

NEW COMPANIES IN TUCSON/PIMA COUNTY:
ECONOMIC AND TAX REVENUE IMPACTS
DURING FY 2000-2001

Prepared for
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(GTEC)

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EXECUTIVE SUMMARY

Between 1999 and 2001, twelve new companies established their operations in Tucson/Pima County. They include affiliates of several global companies involved in the manufacturing and distribution of products ranging from precision metal parts for the computer, telecommunications and consumer electronics industries, to health shakes and nutrition bars. There also is a new research and development facility for design and development of gaming software. As in previous years, Tucson/Pima County attracted a number of regional and national teleservices firms.

Together, the twelve companies created 1,230 direct jobs in the local economy during fiscal year (FY) 2000-2001 and paid about \$25.4 million in direct wages. They invested \$140.2 million in construction of new or renovation of existing commercial space. Because these new dollars were respent in the local economy, the total dollar impact was considerably larger. This study provides estimates of these indirect and induced impacts on the Tucson/Pima County economy in terms of jobs, wages, tax revenues, sales and total dollar impact. All estimates apply to FY 2000-2001.

*New Companies in
Tucson/Pima County*

Advantage Receivable Solutions

AFCO

APAC Customer Services, Inc.

Aristocrat Technologies, Inc.

Atlas Wire Corporation

Card Management Corporation

Cheng Fwa Industrial Company

Cricket Communications

Slim Fast Foods Company

Sprint

Sun Coast Flexible Products

The Infinity Partners

Job Impact

In addition to 1,230 direct jobs, the twelve companies generated an additional 530 jobs in various sectors of the Tucson/Pima County economy. These additional jobs were generated as companies purchased goods and services from other local businesses, and as the employees in these companies spent their wages to buy groceries, clothing, household furnishings and personal services, including education and entertainment.

Construction/capital investment resulted in 1,080 direct jobs in the construction sector, and an additional 1,300 indirect and induced jobs as a result of spending by businesses and employees.

Thus, the total job impact of the twelve new companies was 4,140 jobs

Total Job Impact 4,140

- 1,230 direct jobs in new companies
- 530 indirect and induced jobs
- 2,380 jobs related to construction/capital investment

Wage Impact

In addition to \$25.4 million in direct wages paid to employees in the new companies, an additional \$10.7 million in wages was generated through a multiplier effect. The construction/capital investment activity generated another \$45.2 million in wages.

The total wage impact was approximately \$81.3 million.

Total Wage Impact \$81.3 million

- \$25.4 million in direct wages
- \$10.7 million in indirect and induced wages
- \$45.2 million in wages related to construction/capital investment

Tax Revenue Impact

Revenues to state, county and city governments are generated through property and sales taxes. An estimated \$3.2 million in taxes were generated through operating expenditures and employees' spending. Another \$5.8 million in tax revenues were generated in association with the construction/capital investment activity.

The total tax revenue impact was \$9 million. Of that amount, the State of Arizona collected \$3.8 million, Pima County \$3.2 million and the City of Tucson approximately \$2 million.

Total Tax Revenue Impact \$9 million

- \$3.8 million to the State
- \$3.2 million Pima County
- \$2.0 million to the City of Tucson

Total Dollar Impact

The total dollar impact of the twelve new companies, including wages and tax revenues was approximately \$292 million.

Out of that amount, \$203.2 million was associated with construction/capital investment, a one-time impact.

The remaining \$88.8 million, which was associated with companies' annual operations, and will continue to be generated on an annual basis. If the employment levels and operations expenditures change, so will the extent of the ongoing impacts. The new companies expect to reach an employment level of 1,970 jobs in FY 2002-2003. During that fiscal year, the total dollar impact is expected to be \$146.7 million (in 2000 dollars).

Total Dollar Impact \$ 292 million

- *\$ 81.3 million in wages*
- *\$ 9.0 million in tax revenues*
- *\$ 201.7 million in other dollar impact*

NEW COMPANIES IN TUCSON/PIMA COUNTY: ECONOMIC AND TAX REVENUE IMPACTS DURING FY 2000-2001

INTRODUCTION

Since 1992, the University of Arizona Office of Economic Development has conducted annual impact studies of companies that move to or expand their businesses in Tucson/Pima County as a result of a focused recruitment program led by the Greater Tucson Economic Council (GTEC). GTEC accomplishes its mission of attracting and retaining quality jobs in the local economy through an aggressive targeting program conducted in cooperation with a number of other organizations involved with economic development in the Tucson region. This broad partnership of organizations includes the City of Tucson Office of Economic Development, Pima County, the Tucson Metropolitan Chamber of Commerce, the University of Arizona, Pima Community College, the Arizona Department of Commerce, the Metropolitan Tucson Convention and Visitors Bureau and members of the private sector such as utility providers and the real estate community.

The latest newcomers are twelve companies that selected Tucson/Pima County as the site for their new operations between 1999 and 2001. In alphabetical order these include the following companies: Advantage Receivable Solutions, a teleservices facility; AFCO, a new manufacturing, warehouse and distribution center of a New York based manufacturer of modular enclosures and data communications products; APAC Customer Services, Inc., a sales center for Customer Relationship Management (CRM), a provider of integrated marketing solutions; Aristocrat Technologies Inc., a research and development facility for design and development of gaming software and solutions; Atlas Wire Corporation, a manufacturing and assembly plant; Card Management Corporation, a teleservices operation; Cheng Fwa Industrial Company, a Taiwanese manufacturer of ISO-9002 certified precision metal parts for the computer, telecommunications and consumer electronics industries; Cricket Communications, a telecommunication operation facility; Slim Fast Foods Company, the western manufacturing facility of a leading manufacturer, marketer and distributor of health shakes and nutritional bars; Sprint, a teleservices company's new national call center for sales and technical support for its new wireless broadband product; Sun Coast Flexible Products, a manufacturer of packaging products; and The Infinity Partners, an expansion of the company's aircraft interiors operation.

The twelve new companies planned to create 1,970 new jobs within a year or two after establishing their operations in Tucson/Pima County. This is only one indicator of their economic importance, however. Their total economic and tax revenue impact in the local economy is considerably higher. As these companies export their goods and services to markets outside Tucson/Pima County, they bring new money into the local economy and generate, using economic terminology, “impacts.” When dollars are spent locally on supplies, services and other inputs, additional jobs are generated which, in turn, induce another round of local purchases by employees of those businesses. Due to this multiplier effect, the total impact on the economy ends up being larger than just the direct employment in new firms. The total impact reflects a larger number of businesses and their employees benefiting from the arrival of new companies in Tucson/Pima County.

As in previous years, the specific objective of this study is to quantify the economic and tax revenue contributions of the new companies to the local economy. While this study is focused on providing an accurate assessment of quantifiable impacts, there are other “non-quantifiable” contributions associated with new companies moving to the community. For example, a general improvement of workforce skills, support for existing industry clusters and enhancement of Tucson/Pima County’s attractiveness to other firms are all of paramount importance to economic development efforts. These latter aspects, however, are outside the scope of this study.

SCOPE OF THE ANALYSIS

This analysis includes a total of twelve companies that located operations in Tucson/Pima County between 1999 and 2001. On the basis of the direct employment levels and associated wages, the study provides estimates of economic and tax revenue impacts in the following four categories:

- Indirect and induced jobs
- Indirect and induced wages
- Direct and induced City, County and State tax revenues
- Total dollar impact.

The basis for this estimate is the actual number of jobs in FY 2000-2001. Therefore, all estimates apply to FY 2000-2001. Because the companies expect to reach their projected levels of full employment between 18 months and three years after establishing their operations at the new sites, this study also provides estimates of economic and tax revenue impacts based on those anticipated full employment figures (approximately in the year 2003).

RESEARCH METHODS AND DATA

Data for this analysis were obtained from two main sources: GTEC and the companies themselves. GTEC provided basic information for each company, including the name, contact person, product or services, location, anticipated number of jobs and average wages. More detailed information about each company's affiliation and product lines were obtained from GTEC's press releases. Additional data, such as the actual levels of employment during FY 2000-2001, were collected through a telephone survey conducted by the University of Arizona Office of Economic Development during August 2001.

Two models produced the impact results reported in this study. The Pima County Input-Output (I-O) model portrays the County's economy in terms of more than 200 sectors that are interrelated through purchases and sales. The model estimates indirect and induced jobs, indirect and induced wages and the total dollar impact. Tax revenue impacts were estimated by means of City of Tucson, Pima County and the State of Arizona revenue models.

The total dollar impact is the total volume of business activity or gross sales. The difference between the total dollar impact and the sum of wages and taxes is referred to as the "other dollar impact". In this report, thus, "other dollar impact" corresponds to a portion of the total dollar impact that is not measured by wages and taxes. The I-O model does not specify this category because it is the three other categories – wages, taxes and total dollar impact – that are the primary focus of an impact analysis. We have included this category in this report only for the purpose of accounting for a "missing link" in the final arithmetic (Tables 5 and 10, and the Executive Summary).

More information about each model's methodology and definition of terms is provided in the Appendix.

CHARACTERISTICS OF THE NEW COMPANIES

The twelve new companies reported a total of 1,230 new direct jobs during FY 2000-2001. Out of the twelve companies, six fall in the category of manufacturing firms, one is a research and development (R&D) organization, while the remaining five are service providers. The manufacturing and R&D firms accounted for about 9 percent of the new direct jobs, while the services firms accounted for 91 percent. In terms of payroll, however, the service firms accounted for just 68 percent of all direct wages. This reflects the fact that manufacturing and R&D firms pay higher wages and salaries than firms in the services sector.

Manufacturing and service providers also differ in terms of the indirect impacts they generate. Indirect jobs and associated wages depend upon the extent to which the new companies use locally produced goods and services. Thus, two businesses of comparable size but dissimilar activities may have different impacts on indirect jobs and associated wages and sales. Conversely, two companies that differ in size and nature may generate approximately the same volume of indirect jobs. Ideally, from an economic development perspective, it is most desirable to have a situation where companies in the local economy are closely linked to each other through purchases and sales, thus generating the smallest leakages of money to suppliers outside the region.

ONGOING IMPACTS (OPERATIONS-RELATED)

Operations-related impacts are those that involve ongoing business operations and are generated in the local economy through daily expenditures for items such as supplies, utilities and labor costs. The results presented in Tables 1 through 4 apply to FY 2000-2001. They are generated within one year, and will be generated every year providing the companies continue to export their goods and services to markets outside the Tucson/Pima County area. This is why the operations-related impacts are also referred to as ongoing impacts.

Four types of impacts are presented: number of jobs, wages, tax revenues and total dollar impact.

Jobs

Table 1 provides direct employment data together with estimates of indirect and induced jobs generated through the multiplier effect. Direct employment was 1,230 jobs (both full-time and part-time). An additional 280 indirect and 250 induced jobs were generated in different sectors of the local economy. Indirect jobs reflect purchases and sales of goods and services that occur between businesses, while induced jobs result from employees in those businesses spending their earnings on, for example, consumer goods, services and entertainment. The total job impact in Tucson/Pima County, including direct, indirect and induced effects, was 1,760 jobs. Thus, for every 10 new jobs that the new companies created, an additional 4 jobs were generated in the community.

Table 1
Job Impact In FY 2000-2001 (Ongoing)

NUMBER OF JOBS	
Direct	1,230
Indirect	280
Induced	250
TOTAL	1,760

Sources: Company survey, GTEC, and UA Office of Economic Development I-O Model.

Table 2 shows the distribution of new jobs (direct, indirect and induced) among the Tucson/Pima County economic sectors. The services sector benefited the most, with 1,360 jobs or 77.3 percent of all new jobs generated in association with the twelve new companies. About 160 jobs were in trade (retail and wholesale combined), another 110 in manufacturing, and between 40 and 50 each in the finance-insurance-real-estate (FIRE) and transportation-communications-public-utilities (TCPU) sectors. The remaining 40 jobs were generated in other sectors of the local economy (including construction).

Table 2
Job Impact By Sector In FY 2000-2001 (Ongoing)

	NUMBER OF JOBS	%
Services	1,360	77.3
Trade	160	9.1
Manufacturing	110	6.3
FIRE	50	2.8
TCPU	40	2.3
Construction	20	1.1
All other	20	1.1
TOTAL	1,760	100.0

Source: UA Office of Economic Development I-O Model.

Wages

Table 3 displays estimates of direct, indirect and induced wages. The total wage impact was \$36.1 million. Out of that figure, the twelve new companies contributed about \$25.4 million in direct wages. In addition, about \$6.1 million was generated through indirect impacts and another \$4.6 million through induced impacts, totaling \$10.7 million in additional wages. Thus, for every dollar paid directly to employees in new companies, an additional 42 cents in wages were generated in other sectors throughout the local economy.¹

Table 3
Wage Impact In FY 2000-2001 (Ongoing)

	WAGES (\$)
Direct	25,419,600
Indirect	6,097,400
Induced	4,599,300
TOTAL	36,116,300

Source: UA Office of Economic Development I-O Model.

¹ A "multiplier" is the ratio between total impact and direct impact. In case of wages, for example, dividing the total wage impact of \$36,116,300 by direct wages of \$25,419,600 results in the wage multiplier of 1.42. This number includes one direct dollar and 42 indirect and induced cents. Note that this multiplier is a composite multiplier reflecting the specific mix of companies (industries) in this study. Individual companies (industries) may have higher or lower wage multipliers than this average.

Tax Revenues

Table 4 shows the amounts of estimated revenues that accrue to local and state governments. Direct revenues are amounts paid as a direct result of the new firms' expenditures, *i.e.*, taxes paid on equipment purchases and utilities. Induced revenues are associated with employee spending (direct, indirect and induced wages). Induced revenues include such monies as sales tax on goods purchased with wages.

Table 4
Tax Revenue Impact In FY 2000-2001 (Ongoing)

	DIRECT (\$)	INDUCED (\$)	TOTAL (\$)
State of Arizona	76,800	1,611,700	1,688,500
Pima County	6,200	605,200	611,400
City of Tucson	42,000	817,500	859,500
TOTAL	125,000	3,034,400	3,159,400

Source: UA Economic and Business Research Program Revenue Model.

Direct revenue impacts occur at the time of the activity, *i.e.*, at the time of an equipment purchase. Certain induced revenues take a few years to show the full impact, however. For instance, induced property tax revenues require time for the housing market to adjust to the increase in local income associated with new activity.

Estimates of direct and induced revenues associated with the current (FY 2000-2001) operations of the twelve companies are based on direct, indirect and induced jobs (Table 1), wages (Table 2) and total dollar impact (Table 5). As shown in Table 4, direct revenues generated by ongoing operations were estimated at \$125,000 annually. This included City of Tucson tax revenues of \$42,000 (generated through city sales tax and state shared sales tax), Pima County tax revenues of \$6,200 (generated through state shared sales tax) and State tax revenues of \$76,800 (generated through the states sale tax).

Induced tax revenues are essentially the personal taxes paid by workers in all new firms and all workers that are related to those firms, through either business-to-business linkages or employees' spending. The estimated total induced tax revenue impact of \$3 million was distributed as follows: \$0.8 million to the City of Tucson (generated through urban revenue sharing, state shared sales taxes, state shared highway user revenue fund, vehicle license tax, property tax and city sales tax), \$0.6 million to Pima County (through state shared sales tax, state shared highway user revenue fund, vehicle license tax and property tax) and \$1.6 million to the State of Arizona (generated through the state income tax, sales tax, highway user revenue fund, vehicle license tax and property tax).

By combining direct and induced impacts, the total tax revenue impact was \$3.2 million. Out of that amount, \$1.7 million was distributed to the State of Arizona, over \$0.8 million to the City of Tucson and over \$0.6 million to Pima County.

Total Dollar Impact

The total dollar impact, which can be described as the total amount of money that circulates in the local economy in association with the new companies' activity during one year, is shown in Table 5. It includes wages (reported in Table 3), tax revenues (from Table 4), and sales.

Table 5
Total Dollar Impact In FY 2000-2001 (Ongoing)

	WAGES	TAX REVENUES	OTHER DOLLAR IMPACT	TOTAL
Direct	25,419,600	125,000	33,932,000	59,476,600
Indirect/induced	10,696,700	3,034,400	15,588,900	29,320,000
TOTAL	36,116,300	3,159,400	49,520,900	88,796,600

Sources: UA Office of Economic Development I-O Model, and UA Economic and Business Research Program Revenue Model.

The total dollar impact of the twelve companies on the local economy was estimated to be \$88.8 million. Out of that amount, \$59.5 million were directly associated with the new companies' operations, and another \$29.3 million were generated as indirect and induced impacts. Thus, for every direct dollar that the new companies injected into the local economy, an additional 49 cents were generated in the Tucson/Pima County economy.

ONE-TIME IMPACTS (CONSTRUCTION/CAPITAL INVESTMENT-RELATED)

In addition to the ongoing (annual) expenditures, new companies often construct new commercial space or remodel an existing commercial space. They also invest in equipment, machinery and various supplies necessary for starting the new operation. The impacts on jobs, wages, tax revenues and sales in the local economy usually last only for the construction/renovation phase, and are assumed to cease after a year. Thus, both construction and capital investments are referred to as one-time spending.

According to data provided by GTEC, the new companies spent an aggregate of \$140.2 million on construction of new commercial space, remodeling of existing space and other capital investments associated with starting new operations in Tucson/Pima County. As in the preceding section, four types of impacts are presented: number of jobs, wages, tax revenues and total dollar impact.

Jobs

As shown in Table 6, approximately 2,380 jobs were generated in Tucson/Pima County due to the construction and capital investment activity of the new companies. Out of that number, more than 1,000 jobs were direct jobs in the construction sector, while about 900 indirect and about 400 induced jobs also were generated through linkages of construction companies to other businesses and employees' spending in the local community.

Table 6
Job Impact In FY 2000-2001 (One-Time)

NUMBER OF JOBS	
Direct	1,080
Indirect	900
Induced	400
TOTAL	2,380

Source: UA Office of Economic Development I-O Model.

Table 7 shows in more detail how these jobs were distributed throughout the local economy. Besides the construction sector, which accounted for about 46 percent of all jobs related to construction and capital investment activity (1,100 jobs), the trade sector and the services sector also benefited with about 700 and 400 new jobs, respectively. The FIRE and TCPU sectors benefited from 60 to 80 new jobs each. About 40 jobs were generated in all other sectors, including manufacturing.

Table 7
Job Impact By Sector In FY 2000-2001 (One-Time)

	NUMBER OF JOBS	%
Construction	1,100	46.2
Trade	700	29.4
Services	400	16.8
FIRE	80	3.4
TCPU	60	2.5
Manufacturing	20	0.8
All other	20	0.8
TOTAL	2,380	100.0

Source: UA Office of Economic Development I-O Model.

Wages

The wage impact is shown in Table 8. An estimated \$45.2 million in total wages (direct, indirect and induced) was generated as a result of new construction and capital investment activity.

Table 8
Wage Impact In FY 2000-2001 (One-Time)

	WAGES (\$)
Direct	22,247,100
Indirect	17,169,300
Induced	5,744,900
TOTAL	45,161,300

Source: UA Office of Economic Development I-O Model.

Tax Revenues

As with one-time job and wage impacts due to construction and capital investment, there are tax revenue impacts that accrue to the State, County and City of Tucson. Table 9 displays direct, induced and total tax revenue impacts.

Table 9
Tax Revenue Impact In FY 2000-2001(One-Time)

	DIRECT (\$)	INDUCED (\$)	TOTAL (\$)
State of Arizona	59,400	2,015,300	2,074,700
Pima County	1,813,600	774,900	2,588,500
City of Tucson	62,200	1,063,000	1,125,200
TOTAL	1,935,200	3,853,200	5,788,400

Source: UA Economic and Business Research Program Revenue Model.

Construction and capital investment activity generated an estimated \$59,400 in direct tax revenues to the State (through the sales tax), while \$1.8 million accrued to Pima County (through the state shared sales tax and the property tax). The City of Tucson collected an estimated \$62,200 in direct tax revenues through the state shared tax, the property tax and the city sales tax.

Induced revenues retained by the State were estimated at over \$2 million. These revenues were generated through the state income tax, sales tax, highway user revenue fund, vehicle license tax and property tax. Pima County received an estimated \$0.8 million in revenues through the state shared sales tax, state shared highway user revenue fund, vehicle license tax and property tax. The City of Tucson collected an estimated \$1.1 million in induced revenues from urban revenue sharing, state shared sales tax, state shared highway user revenue fund, vehicle license tax, property tax and the city sales tax.

The total tax revenue impact due to construction and capital investment was \$5.8 million, out of which the State received an estimated \$2.1 million, Pima County \$2.6 million and the City of Tucson \$1.1 million.

Total Dollar Impact

Total dollar impact of the new companies' construction and capital investment is the total amount of money that circulates in the local economy in association with these activities. In applying the input-output methodology, it was assumed that the construction and capital investment took place within one year.

Table 10 shows total dollar impact and summarizes its various components: wage impact (reported in Table 8), tax revenue impact (from Table 9) and the remaining dollar impact.

Table 10
Total Dollar Impact In FY 2000-2001 (One-Time)

	WAGES	TAX REVENUES	OTHER DOLLAR IMPACT	TOTAL
Direct	22,247,100	1,935,200	15,967,700	140,150,000
Indirect/induced	22,914,200	3,853,200	36,243,600	63,011,000
TOTAL	45,161,300	5,788,400	152,211,300	203,161,000

Sources: UA Office of Economic Development I-O Model, and UA Economic and Business Research Program Revenue Model.

Construction and capital investment associated with the new companies accounted for an estimated \$203.2 million impact on the Tucson/Pima County economy. This included \$140.2 million that was directly spent on construction and capital investment and an additional \$63 million generated through the multiplier effect. Thus, every dollar directly spent on construction and capital investment projects generated an additional 45 cents in the local economy.

SUMMARY OF ONGOING AND ONE-TIME IMPACTS IN FY 2000-2001

Table 11 summarizes estimates of the two basic sources of economic and tax revenue impacts in connection with the twelve new companies in Tucson/Pima County during FY 2000-2001: ongoing (operations-related) impacts and one-time impacts due to construction and capital investment activity.

The total dollar impact was about \$292 million, of which about \$81.3 million were distributed in wages and an estimated \$9 million were collected in tax revenues. The State collected an estimated \$3.8 million, Pima County \$ 3.2 million and City of Tucson about \$2 million.

Table 11
Summary of Ongoing And One-Time Impact In FY 2000-2001

	ON GOING	ONE-TIME	TOTAL (\$)
Jobs	1,760	2,380	4,140
Wages	36,116,300	45,161,300	81,277,600
Tax revenues			
State	1,688,500	2,074,700	3,763,200
Pima County	611,400	2,588,500	3,199,900
City of Tucson	859,500	1,125,200	1,984,700
Other dollar impact	49,520,900	152,211,300	201,732,200
TOTAL	88,796,600	203,161,000	291,957,600

Sources: UA Office of Economic Development I-O Model, and UA Economic and Business Research Program Revenue Model.

About 4,140 new jobs were generated in the local economy. The economic sectors that benefited from the new companies are shown in Table 12. The services and construction sectors benefited the most, with about 1,760 new jobs in the services sector and about 1,130 in construction. The trade sector, with 870 jobs, benefited largely through employee spending. An additional 130 new jobs were generated in manufacturing. Practically every economic sector was affected, including FIRE and TCPU with over 100 new jobs each.

Table 12
Total Job Impact By Sector In FY 2000-2001
(Ongoing And One-Time)

SECTOR	NUMBER OF JOBS	%
Services	1,760	42.5
Construction	1,130	27.3
Retail trade	700	16.9
Wholesale	170	4.1
Manufacturing	130	3.1
FIRE	120	2.9
TCPU	100	2.4
All other	30	0.7
TOTAL	4,140	100.0

Source: UA Office of Economic Development I-O Model.

PROJECTED ECONOMIC AND REVENUE IMPACTS IN FY 2002-2003

The twelve new companies anticipate increases in employment within two to three years of starting operations in Tucson/Pima County. Total direct employment in FY 2002-2003 is expected to increase by 740 jobs to reach a total of 1,970 direct jobs. Table 13 shows projected direct, indirect and induced jobs and associated wage impacts. The total job impact will be about 2,830 jobs with \$68.3 million in wages. All projected dollar figures are in 2000 dollars.

Table 13
Projected Job And Wage Impacts In FY 2002-2003

	JOBS	WAGES (2000 DOLLARS)
Direct	1,970	47,256,800
Indirect/induced	860	21,079,800
TOTAL	2,830	68,336,600

Source: UA Office of Economic Development I-O Model.

The projected revenue impact is shown in Table 14. Total tax revenue impact is expected at \$15.4 million and will be distributed as follows: the State can expect \$7.1 million in tax revenues, Pima County \$4.6 million and the City of Tucson \$3.7 million.

Table 14
Projected Tax Revenue Impact In FY 2002-2003

	TAX REVENUES (2000 DOLLARS)
State of Arizona	7,112,500
Pima County	4,575,200
City of Tucson	3,703,400
TOTAL	15,391,100

Source: UA Economic and Business Research Program Revenue Model.

The projected total dollar impact is shown in Table 15. It is estimated that in FY 2002-2003 the total dollar impact will be in about \$146.7 million.

Table 15
Projected Total Impacts In FY 2002-2003

Jobs	2,830
Wages*	68,336,600
Tax revenues*	15,391,100
Other dollar impact*	62,984,600
TOTAL DOLLAR IMPACT*	146,712,300

** In 2000 dollars.*

*Sources: UA Office of Economic Development I-O Model, and
UA Economic and Business Research Program Revenue Model.*

CONCLUSION

The analysis of the twelve new companies that relocated or established new operations in Tucson/Pima County involved both the operations-related (on-going) and capital investment-related (one-time) impacts on jobs, wages and tax revenues. These impacts were aggregated to arrive at the total dollar amount of money that was generated and re-spent in the local economy in FY 2000-2001.

The results indicate that the total job impact on the local economy was a total of 4,140 jobs with about \$81.3 million in wages. The total dollar impact (including wages and tax revenues) was about \$292 million. The State of Arizona, Pima County and the City of Tucson combined received \$8.9 million in taxes. Estimates suggested that Pima County received about \$3.2 million while the City of Tucson received about \$2 million in revenues.

As in the past, the scope of the study was the measurable impacts on the local economy associated with operation-related expenditures, construction activity and employee spending. There are, of course, other significant benefits to the local community that are intangible and are beyond the scope of this study. These, however, need to be taken into consideration for a comprehensive view of the role of the new companies in the Tucson/Pima economy.

APPENDIX

Definitions

Direct jobs refer to the jobs in basic or export industries; in this study, “direct jobs” included 1,230 jobs that the new companies opened in the community during FY 2000-2001. Associated with direct jobs are **direct wages and salaries** paid to these employees.

Indirect jobs are generated when a new company moves to an area and purchases supplies and services from other companies, resulting in an increased demand for products and services in other industries and thus increased demand for labor input. These new jobs in supporting industries are referred to as indirect jobs. Accordingly, wages and salaries paid to those employees are called **indirect wages/salaries**. The more a company buys from other firms in the area, the larger the number of indirect jobs in that area will be. Otherwise, more indirect jobs will be generated outside the region.

Induced jobs result as employees in both basic companies and their supplying businesses spend their incomes in the community; this generates additional jobs and associated wages and salaries (**induced wages/salaries**). Typically, most induced jobs are generated in the retail and services sectors, reflecting household expenditure patterns.

Direct tax revenue impacts are generated by expenditures by the firm/business itself. In addition to paying workers, the company or new business makes purchases and expenditures that generate tax revenue dollars to cities, counties and the State of Arizona.

Induced tax revenues are those revenues that are generated when income or wages are spent in the local economy. When an industry hires additional workers, their payroll represents an increase in income to the area. As this money is respent, taxes are paid in the form of, for example, sales taxes, property taxes and vehicle license taxes. In addition, when a basic industry expands, the output and work force of other industries that sell to the basic industry also expand. Workers in these technically linked industries also respent their money in the community generating revenues.

Property taxes are imposed in this State at many different levels of government, including counties, cities, school districts and a variety of special districts, *i.e.*, community colleges and fire districts. Only property taxes that accrue to Pima County and the City of Tucson are computed in this study.

The **Vehicle License Tax** is a tax imposed on the value of the car, currently set at a rate of \$4.00 per \$100 of value, where value is set at 60 percent of the manufacturer’s base retail price for

the first 12 months of vehicle life, and value is reduced by 15 percent in each 12 month period following the first 12 months of the vehicle's life.

The **State-Shared Fuel Taxes and Highway User Revenue Funds (HURF)** consists primarily of: gasoline tax collections, diesel fuel tax collections, a portion of the Vehicle License Tax, county registration collections (*i.e.*, the charge paid at registration), and the motor carrier tax (imposed on trucks according to the miles driven, where the rate varies with the weight of the trucks).

State-Shared Sales Tax Collections consists of a State imposed "sales" tax on 17 categories of taxable activities. The most important of these for the present analysis are utilities, communications, publishing, printing, restaurants and bars, rentals of real and personal property, contracting (materials only, or 65 percent of the contracting award), amusements, hotels/motels and retail. Each of these activities is taxed by the State at 5 percent, except hotels, motels and real property rentals, which currently are taxed at 5.5 and 3 percent, respectively.

Urban Revenue Sharing is based on 12.8 percent of the proceeds of State income taxes (total net collections from the individual and corporate income taxes, less voluntary contributions) collected two fiscal years prior to the current fiscal year. (Because of the recently enacted State income tax cut, the distribution to the Urban Revenue Sharing Fund will increase to 13.6 percent in two years.) Each city and town receives its share of the fund according to its share of incorporated population based on the last U.S. decennial or special census, adjusted for changes in city or town boundaries.

Input-Output (I-O) Model

An I-O Model represents a regional economy in terms of transaction flows among economic sectors. For example, to produce \$1 worth of staplers, 20 cents worth of input is needed from fabricated metal products, 20 cents worth from business services, 30 cents worth of labor and about 30 cents worth of other value added, *i.e.*, rent, interest and profit. An increase in the production of staplers will cause an increase in the production of other directly related sectors in proportion to their inputs per \$1 of output in staplers. Because these directly related sectors also use inputs from other sectors, an increase in the production of staplers will indirectly affect many other sectors. Economic impacts also are induced by households spending the additional wage income earned in direct and indirect production. These household expenditures create additional sales and production of goods and services, resulting in increased employment and wages from that production.

The Pima County I-O model portrays the economy in terms of a matrix of about 200 sectors that purchase and sell goods and services from and to each other. The County model is based on the Arizona I-O model, developed by the Regional Science Research Institute. The State model has been modified to reflect the County economy. Each of the relocating companies was identified in terms of these existing industries; thus the estimated multipliers do not represent a company-specific multiplier, but rather an average multiplier characteristic for all firms in this study.

The Pima County I-O was used to estimate indirect impacts, *i.e.*, change in employment (and wages and salaries) in all other industries based on the purchases of goods and services for the purpose of company's operation. The magnitude of indirect (*i.e.*, interindustry) impacts depends upon the percentage of locally produced goods and services represented in the model as the regional purchase coefficient. The more locally produced goods and services used, the higher the indirect impacts. Conversely, the higher the percent of goods and services purchased from outside the region, the higher the leakage and the lower the indirect impacts to the region (county).

Induced impacts, *i.e.*, the impacts that result from an increase in employees' spending, are estimated using the average household spending generated by the I-O model.

The Revenue Impact Model

This project utilized the Arizona revenue model designed by Dr. Alberta Charney. The model computes State, County and City revenues associated with changes in business activity. The model is designed to be used in conjunction with other economic assessment information (*i.e.*, wage impact results obtained from an input-output model) and other specific information about changes in business activity.

Two types of input data are required to run the model. The first type of input data consists of variables such as county, city and state property tax rates, net assessed valuations (by major category), taxable sales (by category), sales tax rates, population of counties and incorporated population of cities.

The second type of input is project-specific information. The required input consists of the following types of data inputs: total wage impact of the project obtained from an economic impact model (direct, indirect and induced); taxable expenditures (by category); construction costs; and for retail sales, the portion of sales spent in the city, the county and the state.

The model computes both direct revenue impacts and induced revenue impacts. Two separate direct revenue computations are involved: one for the construction phase of a project and one for operation of the facility. Direct revenues associated with construction occur only during the construction phase.

Direct revenue impacts are computed for the following categories of revenues that are retained by the State of Arizona following distribution to cities, towns and counties:

- Use Tax
- Sales Taxes

Direct revenue impacts are computed for Pima County for the following categories:

- County Excise Taxes
- State Shared Sales Tax Revenues

Direct revenue impacts are computed for the City of Tucson for the following categories:

- City Sales Taxes
- State Shared Sales Tax Revenues

Computation of direct revenues requires substantial cooperation from the industry or firm on which the impact study is conducted. Information on existing taxes paid and existing taxable expenditures is not sufficient. Rather, the firm or industry must provide some reasonable insights as to the magnitude of expenditure changes associated with changes in employment in that industry. Certain types of expenditures may have a large fixed component and, therefore, do not change proportionally with changes in employment. For example, in some instances the electricity costs of operating a facility may not change when employees are hired or laid off because existing buildings must be kept lighted or cooled regardless of the level of activity within. In other instances, the industry may be able to shut down or reopen a portion of the complex, thus making electricity costs variable with employment change.

It is virtually impossible for any person outside the specific firm being analyzed to assess changes in direct revenues paid by a firm without cooperation from the firm or industry. Even with complete cooperation, some assumptions are necessary. In addition, the user of the model must attempt to assess the veracity of the information obtained from the firm using secondary data when possible.

Induced revenue that is retained by the State (after sharing with the cities and counties) is computed for the following four categories:

- Income Tax
- Sales Tax
- Fuel Tax and Highway User Revenue Fund
- Vehicle License Tax

Induced revenue impacts are computed for five revenue sources for county governments:

- County Excise Tax
- State Shared Sales Tax
- State Shared Fuel Tax and Highway User Revenue Fund
- Vehicle License Tax
- Property Tax

Induced revenue impacts are computed for six different revenue sources for the largest city in each county:

- Urban Revenue Sharing
- State Shared Sales Tax
- State Shared Fuel Tax and Highway User Revenue Fund
- Vehicle License Tax
- Property Tax
- City Sales Tax

Note that the revenue impact model does not estimate revenues that will be distributed to special districts or school districts. However, it should be recognized that these other government entities would receive a portion of induced revenues.

The following discussion summarizes most of the assumptions and computations that underlie estimation of induced revenues. Each county spreadsheet computes the change in taxable activity associated with a change in wages of \$X in that county. Thus, for \$X increase in wages, the spreadsheets compute the change in the taxable income (personal and corporate), taxable sales (retail, contracting, communications, utilities, restaurants and bars, personal and real property rentals, printing and publishing), fuel consumption (gallons), motor carrier activity, vehicle license taxes and net assessed value.

The responsiveness of each taxable activity to a change in wages (or personal income) is referred to as income “elasticity,” specifically defined as the percent of change in a taxable activity divided by the percent change in income. A very responsive taxable activity, *i.e.*, one that grows faster than the growth in personal income, is known as an “elastic” revenue base. A taxable activity that grows less than proportionally to income is “inelastic,” and a taxable activity that grows proportionally to income is said to have a “unitary” elasticity.

Elasticities for each of the taxable activities were either obtained from secondary sources or computed by the author. These elasticities were used in conjunction with existing tax laws in Arizona to compute total revenues generated from each taxable source. Then Arizona’s revenue

sharing formulas were applied to compute the induced revenue impacts for the state, counties and cities.

Note that there are substantial linkages among the revenue sources. For example, a change in taxable activity in a city is also a change in taxable activity in the county and state. The revenue sharing formulas create additional linkages, *i.e.*, a change in net assessed valuation in a county affects not only that county's and the state's property tax collections, it also can affect the amount of state-shared sales taxes received by the county government because net assessed value appears in one version of the sales tax sharing formula. Similarly, a change in Vehicle License Tax collections changes the amount of vehicle license taxes collected by the city and the county, as well as affecting the Highway User Revenue Fund (HURF) distributions, because a portion of the Vehicle License Tax is deposited in HURF.

For a detailed description of Arizona's revenues and revenue sharing formulas and computation of income elasticities implicit in the Pima County revenue model, contact the author.

Limitations Of The Analysis

Estimates in this analysis are subject to the "measurable" portion of impacts and are also limited by the availability of data.