community?

Other things equal, development efforts targeting sectors having the highest total economic impacts will have the most significant long-term benefit for the region's economy.

Hence, this study offers recommendations based on a detailed economic impact analysis of the seven sectors and 3 industries appearing in Table 1. The results cover the total (direct, indirect and induced) impacts of creating a single new job in each sector an industry on value added, employee compensation, proprietor's income, indirect business taxes, employment and output.

After detailing the methodology employed in the study and analyzing the results, the study closes with recommendations based on five metrics: jobs, incomes, and sales; and the relative environmental consequences and growth prospects for the sectors.

¹ Mimeo, *Comprehensive Economic Development Strategy*, p.

Table 1 Sector and Industry List with SIC and IMPLAN Codes

SECTOR	SIC CODES	IMPLAN CODES
High Technology		
Organic fibers, noncellulosic	2824	194
Miscellaneous plastic products	3080	220
Aircraft and missile equipment, NEC	3728 3769	391
Mechanical measuring devices	3823 3824 3829	403
Electromedical apparatus	3845	411
Financial Services		
Banking	6000	456
Credit agencies	6100,6710 6720 6733 6790	457
Security and commodity brokers	6200	458
Insurance carriers	6300	459
Insurance agents and brokers	6400	460
Publishing		
Newspapers	2710	174
Periodicals	2720	175
Books	2731	176
Commercial Printing	2750	179
Radio and TV broadcasting	4630	442
Apparel		
Manufacturers	2310 2320 2330 2340 2350 2360 2370 2380	124
Digital Services		
Communications, except radio and TV	4810 4820 4840 4890	441
Computer and data processing services	7370	475
Value-Added Agricultural Products and Services		
Sawmills and planing mills, general	2421	134
Soap and other detergents	2841	196
Toiletry preparations	2844	199
Food stores	5400	450
Furniture & home furnishings stores	5700	453
Miscellaneous retail	5900	455
Professional Services		
Engineering, architectural services	8710	506
Management and consulting services	8740	508
Research, development & testing services	8730	509
Automotive dealers & service stations	5500	451
Other business services	7320 7331 7338 7383 7389	470
Other educational services	8230 8240 8290	497

2. Methodology

Sector and Industry Selection Process. Extensive, if informal, opinion surveying that was conducted among business leaders in the community shared a common thread that was best expressed by Cairn Cross, Managing Director, Fresh Tracks Capital,

“Think about what is already here, sectors that can serve as platforms for the CEDS. Others doing the same or similar things attract business people, even if some of them might be competitors. They feel that the presence of others in their group means that there is a labor pool that can be drawn upon. The local bankers have experience with what we do. The continuing education providers may well offer courses in my area. The point is that there is a herd mentality. You and the CEDS will have much great luck enticing new members to existing sectors than you will if you attempt introducing something totally new; something that just is not here at all as yet.”

While Cairn was the most articulate on the subject, others repeated much the same message.

To that end, Addison County businesses were inventoried using databases generously provided by the Middlebury Chamber of Commerce and *Vermont Business Magazine*. Addison County companies were assigned to candidate sectors, from which the seven appearing in Table 1 were identified as exhibiting an actual or emerging critical mass. The seven sectors were further divided into 30 industries. (Fifty-four 3-digit industries by SIC classification are represented in the 30 IMPLAN coding industries.)

Input/Output Modeling. Economic impact analysis was conducted and multipliers were estimated for each sector and industry using the IMPLAN (IMPact analysis for PLANning) software, a widely used package of modeling and 1999-2001 data from Minnesota IMPLAN Group, Inc).²

Input/Output (I/O) analysis, the basic tool used in deriving our results, is built on the fact that a market economy is comprised of a myriad of buyers and sellers, producers and supplier, all of whom are woven into a web of interrelated economic transactions. No sector or business or worker or householder or government operates in a vacuum. An event in one part of the economy has at least some impact on each one of us.

If, for example, Autumn Harp’s sales (final demand) rise, its response sets off a wave of ripples through Addison County and Vermont beyond. Its purchases of inputs from other industries rise, while Autumn Harp and its suppliers begin seeking additional labor inputs as production volumes rise. New jobs translate into new wages and salaries and into rising purchases of goods and services throughout the economy.

In time, the linkages along its supply chain and through the economy multiply the original Autumn Harp sales growth into additional job, income, and sales growth. Indeed, the results derived from this study suggest that, when all ripple effects are exhausted, the total impact of one new job at a company like Autumn Harp is 2.3 new jobs in the County, \$58,000 in new

² The IMPLAN model used in this study is constructed using national, Vermont and Addison County data covering the period 1999-2001.

employee compensation, \$349,000 in new sales, and \$6,000 in new indirect business tax revenue. The bottom line is that growth by industries and companies having large multipliers translates into much-amplified growth throughout Addison County.

Estimating Addison County economic impact multipliers for the seven sectors and 29 industries included in this study using input-output analysis permits assessing their relative importance and power as drivers of economic growth in the County.

As Nancy Wood and Kathleen Liang forcefully argued in their highly informative study of the tourism sector's impact on Vermont's economy, I/O modeling is the tool of choice for economic impact studies:

1. An input-output model is ideally suited to measure both the relative sizes of sectors that make up the economy and the linkages among them. I/O modeling produces a structural model that illuminates the interactions among many sectors and measures impacts as they reverberate through the economy. Understanding which types of economic activities generate higher returns can direct decision-makers toward enterprises that will stimulate economic development within the region.
2. Input-output modeling is the most commonly used method to assess the economic impact of tourism by many other states as well as at the national level. So it is expected to provide comparable results to other states' research, national data, and previous Vermont studies.
3. The advantage of an input-output model is that it provides impact estimates in a general equilibrium framework instead of single-market analysis (referred to as "partial equilibrium"). The input-output model captures not only the direct impact of tourists' expenditure but also the indirect and induced impacts that occur when tourist dollars work their way through the economy.³

Perhaps most importantly, I/O modeling and analysis provides a mechanism for capturing and measuring the direct, indirect and induced impacts of sales changes among local companies on Addison County's economy.

- The *Direct Effect* is that which changing demand has on Autumn Harp's production, staffing, etc.
- The *Indirect Effect* is driven by Autumn Harp's changing input needs and their direct impacts on production, staffing, etc. in industries from which it sources its inputs.
- The *Induced Effect* is driven by household spending changes arising from the new jobs generated by direct and indirect effects of growing demand for Autumn Harp's products.
- The *Total Effect* is the sum of the direct, indirect and induced effects.

Estimating and Interpreting the Multipliers. Traditionally, multipliers are estimated as the change resulting in a one-dollar change in final demand for a product or service. Thus, a *total output multiplier* is the total amount of production for all industries required to satisfy a

³ Nancy E. Wood and Dr. Kathleen Liang, "The Impact of the Tourism Sector on the Vermont Economy 1999-2000," September 2001, p. 47. (Vermont Department of Tourism and Marketing and Vermont Tourism Data Center, School of Natural Resources, University of Vermont)

one-dollar increase in final demand for an industry or sector's product(s). A *total employee compensation multiplier* is the change in compensation received by employees in an industry or sector for each dollar change in final demand for its products or services. And a *total employment multiplier* is the number of jobs gained (or lost) when final spending on the industry's products increases (decreases) by one dollar.

Given the wide array of industries being examined and that job generation is a major CEDS objective, multipliers are estimated in this study in a somewhat different manner. Rather than holding the change in final demand constant across sectors, we estimated the direct, indirect, and induced effects of creating 25 new jobs in each sector and industry, taken one at a time.

Either approach effectively leads to the same end point, as IMPLAN calculates the total output (final demand) change that corresponds to increasing a sector or industry's employment by 25 jobs. Consider the *Direct* column of Table XX, which reports estimated impacts for the aggregated high technology sector.

A 25-job increase in employment corresponds to a \$4,208,490 increase in output. In other words, 25 new jobs (direct impact) will be created if final demand (output) rises by a bit over \$4.2 million. Using the traditional view, the employment multiplier, then is 25 jobs divided by \$4.2 million or .0000059 jobs per dollar of new final demand in the sector.

Table 2 Impact Estimates – High Technology Sector

High Technology	Direct	Indirect	Induced	Total
Value Added	1,684,848	477,285	525,490	2,687,624
Employee Compensation	1,244,767	288,880	274,790	1,808,437
Proprietors Income	154,012	56,896	41,998	252,906
Indirect Business Taxes	44,717	31,979	52,274	128,970
Employment	25	10.6	13.3	48.8
Output	4,208,490	993,469	836,753	6,038,712

More to the point, however, is the reality that the question being asked differs from tradition. The question posed herein is, "Suppose final demand for a sector or industry's products or services grows sufficiently to generate (require) 25 new jobs to meet the new demand. What are the implications of this rising employment for total incomes, employment, value added, taxes, and output?"

3. Findings

Sector-level Total Impact Estimates. Three sectors – high technology, financial services, and publishing – consistent exhibit the largest multipliers, independent of the metric chosen.

Table 3 and Charts 1 and 2 provide the details.⁴ Where the average sales impact of one new job on sales across all seven sectors is \$140,000 (Chart 1), high technology, financial services and publishing generate \$242,000, \$176,000, and \$160,000 respectively. Apparel manufacturing approaches the average with an impact of \$138,000, while the remaining three sector impacts are increasingly below average – \$110,000 for digital services, \$73,000 for value-added agriculture, and \$57,000 for professional services.

The jobs impacts (Chart 2) are similarly arrayed. Each new job in high technology generates an additional job in the county, while financial services and publishing each generate .7 additional jobs. Apparel and digital services approach the average of .6 jobs with .55 and .52, respectively; while value-added agriculture and professional services again lag behind, generating .32 and .31 additional jobs, respectively.

The impacts of creating jobs on employee compensation break from this pattern slightly (Chart 1). Once again creating a new high technology job generates the largest overall impact, with a \$72,000 increase in employee compensation. Financial services and publishing, while both are above the average impact of \$37,000, lag behind high technology with employee compensation impacts of \$50,000 and \$42,000, respectively.

The one break in the pattern is that the digital services sector generates a \$42,000 impact and matches publishing. However, apparel at \$28,000, value-added agriculture at \$25,000, and professional services at \$16,000 all generate impacts that are well below the average for the group.

Industry-level Total Impact Estimates. Chart 3 reports value added, employee compensation and sales impacts for each of the 30 industries in the sample after they have been sorted by the sales impact estimates. The average impacts per job are \$62,000, \$37,000, and \$140,000 respectively for value added, employee compensation and sales.

Toiletry preparations at \$350,000 per job generate an estimated sales impact that exceeds those of the next for industries by at least \$50,000: electromedical apparatus (\$300,000); organic fibers, noncellulosic (\$299,000); Miscellaneous plastic products (\$298,000); and book publishing (\$298,000).

All industries to the left of Apparel in Chart 3 generated estimated sales impacts that exceed the group average, while from apparel through food stores, the sales impacts fall ever more below the average.

The employee compensation estimates demonstrate a similar pattern that will be analyzed in greater detail below (see Chart 6).

Finally – save for radio and TV broadcasting and security and commodity brokers, the value added impacts per job exceed the group average for industries including and to the

⁴ The first row within each sector is titled *Aggregated Sector*, or the results when all industries appearing within each sector are aggregated into a single unit. As aggregating over the sectors may involve some double-counting issues, the sector impact estimates are best applied to a comparative analysis across sectors.

left of soap and other detergents in Chart 3. Those to the right of soap and other detergents in the chart – save for automotive dealers and service stations, and computer and data processing services – generate value added impact estimates that fall short of the group average.

Table 3 Total Impact Multipliers*

SECTOR	Value-Added	Employee Compensation	Proprietor's Income	Indirect Bus Taxes	Jobs	Sales
High Technology						
Aggregated Sector	\$108	\$72	\$10	\$5	2.0	\$242
Electromedical apparatus	\$80	\$58	\$4	\$5	2.0	\$307
Organic fibers, noncellulosic	\$133	\$69	\$24	\$6	2.1	\$297
Miscellaneous plastic products	\$122	\$76	\$7	\$6	2.2	\$296
Mechanical measuring devices	\$93	\$73	\$4	\$5	1.8	\$207
Aircraft and missile equipment, NEC	\$61	\$45	\$2	\$3	1.6	\$150
Financial Services						
Aggregated Sector	\$106	\$50	\$5	\$6	1.6	\$176
Insurance carriers	\$149	\$85	\$7	\$12	2.4	\$234
Banking	\$145	\$48	\$5	\$5	1.7	\$227
Security and commodity brokers	\$55	\$49	\$13	\$5	1.9	\$207
Insurance agents and brokers	\$40	\$23	\$7	\$1	1.2	\$54
Credit agencies	\$26	\$21	\$2	\$2	1.2	\$50
Publishing						
Aggregated Sector	\$63	\$42	\$3	\$3	1.6	\$160
Books	\$108	\$61	\$5	\$6	2.0	\$294
Periodicals	\$86	\$56	\$5	\$4	1.9	\$211
Radio and TV broadcasting	\$55	\$35	\$6	\$3	1.9	\$187
Commercial Printing	\$53	\$38	\$3	\$3	1.5	\$141
Newspapers	\$49	\$34	\$2	\$2	1.4	\$102
Apparel						
Manufacturers	\$42	\$28	\$4	\$2	1.5	\$138
Digital Services						
Aggregated Sector	\$76	\$42	\$15	\$4	1.5	\$110
Communications, except radio & TV	\$128	\$54	\$9	\$12	1.8	\$242
Computer/data processing services	\$66	\$39	\$16	\$2	1.4	\$87
Value-Added Agricultural Products and Services						
Aggregated Sector	\$47	\$25	\$4	\$7	1.3	\$73
Toiletry preparations	\$139	\$58	\$13	\$6	2.3	\$349
Sawmills & planing mills, general	\$86	\$48	\$11	\$5	1.9	\$248
Soap and other detergents	\$78	\$34	\$8	\$3	1.5	\$151
Miscellaneous retail	\$42	\$23	\$3	\$7	1.2	\$58
Furniture & home furnishings stores	\$41	\$23	\$2	\$7	1.2	\$55
Food stores	\$41	\$23	\$3	\$7	1.2	\$49
Professional Services						
Aggregated Sector	\$25	\$16	\$5	\$1	1.3	\$57
Engineering, architectural services	\$47	\$30	\$9	\$2	1.7	\$113
Management & consulting services	\$54	\$34	\$10	\$2	1.5	\$107
Automotive dealers & service stations	\$70	\$39	\$4	\$13	1.4	\$99
Other business services	\$33	\$17	\$5	\$2	1.5	\$96
Other educational services	\$42	\$30	\$2	\$3	1.4	\$83
Research, development & testing services	\$25	\$16	\$5	\$1	1.3	\$57
Average						
Aggregated Sectors	\$62	\$37	\$5	\$4	1.6	\$140

*Multiplier units: \$1,000 of new dollars generated/direct new job; and total jobs generated/direct new job created.

Chart 1 Direct Employee Compensation Impacts per Job Created

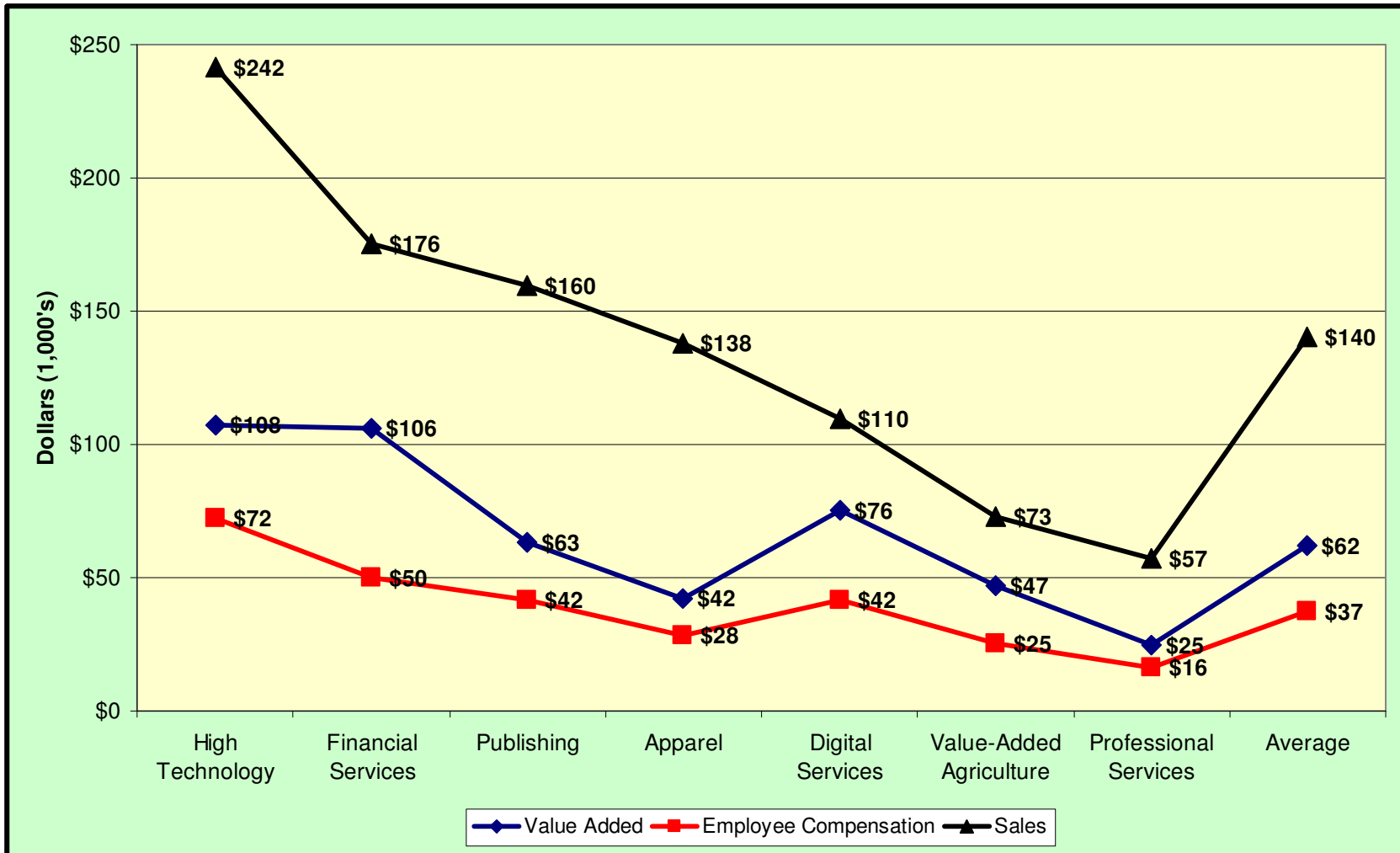


Chart 2 Total Employee Compensation Impacts per Job Created

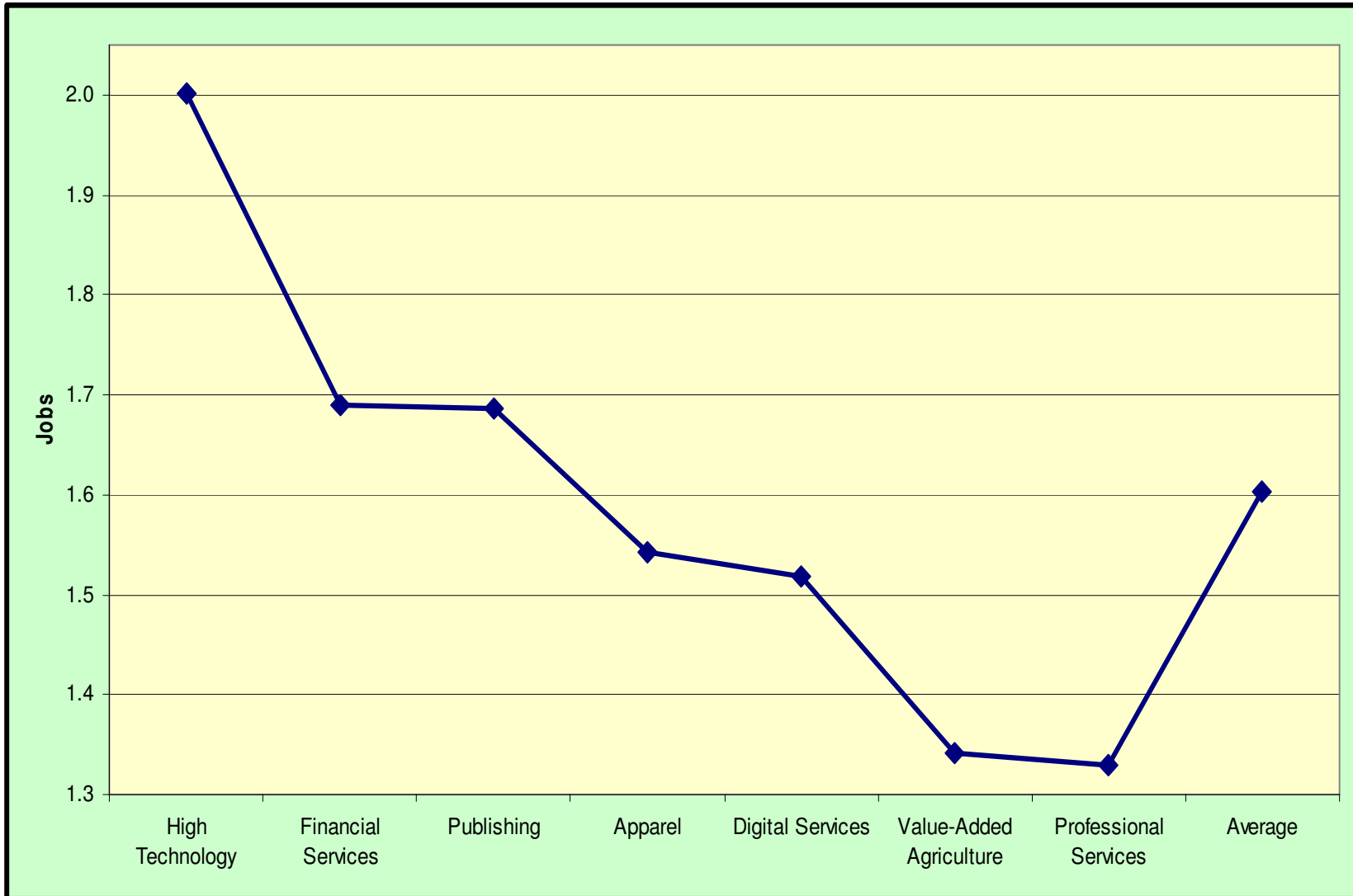
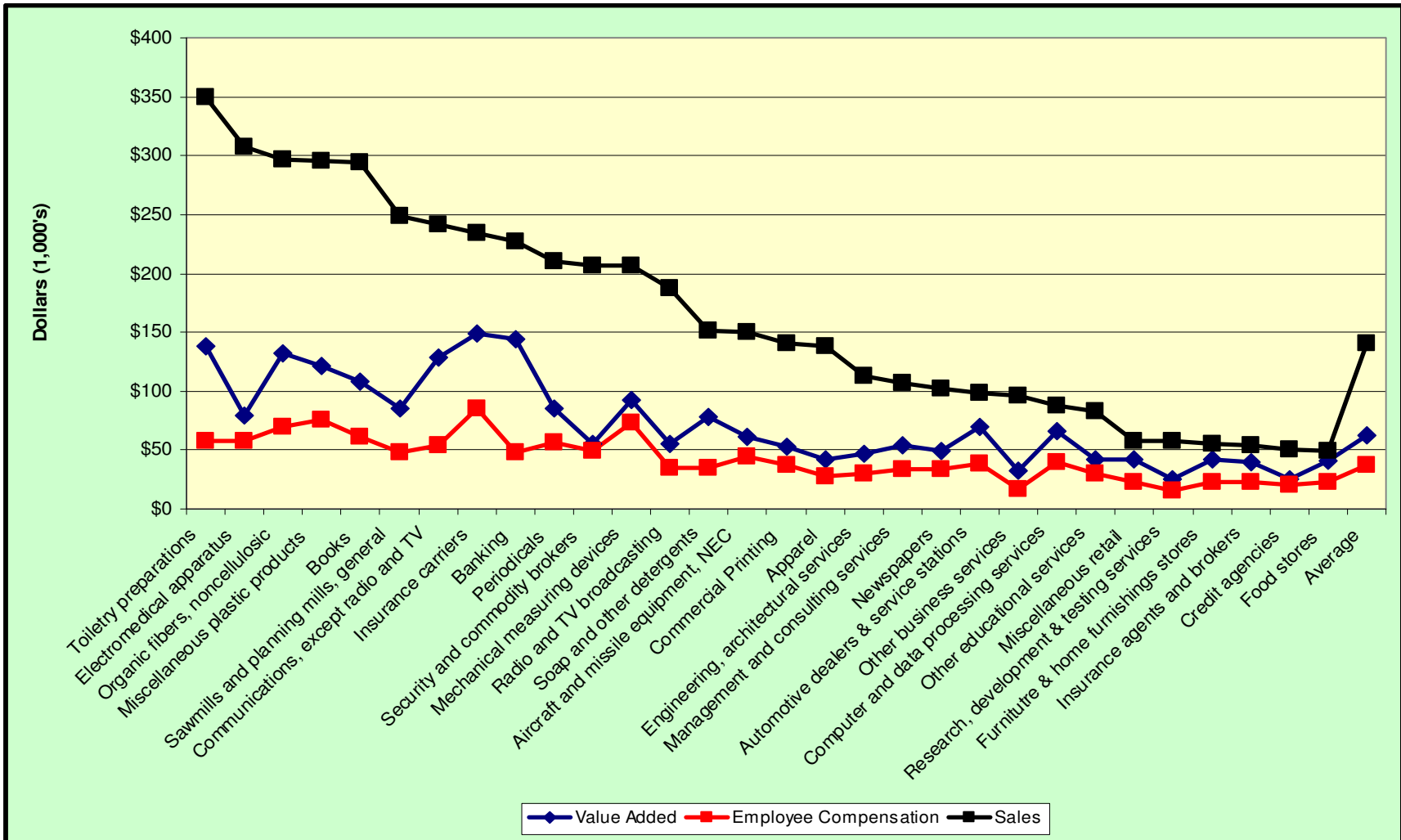


Chart 3 Total Impacts per Job Created by Industry



Industry-Level Results. Table 4, and Charts 4 through 6 report disaggregated impacts for the 30 industries included in the study. These charts present the estimated impacts after the data were sorted by total employee compensation impact per job created. This choice reflects the core goal of the CEDS to implement development within Addison County that maximizes the impacts on incomes.

The average jobs impact multiplier across the 30 industries is 1.6. That is, for each initially created job, the subsequent impacts on Addison County's economy will generate an additional .6 job. However, as Chart 4 illustrates, there is significant variation around that average among the 30 industries.

Save for sawmills and planing mills, general all industries exhibiting above-average jobs impacts are members of the three leading sectors in this study: high technology, financial services, and publishing. At the high end, with multipliers at or exceeding 2.0 are insurance carriers, miscellaneous plastic products, organic fibers, toiletry preparations, book publishing, and electromedical apparatus.

The balance of the industries exhibit jobs multipliers that fall short of the average. However, a careful reading of Chart 4 shows that nine of these industries have multipliers between 1.4 and 1.5.

While generating jobs is a core goal of the CEDS, high-paying jobs are certainly preferable to low-paying jobs. Chart 5 illustrates the direct employee compensation impact of generating a new job in each industry. In other words, these are estimates of the expected total compensation that a new employee in each of the 30 industries.

With an average of \$29,000, expected direct compensation impacts range from a high of \$58,000 for insurance carriers to a low of \$8,000 for other business services. Joining insurance carriers at the high end are three high technology industries: miscellaneous plastic products, mechanical measuring devices and organic fibers. Also exceeding the average impact are periodicals (\$37,000) and communications, except radio and TV (\$38,000), computer and data processing services (\$31,000), aircraft and missile equipment, NEC (\$32,000) and automotive dealers and service stations (\$30,000)..

While compensation earned by the initial jobholder is a significant metric of the CEDS process, the total impact of one new job in the County on jobs in general, and particularly on employee compensation across the County is critical to the growth and development of its economy. Chart 6, therefore, produces the estimated total employee compensation impacts – the combination of the direct, indirect, and induced impacts – for each of the 30 industries.

The average for the group is \$42,000, with a range from \$85,000 for insurance carriers to \$16,000 for research, development and testing services. With one exception – communications, except radio and TV from the digital services sector – all of the industries generating above-average total employee compensation impacts are members of the three leading sectors – high technology, financial services and publishing.

Table 4 Employee Compensation Impacts per Job Created

SECTOR	Direct*	Indirect*	Induced*	Total*
High Technology				
Aggregated Sector	\$50	\$12	\$11	\$72
Electromedical apparatus	\$33	\$16	\$8	\$58
Organic fibers, noncellulosic	\$42	\$15	\$13	\$69
Miscellaneous plastic products	\$47	\$18	\$11	\$76
Mechanical measuring devices	\$54	\$8	\$10	\$73
Aircraft and missile equipment, NEC	\$32	\$7	\$6	\$45
Financial Services				
Aggregated Sector	\$34	\$8	\$7	\$50
Insurance carriers	\$58	\$15	\$12	\$85
Banking	\$33	\$8	\$7	\$48
Security and commodity brokers	\$28	\$13	\$8	\$49
Insurance agents and brokers	\$18	\$1	\$4	\$23
Credit agencies	\$16	\$2	\$3	\$21
Publishing				
Aggregated Sector	\$29	\$7	\$6	\$42
Books	\$40	\$12	\$9	\$61
Periodicals	\$37	\$11	\$8	\$56
Radio and TV broadcasting	\$21	\$9	\$5	\$35
Commercial Printing	\$27	\$5	\$5	\$38
Newspapers	\$25	\$4	\$5	\$34
Apparel				
Manufacturers	\$18	\$6	\$4	\$28
Digital Services				
Aggregated Sector	\$32	\$2	\$8	\$42
Communications, except radio and TV	\$38	\$8	\$8	\$54
Computer and data processing services	\$31	\$1	\$7	\$39
Value-Added Agricultural Products and Services				
Aggregated Sector	\$19	\$2	\$4	\$25
Toiletry preparations	\$29	\$19	\$9	\$58
Sawmills and planing mills, general	\$27	\$13	\$8	\$48
Soap and other detergents	\$23	\$5	\$6	\$34
Miscellaneous retail	\$18	\$1	\$3	\$23
Furniture & home furnishings stores	\$19	\$1	\$3	\$23
Food stores	\$19	\$0	\$3	\$23
Professional Services				
Aggregated Sector	\$24	\$5	\$5	\$34
Engineering, architectural services	\$18	\$7	\$5	\$30
Management and consulting services	\$23	\$5	\$6	\$34
Automotive dealers & service stations	\$30	\$2	\$6	\$39
Other business services	\$8	\$6	\$3	\$17
Other educational services	\$22	\$4	\$4	\$30
Research, development & testing services	\$10	\$3	\$3	\$16
Average				
Aggregated Sectors	\$29	\$6	\$6	\$42

*Multiplier units: \$1,000 of new employee compensation generated/direct new job created.

Chart 4 Total Jobs Impact per New Job Created – by Industry

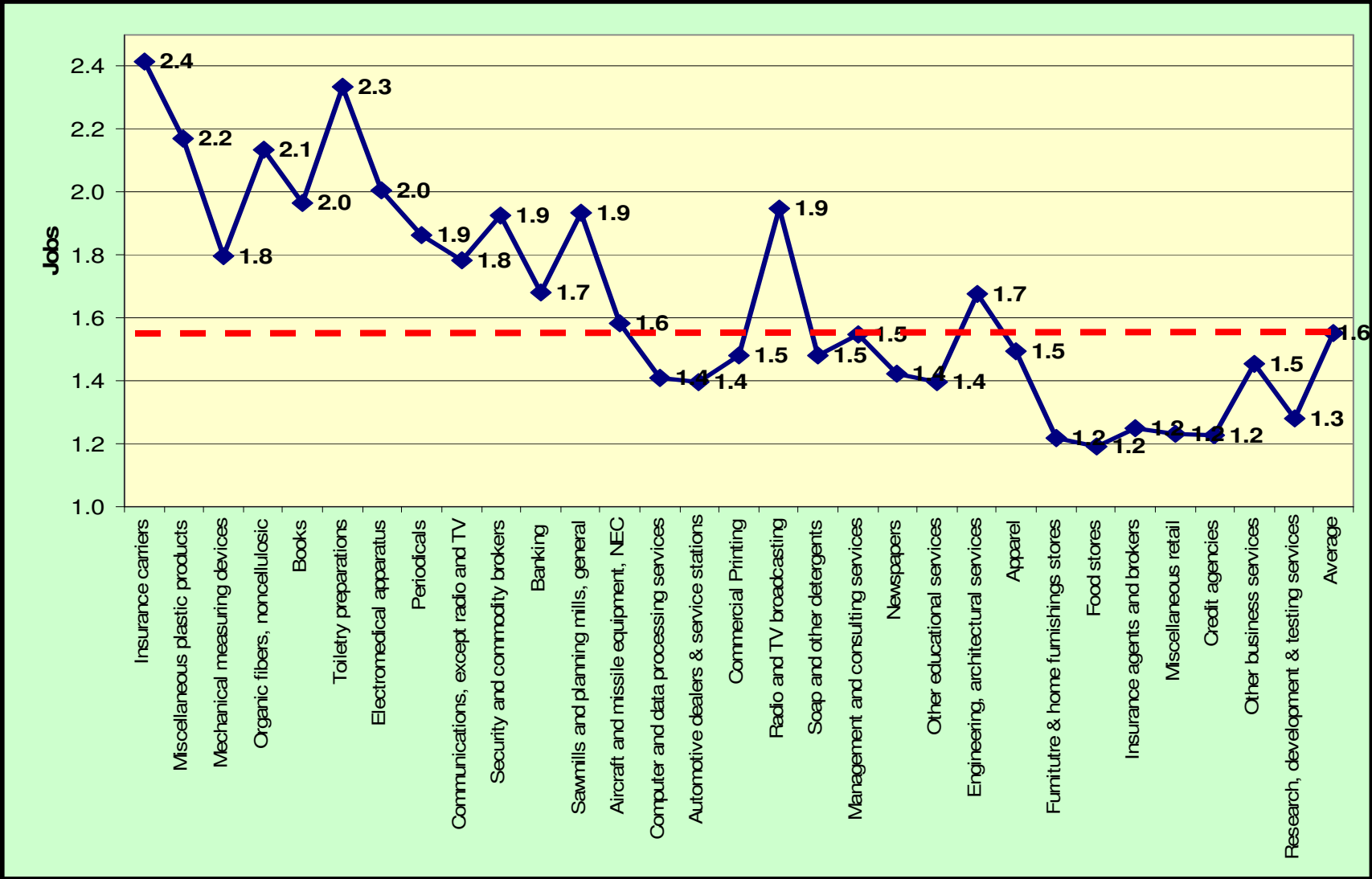


Chart 5 Direct Employee Compensation Impact per Job Created – by Industry

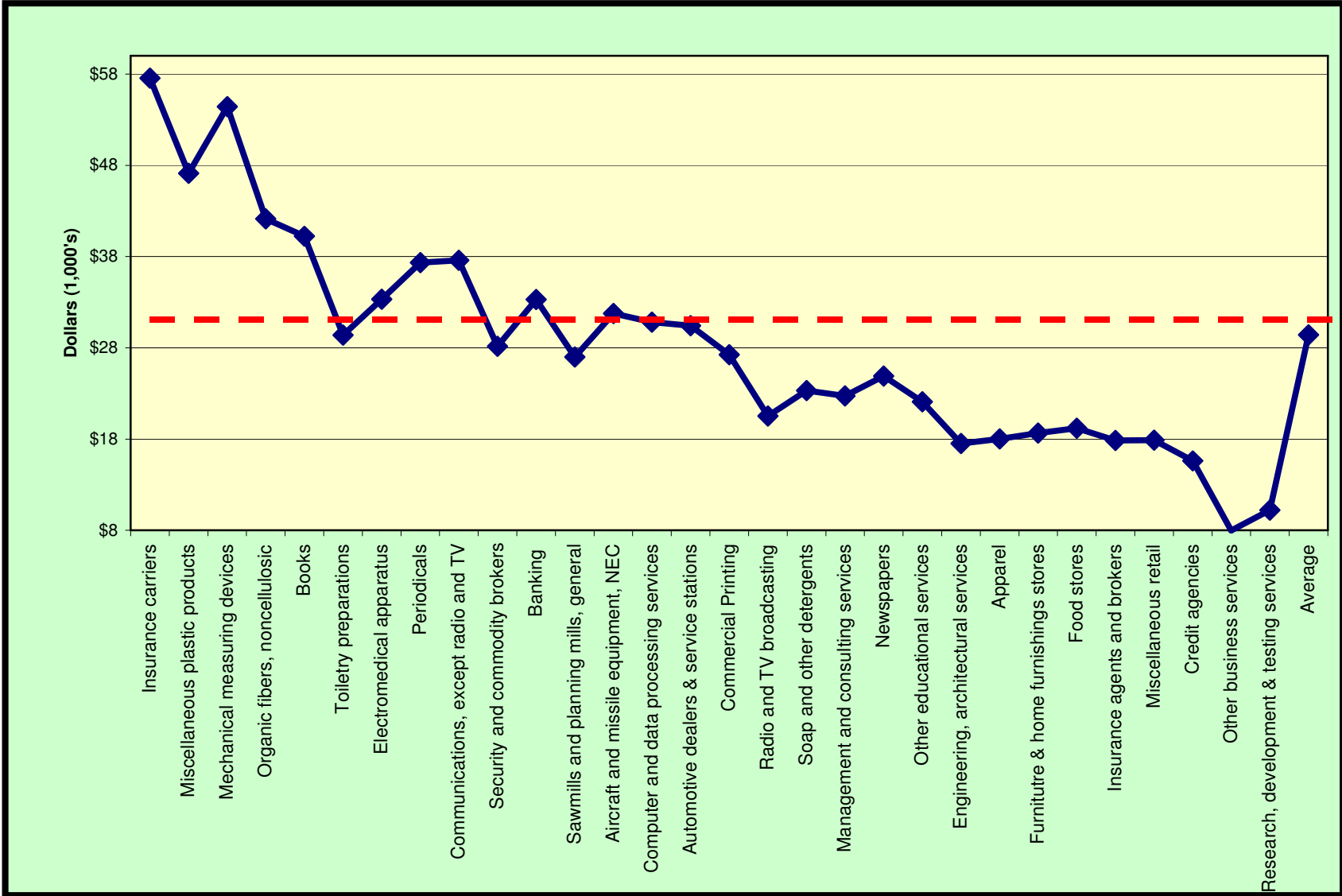
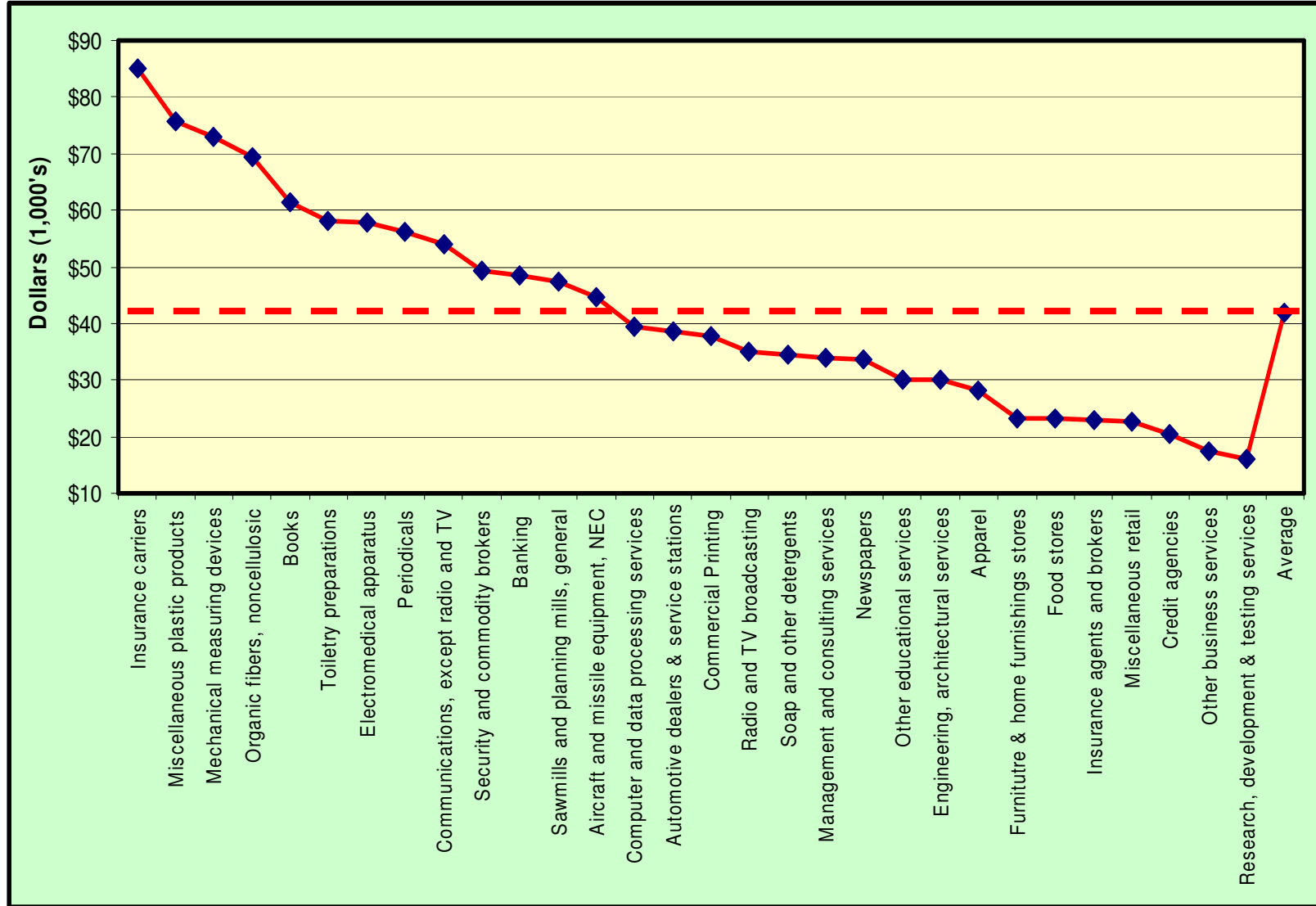


Chart 6 Total Employee Compensation Impact per Job Created – by Industry



4. Recommendations

As stated in the introduction, other things equal, development efforts targeting sectors having the highest total economic impacts will have the most significant long-term benefit for the region's economy. To that end, and purely in terms of the estimated impacts expanding their presence in the County will have, three sectors warrant the CEDS' focus: high technology, financial services, and publishing.

Not only does a single new job (or new dollar of production) in these sectors have larger impacts on jobs and incomes throughout the County, they also offer highest-paying (in terms of total employee compensation) employment opportunities among the seven sectors studied.

Two of these sectors, high technology and publishing already possess a critical mass of existing companies operating in the County, while financial services is more properly considered as having an emerging critical mass.

Within the three, and while it offers the highest multipliers and compensation levels, high technology may well present difficult challenges in terms of what the County can offer potential entrants. While Middlebury College offers solid natural, physical and computer science programs where significant and first-rate research is conducted regularly, it lacks the scale and pure volume of research, especially of applied research, that is typical of a university. Moreover, while there are numerous sector participants operating within the country, the linkages among them make it difficult to envision anything like a mini-Silicon Valley being likely.

Having said this, though, the sector's very high multipliers and compensation levels warrant careful consideration and active development of strategies directed towards expanding high technology's presence in Addison County. In particular, it may be worth considering leveraging off of the presence of the plastics, fiber, and measuring devices presence we enjoy in the County. In other words, the expected pay-off to a rifle shot approach that focuses on relatively narrow segments of high technology may well be higher on practical grounds than might initially appear to be the case.

Drilling down through the sector- to the industry-level reveals several interesting potential targets that warrant consideration in developing the CEDS. Personal care product companies like Autumn Harp constitute one very attractive consideration. The sales multiplier for toiletry preparations – which belong to the personal care space – exceeded all others. And, given our aging population and continued fixation on health and appearance, personal care products – and especially those in a fairly new segment, cosmeceuticals – growth in these markets will very likely continue at close to double-digit levels. Thus, the very high sales and jobs multipliers, combined with compensation multipliers that are well above average makes the personal care space particularly attractive.

While the world may be going digital, the overwhelming majority of people still regularly reach to books and periodicals for information, news, and pure reading enjoyment. Book

and periodicals publishing offer employment, sales, and compensation multipliers that rival high technology. The industry is certainly clean. Future growth prospects of markets for books warrant careful consideration here as E-books increasingly make inroads into the space, however.

Insurance carriers also exhibit high jobs and compensation multipliers. On pure economic impact grounds, it would seem that this industry warrants further consideration. However, the likelihood of attracting another major carrier to Addison County seems problematical at best.

Financial Services – An Emerging Critical Mass. Save for credit agencies and insurance brokers, the financial services sector and the industries currently represented by firms operating in Addison County consistently generated above-average multipliers for the sample. Indeed, insurance carriers discussed above, consistently out-performed other industries, and the 1.9 jobs multiplier for securities and commodity brokers and banks makes these two industries solid jobs generators for the County.

Apart from the presence of the Co-Operative Fire Insurance Companies, Addison County's "inventory" of financial services firms is not much different than what is typical outside of Montpelier and Orange Counties in Vermont. However, the financial services sector warrants particular consideration by the Addison County CEDS. First, as noted earlier, the database with which the IMPLAN model and the multipliers reported here were estimated ends in 2001. Since then several new financial services firms such as Fresh Tracks Capital LLC and Middlebury Capital LLC among others, have begun operating in Addison County.

But the combination of the Financial Services Development Tax Credit legislation that was renewed by the Vermont Legislature in 2002 and the presence of Middlebury College in the County are the real drivers for this recommendation.

In 1996, Vermont passed an income tax credit of up to 75 percent for the money management industry.⁵ The tax credits are for mutual funds and investment companies, global custodians, investment research firms, fund administration firms, fund distributors, investment advisors and hedge funds who manage assets owned or who have clients outside of Vermont.

Notable characteristics of businesses on the law's eligibility list include the fact that they pay high incomes and have virtually no impact on the environment. Additionally, and especially as we live longer lives and therefore must place higher priorities on managing our financial resources, this is a sector promising singularly above average growth going forward.

Middlebury College is a resource that could be tapped to the County's advantage, especially in the financial services space. Economics is the largest major among students studying at Middlebury College. The Economics Department's curriculum includes

⁵ Please visit www.thinkvermont.com and select *financial services* for the complete details on the law, eligibility, and the benefits it offers to money managers.

corporate finance and accounting, the economics of investing in securities and competitive strategies offerings. Financial services consistently ranks high among the career choices of graduating seniors. While many would stay in Vermont given the requisite job opportunities, they currently go to the major urban financial centers such as New York, Boston and San Francisco.

The DigitalBridges2.0 project brings a continuous flow of alumni in financial services, and technology and entrepreneurial firms back to campus; and integrates them with members of the Vermont venture, consulting and financial services players.

It is well understood at the College that Middlebury alumni find everything about Vermont – and especially Addison County incredibly attracting save for one essential item: business and continuing career opportunities.

Bottom line, Vermont's tax credit legislation may well constitute a powerful inducement for financial services to locate in Vermont. And the resources available by tapping into Middlebury graduates seeking their first positions and alumni hankering for a way to bring young families back to the community of their alma mater.

Unlike the compelling reasons for focusing on high technology and publishing as two very powerful sectors that the CEDS can usefully focus upon in the near term, financial services represents an opportunity appearing on the horizon. Translating the opportunity into a thriving, vibrant critical mass of financial services players depends upon developing a long-term partnership between the County's business and development communities and Middlebury College.

Such a partnership could usefully focus on creating the requisite circumstances and opportunities that lead to growing a financial services presence in the County. Ranking very high on the list of must do's, however, is dealing with the broadband access cost, availability and reliability constraints that now plague Addison County. Unless and until broadband access becomes ubiquitous, reliable and inexpensive, attracting significant numbers of financial services operations to the County will be exceedingly challenging.

Appendix 1 Definitions – Economic Impact Variables⁶

Value Added Impact

- Employees compensation plus proprietary income plus other property income plus indirect business taxes
- Direct: direct change in total value added (the sum of employee compensation plus proprietor's income plus other property income plus indirect business taxes in dollars) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in total value added (dollars) per change in final demand for labor in that sector or industry resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in total value (dollars) per change in final demand for labor in that sector or industry resulting from interaction of institutions – including the additional effects of households' spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

Employee Compensation Impact

- Wages, salaries and benefits (including health and life insurance, retirement payments and the value of non-cash compensation) paid to employees
- Direct: direct change in employee compensation (dollars) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in employee compensation (dollars) per change in final demand for labor in that sector or industry resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in employee compensation (dollars) per change in final demand for labor in that sector or industry resulting from interaction of institutions – including the additional effects of households' spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

Proprietors Income Impact

- Income payments received by self-employed individuals in Addison County.
- Direct: direct change in proprietor's income (millions of dollars) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in proprietor's income (millions of dollars) per change in final demand for labor in that sector or industry resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in proprietor's income (millions of dollars) per change in final demand for labor in that sector or industry resulting from interaction of institutions – including the additional effects of households' spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

⁶ Multipliers are typically calculated as the response of the total economic response of the variable in question to a one-dollar increase in final demand for an industry's output. However, the estimates reported herein are based on the response of all impact variables, including total jobs, to creating 25 new jobs in a given sector or industry. Thus the reported multipliers represent the total response per new job created.

Indirect Business Taxes Impact

- Sales and excise taxes paid by Addison County individuals to businesses
- Direct: direct change in indirect business tax (dollars) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in indirect business tax (dollars) per change in final demand for labor in that sector or industry resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in indirect business tax (dollars) per change in final demand for labor in that sector or industry resulting from interaction of institutions – including the additional effects of households’ spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

Employment Impact

- Number of jobs within Addison County
- Direct: direct change in employment (jobs) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in employment (jobs) per change in final demand for labor demand for labor in that sector or industry resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in employment (jobs) per change in final demand for labor demand for labor in that sector or industry resulting from interaction of institutions – including the additional effects of households’ spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

Output (Sales) Impact

- Value of goods and services produced in Addison County
- Direct: direct change in output (dollars) per change in final demand for labor in that sector or industry.
- Indirect: indirect change in output (dollars) per change in final demand for labor resulting from interaction of local industries purchasing from local industries.
- Induced: induced change in output (dollars) per change in final demand for labor resulting from interaction of institutions – including the additional effects of households’ spending response to changing incomes.
- Total: sum of direct, indirect, and induced effects.

Appendix II Addison County Input-Output IMPLAN Model⁷

An input-output (I/O) analysis traces the flow of goods and services, income, and employment among related sectors of the economy.

An input-output model is a snapshot of an economy in equilibrium, where the gross output of each industry is equal to the gross inputs to the industry. The gross output of an industry includes both inter-industry sales and sales to final demand. The gross input of an industry includes the

⁷ As it is among the clearest and most comprehensive that the current authors have encountered, his appendix reproduces the essential content of Wood and Liang, 2001, Appendix A, pp. 43-51.

purchase of goods and services, labor, investment, and profit. The I/O model provides a means of examining relationships within an economy both among different sectors and between sectors and final consumers such as households and government. The model allows one to examine the impact on the entire economy of a change in one or several economic activities.

Input-Output Transaction Table: An Example

						Purchasing Sectors (Buyers)				Total Gross Output			
						Intermediate Demand		Final Demand					
				Agriculture Forestry	Manufacturing Trade	Finance Services	Household Consumption	Govt. Expenditures	Capital Formation	Exports			
				1	...	j	...	n					
				I Intermediate Production and Consumption				II Final Outputs					
Producing Sectors	Intermediate Inputs	Agriculture	1	Z_{11}	...	Z_{1j}	...	Z_{1n}	C_1	G_1	I_1	E_1	X_1
		Forestry	...	...	...	...	...	...	...	...	...	...	...
		Trade	...	...	...	...	...	...	...	...	...	...	...
		Manufacturing	i	Z_{i1}	...	Z_{ij}	...	Z_{in}	C_i	G_i	I_i	E_i	X_i
		Finance	...	...	...	...	...	...	...	...	...	...	...
Services	n	Z_{n1}	...	Z_{nj}	...	Z_{nn}	C_n	G_n	I_n	E_n	X_n		
				III Primary Inputs to Production				IV Primary Inputs to Final Demand					
Producing Sectors	Primary Inputs	Payments to Households		H_1	...	H_j	...	H_n	H_C	H_G	H_I	H_E	H
		Government		T_1	...	T_j	...	T_n	T_C	T_G	T_I	T_E	T
		Depreciation		D_1	...	D_j	...	D_n	D_C	D_G	D_I	D_E	D
		Imports		M_1	...	M_j	...	M_n	M_C	M_G	M_I	M_E	M
		Total Gross Outlays		X_1	...	X_i	...	X_n	C	G	I	E	

The I/O model works with a transaction table diagramming the flows among sectors. Rows and columns are the producing and purchasing sectors in the economy, respectively. The columns are buyers and the rows are sellers. The more sectors in the model, the more rows and columns there are, and the more inter-linkages the model has. IMPLAN has 528 sectors, of which 344 sectors exist in Vermont.

To interpret a transaction table let's examine the agricultural sector. In the table above, the agricultural sector is shown in the first column and the first row. Column one shows that the agriculture sector buys $\$Z_{11}$ from the agriculture sector itself (row 1), $\$Z_{i1}$ from the manufacturing (row i), $\$H_1$ from households for their labor, and so forth. Total input expenditure by the agriculture sector ($\$X_1$, found in the last row) is the sum of the first column.

To examine what sectors agriculture sells to, look at the first row in the I/O transaction table: the agriculture sector (row one) sells $\$Z_{11}$ to the agriculture sector itself (column one), $\$Z_{1j}$ to the manufacturing sector (column j), $\$C_1$ to households, $\$G_1$ to government, and so on. Total output of the agriculture sector ($\$X_1$, found in the last column of the first row) is the sum of the first row. For each sector, total expenditures (input) always equal total earnings (output).

The input-output transaction table is always balanced at any given time. Any change in this table will trigger changes throughout the economy that will achieve a new balance. For example,

suppose the household demand for agricultural goods (C_1) increases due to increased product promotion. As a result there is a change in the demand for (C_1). The change will increase the total earnings of the agriculture sector (X_1). In order to meet the increase in demand for agricultural goods, the agriculture sector has to buy more intermediate input (e.g., machinery), and hire more people---everything in column one will change. Then the affected manufacturing sector has more earnings (output) because the agriculture sector buys more machines, and in turn the manufacturing sector will buy more inputs from other sectors. The ripple (multiplier) effect due to an initial increase in the demand for agricultural goods will ripple through the economy, until the economy reaches a new balance.

Appendix III Detailed Results

This appendix contains disaggregated direct, indirect, and induced effects for each of the seven sectors.

The following tables display the output generated by the aggregate IMPLAN models. The aggregated models take into account multiple IMPLAN sectors. The industries in each sector were combined to form a new model. IMPLAN generates new multipliers by combining the multipliers from the individual sectors. The results show the affects of an additional 25 workers in each sector.

High Technology.

This sector generates the highest amount of output per 25 workers. Most notably, 25 workers create just under 24 additional jobs across the economy. This is almost a 2 to 1 turnover. Initially the 25 workers can be valued at \$4.2mm, then almost \$2mm is generated in output, an increase of almost 44percent.

High Technology	Direct	Indirect	Induced	Total
Value Added	1,684,848	477,285	525,490	2,687,624
Employee Compensation	1,244,767	288,880	274,790	1,808,437
Proprietors Income	154,012	56,896	41,998	252,906
Indirect Business Taxes	44,717	31,979	52,274	128,970
Employment	25	10.6	13.3	48.8
Output	4,208,490	993,469	836,753	6,038,712

Financial Services

Financial services' 39 percent total output response – a sector we identify as exhibiting an emerging critical mass - ranks second strongest among the seven sectors. The total employment of 1.64 places this sector well above average in terms of job creation.

Financial Services	Direct	Indirect	Induced	Total
Value Added	1,909,284	395,882	351,821	2,656,987
Employee Compensation	861,209	198,881	183,216	1,243,306
Proprietors Income	66,102	36,624	28,107	130,834
Indirect Business Taxes	96,309	18,824	34,819	149,951
Employment	25	7.2	8.9	41
Output	3,166,292	661,927	559,667	4,387,886

Publishing.

Changes in publishing employment have the third highest sector impact on Addison County's economy. The initial 25 jobs create 16 more jobs, an increase of 60 percent; this number is high in comparison to other industries. Output increases by 37 percent, which is low compared to other industries.

Publishing	Direct	Indirect	Induced	Total
Value Added	996,885	293,086	285,341	1,575,312
Employee Compensation	727,803	167,023	148,901	1,043,727
Proprietors Income	21,167	41,309	22,818	85,295
Indirect Business Taxes	25,994	19,270	28,470	73,734
Employment	25	8.6	7.2	40.9
Output	2,912,852	628,821	453,210	3,994,882

Apparel

Unlike the other models, apparel is represented by a single IMPLAN sector. However, it is quite a strong sector. Creating 25 jobs generates an additional 12 jobs, or a multiplier of 1.5, which equals the average across all sectors. Almost \$1mm in additional output is created from the original amount of \$2.6mm, an increase of 33percent.

Apparel	Direct	Indirect	Induced	Total
Value Added	601,492	255,566	202,735	1,059,793
Employee Compensation	450,907	143,937	105,852	700,697
Proprietors Income	49,396	28,449	16,282	94,128
Indirect Business Taxes	9,735	21,788	20,125	51,648
Employment	25	7.2	5.1	37.3
Output	2,595,516	537,804	322,998	3,456,317

Digital Services

Although digital services does not generate as much output or employment as the previous sectors, it does generate the second highest total amount of value added. Output increases of 38 percent when 25 jobs are created, which is on the lower end compared to all the industries.

Digital Services	Direct	Indirect	Induced	Total
Value Added	1,424,973	98,048	365,726	1,888,747
Employee Compensation	794,919	56,771	191,055	1,042,745
Proprietors Income	327,357	19,364	29,517	376,238
Indirect Business Taxes	53,848	4,218	36,371	94,436
Employment	25	2.5	9.2	36.7
Output	1,986,056	178,079	580,595	2,744,731

Professional Services

Although the employment effect is only about 50 percent, an additional 12.2 jobs, the output effect is quite efficient. The overall increase in output is about 45 percent, a higher percentage than any of the previously mentioned pillars.

Professional Services	Direct	Indirect	Induced	Total
Value Added	981,501	221,561	247,681	1,450,744
Employee Compensation	594,843	127,009	129,332	851,184
Proprietors Income	80,607	32,141	20,254	133,002
Indirect Business Taxes	142,983	19,148	24,154	186,285
Employment	25	5.9	6.3	37.2
Output	1,724,616	377,236	396,148	2,498,000

Value-Added Agriculture

This industry exhibits a low employment multiplier, as only 7 jobs are created in response to the initial 25. However, output increases by 37 percent, similar to the increase in publishing without the absolute dollar amount.

Value-Added Agriculture	Direct	Indirect	Induced	Total
Value Added	881,345	110,145	177,641	1,169,130
Employee Compensation	475,972	57,625	92,311	625,908
Proprietors Income	68,418	16,334	14,362	99,114
Indirect Business Taxes	148,156	7,615	16,871	172,642
Employment	25	2.8	4.4	32.3
Output	1,322,110	206,765	289,004	1,817,880

DISAGGREGATED INDUSTRY RESULTS

Following are the disaggregated impact estimates for each of the 30 individual industries, reported by sector with SIC and IMPLAN codes.

HIGH TECHNOLOGY

Organic fibers, noncellulosic				
SIC Code(s): 2824				
IMPLAN #194	Direct	Indirect	Induced	Total
Value Added	2,029,725	686,380	600,267	3,316,373
Labor Income	1,478,045	486,031	361,600	2,325,677
Employee Compensation	1,053,721	365,975	313,403	1,733,099
Proprietors Income	424,325	120,056	48,197	592,577
Indirect Business Taxes	54,190	42,014	59,585	155,789
Employment	25	13.2	15.2	53.4
Output	5,097,806	1,373,460	956,364	7,427,630

HIGH TECHNOLOGY, Continued

Miscellaneous plastic products				
SIC Code(s): 3080				
IMPLAN #220	Direct	Indirect	Induced	Total
Value Added	1,694,623	815,803	528,495	3,038,921
Labor Income	1,185,096	573,945	318,386	2,077,427
Employee Compensation	1,178,033	439,951	275,941	1,893,924
Proprietors Income	7,063	133,993	42,446	183,502
Indirect Business Taxes	38,854	47,783	52,462	139,099
Employment	25	15.9	13.4	54.3
Output	4,828,406	1,717,217	841,995	7,387,618

Aircraft and missile equipment, NEC				
SIC Code(s): 3726 3769				
IMPLAN #391	Direct	Indirect	Induced	Total
Value Added	953,116	284,556	297,968	1,535,640
Labor Income	793,676	201,705	179,510	1,174,890
Employee Compensation	793,676	163,309	155,578	1,112,562
Proprietors Income	0	38,396	23,932	62,329
Indirect Business Taxes	18,431	19,406	29,578	67,414
Employment	25	7	7.5	39.6
Output	2,698,525	571,988	474,718	3,745,231

Mechanical measuring devices				
SIC Code(s): 3823 3824 3829				
IMPLAN #403	Direct	Indirect	Induced	Total
Value Added	1,499,509	328,833	486,787	2,315,129
Labor Income	1,387,840	238,592	293,264	1,919,696
Employee Compensation	1,360,660	206,365	254,166	1,821,191
Proprietors Income	27,180	32,227	39,098	98,505
Indirect Business Taxes	40,450	24,660	48,322	113,431
Employment	25	7.6	12.3	44.9
Output	3,640,332	753,491	775,542	5,169,365

Electromedical apparatus				
SIC Code(s): 3845				
IMPLAN #411	Direct	Indirect	Induced	Total
Value Added	955,808	639,117	394,149	1,989,074
Labor Income	845,099	469,628	237,453	1,552,180
Employee Compensation	832,769	409,061	205,796	1,447,626
Proprietors Income	12,330	60,567	31,657	104,555
Indirect Business Taxes	33,831	46,589	39,126	119,545
Employment	25	15.2	10	50.2
Output	5,410,266	1,644,334	627,954	7,682,554

FINANCIAL SERVICES

Banking				
SIC Code(s): 6000				
IMPLAN #456	Direct	Indirect	Induced	Total
Value Added	2,951,115	330,335	336,545	3,617,995
Labor Income	860,304	260,154	202,748	1,323,206
Employee Compensation	832,374	201,698	175,719	1,209,791
Proprietors Income	27,930	58,456	27,029	113,415
Indirect Business Taxes	72,032	14,596	33,408	120,035
Employment	25	8.5	8.5	42
Output	4,456,422	675,521	536,182	5,668,124

Credit agencies				
SIC Code(s): 6100,6710 6720 6733 6790				
IMPLAN #457	Direct	Indirect	Induced	Total
Value Added	424,626	69,696	143,714	638,037
Labor Income	415,802	62,464	86,579	564,845
Employee Compensation	390,341	48,762	75,037	514,140
Proprietors Income	25,461	13,702	11,542	50,705
Indirect Business Taxes	25,434	3,681	14,266	43,381
Employment	25	2.1	3.6	30.7
Output	842,142	183,267	228,964	1,254,374

Security and commodity brokers				
SIC Code(s): 6200				
IMPLAN #458	Direct	Indirect	Induced	Total
Value Added	554,981	430,284	400,182	1,385,448
Labor Income	893,024	422,904	241,074	1,557,002
Employee Compensation	704,028	323,084	208,940	1,236,052
Proprietors Income	188,997	99,820	32,134	320,951
Indirect Business Taxes	62,783	27,240	39,724	129,748
Employment	25	13.1	10.1	48.2
Output	3,270,378	1,268,579	637,579	5,176,535

FINANCIAL SERVICES, Continued

Insurance carriers				
SIC Code(s): 6300				
IMPLAN #459	Direct	Indirect	Induced	Total
Value Added	2,502,148	643,016	584,290	3,729,455
Labor Income	1,438,578	508,542	352,001	2,299,120
Employee Compensation	1,438,578	379,476	305,073	2,123,127
Proprietors Income	0	129,066	46,928	175,994
Indirect Business Taxes	232,484	12,165	58,000	302,650
Employment	25	20.7	14.8	60.4
Output	4,043,175	881,855	930,886	5,855,916

Insurance agents and brokers				
SIC Code(s): 6400				
IMPLAN #460	Direct	Indirect	Induced	Total
Value Added	757,487	46,474	194,221	998,182
Labor Income	602,170	34,471	116,999	753,640
Employee Compensation	446,830	26,711	101,404	574,946
Proprietors Income	155,339	7,761	15,595	178,695
Indirect Business Taxes	10,263	2,416	19,279	31,958
Employment	25	1.3	4.9	31.2
Output	962,854	86,183	309,438	1,358,475

PUBLISHING

Newspapers				
SIC Code(s): 2710				
IMPLAN #174	Direct	Indirect	Induced	Total
Value Added	821,493	182,423	228,154	1,232,069
Labor Income	631,587	129,949	137,450	898,986
Employee Compensation	622,925	102,101	119,126	844,151
Proprietors Income	8,662	27,848	18,325	54,834
Indirect Business Taxes	18,517	11,567	22,648	52,732
Employment	25	4.8	5.8	35.6
Output	1,854,998	340,933	363,492	2,559,424

PUBLISHING, Continued

Periodicals				
SIC Code(s): 2720				
IMPLAN #175	Direct	Indirect	Induced	Total
Value Added	1,304,345	455,845	385,013	2,145,202
Labor Income	947,795	335,435	231,948	1,515,178
Employee Compensation	933,401	266,978	201,025	1,401,404
Proprietors Income	14,394	68,458	30,923	113,774
Indirect Business Taxes	31,818	27,102	38,219	97,138
Employment	25	11.9	9.7	46.6
Output	3,780,067	869,183	613,398	5,262,649

Books				
SIC Code(s): 2731				
IMPLAN #176	Direct	Indirect	Induced	Total
Value Added	1,703,270	575,711	418,754	2,697,735
Labor Income	1,022,457	374,039	252,276	1,648,772
Employee Compensation	1,005,618	309,942	218,643	1,534,202
Proprietors Income	16,839	64,098	33,633	114,570
Indirect Business Taxes	57,120	49,935	41,568	148,623
Employment	25	13.6	10.6	49.2
Output	5,604,379	1,073,131	667,155	7,344,665

Commercial Printing				
SIC Code(s): 2750				
IMPLAN #179	Direct	Indirect	Induced	Total
Value Added	840,622	235,633	255,578	1,331,833
Labor Income	691,951	160,978	153,972	1,006,901
Employee Compensation	681,031	129,368	133,445	943,844
Proprietors Income	10,919	31,610	20,527	63,057
Indirect Business Taxes	24,411	18,496	25,370	68,277
Employment	25	5.5	6.5	37
Output	2,672,697	439,986	407,184	3,519,867

Radio and TV broadcasting				
SIC Code(s): 4830				
IMPLAN #442	Direct	Indirect	Induced	Total
Value Added	742,108	365,909	260,915	1,368,932
Labor Income	583,906	279,450	157,182	1,020,538
Employee Compensation	513,002	223,131	136,229	872,362
Proprietors Income	70,904	56,319	20,953	148,177
Indirect Business Taxes	26,272	16,694	25,900	68,866
Employment	25	17.1	6.6	48.7
Output	3,124,241	1,136,562	415,691	4,676,495

APPAREL MANUFACTURING

Apparel				
SIC Code(s): 2310 2320 2330 2340 2350 2360 2370 2380				
Apparel/ IM #124	Direct	Indirect	Induced	Total
Value Added	601,492	255,566	202,735	1,059,793
Labor Income	500,303	172,387	122,134	794,824
Employee Compensation	450,907	143,937	105,852	700,697
Proprietors Income	49,396	28,449	16,282	94,128
Indirect Business Taxes	9,735	21,788	20,125	51,648
Employment	25	7.2	5.1	37.3
Output	2,595,516	537,804	322,998	3,456,317

DIGITAL SERVICES

Communications, except radio and TV				
SIC Code(s): 4810 4820 4840 4890				
IMPLAN #441	Direct	Indirect	Induced	Total
Value Added	2,448,141	361,112	402,650	3,211,903
Labor Income	1,062,072	270,663	242,567	1,575,302
Employee Compensation	939,728	201,041	210,231	1,351,000
Proprietors Income	122,344	69,622	32,336	224,302
Indirect Business Taxes	235,431	16,413	39,969	291,813
Employment	25	9.4	10.2	44.6
Output	4,745,980	663,204	641,505	6,050,688

Computer and data processing services				
SIC Code(s): 7370				
IMPLAN #475	Direct	Indirect	Induced	Total
Value Added	1,251,627	48,709	359,032	1,659,368
Labor Income	1,132,476	38,302	216,278	1,387,055
Employee Compensation	770,385	29,651	187,452	987,488
Proprietors Income	362,091	8,650	28,826	399,567
Indirect Business Taxes	23,084	2,365	35,639	61,087
Employment	25	1.1	9.1	35.2
Output	1,518,467	88,895	572,024	2,179,386

VALUE-ADDED AGRICULTURE

Sawmills and planing mills, general				
SIC Code(s): 2421				
IMPLAN #134	Direct	Indirect	Induced	Total
Value Added	1,168,870	598,949	377,212	2,145,031
Labor Income	848,994	393,234	227,238	1,469,466
Employee Compensation	674,661	316,160	196,947	1,187,769
Proprietors Income	174,333	77,074	30,290	281,698
Indirect Business Taxes	42,664	46,077	37,444	126,185
Employment	25	13.8	9.5	48.4
Output	4,253,401	1,348,099	600,980	6,202,480

Soap and other detergents				
SIC Code(s): 2841				
IMPLAN #196	Direct	Indirect	Induced	Total
Value Added	1,433,234	245,772	268,467	1,947,473
Labor Income	713,181	172,039	161,729	1,046,948
Employee Compensation	583,092	135,777	140,170	859,040
Proprietors Income	130,089	36,261	21,559	187,908
Indirect Business Taxes	28,810	19,470	26,649	74,930
Employment	25	5.2	6.8	37
Output	2,879,780	474,004	427,725	3,781,508

Toiletry preparations				
SIC Code(s): 2844				
IMPLAN #199	Direct	Indirect	Induced	Total
Value Added	2,195,509	817,162	452,578	3,465,248
Employee Compensation	734,686	478,816	236,297	1,449,800
Proprietors Income	150,123	128,799	36,343	315,265
Indirect Business Taxes	45,231	48,119	44,925	138,275
Employment	25	21.9	11.4	58.4
Output	6,275,637	1,734,034	721,052	8,730,724

Food stores				
SIC Code(s): 5400				
IMPLAN #450	Direct	Indirect	Induced	Total
Value Added	826,680	22,179	167,317	1,016,176
Employee Compensation	479,684	11,337	87,360	578,381
Proprietors Income	60,699	3,457	13,437	77,593
Indirect Business Taxes	145,240	1,356	16,609	163,205
Employment	25	0.6	4.2	29.8
Output	908,951	40,748	266,569	1,216,268

VALUE-ADDED AGRICULTURE, Continued

Furniture & home furnishings stores				
SIC Code(s): 5700				
IMPLAN #453	Direct	Indirect	Induced	Total
Value Added	820,230	53,304	162,631	1,036,165
Employee Compensation	466,868	27,247	84,914	579,028
Proprietors Income	38,573	8,308	13,061	59,942
Indirect Business Taxes	159,695	3,258	16,144	179,097
Employment	25	1.4	4.1	30.5
Output	1,017,953	97,931	259,103	1,374,986

Miscellaneous retail				
SIC Code(s): 5900				
IMPLAN #455	Direct	Indirect	Induced	Total
Value Added	827,762	62,939	166,074	1,056,775
Employee Compensation	447,237	32,172	86,711	566,119
Proprietors Income	61,191	9,810	13,337	84,338
Indirect Business Taxes	162,001	3,847	16,485	182,333
Employment	25	1.6	4.2	30.8
Output	1,061,223	115,631	264,589	1,441,444

PROFESSIONAL SERVICES

Engineering, architectural services				
SIC Code(s): 8710				
IMPLAN #506	Direct	Indirect	Induced	Total
Value Added	625,310	306,315	253,194	1,184,818
Employee Compensation	437,873	178,298	132,194	748,365
Proprietors Income	141,998	71,686	20,330	234,014
Indirect Business Taxes	9,092	9,961	25,133	44,186
Employment	25	10.5	6.4	41.9
Output	1,863,610	566,980	403,395	2,833,984

PROFESSIONAL SERVICES, Continued

Management and consulting services				
SIC Code(s): 8740				
IMPLAN #508	Direct	Indirect	Induced	Total
Value Added	837,690	220,694	281,029	1,339,414
Employee Compensation	568,410	131,547	146,728	846,685
Proprietors Income	183,671	38,759	22,566	244,996
Indirect Business Taxes	10,950	10,850	27,896	49,696
Employment	25	6.6	7.1	38.7
Output	1,829,768	404,934	447,743	2,682,445

Research, development & testing services				
SIC Code(s): 8730				
IMPLAN #509	Direct	Indirect	Induced	Total
Value Added	356,645	129,781	133,894	620,320
Employee Compensation	255,074	75,480	69,907	400,462
Proprietors Income	83,847	24,826	10,751	119,424
Indirect Business Taxes	6,375	6,036	13,291	25,702
Employment	25	3.6	3.4	32
Output	976,220	238,066	213,324	1,427,609

Automotive dealers & service stations				
SIC Code(s): 5500				
IMPLAN #451	Direct	Indirect	Induced	Total
Value Added	1,362,460	121,765	267,518	1,751,743
Employee Compensation	760,683	62,241	139,678	962,602
Proprietors Income	48,821	18,978	21,486	89,285
Indirect Business Taxes	280,519	7,442	26,556	314,516
Employment	25	3.1	6.8	34.9
Output	1,814,130	223,708	426,208	2,464,046

Other business services				
SIC Code(s): 7320 7331 7338 7383 7389				
IMPLAN #470	Direct	Indirect	Induced	Total
Value Added	404,098	274,905	144,709	823,712
Employee Compensation	199,107	160,097	75,554	434,758
Proprietors Income	69,851	45,805	11,620	127,276
Indirect Business Taxes	14,178	15,312	14,364	43,854
Employment	25	7.7	3.7	36.3
Output	1,675,083	490,129	230,554	2,395,766

PROFESSIONAL SERVICES, Continued

Other educational services				
SIC Code(s): 8230 8240 8290				
IMPLAN #497	Direct	Indirect	Induced	Total
Value Added	675,733	159,383	205,855	1,040,971
Employee Compensation	552,163	94,687	107,482	754,332
Proprietors Income	12,718	26,944	16,534	56,195
Indirect Business Taxes	47,088	9,259	20,434	76,782
Employment	25	4.7	5.2	34.9
Output	1,413,149	335,415	327,965	2,076,528

Research, development & testing services				
SIC Code(s): 8730				
IMPLAN #509	Direct	Indirect	Induced	Total
Value Added	356,645	129,781	133,894	620,320
Employee Compensation	255,074	75,480	69,907	400,462
Proprietors Income	83,847	24,826	10,751	119,424
Indirect Business Taxes	6,375	6,036	13,291	25,702
Employment	25	3.6	3.4	32
Output	976,220	238,066	213,324	1,427,609