ARIZONA'S ECONOMY

JULY 1998 SUMMER ISSUE

IS A BUBBLE DEVELOPING?

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Forecasting Project Director
June 1, 1998

The economy is on a tear. Nationally, real GDP grew by 4.3% in the first quarter following gains averaging 3.8% over the past two years. That's the best two-year performance in nine years and far above the economy's long-run growth potential. Even so, inflation remains nearly absent with overall domestic inflation increasing at less than a one percent annual rate in the first quarter. Producer prices were actually lower than one year ago. The "new economy" is alive and well... or so it seems. Today's economy is highly liquid, and a huge supply of money is bidding up asset prices, mostly visible in financial markets and in real estate. The burning question is whether a "bubble" is developing, which might eventually pop.

The first quarter's advance was propelled by strong consumer spending, a surge in residential construction and spending on high-tech equipment. In this environment, business managers' main worry is finding skilled workers suited for today's high-tech jobs. The nation's unemployment rate fell to only 4.3% in April, the lowest since February 1970. With tight labor markets, wages are accelerating — average hourly earnings were up 4.4% in March compared to last year's reading.

These same trends also are evident in Arizona. After a brief slowdown in 1996 and early 1997, the pace has accelerated in recent months. Although growth rates remain below those of 1994-95, Arizona's economy is growing quite rapidly once again.

Consumers have been buying everything in sight in recent months. Consumer spending, as measured by year-over-year sales gains at retail stores, is running at a much faster clip than last summer. Nationwide, retail sales increased at an 8.1% annual rate in the first quarter. For the 12-month period ending in February, sales in Arizona were 7.4% higher than a year earlier. That compares to a gain of only 5.0% recorded in May of 1997. Historically, consumers spend little (only four percent) of gains in wealth from a rising stock market. There is some evidence that consumers are using more of their stock market gains to finance current spending. We doubt that they can continue spending at this pace and we project a gain in Arizona retail sales of 6.8% for all of this year.

So far, the Asian crisis doesn't appear to be affecting Arizona's export industries. The manufacturing sector, which is primarily high-tech oriented, added nearly 12,000 jobs during the past year. That is the strongest advance since 1994 **(Exhibit 1).** Arizona's exports surged last year to $13.5 billion, up from $9.9 billion in 1996. So far, only Intel (1,100 job reduction, 600 net) and Motorola (10% company wide, which if applied evenly means 2,000 in Arizona) have announced reductions due to the Asian crisis. We have allowed for a loss of 6,000 jobs by mid-1999 in our BASE forecast.

After reaching a low last summer, job growth has been accelerating. In the first

EXHIBIT 1
Manufacturing Jobs are Surging Again
Manufacturing Employment Growth, AZ

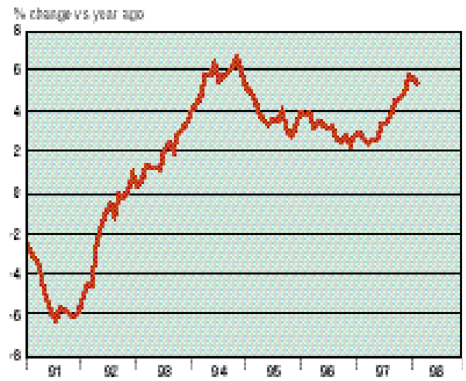
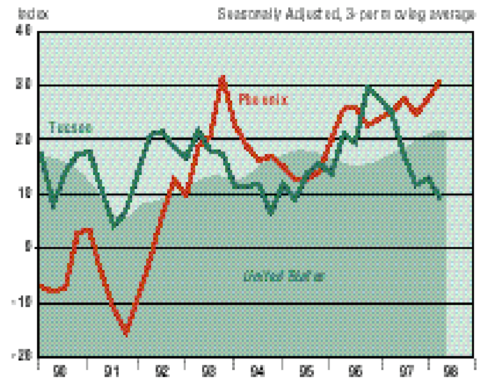


EXHIBIT 2
Demand for Temps is Strong
Manpower, Inc.'s Net Hiring Strength



INSIDE

EXHIBIT 3

Total Income is Accelerating

Personal Income Growth, AZ

EXHIBIT 4

A Tight Labor Market is Boosting Wages

Wages and Salaries per Employee, AZ

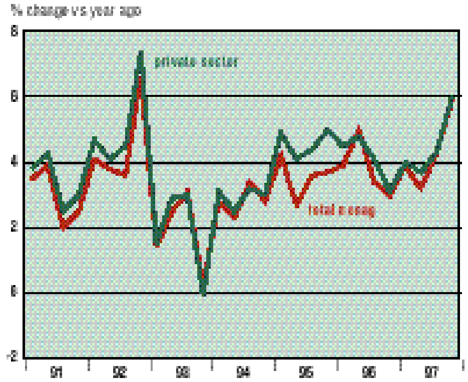
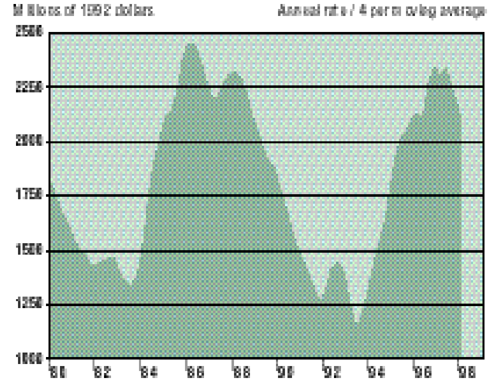


EXHIBIT 5

Investment in Non-Residential Structures Matches the Mid 80's

Real Non-Residential Building, AZ



quarter, wage & salary employment was 4.8% higher than the year before. That's about 94,000 new jobs. Two separate surveys show that demand for labor remains strong. The Conference Board's Help Wanted Index rose sharply in the first quarter to its highest point of the decade. And, Manpower, Inc.'s survey of Net Hiring Strength for the second quarter in Metro Phoenix rose to its highest level since late 1993 **(Exhibit 2).** Net Hiring Strength is the percentage of employers who plan to increase payrolls minus the percentage planning to decrease payrolls. In the Tucson metro area, this index peaked in last year's second quarter and has fallen to a low reading of only 10.

Personal income also is accelerating. The Bureau of Economic Analysis recently released new Arizona personal income estimates for 1997. In this release, quarterly figures were revised for the entire period from 1969 to 1997. According to the new numbers, Arizona personal income grew by 7.7% in 1997, slightly slower than the 8.1% gain registered the year before. However, personal income growth was accelerating during last year's second half. By the fourth quarter, it was growing at an 8.4% annual rate. That compares to a 6.8% annual rate in last year's second quarter, the low point for the year **(Exhibit 3).** Accelerating wages and strong job growth will keep personal income growing briskly during the remainder of this year. We expect a 9.0% increase in 1998.

The new data also show that wages and salaries per employee accelerated sharply during the fourth quarter. Overall wages were six percent higher than one year earlier **(Exhibit 4).** That's the fastest increase since the end of 1992, which was an anomaly in the data. We expect wage gains to average five percent over 1998-99. The largest increases will be in FIRE (finance, insurance and real estate), manufacturing, services and TCPU (transportation, communications and public utilities).

Buoyed by a strong job market and increasing real wages, consumer confidence in Arizona rose to an all-time record high of 115.5 in April. The index is compiled by the Behavior Research Center for Stockton Capital Management & Trust of Scottsdale.

IS TOO MUCH MONEY FLOWING INTO REAL ESTATE?

The major concern in this currently happy environment is that the economy is awash with too much money, and that asset prices are being driven too high. Surging prices in the stock market is an obvious example. Real estate prices also are moving up sharply across many parts of the nation. Anecdotal evidence continues to mount that too much money is available: real estate investment trusts (REITs) paying far too much for existing properties, borrowers qualifying for mortgages who would not have qualified a year or two ago and new loan programs for those entwined in foreclosure proceedings! More recently, REIT money is being committed to new construction on projects that have no pre-leased tenants. This is reminiscent of the 1980's when too much money was turned into a decade's worth of empty buildings.

> SEVEN OF THE 10 LEAST-AFFORDABLE HOUSING MARKETS IN THE COUNTRY ARE IN CALIFORNIA, AND TWO ARE IN OREGON.

This not the 1980's, in which building was spurred to frenzied excess by tax inducements and a flow of financing from a misregulated savings and loan industry. Nevertheless, real estate markets are beginning to take on the feel of that prior period, and this is the kind of behavior one normally sees in the late stages of the building cycle.

A review of several measures shows that real estate markets are soaring high. Non-residential building rose last year to the highest inflation-adjusted level since 1986, during the height of the tax-induced building boom **(Exhibit 5).** Nearly $10 billion of construction awards were made during 1997, according to F. W. Dodge. Nearly 73% occurred in Maricopa County, and Pima County accounted for 12%. Recent large projects in the Phoenix area include the Bank One Ballpark, Arizona Mills regional shopping center, new semiconductor "fab" plant projects by Intel, Motorola, Sumitomo, Microchip Technology and others. An estimated 1.8 million square feet of office space and eight

EXHIBIT 6
The Resale Home Market is Surging
Existing 1-Family Home Sales (SAAR)

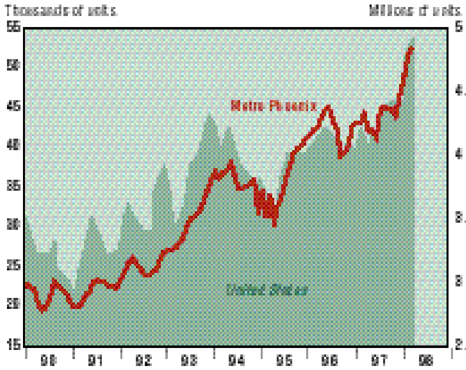
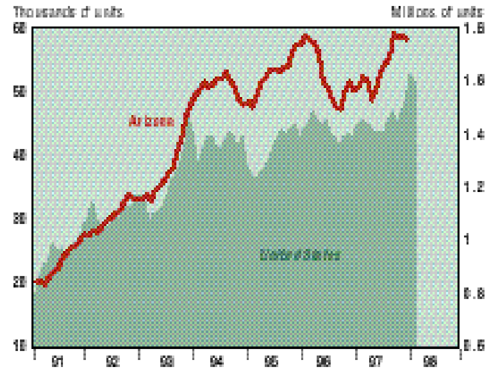


EXHIBIT 7
Builders' Expectations Soar
Housing Market Index, U.S.
(NAHB Builders Survey)

EXHIBIT 8
Residential Permits Back to Cycle High
Housing Permits, Total (SAAR)



million square feet of industrial are to be built in the Phoenix area this year. According to CB Richard Ellis, industrial vacancies stood at 7.8% in Phoenix in the fourth quarter compared to 8.4% nationwide. In Tucson, it is 11.7%. Office vacancies are 9.4% in Phoenix, 7.3% in Tucson and 9.9% nationwide.

Resale housing markets, as measured by the number of homes sold, skyrocketed in recent months. Nationwide, sales shot up to a 4.9 million annual rate in early 1998. That was mirrored in the Phoenix market, where 52,000 units at an annual rate changed hands, an all-time record **(Exhibit 6).** In Tucson the rate also rose to the highest level (a 9,000 unit annual rate) since a surge in early 1994.

The median price of homes sold during the first quarter was 7.1% higher than last year in metro Phoenix. Comparable increases were 5.4% nationwide and 5.0% in Tucson. These measures do not adjust for the changing composition of size and quality of homes sold, and therefore overstates the appreciation of any given home. According to the Arizona Real Estate Center at ASU's College of Business, appreciation of homes in the Phoenix area that have sold more than once between 1981 and 1997 was 2.9% in 1997. Although same-home increases are smaller than the often-sited measure, this is still the largest increase during the 1990's.

Currently, homebuilders are very confident. The National Association of Home Builders each month surveys attitudes and expectations of 450 builders. Their Housing Market Index incorporates measures of current sales, buyer traffic and expectations for sales of single-family detached homes. The index ranges from 0 to 100, with 50 as average. If all respondents say that their sales are "good" (or "high" for traffic), the index is 100. If all respondents say "poor" (or "low" for traffic), the index is 0. In February and March, the index stood at the highest level (67) since late 1993 **(Exhibit 7).**

Optimism on the part of homebuilders, coupled with strong market fundamentals, led to a spurt of new homes authorized by building permits during the first quarter. Nationally, mild weather was sighted as a primary factor for the rise to a 1.6 million annual rate, the highest this decade. In Arizona, the number of units rose to a 60,000 annual rate. That's the strongest since 1986 **(Exhibit 8).** Our forecast for 1998 calls for the same number as last year, roughly 56,000 units. A 10-15% decline is expected for 1999.

HOMEOWNERSHIP: UP NATIONWIDE, DOWN IN ARIZONA

Nationwide, home ownership climbed to an all-time record high in recent months. Nearly 66% of households own their own home. Homeownership in Arizona, however, has declined since the beginning of the current expansion. From a high of 69.2% in 1992 homeownership declined to 63.0% last year **(Exhibit 9).** Why has homeownership trended downward in one of the hottest economies in the nation? Rapidly growing numbers of people who are unable to afford to buy a home, a changing income distribution, and depressed wage rates are the most likely explanations. It is noteworthy that homeownership rates are much higher in Metro Phoenix (65.5%) than in Tucson (54.4%) or (apparently) the outlying areas of the state.

Is affordability the cause of declining homeownership? Housing affordability remains at high levels, at least in Metro Phoenix. According to ASU's Real Estate Center, affordability of resale homes stood at 135 in last year's fourth quarter. That's higher than the nationwide figure of 130 and a high level compared to the end of the1990-91 recession **(Exhibit 10).** The National Association of Realtors compiles the nationwide index. An index of 100 indicates that a median-income household is able to qualify for a median-priced home. An index of 130 means that the same household has 130% of the income needed. Affordability has remained high because lower mortgage rates have offset large increases in median home prices.

Another measure, computed differently, comes from the National Association of Home Builders. Their Housing Opportunity Index (HOI) measures the percentage of homes sold that a family earning the median income in that market could afford to buy. It is the only index that ranks city-by-city housing affordability, and considers the distribution of homes for sale. In last year's fourth quarter, a Metro Phoenix family earning the median income of $47,500 could afford to buy 66.0% of the homes offered. That ranks Phoenix 123rd of some 193 metro areas. Tucson, with lower housing prices but much lower incomes, ranks 142nd with an HOI of 61.5. Flagstaff, with an index of 50.2, is one of the least-affordable housing markets in the country, ranking 175th. See **Exhibit 11.**

EXHIBIT 9
Why is Homeownership Declining in Arizona?
Homeownership Rates: 1984-1997

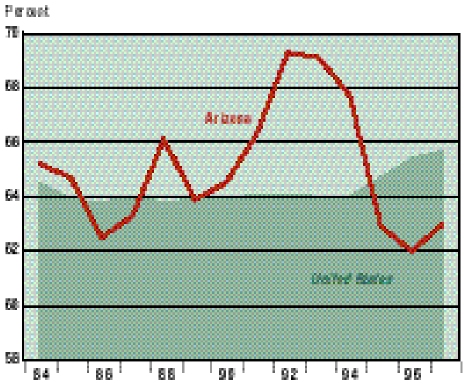


EXHIBIT 10
Affordability Remains High
Housing Affordability, Resale Homes

Sources: NAR and Arizona Real Estate Center, ASU

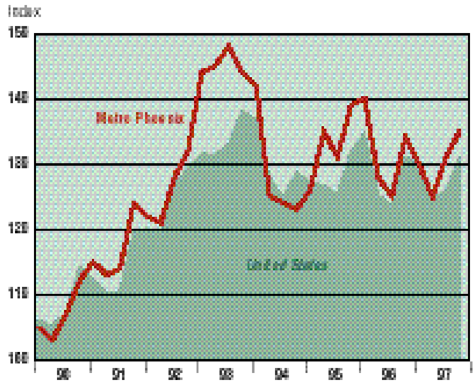
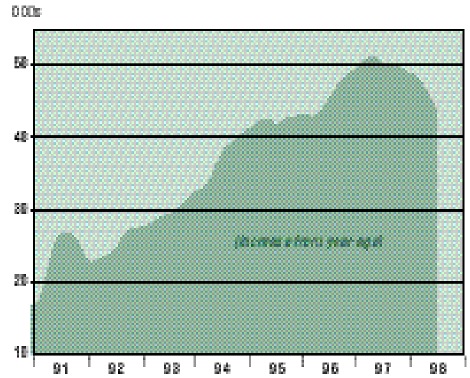


EXHIBIT 12
Population Growth is Slowing
Residential Electrical Customers

TEP, SRP and APS Service Areas



The least affordable housing market in the country is San Francisco, where a median income family can afford only 18.7% of the homes sold. Seven of the 10 least affordable are from California (which imposes large impact fees). Two of the least-affordable (Portland and Salem) are in Oregon, the state with extensive growth control measures.

WHY WORRY WHEN THE ECONOMY IS SO GOOD?

Perhaps the biggest concern at this stage is the lack of concern. An analogy to the stock market may be helpful. The market is known to "climb a wall of worry." And when market participants become complacent, bubbles develop which eventually pop. At this point both consumers and business people are quite optimistic — maybe even euphoric. That in its self poses a risk. As any well-trained economist will tell you, there are plenty of things to worry about.

- The Asian crisis has a long way to go, maybe years before recovery resumes. The financial part is over and the real effects lie ahead. Student demonstrations, social unrest, and new governments add to uncertainty. Japan also appears unable to help itself recover from a mountain of bad loans and corruption. U.S. exports have held up well so far but could tank in the months ahead.
- Inflation has passed its low point for this business cycle. Energy prices have bottomed and are moving higher. Airline ticket prices increased 37% during the first three months of the year. Health care costs are accelerating. It would be unreasonable to expect the dollar to continue climbing (and for import prices to continue falling).
- Corporate profits are due for a squeeze in the face of rising unit labor costs and no pricing power due to cheap imports.
- The U.S. has been blessed recently with large inflows of private capital, which have kept interest rates low. Again, these flows cannot continue.
- Asset prices are now very high. When will the bubble burst?

To that list, one needs to add an Arizona-specific risk — that population flows (and imported labor) may retreat. Gains already appear to be slowing. The number of new residential utility customers (a proxy for population growth) has fallen from its peak exceeding 50,000 near the end of 1996 to roughly 43,000 **(Exhibit 12).** The Tucson Electric Power service area accounts for over half, or nearly 4,000, of the reduction.

The economy has been too good for too long, and its recent reacceleration has raised the possibility that this expansion may come to an unceremonious end. In the months ahead, we'll need to keep an eye on population, manufacturing job growth and last but not least, the debate concerning growth controls. If passed, the Baron Initiative will induce a jump in developed real estate prices, which will drastically reduce affordability and overall growth rates. $

EXHIBIT 11
In Arizona, Affordability Ranks Poorly
Housing Opportunity Index (HOI)

	HOI 1997 Q4	1997 Median Family Income ($000)	Median Sales Price ($000)	National Rank
Flagstaff, AZ-UT MSA	50.2	40.8	128	175
Phoenix-Mesa MSA	66.0	47.5	120	123
Tucson MSA	61.5	40.1	111	142
National	64.8	43.5	127	—

Note: The HOI measures the percentage of homes sold that a family earning the median income in that market could afford to buy.
Source: National Association of Home Builders.

S P O N S O R S

Arizona Joint Legislative Budget Committee
Arizona Portland Cement
Arizona Public Service Company
Bank One Arizona
CB Richard Ellis
City of Tucson
Coldwell Banker Success Realty
Elliott D. Pollack and Company
Estes Homes/Kauffman & Broad
Pima County
Salt River Project
Territorial Newspapers
Tucson Electric Power Company
Tucson Newspapers
U S WEST Communications
U S WEST Dex

Forecasts for Arizona	1997	1998	1999	2000	2001	2002	2003
Personal Income ($ mill)	101,907.0	111,063.9	120,493.8	130,392.8	140,288.5	150,207.2	160,595.7
percent change	7.7	9.0	8.5	8.2	7.6	7.1	6.9
Per Capita Personal Income	22,294.2	23,627.0	24,921.7	26,293.9	27,612.9	28,878.0	30,176.8
percent change	4.6	6.0	5.5	5.5	5.0	4.6	4.5
Aggregate Retail Sales ($ mill)*	42,966.5	45,582.4	48,462.5	51,547.4	54,714.3	57,863.9	61,041.6
percent change	6.3	6.1	6.3	6.4	6.1	5.8	5.5
Population (000s, mid-year)	4,571.0	4,700.7	4,834.9	4,959.0	5,080.5	5,201.4	5,321.8
percent change	3.0	2.8	2.9	2.6	2.5	2.4	2.3
Net Migration (000s)	90.9	94.3	89.4	82.7	81.6	81.0	81.3
Wage & Salary Employment (000s)	1,981.3	2,090.0	2,170.7	2,245.4	2,319.1	2,390.8	2,465.3
percent change	4.7	5.5	3.9	3.4	3.3	3.1	3.1
Goods-Producing	351.6	368.1	366.6	369.6	373.6	378.6	384.1
percent change	3.4	4.7	-0.4	0.8	1.1	1.3	1.5
Construction	129.8	136.9	136.8	135.7	135.3	136.9	139.4
percent change	2.9	5.5	-0.1	-0.8	-0.3	1.1	1.8
Manufacturing	207.5	217.1	215.7	219.5	223.9	227.2	230.3
percent change	3.8	4.6	-0.7	1.8	2.0	1.5	1.3
Service-Providing	1,629.7	1,721.9	1,804.1	1,875.8	1,945.5	2,012.2	2,081.2
percent change	5.0	5.7	4.8	4.0	3.7	3.4	3.4
Trade (Wholesale & Retail)	483.6	509.1	531.8	553.1	574.0	593.3	611.6
percent change	4.1	5.3	4.5	4.0	3.8	3.4	3.1
Services	599.8	644.5	686.4	724.6	762.7	800.2	839.1
percent change	6.9	7.4	6.5	5.6	5.3	4.9	4.9

Forecasts for Phoenix-Mesa Metro Area	1997	1998	1999	2000	2001	2002	2003
Personal Income ($ mill)	70,666.0	77,670.1	84,336.7	90,896.7	97,644.5	104,678.0	112,085.0
percent change	9.8	9.9	8.6	7.8	7.4	7.2	7.1
Per Capita Personal Income	24,792.1	26,373.2	27,779.3	29,136.3	30,497.3	31,865.0	33,261.0
percent change	6.4	6.4	5.3	4.9	4.7	4.5	4.4
Aggregate Retail Sales ($ mill)*	29,301.0	31,055.5	33,102.2	35,330.0	37,435.1	39,489.5	41,559.9
percent change	7.2	6.0	6.6	6.7	6.0	5.5	5.2
Population (000s, mid-year)	2,850.3	2,945.0	3,035.9	3,119.7	3,201.7	3,285.0	3,369.9
percent change	3.2	3.3	3.1	2.8	2.6	2.6	2.6
Net Migration (000s)	61.3	65.3	60.1	52.0	49.5	50.2	51.0
Wage & Salary Employment (000s)	1,388.6	1,465.2	1,518.7	1,560.0	1,602.5	1,646.7	1,693.0
percent change	5.8	5.5	3.6	2.7	2.7	2.8	2.8
Goods-Producing	267.0	280.9	281.0	278.5	278.5	280.3	283.7
percent change	6.4	5.2	0.0	-0.9	-0.0	0.6	1.2
Construction	97.1	102.0	100.9	98.5	96.7	96.9	99.0
percent change	7.6	5.0	-1.0	-2.4	-1.8	0.2	2.2
Manufacturing	163.5	172.6	173.7	173.7	175.5	177.0	178.2
percent change	5.9	5.6	0.6	0.0	1.0	0.9	0.7
Service-Providing	1,121.6	1,184.3	1,237.7	1,281.5	1,324.0	1,366.4	1,409.4
percent change	5.7	5.6	4.5	3.5	3.3	3.2	3.1
Trade (Wholesale & Retail)	340.6	357.6	372.8	387.2	400.9	414.0	426.8
percent change	4.6	5.0	4.3	3.8	3.5	3.3	3.1
Services	433.8	462.8	488.8	509.8	530.3	551.5	572.6
percent change	7.6	6.7	5.6	4.3	4.0	4.0	3.8

Forecasts for Tucson Metro Area	1997	1998	1999	2000	2001	2002	2003
Personal Income ($ mill)	16,863.1	18,089.1	19,467.4	20,886.9	22,309.6	23,720.9	25,150.6
percent change	7.0	7.3	7.6	7.3	6.8	6.3	6.0
Per Capita Personal Income	21,211.5	22,236.6	23,381.3	24,557.3	25,718.1	26,843.1	27,961.5
percent change	4.5	4.8	5.1	5.0	4.7	4.4	4.2
Aggregate Retail Sales ($ mill)*	6,937.2	7,288.1	7,727.5	8,232.0	8,708.6	9,162.2	9,593.7
percent change	5.3	5.1	6.0	6.5	5.8	5.2	4.7
Population (000s, mid-year)	795.0	813.5	832.6	850.5	867.5	883.7	899.5
percent change	2.3	2.3	2.4	2.2	2.0	1.9	1.8
Net Migration (000s)	13.6	14.3	15.0	13.7	12.7	12.0	11.6
Wage & Salary Employment (000s)	316.9	329.6	341.1	350.6	359.5	367.4	375.3
percent change	3.2	4.0	3.5	2.8	2.5	2.2	2.1
Goods-Producing	50.5	52.4	54.5	56.0	57.0	57.7	58.5
percent change	2.0	3.9	4.0	2.7	1.7	1.3	1.3
Construction	19.6	20.2	21.2	21.8	22.0	22.2	22.3
percent change	2.3	3.3	4.6	2.8	1.2	0.7	0.7
Manufacturing	28.5	29.5	30.4	31.0	31.6	32.2	32.8
percent change	1.5	3.8	2.7	2.1	2.0	1.8	1.7
Service-Providing	266.4	277.1	286.5	294.6	302.5	309.7	316.8
percent change	3.4	4.0	3.4	2.8	2.7	2.4	2.3
Trade (Wholesale & Retail)	68.6	70.6	72.7	75.2	77.5	79.4	81.2
percent change	2.5	2.8	3.0	3.4	3.1	2.6	2.2
Services	100.6	106.7	112.4	117.2	122.1	126.9	131.5
percent change	5.1	6.1	5.4	4.2	4.1	3.9	3.6

** Aggregate Retail Sales includes retail, food, restaurant & bars and gasoline sales.*

Source: Economic and Business Research Program, Karl Eller Graduate School of Management, College of Business and Public Administration, The University of Arizona.

FRESH PRODUCE INDUSTRY IN NOGALES, ARIZONA

Vera K. Pavlakovich, Ph.D.
Office of Economic Development
Alberta H. Charney, Ph.D.
Economic and Business Research Program, College of Business and Public Administration
June 1, 1998

The fresh produce industry in Nogales, Arizona is part of a unique trans-border agricultural production complex that links growers in Mexico with shippers in Nogales, Arizona. The complex contains a network of elaborate organizational structures that include financing, growing, picking, packing, selling, warehousing and truck loading.

ONE FAMILY'S STORY

My great-grandfather, an Irishman, moved to Nogales sometime in the 1920's to begin a produce importation business. The industry was just beginning in those years. His sons continued the business. The oldest, my grandfather, turned the business into a brokerage. He spent six months in Nogales and the other six on the Los Angeles Produce Market Exchange, located in downtown Los Angeles.

His wife, my grandmother, was born in Nogales in 1919. She spent a part of her childhood living in Culiacán, where her parents sold Fords. When the two met in Los Angeles, the Nogales link proved to be a strong draw. My grandfather often flew his small plane to Guaymas and Culiacán for business — to meet with produce growers in Mexico, etc. My mother's Los Angeles wedding included Mexican produce families that my grandfather was linked with for many years.

Later, my grandmother remarried another Nogales produce industry player — my current grandfather, who, with his father, started a Nogales customs brokerage in the 1930s. All the grandfathers played a lot of golf with each other. All three of my grandparents speak (spoke) Spanish. This was an aid for doing business and entertaining. My family's ties to Nogales continue; almost all of the grandchildren and great-grandchildren of the original settler live today in Tucson one hour north of the border.

With roots going back as early as the turn of the century, the industry's development into a major supplier of winter fresh produce for North American markets has depended upon close family ties and networks of friends that transcend the international boundary. It is these traditional ties and the complexity of doing business in a border context that make the Nogales fresh produce industry unique and different from other regional agricultural production complexes such as those in South Florida and Southern California.

In the 1995/96 season, approximately $1 billion worth of Mexican-grown fresh produce was imported into the United States through the Nogales Custom District, which includes six border ports of entry in the Arizona-Sonora section, one of which is Nogales. The City of Nogales is the dominant entry port for Mexican produce. The top eight commodities — tomatoes, cucumbers, peppers, squash, melons, watermelons, mangoes and grapes — account for more than three-quarters of all imported fresh produce (tonnage) through Nogales **(Figure 1).**

Recent attention on the Nogales fresh produce industry has been due largely to continuing trade disputes with Florida growers, with whom the Mexican winter produce (mainly tomato) growers compete. The competition between Florida- and Mexican-growers grew in intensity after 1962 when the United States imposed the trade embargo on Cuba. Until that time, Cuba had been a major supplier of winter vegetables to the United States. The Mexican government sensed this gap and encouraged the expansion of export farm production with funding and expert advice from abroad. The Florida produce industry, concentrated mainly in Dade County and the Palmetto-Ruskin areas, also took off at this time.

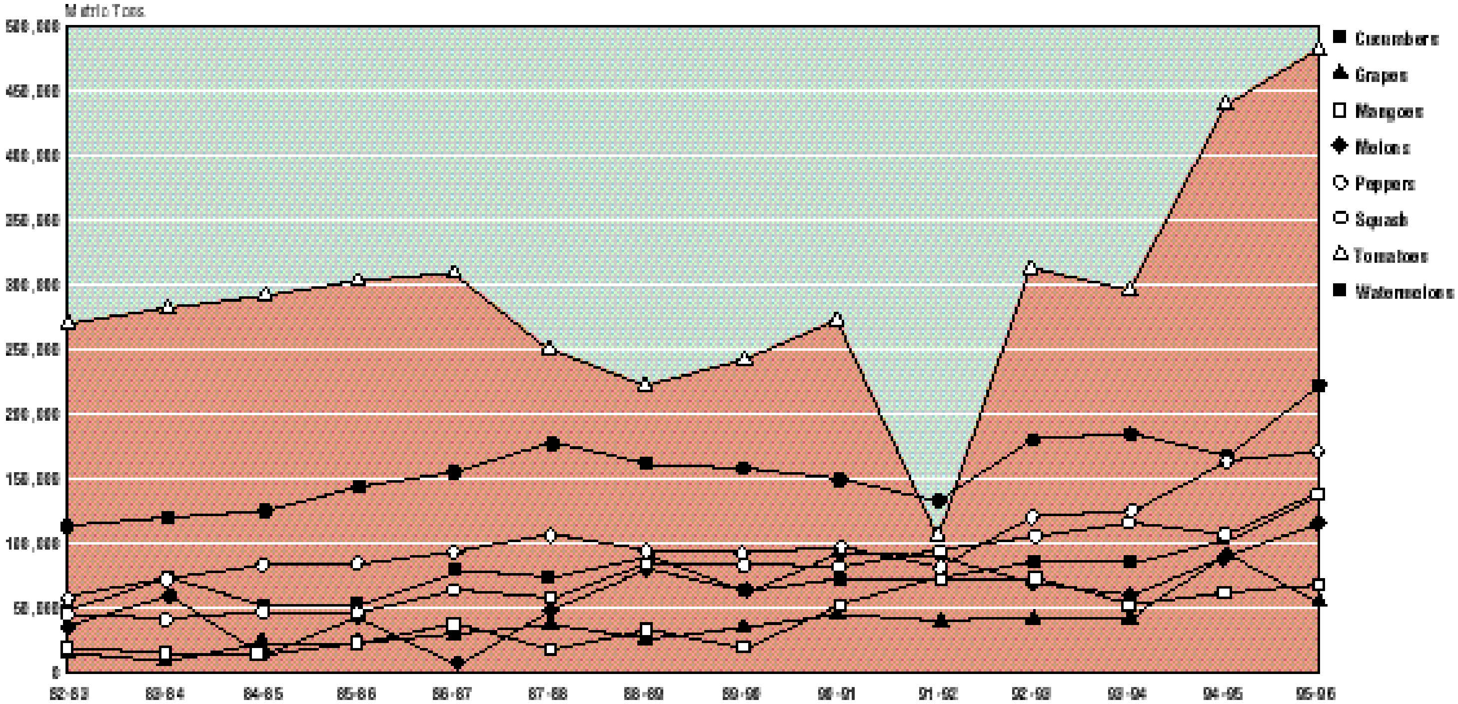
Florida growers have filed numerous unfair-trade complaints with U.S. legislators and U.S. courts, the most recent in the early 1990s. Florida growers do not have the high transportation-related costs of the Mexican growers, nor do they have to pay duties or other import fees. However, Mexican labor/production costs are generally lower than Florida's, although growing rapidly. The most recent round in the battle was won by Florida, in conflict with the spirit of NAFTA. Contrary to popular opinion, NAFTA did not instantly remove all duties on Mexican products. Those products most in direct competition with U.S. products, such as tomatoes, are on gradual tariff-reduction schedule that will take up to 15 years (from the passage of NAFTA) to complete. In addition, there are seasonal quota on tomatoes, onions, eggplants, chile peppers, squash and watermelon coming from Mexico and added duties if this quota is exceeded.

Nogales grower-distributors are responding to Florida's complaint in several positive ways: voluntarily signing the new price floor agreement; expanding market shares and expanding the season by diversifying (selling products such as mangoes and grapes in the summer, for example); branding out growing operations to Baja California and California, to become less geographically dependent on Sinaloa's fertility; and extending their production into the non-winter markets. The availability of new Spanish and Israeli technologies have aided expansion to create less costly and better quality products, some from greenhouses.

Growers in Mexico and Florida compete primarily in the North Central region. Mexican-grown tomatoes, for example, dominate retail sales in the West, while those in the East are dominated by Florida growers. Some studies have suggested that consumers in the North Central and West regions have benefited from increased competition between Florida and Mexican growers by enjoying relatively lower produce prices and improved product quality.

FIGURE 1

Principal Produce Imports Through Nogales



ECONOMIC AND REVENUE IMPACTS ON THE ARIZONA ECONOMY

The primary goal of this analysis is to ascertain the economic impact of the produce industry on the economy of Arizona. The produce industry generates direct employment in warehousing, trucking, brokering and associated services, including federal and state inspection offices. Arizona businesses also supply seeds, fertilizers, equipment and other inputs to growers in Western Mexico. A portion of Mexican growers' income is spent in Arizona, creating indirect and induced jobs in addition to the multiplier effects from the above mentioned sources. A significant amount of revenue is generated through various direct, indirect, and induced taxes at local and state levels that add to the total economic impact on the state's economy.

Nogales' produce industry originates in Northern Mexico, mainly in the state of Sinaloa, with lesser ties to the states of Sonora, Nayarit and Jalisco. The vast majority of export tomatoes and winter vegetables are grown in Sinaloa. Mexican growers tend to have large operations (median of 400-500 hectares, or about 900-1200 acres) that employ local employees to work the fields.

APPROXIMATELY $1 BILLION WORTH OF MEXICAN FRESH PRODUCE WAS IMPORTED DURING FISCAL YEAR 1995/96 THROUGH THE NOGALES CUSTOMS DISTRICT. BY THE TIME IT REACHED RETAIL STORES ON THE WEST COAST AND THE MIDWEST, THE TOTAL VALUE WAS ALMOST FOUR TIMES ITS CUSTOMS IMPORT VALUE AT THE BORDER — AN ESTIMATED $3.8 BILLION.

It is difficult to ascertain which came first: U.S. based financing for growing operations or Mexican-based export farms. Today, most Mexican growers are completely finance by U.S. based produce distributorships, which are about 70% Mexican-owned, as opposed to 20 years ago, when approximately 95% of distributorships were American-owned. This shift in ownership has created a vertically integrated situation where Mexican businessmen finance Mexican growers with U.S. dollars and U.S.-bought inputs.

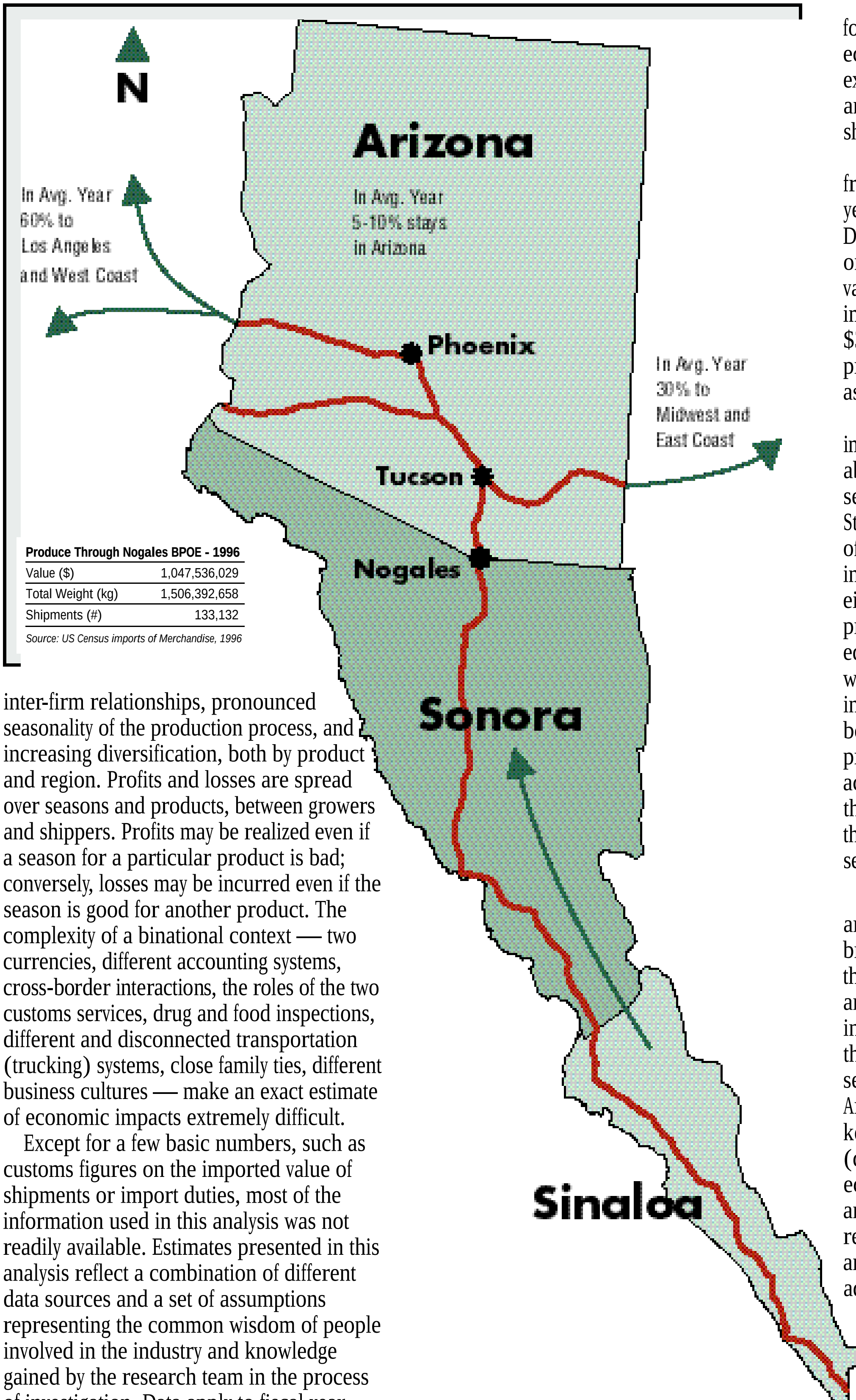
During the winter season (from November through March/April) the City of Nogales, with barely 20,000 residents, turns into a major marketing center for fresh produce. Each season, 136,000 Mexican trucks bring Mexican-grown produce to 60-70 Nogales-based warehouses, and some 200,000 U.S. trucks pick up the produce for distribution to markets in the United States and Canada. The produce may stay in Arizona (only about 5%), go to Los Angeles (70%) for redistribution, or to other destinations, transshipment to Canada or the West Coast shipping cities of Portland and Seattle. In a normal (i.e., non-freeze) year, about 70% of the produce stays west of Arizona, while 30% is shipped east of the state **(Figure 2).**

Capturing the financial aspects of the produce industry is difficult because of complex

FIGURE 2

Main Transportation Routes for Mexican Produce into US

Source: University of Arizona. Community Affairs and Economic Development, based on various sources.



Produce Through Nogales BPOE - 1996	
Value ($)	1,047,536,029
Total Weight (kg)	1,506,392,658
Shipments (#)	133,132

Source: US Census imports of Merchandise, 1996

inter-firm relationships, pronounced seasonality of the production process, and increasing diversification, both by product and region. Profits and losses are spread over seasons and products, between growers and shippers. Profits may be realized even if a season for a particular product is bad; conversely, losses may be incurred even if the season is good for another product. The complexity of a binational context — two currencies, different accounting systems, cross-border interactions, the roles of the two customs services, drug and food inspections, different and disconnected transportation (trucking) systems, close family ties, different business cultures — make an exact estimate of economic impacts extremely difficult.

Except for a few basic numbers, such as customs figures on the imported value of shipments or import duties, most of the information used in this analysis was not readily available. Estimates presented in this analysis reflect a combination of different data sources and a set of assumptions representing the common wisdom of people involved in the industry and knowledge gained by the research team in the process of investigation. Data apply to fiscal year 1995/96. Where fiscal year figures were not available, combined values from 1995 and 1996 are used instead.[1]

First, direct impacts will be presented, followed by a discussion of impacts by major economic activity, i.e., marketing services, export of agricultural equipment and supplies, and outshopping. These impacts are then shown as total economic and revenue impacts.

Approximately $1 billion worth of Mexican fresh produce was imported during fiscal year 1995/96 through the Nogales Customs District. By the time it reached retail stores on the West Coast and the Midwest, the total value was almost four times its customs import value at the border — an estimated $3.8 billion. An outline of the importation process and marketing services with the associated fees is shown in **Figure 3.**

Table 1 shows the estimated direct dollar impact that was generated in Arizona, totaling about $552 million during the 1995/96 season. Inspection fees are collected by the State's inspection agencies (the Departments of Agriculture and Transportation). Included in these figures are dollars earned in Arizona either through the actual marketing of fresh produce, through exports of agricultural equipment and supplies to growers in Northwest Mexico, and a portion of growers' income that returns to Arizona through trans-border outshopping. **Tables 2 through 5** present the economic impact of these three activities, including the multiplier effect, i.e., the effect after direct dollars are respent in the economy through purchases of goods and services from other Arizona-based businesses.

Marketing Services: Marketing services are broadly defined as services needed to bring Mexican-grown fresh produce across the border to Nogales-based warehouses, and from there to distributors and retailers in North American markets. It is estimated that in the 1995/96 season, marketing services directly generated $377 million in Arizona. Through the multiplier effect, marketing services generate more than 6,000 jobs (direct, indirect, and induced) in Arizona's economy, earning $159 million in wages, and contributing over $21 million in state revenues. Total sales, which includes wages and taxes (and other components of value added), amount to $588 million **(Table 2).**

Export of Agricultural Equipment and Supplies: An estimated $134 million of Arizona-produced farm equipment and supplies (fertilizers, pesticides, seeds,

TABLE 1

Direct Impact of Mexican-Grown Fresh Produce on Arizona's Economy

1995/96 Season in Millions of $

Marketing services		**$ 377**
Inspection fees	$ 5	
Customs brokers' fees	$ 7	
Out-of-state truckers' spending	$ 10	
Produce brokers' fees	$ 18	
Trucking brokers' fees	$ 23	
Shippers' commission (marketing)	$ 125	
Share of marketing spread	$ 189	
Outshopping by Mexican growers		**$ 41**
Export of agricultural supplies		**$ 134**
TOTAL		**$ 552**

Source: The University of Arizona, various sources

THE PRODUCE INDUSTRY GENERATES DIRECT EMPLOYMENT IN WAREHOUSING, TRUCKING, BROKERING AND ASSOCIATED SERVICES, INCLUDING FEDERAL AND STATE INSPECTION OFFICES.

ARIZONA BUSINESSES ALSO SUPPLY SEEDS, FERTILIZERS, EQUIPMENT AND OTHER INPUTS TO GROWERS IN WESTERN MEXICO.

TABLE 2

Arizona Total Impacts of Marketing Services for $1 Billion Mexican-Grown Fresh Produce

(1995/96 Season)

Imported via Nogales Customs District

• 6,052 jobs	**• $159 million in wages**	**• $588 million in total sales**	**• $21.4 million in state revenues**

TABLE 3

Arizona Total Impacts of Exports of Agricultural Equipment and Supplies from Arizona to Production Fields in Sinaloa & Sonora

(1995/96 Season)

• 4,010 jobs	**• $75.3 million in wages**	**• $300.3 million in sales**	**• $3.5 million in state revenues**

TABLE 4

Arizona Total Impacts of Outshopping by Mexican Business People and Families

(1995/96 Season)

• 918 jobs	**• $10.3 million in wages**	**• $88.6 million in sales**	**• $3.3 million in state revenues**

TABLE 5

Total Impacts of the Mexican-Grown Fresh Produce Industry on the Economy of Arizona

(1995/96 Season)

Sum of the impacts of Marketing Services, Exports of Agricultural Equipment and Supplies, and Outshopping in Arizona.

• 4,010 jobs	**• $75.3 million in wages**	**• $300.3 million in sales**	**• $3.5 million in state revenues**

Source for tables 2 - 5: The University of Arizona, based on Input-Output and Revenue Models

FIGURE 3
Mexican Produce Imported Through Nogales:
Markups from Grower-Shipper to Retailer

III
To the US Retailer

	$3,780,285,500	**Retail Value of Produce**

Marketing Spread

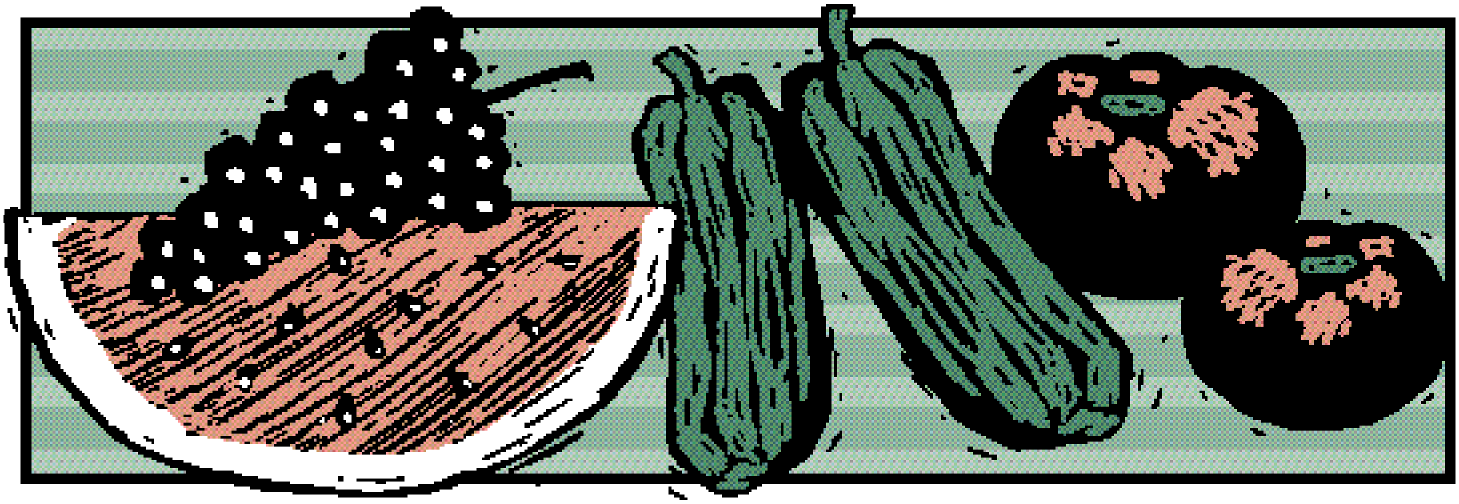
$ 189,307,240	Arizona Portion of Marketing Spread
$ 22,500,000	Nogales Truck Broker Fees
$ 18,000,000	Produce Broker Fees

II
To the US Shipper

=	**$1,256,188,900**	**Shipping Point Price**
+	$ 124,487,190	Shipper's Commission
=	$1,131,701,800	Shipper's Import Cost
+	$ 8,160,000	Border Inspection Charges - Customs, DOT, USDA, etc.
+	$ 7,000,000	US Customs Brokers
+	$ 33,906,900	US Import Duties

I
To the US/Mexico Border

+	$ 82,634,910	Mexican Export Charges (i.e., insurance, customs, freight)	**CIF**
	$1,000,000,000	**Customs Value of Produce**	



machinery and parts) are exported to the Mexican agriculture industry. These exports generate approximately 1,845 direct jobs in Arizona in the following industries: paperboard containers and other packaging materials, farm machinery and parts, fertilizers, pesticides and other agricultural chemicals, wholesale machinery and farm supplies. Through the multiplier effect, an additional 2,165 indirect and induced jobs are generated in other sectors. Total direct, indirect and induced effects are in **Table 3.**

Outshopping by Mexican Businessmen and their Families: Border location and familial and business ties make Arizona a popular shopping destination for Mexican visitors. A portion of growers' income from exports of fresh produce to North American markets (an estimated $41 million) returns to Arizona and is spent in Arizona's stores. An earlier study (Hopkins 1992) suggests that approximately 32% is spent in department stores, 25% in grocery stores and restaurants, 21% in the purchasing of business supplies, and the remaining 21% is for various other categories, including medical services. Approximately 918 jobs in Arizona depend directly or indirectly upon those purchases **(Table 4).**

Summary of Total Impacts: When all estimated impacts are summed up, the total employment impact (including the multiplier effect) is 10,980 jobs in Arizona, an estimated $244.6 million in wages, and $976.9 million in sales in 1995/96. With the multiplier effect included, the benefits to Arizona's economy is approximately $1 billion dollars in total sales.

Impacts on Nogales/Santa Cruz Counties: While the fresh produce industry affects the economy of Arizona as a whole, a large portion of the economic impact is concentrated in Nogales/Santa Cruz County due to a concentration of services at or close to the border. The industry generates approximately 6,000 jobs in Nogales/Santa Cruz. More than 3,200 jobs are directly involved with the importation and marketing of Mexican-grown fresh produce, such as warehousing, border inspection, customs and produce brokerage, and freight arrangement. An additional 2,500 jobs are generated through the multiplier effect.

More than 4,000 jobs related to the Mexican fresh produce industry occur in the rest of the state. Thus, although the border crossing and marketing services are concentrated in the border community of Nogales/Santa Cruz County, the impacts are felt in the rest of Arizona as well. Exports of agricultural equipment and supplies to Sonora and Sinaloa agribusinesses support substantial numbers of employees in related manufacturing and wholesale industries throughout Arizona. While border communities, particularly Nogales, receive a significant share of impacts generated through transborder outshopping due to proximity, the Phoenix and Tucson metropolitan areas offer a better and more diverse choice of consumer goods and are more attractive for higher income Mexican visitors. The state collected an estimated $27 million in state taxes, and there were additional millions of dollars in savings passed on to consumers due to comparatively lower retail prices of Mexican-grown produce. $

[1] Additional information about the estimation procedure and the underlying assumption(s) is provided in the full report "Fresh Produce Industry in Nogales, Arizona: Impacts of a Trans-border Production Complex on the Economy of Arizona," which is available upon request.

ECONOMIC IMPACTS

Direct jobs are those that are directly related to the fresh produce industry, i.e., that receive wages/salaries related directly to the importation and handling of fresh produce, such as customs inspectors, custom brokers, workers in ware-houses, distributors, and produce and trucking brokers.

Indirect jobs are generated through inter-business purchases. Relatively small numbers of indirect jobs reflect the fact that as a service industry, the importation of fresh produce requires minimal or no inputs from manufacturing industries. Major inputs are utilities (electricity, in particular), communications (telephone services), and various supplies.

The major multiplier effect occurs through expenditures by employees (direct and indirect jobs) as they spend portions of their wages and salaries on groceries, clothing, entertainment and other items. Jobs that are generated through employees' spending are referred to as **induced jobs.**

Associated with direct, indirect and induced jobs are direct, indirect, and induced wages. Sales include wages, cost of materials and supplies, other operating costs, rent, taxes and profits.

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
YUMA METROPOLITAN REGION							
Civilian Labor Force, ADES	60,875	58,100	57,500	58,100	64,025	2.9	-6.0
Employment	48,850	47,950	47,675	47,675	46,700	4.2	-0.4
Unemployment	12,025	10,150	9,825	10,425	17,325	-0.7	-18.5
Unemployment Rate (%)	19.8	17.5	17.1	17.9	27.1	-3.5	-12.8
Employees on Nonagricultural Payrolls, ADES							
Total	39,100	38,500	39,300	39,200	38,600	2.4	1.6
Mining	0	0	0	0	0	...	...
Construction	2,600	2,500	2,500	2,600	2,700	17.4	21.3
Manufacturing	1,900	1,800	1,800	1,800	1,700	0.0	4.3
Trans., Comm. & Publ. Util.	1,500	1,400	1,500	1,400	1,400	-6.7	-13.7
Trade	12,400	12,300	12,300	12,300	11,500	-3.4	-3.0
Finance, Ins. & Real Estate	1,200	1,200	1,300	1,300	1,300	0.0	0.7
Services	9,200	9,000	9,100	9,000	8,900	3.5	2.0
Government	10,300	10,300	10,800	10,800	11,100	6.7	4.9
Sales ($000s) ADOR							
Gross Retail	99,088	85,779	92,761	92,537	...	11.4	10.5
Retail	81,929	67,745	73,030	73,964	...	17.1	12.9
Restaurants & Bar	8,508	8,896	10,464	11,029	...	9.6	3.8
Gasoline, EBR	8,651	9,138	9,267	7,544	...	-23.1	0.0
Gallons (000s) ADOT	6,853	7,528	8,378	7,282	...	-1.5	6.7
Contracting	17,225	18,314	14,551	16,326	...	44.1	37.2
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	6,381	15,401	11,998	23,987	13,594	-45.1	10.0
Residential Building	5,122	3,950	4,474	10,428	7,515	4.3	-7.3
Non-Residential Building	958	10,289	1,883	2,862	5,013	-69.8	4.4
Non-Building	301	1,162	5,641	10,697	1,066	7.7	91.9
Number of Dwelling Units Awarded, F.W. Dodge							
Total	64	49	46	116	94	10.6	-13.4
One Family Houses	64	49	46	116	94	10.6	0.1
MOHAVE-LA PAZ REGION							
Civilian Labor Force, ADES	68,550	68,700	68,450	69,025	69,125	6.6	0.8
Employment	65,350	65,425	65,175	65,700	66,000	7.1	3.4
Unemployment	3,200	3,275	3,275	3,325	3,125	-2.3	-31.6
Unemployment Rate (%)	4.7	4.8	4.8	4.8	4.5	-8.4	-31.9
Employees on Nonagricultural Payrolls, ADES							
Total	41,500	41,200	41,300	41,900	41,900	4.0	4.8
Mining	200	200	200	200	200	0.0	0.0
Construction	2,700	2,600	2,500	2,500	2,600	-13.3	-5.8
Manufacturing	3,200	3,200	3,200	3,200	3,300	0.0	0.8
Trans., Comm. & Publ. Util.	2,100	2,000	2,000	2,000	2,100	0.0	10.2
Trade	13,200	13,200	13,200	13,400	13,200	6.5	6.7
Finance, Ins. & Real Estate	1,300	1,300	1,200	1,200	1,300	-7.1	-9.0
Services	10,500	10,400	10,600	10,600	10,700	8.1	6.7
Government	8,300	8,300	8,400	8,800	8,500	6.3	6.5
Sales ($000s) ADOR							
Gross Retail	106,165	84,501	83,384	96,591	...	3.6	2.6
Retail	75,444	61,818	64,604	72,395	...	7.7	5.3
Restaurants & Bar	10,389	11,368	11,572	12,774	...	2.0	2.6
Gasoline, EBR	20,332	11,315	7,208	11,422	...	-15.3	-9.0
Gallons (000s) ADOT	16,106	9,321	6,516	11,025	...	8.4	-3.2
Contracting	15,765	15,873	16,066	17,113	...	-3.6	9.1
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	11,751	27,308	92,240	30,689	18,143	6.0	36.2
Residential Building	10,021	10,720	12,622	16,254	13,462	54.2	17.3
Non-Residential Building	1,632	2,506	50,595	859	4,009	-41.7	47.0
Non-Building	98	14,082	29,023	13,576	672	-55.8	70.9
Number of Dwelling Units Awarded, F.W. Dodge							
Total	112	115	141	182	146	32.7	10.9
One Family Houses	104	113	128	178	144	33.3	13.3

See notes at bottom of Arizona - Quarterly table.

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
COCHISE-SANTA CRUZ REGION							
Civilian Labor Force, ADES	54,425	53,675	53,225	53,525	53,100	1.8	-3.8
Employment	49,450	48,925	48,700	48,850	48,800	4.1	-0.2
Unemployment	4,975	4,750	4,525	4,675	4,300	-18.5	-25.8
Unemployment Rate (%)	9.1	8.8	8.5	8.7	8.1	-19.9	-22.7
Employees on Nonagricultural Payrolls, ADES							
Total	42,900	42,000	42,500	42,900	42,700	2.4	2.4
Mining	0	0	0	0	0	...	-100.0
Construction	1,900	1,900	1,900	1,900	1,800	-5.3	7.9
Manufacturing	2,200	2,200	2,300	2,300	2,300	0.0	-0.4
Trans., Comm. & Publ. Util.	2,400	2,400	2,400	2,400	2,400	0.0	-0.4
Trade	12,300	12,100	12,200	12,300	12,200	4.3	4.7
Finance, Ins. & Real Estate	800	800	800	800	800	-11.1	-18.0
Services	9,700	9,100	9,100	9,200	9,200	3.4	4.2
Government	13,600	13,500	13,800	14,000	14,000	2.9	1.6
Sales ($000s) ADOR							
Gross Retail	86,923	62,047	64,263	74,877	...	5.3	9.1
Retail	71,852	48,002	51,253	58,699	...	7.1	10.6
Restaurants & Bar	8,317	8,697	8,922	9,231	...	8.5	7.9
Gasoline, EBR	6,754	5,348	4,088	6,947	...	-11.2	-0.6
Gallons (000s) ADOT	5,350	4,405	3,696	6,706	...	13.6	5.3
Contracting	11,155	12,428	9,971	9,653	...	-17.4	1.6
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	12,657	5,790	7,874	14,046	9,262	-33.5	-31.1
Residential Building	8,162	5,173	5,092	8,594	7,155	-8.6	3.8
Non-Residential Building	637	617	430	4,276	2,107	-10.6	-54.2
Non-Building	3,858	0	2,352	1,176	0	-100.0	-73.7
Number of Dwelling Units Awarded, F.W. Dodge							
Total	81	57	59	90	79	-13.2	-4.7
One Family Houses	77	57	57	85	79	-7.1	8.5
GILA-GRAHAM-GREENLEE REGION							
Civilian Labor Force, ADES	34,075	33,650	33,525	34,100	34,100	5.6	0.0
Employment	31,600	31,200	31,000	31,200	31,325	4.9	1.3
Unemployment	2,475	2,450	2,525	2,900	2,775	14.4	-13.5
Unemployment Rate (%)	7.3	7.3	7.5	8.5	8.1	8.4	-13.5
Employees on Nonagricultural Payrolls, ADES							
Total	26,100	25,500	25,700	26,000	26,200	4.0	3.2
Mining	3,100	3,100	3,000	3,000	3,000	0.0	0.0
Construction	1,800	1,700	1,700	1,700	1,900	0.0	-6.4
Manufacturing	1,900	1,900	2,000	2,000	2,000	5.3	3.1
Trans., Comm. & Publ. Util.	800	800	800	800	800	0.0	-1.0
Trade	5,900	5,700	5,700	5,800	5,800	1.8	1.0
Finance, Ins. & Real Estate	300	400	400	400	400	33.3	-6.1
Services	4,300	4,100	4,200	4,200	4,200	2.4	2.4
Government	8,000	7,800	7,800	8,100	8,100	8.0	10.4
Sales ($000s) ADOR							
Gross Retail	48,943	38,033	36,078	41,096	...	32.8	2.5
Retail	39,977	29,606	28,596	32,998	...	53.7	3.9
Restaurants & Bar	4,747	4,963	4,764	4,903	...	-1.8	3.3
Gasoline, EBR	4,219	3,464	2,718	3,195	...	-28.9	-8.4
Gallons (000s) ADOT	3,342	2,854	2,457	3,084	...	-8.9	-3.1
Contracting	10,289	13,244	11,566	12,132	...	-3.4	-4.1
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	6,661	6,924	4,668	7,496	8,219	-33.1	-2.5
Residential Building	4,466	6,622	4,296	3,827	6,840	-19.6	2.5
Non-Residential Building	2,111	0	0	1,731	138	-96.3	-26.4
Non-Building	84	302	372	1,938	1,241	...	12.1
Number of Dwelling Units Awarded, F.W. Dodge							
Total	42	83	40	42	57	-31.3	7.8
One Family Houses	42	34	40	42	57	-14.9	7.3

See notes at bottom of Arizona - Quarterly table.

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
APACHE-NAVAJO REGION							
Civilian Labor Force, ADES	48,100	49,025	49,100	49,625	49,400	3.2	-3.1
Employment	41,550	41,600	41,600	41,800	42,325	4.7	-0.3
Unemployment	6,550	7,425	7,500	7,825	7,075	-4.7	-15.5
Unemployment Rate (%)	13.6	15.1	15.3	15.8	14.3	-7.7	-12.8
Employees on Nonagricultural Payrolls, ADES							
Total	41,100	41,000	41,300	41,600	41,800	3.0	2.0
Mining	900	900	900	900	900	0.0	0.0
Construction	1,900	1,500	1,600	1,600	1,600	-11.1	-4.3
Manufacturing	1,700	1,700	1,700	1,700	1,700	13.3	-0.0
Trans., Comm. & Publ. Util.	2,400	2,400	2,300	2,300	2,300	-11.5	-7.1
Trade	7,400	7,100	7,000	7,100	7,000	-2.8	1.6
Finance, Ins. & Real Estate	1,100	1,100	1,000	1,100	1,100	0.0	-2.9
Services	8,100	7,900	8,000	8,000	8,400	0.0	1.3
Government	17,600	18,400	18,800	18,900	18,900	13.2	5.5
Sales ($000s) ADOR							
Gross Retail	65,902	53,326	47,347	52,228	...	7.9	1.3
Retail	52,106	42,041	37,960	42,607	...	17.2	5.3
Restaurants & Bar	4,759	4,555	4,411	4,335	...	-5.2	4.8
Gasoline, EBR	9,037	6,730	4,976	5,286	...	-29.4	-19.4
Gallons (000s) ADOT	7,158	5,545	4,499	5,102	...	-9.7	-14.6
Contracting	9,612	9,721	6,146	7,305	...	22.8	-10.9
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	5,721	4,763	7,900	16,218	8,698	-67.6	-7.4
Residential Building	3,432	2,893	2,748	4,341	6,423	-57.3	-31.1
Non-Residential Building	284	1,870	5,152	9,479	1,100	-85.5	51.4
Non-Building	2,005	0	0	2,398	1,175	-72.4	-7.2
Number of Dwelling Units Awarded, F.W. Dodge							
Total	37	28	35	40	62	-57.2	-24.0
One Family Houses	35	28	35	40	62	-57.2	-33.3
COCONINO-YAVAPAI REGION							
Civilian Labor Force, ADES	121,825	120,700	121,400	122,525	122,950	5.9	1.2
Employment	115,150	113,425	114,275	115,700	116,775	6.2	2.1
Unemployment	6,675	7,275	7,125	6,825	6,175	-0.8	-11.5
Unemployment Rate (%)	5.5	6.0	5.9	5.6	5.0	-6.3	-12.4
Employees on Nonagricultural Payrolls, ADES							
Total	97,500	95,200	97,000	98,900	98,700	5.6	5.4
Mining	900	900	900	1,000	1,000	0.0	2.7
Construction	6,300	6,000	6,000	6,000	6,100	0.0	2.8
Manufacturing	6,500	6,500	6,700	6,600	6,500	-1.5	1.4
Trans., Comm. & Publ. Util.	3,200	3,100	3,000	3,100	3,200	3.2	5.2
Trade	26,000	24,600	24,700	25,000	25,000	0.0	2.4
Finance, Ins. & Real Estate	2,800	2,800	2,800	2,800	2,800	3.7	8.3
Services	26,400	25,900	26,200	26,900	27,300	7.9	7.1
Government	25,400	25,400	26,700	27,500	26,800	13.1	8.5
Sales ($000s) ADOR							
Gross Retail	182,223	133,277	134,872	157,584	...	-4.1	2.7
Retail	143,222	99,575	102,345	119,684	...	3.9	5.3
Restaurants & Bar	24,616	22,788	24,067	27,458	...	-12.8	2.1
Gasoline, EBR	14,385	10,914	8,460	10,442	...	-40.6	-13.6
Gallons (000s) ADOT	11,395	8,991	7,649	10,079	...	-24.0	-8.9
Contracting	40,955	31,065	29,163	33,010	...	-5.0	-14.0
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total	31,177	32,233	30,409	41,961	49,883	23.5	0.8
Residential Building	23,503	20,817	16,214	28,235	30,819	64.2	6.1
Non-Residential Building	4,938	9,135	3,856	9,084	12,994	-11.4	-1.6
Non-Building	2,736	2,281	10,339	4,642	6,070	-12.9	-10.7
Number of Dwelling Units Awarded, F.W. Dodge							
Total	217	226	175	336	284	83.2	15.3
One Family Houses	207	195	167	269	264	70.3	26.6

See notes at bottom of Arizona - Quarterly table.

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
PHOENIX-MESA METROPOLITAN REGION (MARICOPA AND PINAL)							
Civilian Labor Force (000s) ADES	1,482.3	1,469.3	1,474.5	1,482.3	1,486.7	7.1	2.2
Employment	1,445.0	1,433.1	1,438.5	1,445.1	1,451.3	7.6	3.1
Unemployment	37.3	36.2	36.0	37.2	35.4	-8.5	-22.5
Unemployment Rate, Seas. Adj. (%)	2.7	2.4	2.5	2.6	2.6	-16.1	-24.1
Employees on Nonagricultural Payrolls (000s) ADES							
Total	1,445.6	1,421.4	1,441.5	1,453.4	1,456.8	6.0	5.6
Mining	6.8	6.5	6.5	6.0	6.0	3.4	1.7
Construction	95.2	94.1	94.4	95.8	96.4	4.7	4.2
Manufacturing	166.4	167.1	167.8	167.7	167.8	6.5	5.5
Durable	126.9	127.6	127.9	127.6	128.1	7.9	6.4
Nondurable	39.5	39.5	39.9	40.1	39.7	2.3	2.6
Trans., Comm. & Publ. Util.	76.5	74.9	75.2	75.7	75.8	4.1	4.9
Trade	358.6	352.1	353.4	355.9	357.2	6.0	4.4
Wholesale	87.8	86.4	87.6	88.4	89.0	6.2	5.1
Retail	270.8	265.7	265.8	267.5	268.2	5.9	4.2
Finance, Ins. & Real Estate	111.1	111.3	112.2	113.1	114.0	8.0	9.7
Services	451.7	445.6	453.1	458.1	459.8	6.9	7.4
Government	179.3	169.8	178.9	181.1	179.8	3.5	2.4
Sales ($000s) ADOR							
Aggregate Retail Sales	3,037,773	2,445,949	2,428,384	2,747,249	...	7.0	7.0
Retail	2,276,786	1,677,755	1,675,465	1,943,664	...	9.5	8.4
Food, EBR	332,854	334,739	335,885	336,358	...	3.6	6.0
Restaurants & Bars	298,467	299,467	318,296	344,266	...	8.1	6.7
Gasoline, EBR	129,666	133,988	98,738	122,961	...	-17.2	-6.4
Contracting	589,327	452,981	475,351	577,045	...	24.6	13.4
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total Awards	564,092	744,909	443,461	620,655	608,012	-25.7	-6.9
Residential Building	384,471	327,093	292,563	393,914	427,933	-5.0	-5.9
Non-Residential Building	163,510	280,414	124,516	146,683	99,742	-40.8	-1.7
Non-Building	16,111	137,402	26,382	80,058	80,337	-59.7	-22.6
New Housing Units Authorized, Census C-40							
Total Units	4,314	2,907	3,783	3,850	4,567	34.0	18.8
Single Family Units	2,411	2,194	2,557	3,533	3,725	28.9	14.8
2-4 Unit Structures	19	13	6	0	16	-38.5	-52.4
5-plus Unit Structures	1,884	700	1,220	317	826	67.5	28.0
Housing Sales and Prices, ARMLS							
Total Sales ($000s)	527,968	487,636	452,584	659,518	646,537	26.6	21.2
Total Units	3,629	3,209	3,198	4,592	4,396	19.9	11.3
Average Price ($)	145,486	151,959	141,521	143,623	147,074	5.5	8.7
Phoenix Skyharbor International Airport, PSIA							
Total Passengers	2,621,960	2,403,604	2,468,115	...	...	1.7	-0.3
Total Aircraft Movements	43,403	44,792	40,279	...	...	-3.2	-0.5

PHOENIX-MESA METROPOLITAN REGION (MARICOPA AND PINAL) - QUARTERLY DATA	I 97	II 97	III 97	IV 97	98	% change versus year ago for: most recent quarter	most recent 4-quarters
Demographics & Vital Statistics (000s, seas adj) ADHS & EBR							
Population	2,816.4	2,838.8	2,862.0	2,885.8	2,909.5	3.3	3.3
Natural Increase	6.7	6.8	6.9	7.0	7.2	6.9	5.3
Births	12.1	12.1	12.3	12.4	12.6	4.8	3.2
Deaths	5.4	5.4	5.4	5.4	5.5	2.1	0.7
Net Migration	15.3	15.6	16.3	16.7	16.6	8.3	2.4
Personal Income by Source ($mil, SAAR) EBR							
Total Personal Income	68,059	69,780	71,529	73,295	75,044	10.3	10.0
Earnings by Place of Work	49,740	51,029	52,354	53,713	55,062	10.7	10.3
Less: Contributions for Social Insurance	3,448	3,525	3,603	3,683	3,762	9.1	8.9
Plus: Adjustment for Residence	-180	-175	-172	-172	-174	3.0	2.4
Plus: Dividends, Interest & Rent	12,023	12,327	12,628	12,919	13,206	9.8	9.8
Plus: Transfer Payments	9,923	10,123	10,323	10,519	10,712	8.0	7.7
Per Capita Personal Income ($, SAAR) EBR	24,165	24,581	24,993	25,399	25,793	6.7	6.5

See notes at bottom of Arizona - Quarterly table

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
TUCSON METROPOLITAN REGION (PIMA)							
Civilian Labor Force (000s) ADES	366.6	363.8	366.7	367.8	365.4	3.2	-1.0
Employment	356.1	353.8	356.6	357.4	355.7	3.5	-0.3
Unemployment	10.5	10.0	10.1	10.4	9.7	-7.6	-17.4
Unemployment Rate, Seas. Adj. (%)	3.0	2.8	2.9	3.0	3.0	-9.1	-16.0
Employees on Nonagricultural Payrolls (000s) ADES							
Total	321.5	316.6	322.2	324.1	321.9	2.0	2.1
Mining	2.4	2.3	2.3	2.3	2.3	0.0	3.2
Construction	19.9	20.2	20.3	20.5	20.5	9.6	4.2
Manufacturing	28.4	28.5	28.6	28.9	28.9	2.8	1.0
Durable	22.4	22.4	22.5	22.7	22.7	2.3	0.3
Nondurable	6.0	6.1	6.1	6.2	6.2	5.1	3.6
Trans., Comm. & Publ. Util.	13.2	12.9	13.0	13.2	13.3	0.0	-1.6
Trade	70.9	69.6	70.2	70.4	70.0	2.2	2.3
Wholesale	11.0	10.9	10.8	10.9	11.0	4.8	4.9
Retail	59.9	58.7	59.4	59.5	59.0	1.7	1.8
Finance, Ins. & Real Estate	12.1	12.2	12.4	12.5	12.4	6.0	2.2
Services	101.0	99.8	101.0	101.3	100.1	1.5	2.6
Government	73.6	71.1	74.4	75.0	74.4	-0.1	2.0
Sales ($000s) ADOR							
Aggregate Retail Sales	715,915	568,823	568,263	627,682	...	7.7	5.7
Retail	522,086	377,848	383,963	425,209	...	9.8	7.2
Food, EBR	84,895	83,086	83,371	83,488	...	0.8	3.5
Restaurants & Bars	72,295	73,562	73,771	85,546	...	13.9	8.3
Gasoline, EBR	36,639	34,327	27,158	33,439	...	-11.7	-8.9
Contracting	95,492	81,703	79,167	93,076	...	12.3	-2.5
Value of Construction Contract Awards ($000s) F.W. Dodge							
Total Awards	75,384	96,590	64,005	85,954	81,355	-19.9	-11.3
Residential Building	52,195	44,697	39,912	47,505	59,028	-8.9	-14.1
Non-Residential Building	19,368	43,561	17,606	26,975	16,864	-41.2	-4.0
Non-Building	3,821	8,332	6,487	11,474	5,463	-32.9	-15.6
New Housing Units Authorized, Census C-40							
Total Units	602	250	426	494	527	-13.5	4.7
Single Family Units	345	236	426	474	521	9.9	3.8
2-4 Unit Structures	4	14	0	20	6	-66.7	-10.6
5-plus Unit Structures	253	0	0	0	0	-100.0	17.8
Housing Sales and Prices, TAR							
Total Sales ($000s)	90,244	78,589	77,296	115,009	...	20.8	8.1
Total Units	675	585	602	833	...	13.2	5.3
Average Price ($)	133,695	134,339	128,398	138,066	...	6.7	2.6
Tucson International Airport, TAA							
Total Passengers	302,968	279,396	294,153	341,553	315,201	-0.1	0.0
Total Aircraft Movements	18,225	22,178	19,396	21,839	22,223	3.7	2.1

TUCSON METROPOLITAN REGION (PIMA) - QUARTERLY DATA	I 97	II 97	III 97	IV 97	I 98	% change versus year ago for: most recent quarter	most recent 4-quarters
Demographics & Vital Statistics (000s, seas adj) ADHS & EBR							
Population	788.2	792.7	797.3	801.9	806.6	2.3	2.3
Natural Increase	1.1	1.1	1.1	1.1	1.1	-3.3	-2.9
Births	2.8	2.8	2.8	2.8	2.8	0.0	0.5
Deaths	1.7	1.8	1.8	1.8	1.8	2.2	2.7
Net Migration	3.4	3.5	3.5	3.5	3.6	4.3	2.5
Personal Income by Source ($mil, SAAR) EBR							
Total Personal Income	16,409	16,708	17,013	17,323	17,629	7.4	7.1
Earnings by Place of Work	10,037	10,243	10,456	10,674	10,888	8.5	7.7
Less: Contributions for Social Insurance	697	712	726	740	754	8.1	7.5
Plus: Adjustment for Residence	218	218	220	226	231	6.4	6.0
Plus: Dividends, Interest & Rent	3,650	3,697	3,742	3,787	3,833	5.0	5.7
Plus: Transfer Payments	3,202	3,262	3,321	3,377	3,431	7.2	7.2
Per Capita Personal Income ($, SAAR) EBR	20,819	21,077	21,338	21,601	21,858	5.0	4.7

See notes at bottom of Arizona - Quarterly table

	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
ARIZONA MONTHLY DATA							
Civilian Labor Force (000s) ADES	2,236.8	2,216.9	2,224.5	2,234.9	2,244.7	6.0	1.0
Employment	2,153.0	2,135.4	2,143.6	2,151.4	2,158.9	6.5	2.2
Unemployment	83.8	81.5	80.9	83.5	85.8	-5.9	-20.5
Unemployment Rate, Seas. Adj. (%)	4.2	3.7	4.0	4.4	4.4	-8.3	-21.8
Employees on Nonagricultural Payrolls (000s) ADES							
Total	2,053.5	2,017.8	2,046.4	2,063.2	2,062.9	4.6	4.5
Mining	14.2	14.1	14.0	13.4	13.5	1.5	0.7
Construction	132.3	130.6	130.4	132.2	132.6	3.7	3.7
Manufacturing	213.0	213.8	214.5	214.5	214.5	5.7	4.4
Durable	161.3	162.0	162.5	162.4	162.5	6.4	4.8
Nondurable	51.7	51.8	52.0	52.1	52.0	3.6	3.3
Trans., Comm. & Publ. Util.	102.7	100.0	100.4	101.3	101.4	1.8	3.2
Transportation	63.9	61.2	61.5	62.1	62.1	2.1	3.5
Trade	505.5	495.7	497.1	500.7	500.6	4.3	3.7
Wholesale	109.2	108.7	110.2	111.1	111.0	4.8	5.0
Retail	396.3	387.0	386.9	389.6	389.6	4.1	3.4
Finance, Ins. & Real Estate	130.9	130.6	131.5	132.4	132.9	6.1	7.7
Services	620.4	611.7	621.8	627.3	628.8	6.2	6.2
Government	334.5	321.3	336.7	341.4	338.6	2.5	2.5
Federal	43.8	42.7	42.5	42.8	42.5	-2.7	-0.6
State & Local	290.7	278.6	294.2	298.6	296.1	3.2	3.0
Schools	165.7	152.7	167.2	170.5	169.2	2.7	1.9
Hours Worked Per Week, Manufacturing, ADES	42.1	41.7	41.2	41.3	40.7	-2.2	-2.2
Average Hourly Earnings ($) ADES							
Copper Mining	16.58	16.92	17.12	16.92	17.28	2.2	-3.6
Construction	13.84	14.37	14.80	14.82	14.77	3.9	8.6
Manufacturing	11.74	11.77	11.86	11.85	11.86	1.7	1.3
Utilities	17.84	18.38	17.87	17.02	17.40	-3.8	-2.2
Retail Trade	11.57	12.10	11.68	11.43	11.42	-1.3	6.0
Wholesale Trade	13.11	13.15	13.28	13.16	13.15	0.5	0.8
Sales ($000s) ADOR							
Aggregate Retail Sales	4,428,290	3,562,304	3,546,231	3,980,852	...	6.9	6.2
Retail	3,263,402	2,404,390	2,417,216	2,769,220	...	9.8	7.9
Food, EBR	503,108	508,394	510,134	510,854	...	4.1	4.7
Restaurants & Bars	432,098	434,296	456,267	499,542	...	7.3	6.4
Gasoline, EBR	229,682	215,224	162,614	201,236	...	-18.6	-7.7
Gallons (000s) ADOT	181,941	177,300	147,016	194,243	...	4.2	-2.2
Utilities	369,609	406,821	362,048	362,751	...	10.0	4.3
Communications	154,277	152,599	170,684	165,150	...	16.5	15.4
Amusements	51,319	58,744	63,310	80,166	...	10.6	12.9
Rentals - Real Property	9,393	74,091	24,431	-56	...	-100.0	-74.7
Rentals - Personal Property	248,976	242,479	239,131	259,419	...	9.5	7.2
Contracting	789,820	632,878	641,981	765,660	...	19.7	9.6
Mining - Metal, Oil & Gas	92,587	88,657	79,816	97,601	...	-28.5	-5.7
Hotel/Motel	108,336	148,414	188,139	209,593	...	5.6	7.0
Value of Construction Contract Awards ($000s)							
Total Awards	713,824	933,918	662,555	841,006	797,166	-24.5	-6.1
Residential Building	491,372	421,965	377,921	513,098	559,175	-3.8	-5.9
Non-Residential Building	193,438	348,392	204,038	201,949	141,967	-43.0	-1.2
Non-Building	29,014	163,561	80,596	125,959	96,024	-57.3	-16.6
New Housing Units Authorized, Census C-40							
Total Units	5,478	3,622	4,710	5,020	5,721	23.7	14.4
Single Family Units	3,184	2,817	3,387	4,599	4,818	23.2	11.2
2-4 Unit Structures	64	47	29	83	50	-39.0	-25.8
5-plus Unit Structures	2,230	758	1,294	338	853	34.8	49.4
Bankruptcy Filings, U.S. Bankruptcy Court							
Total	1,822	1,597	1,763	2,102	...	-3.0	14.9
Chapter 7	1,442	1,176	1,297	1,665	...	0.3	20.0
Chapter 11	24	28	19	25	...	4.2	2.0
Chapter 13	356	393	446	412	...	-14.5	-0.9

See notes at bottom of Arizona - Quarterly table.

	I 97	II 97	III 97	IV 97	I 98	% change versus year ago for: most recent quarter	most recent 4-quarters
ARIZONA - QUARTERLY DATA							
Demographics & Vital Statistics (000s, seas adj) ADHS & EBR							
Population	4,521.5	4,554.5	4,587.0	4,618.9	4,651.2	2.9	2.9
Natural Increase	9.1	10.2	9.8	9.9	9.9	8.3	4.4
Births	18.7	19.0	18.7	19.0	19.1	2.2	0.9
Deaths	9.6	8.8	8.9	9.1	9.2	-3.6	-2.6
Net Migration	23.9	22.8	22.1	22.1	22.8	-4.6	-6.8
Personal Income Derivation ($mil, SAAR) EBR							
Total Personal Income	99,123	100,813	102,701	104,991	107,534	8.5	8.0
Earnings by Place of Work	68,284	69,519	70,959	72,805	74,710	9.4	8.5
Less: Contributions for Social Insurance	4,732	4,802	4,884	4,989	5,117	8.1	7.6
Plus: Adjustment for Residence	258	259	261	262	263	2.2	3.7
Plus: Dividends, Interest & Rent	18,213	18,487	18,784	19,093	19,430	6.7	6.9
Plus: Transfer Payments	17,100	17,350	17,582	17,819	18,248	6.7	6.9
Components of Earnings ($mil, SAAR) BEA							
Wages and Salaries	55,713	56,739	58,130	59,898	...	10.5	9.0
Other Labor Income	5,713	5,787	5,886	5,985	...	6.5	4.2
Proprietor's Income	6,843	6,995	7,104	7,142	...	5.9	5.4
Farm	461	507	488	394	...	-15.1	2.9
Nonfarm	6,382	6,488	6,616	6,748	...	7.5	5.5
Per Capita Personal Income ($, SAAR) EBR	21,923	22,135	22,390	22,731	23,119	5.5	4.9
Average Wage Per Employee, Annual Rate ($) EBR	28,127	28,299	28,728	29,266	...	6.0	4.4

TRAVEL AND TOURISM	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
Visits to Parks & Other Recreational Areas, ADOT, NPS & ASPB							
Northern Arizona	739,255	859,714	955,610	1,300,369	...	-16.7	-6.0
Historical	75,533	88,359	94,825	161,014	...	-22.6	-7.3
Scenic	259,052	253,429	225,946	386,168	...	-24.6	1.5
Water Based Recreation	404,670	517,926	634,839	753,187	...	-10.4	-9.8
Southern Arizona	189,843	261,844	309,329	442,884	...	-5.4	-8.0
Historical	42,768	58,794	75,856	88,263	...	-8.7	-10.7
Scenic	135,320	182,511	206,560	313,355	...	0.3	-7.4
Water Based Recreation	11,755	20,539	26,913	41,266	49,621	16.0	-2.5
International Border Crossings, USINS & USCS							
U.S. Citizens	679,558	660,587	682,997	...	...	1.6	-2.6
Aliens	2,209,459	2,109,711	1,946,264	...	...	9.6	10.9
Vehicles	798,308	797,921	712,477	...	...	-0.3	4.3

MEASURES OF INFLATION AND PRICES - MONTHLY DATA	DEC 97	JAN 98	FEB 98	MAR 98	APR 98	% change versus year ago for: most recent month	most recent 12-months
Consumer Price Index (1982-1984=100) BLS							
U.S. - All Urban	161.3	161.6	161.9	162.2	162.5	1.4	1.9
U.S. - Wage Earners	158.2	158.4	158.5	158.7	159.1	1.2	1.7

Sources and abbreviations:

ADES: Arizona Department of Economic Security
ADHS: Arizona Department of Health Services
ADOR: Arizona Department of Revenue
ADOT: Arizona Department of Transportation
ARMLS: Arizona Regional Multiple Listing Service
ASBD: Arizona State Banking Department
ASPB: Arizona State Parks Board
ASU: Arizona State University, College of Business, Research Centers
BEA: Bureau of Economic Analysis, U.S. Department of Commerce
BLS: Bureau of Labor Statistics, U.S. Department of Labor
Census C-40, Bureau of the Census, U.S. Department of Commerce
EBR: Economic & Business Research Program, The University of Arizona
F.W. Dodge, Division of McGraw Hill Information Systems Co. (proprietary data provided by special permission)
NPS: National Park Service, U.S. Department of the Interior
NSCCC: Nogales-Santa Cruz Chamber of Commerce
PSIA: Phoenix Skyharbor International Airport
SAAR: Seasonally adjusted at annual rates
TAA: Tucson Airport Authority
TAR: Tucson Association of Realtors
USINS: U.S. Immigration & Naturalization Service, U.S. Department of Justice
U.S. Bankruptcy Court, District of Arizona
USCS: U.S. Customs Service, U.S. Department of the Treasury

MEASURES OF INFLATION AND PRICES

	I 97	II 97	III 97	IV 97	I 98	% change versus year ago for: most recent quarter	most recent 4-quarters
Consumer Price Index (1982-84=100) ASU & BLS							
Metropolitan Phoenix	171.3	173.9	174.4	177.4	176.7	3.2	3.9
Western Region (U.S.)	160.8	161.0	162.1	162.8	163.3	1.6	2.1
U.S. - All Urban Consumers	159.6	160.2	160.8	161.5	161.9	1.5	2.0
U.S. - Urban Wage Earners	156.7	157.3	157.9	158.4	158.5	1.2	1.8
Price Indexes (1992=100) BEA							
Gross Domestic Product	111.8	112.3	112.7	113.1	113.6	1.6	1.9
Personal Consumption Expenditures	112.2	112.5	112.9	113.2	113.5	1.1	1.7

See notes at bottom of Arizona - Quarterly table.

NOTE: Because we changed the publishing schedule for *Arizona's Economy*, we did not print a summer issue in August 1997. During 1997, *Arizona's Economy* was published February (Winter), May (Spring) and September (Fall). From 1998 on, the printing schedule is set for January, April, July and October — the first month of each quarter.

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ARIZONA'S ECONOMY

Trans-border agricultural production dollars for Arizona

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