

# ARIZONA'S ECONOMY

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## IS IT TIME TO WORRY ABOUT A BUBBLE ECONOMY?

*The 1999 economy began much stronger than anyone expected, which sets the stage for what could be another robust year. After revising our forecasts downward last quarter in the aftermath of a severe shock to U.S. financial markets, we're revising them back up this quarter. Can you whiplash? That doesn't mean the risks are any less. The world financial crisis has now spread to Brazil and is sure to affect other Latin American countries, including Mexico – Arizona's largest trading partner. We've increased our estimate of the number of export jobs at risk in the months ahead, but at the same time concluded that consumers will carry the economy at least one more year.*

As 1999 begins, economists are busy revising their forecasts upward. Consensus forecasts for real GDP, which had been running in the 2-2.5% range, were deemed too low following release of fourth quarter real GDP estimates that showed the economy growing at a torrid 6.1% pace. This puts real GDP well above the 1998 average, so even if growth is moderate through 1999, the gain for the whole year will be sizable. Revised forecasts now call for growth of near three percent in 1999.

A two-tier economy has developed during the past year. On the global scale, nearly half of the world's economy is now in recession

while the U.S. economy flourishes. In the United States, exporters in industries such as manufacturing, mining, agriculture as well as domestic oil production are in recession while industries that sell to domestic consumers (homebuilding, autos, computers, and telecommunications) are robust. So far the world financial crisis has been a net stimulus to the U.S. economy as the positive effects on domestic consumption have more than offset declining exports (**Exhibit 1**). Households, which make up roughly two-thirds of the economy, accounted for 85% of real GDP growth during the past year. Therein lies the major risk: how much longer can consumers keep carrying the economy?

Near-zero inflation, declining interest rates, a robust job market and rising real incomes are major reasons for buoyant consumers' spirits. The strong stock market also has played an important role recently. Soaring asset prices have boosted household net worth to the point that consumers no longer see the need to save. Official saving rates have actually turned negative in recent months.

Various measures reflect consumers' current spending spree. New car and light truck sales totaled 15.3 million units nationwide last year, the best year since 1988. In four of the past five years, sales have equaled or surpassed 15 million units. Last year, sales at motor vehicle dealers were strong in both Tucson and Phoenix.

Consumers' spending spree is having a huge effect on resale housing markets. In metro Phoenix, over 51,000 units sold on Multiple Listing Services last year, a gain of

16.5%. That is the largest number ever sold, and marks the fifth year in a row that a new record has been set. In metro Tucson, sales exceeded 9750 units, a gain of 15.1%. That makes 1998 the strongest year this decade with the largest gains since 1978-79, a speculative bubble in Tucson's housing market. Neither Phoenix nor Tucson housing markets are presently experiencing bubbles, just strong economics driven by population growth and low mortgage rates.

Neither are there bubbles presently visible in commercial real estate. But as the economy continues to grow rapidly in the face of increasing supply constraints, imbalances will become more prevalent and the risks of a bubble developing will grow.

### THE IRREPRESSIBLE CONSUMER

Consumer confidence remains buoyant. The recent bombing of Baghdad, the impeachment of President Clinton and last summer's scary crisis in U.S. financial markets had little effect on consumer confidence. Moreover, last summer's sell off in the stock market was short-lived: from its bottom in mid-October, the DJIA soared back to record highs in a mere seven weeks. Two lessons were learned from last summer's financial crisis. First, it reinforced the view that a sell off represents a buying opportunity and that investors should not panic. Second, the Federal Reserve showed that it will do everything in its power to keep the economy growing.

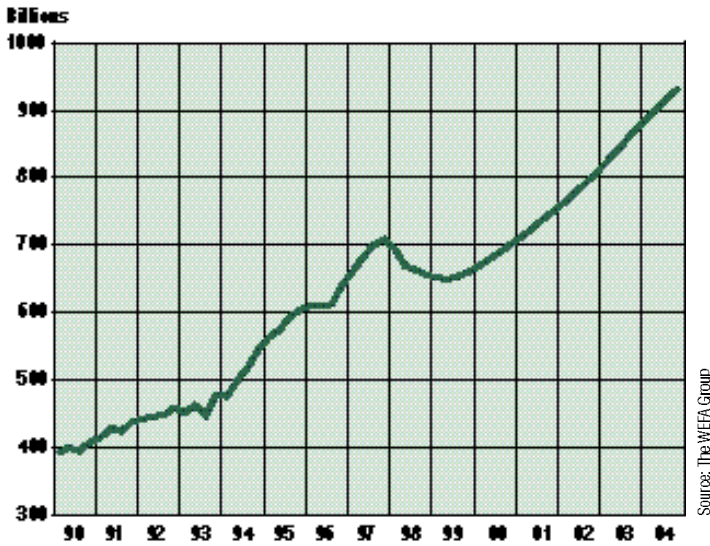
Consumer confidence fell modestly during the second half of 1998, but after the stock market rebound, confidence returned to

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**EXHIBIT 1**

Exports took a Beating Last Year

Merchandise Exports, U.S.



**EXHIBIT 2**

98's Negative News is But a Distant Memory

Consumer Confidence Index, AZ (1985 = 100)



record high levels. **Exhibit 2** shows Arizona's consumer confidence as measured by a survey conducted by the Behavior Research Center sponsored by Stockton Capital Management and Trust of Scottsdale. Since recent negative news had virtually no effect on the real economy, consumers are likely to pay little attention to such things as we go forward.

What will it take to shake consumers? Maybe the year 2000 computer problem will have an effect. The extent of the problem remains anyone's guess. After all, the world has never before experienced an event quite like this. If disruptions are large and last more than a few days, Y2K could have a serious effect on confidence. Some inventory building is likely in advance of this event, and that will boost the economy. But absorption of those inventories will subtract a couple of tenths of

a percentage point from economic growth in early 2000. If air traffic control goes down, if there is a supply disruption in electric energy, if the banking system has difficulty clearing payments, or if any of an unknown number of failures manifests, the consumer's current jubilant mood could head south. Other than Y2K, U.S. consumers appear ready to continue their role as the world's foremost consumers.

**ECONOMIC CRISIS SPREADS TO BRAZIL**

The financial crisis that began in Southeast Asia in early 1997 has now spread to Russia and more recently to South America. In January, Brazil was forced to devalue its currency and its economy has entered what promises to be a severe recession. Although Brazil is one of the world's largest economies,

it comprises a small portion of Arizona's exports, less than one percent. The risk to Arizona's economy grows if the contagion spreads to other Latin American countries, as expected. Mexico is Arizona's largest export destination, accounting for nearly \$2 billion, or 14.5% of total exports. Arizona exports to the entire Latin America and Caribbean region are \$2.2 billion. That compares to nearly \$6 billion that is destined for the Asian 10 countries (**Exhibit 3**).

Arizona exports grew robustly through 1997, but in 1998 the Asian crisis began to take its toll. During the first nine months, Arizona exports fell some \$2-1/4 billion, a drop of more than 22% (**Exhibit 4**). Asian countries accounted for \$1.6 billion of that drop, while exports to both Mexico and Brazil grew by small amounts.

**EXHIBIT 3**

Arizona Merchandise Exports To The World By Region 1993-1997

	1993	1996	1997	% Change 1993-97	% Change 1996-97
<b>TOTAL EXPORTS TO THE WORLD</b>	<b>5,785,148,000</b>	<b>9,937,766,000</b>	<b>13,556,746,528</b>	<b>134.3</b>	<b>36.4</b>
TO ASIAN 10 COUNTRIES as a percent of total	2,265,050,074 39.2%	4,451,637,170 44.8%	5,975,815,370 44.1%	163.8	34.2
TO LATIN AMERICA AND THE CARIBBEAN as a percent of total	1,151,603,343 19.9%	1,776,852,648 17.9%	2,182,004,732 16.1%	89.5	22.8
TO MEXICO as a percent of total	1,087,417,986 18.8%	1,622,176,008 16.3%	1,963,143,223 14.5%	80.5	21.0
TO BRAZIL as a percent of total	17,528,205 0.3%	68,414,593 0.7%	124,251,822 0.9%	608.9	81.6

Source: US Bureau of the Census, Exonstat Location States

What can we expect if other Latin American countries follow Brazil into recession? The WEFA Group, a leading worldwide economic consulting and forecasting firm, expects the economies of Argentina, Uruguay and Venezuela to join Brazil in recession in 1999. Remaining South American countries and Mexico are expected to continue to grow but at a slower rate.

The Mexican peso is expected to experience downward pressure, and interest rates will rise to thwart capital outflows. Even so, Mexico is expected to grow by three percent this year compared to four percent in 1998. If the situation turns decidedly worse than currently expected, the impact on Arizona exports to Mexico could become a factor. The major devaluation of the Mexican peso at the end of 1994 and subsequent severe recession did not devastate Arizona's exports to Mexico. Exports remained relatively stable during 1995 before resuming rapid growth the following year. But that was due to a surge in exports of electric and electronic equipment that more than offset declines in most other export categories. Also, NAFTA was in the early stages of implementation that resulted in significant reductions in tariffs. Therefore, it is difficult at present to assess risks associated with possible recession in Mexico, but the best guess at this point is that exports to Mexico will hold up and not subtract measurably from Arizona exports.

## THE OUTLOOK FOR ARIZONA

Last summer's crisis in financial markets had no effect on Arizona's real economy. As discussed above, consumer confidence rebounded, records were set in local housing markets, the holiday shopping season was a success and the economy continued to accelerate as the year came to an end. As a result, we've raised our forecasts from last quarter (see forecast table on page 5).

**Retail sales** finished last year with a gain of almost eight percent. Although we expect the pace to slow somewhat to nearer seven percent during 1999, the economy will continue to be driven by strong consumer spending.

**Residential building permits** neared 61,000 statewide last year, a gain of nearly 10%. Due to factors related to demographics that will slow the rate of new household formation, we project fewer permits this year – roughly 53,000. Even so, that would make 1999's total the third largest year this decade.

## EXHIBIT 5

### The Outlook – Slowing, with Risks

Wage and Salary Job Growth, Arizona



**Population** will continue to expand by 130-135,000 persons per year, matching the average gain over the past five years.

Roughly 90,000 **jobs** will be created resulting in job growth of 4.4%. Manufacturing payrolls are expected to remain unchanged in the aggregate as gains in aircraft and missiles offset declines in machinery (including electronic). The fastest-growing sectors promise to be services and FIRE<sup>1</sup>.

**Wages** per job will increase by 4.2%, which will help boost **personal income** by 7.5%.

The year 2000 promises to bring slower growth, but no recession. Another year of declines in the number of building permits will bring a small decline in construction jobs, and overall nonag job growth closer to three percent is expected. Population growth slows a couple of tenths of a percentage point to 2.6%. Retail sales will also slow by a full percentage point to near six percent. Growth rates for 2000 are indicative of the pace projected for the 2001-04 period. The pattern as the economy transitions from the strong growth of 1998 is best described as a soft landing.

## FORECAST RISKS

A number of economists believe that the global crisis now becoming established in South America will spread to Europe next and to the U.S. shortly thereafter. In this view, an outright recession in the world economy develops early next year. Reduced exports

## EXHIBIT 4

### Exports from Arizona to the World, Top Destinations

9-month year to date comparisons, \$000s

Destination	96 YTD	97 YTD	% chg	98 YTD	% chg
Asian 10 Countries	3,022,919	4,603,617	52.3	3031,992	-34.1
Mexico	1,194,925	1,434,875	20.1	1487,182	3.6
Canada	747,464	833,209	11.5	799,791	-4.0
United Kingdom	668,510	804,126	20.3	524,164	-34.8
Netherlands	207,368	1,131,385	445.6	378,890	-66.5
Germany	298,605	296,663	-0.7	361,848	22.0
France	226,173	293,135	29.6	325,369	11.0
Brazil	51,423	88,604	72.3	105,124	18.6
Switzerland	24,010	65,362	172.2	100,088	53.1
Ireland	69,312	72,332	4.4	99,360	37.4
Australia	60,068	69,765	16.1	98,835	41.7
<b>Total Arizona Exports</b>	<b>\$6,938,012</b>	<b>\$10,271,816</b>	<b>48.1</b>	<b>\$8,005,014</b>	<b>-22.1</b>

and lower profits lead to lower equity markets and declining business investment. Asset deflation prompts a restriction in bank lending. Year 2000 computer problems effect consumer sentiment and consumers cut back on spending. The result is a recession beginning in the first quarter of 2000, resulting in a decline of 1.4% in real GDP for the year.

Arizona job growth in this scenario falls to near zero, retail sales grows by less than two percent and the manufacturing and construction sectors are hammered. By 2001, population growth also falls below two percent. We assign a subjective probability of 30% to this scenario.

It is possible, of course, that the U.S. economy will shrug off the best made predictions and continue growing at an elevated pace similar to the past four years. Auto and housing remain strong, the world financial crisis ameliorates and U.S. exports recover. These events add a half percent to Arizona's rate of growth as measured by retail sales, jobs and income. A probability of 10% is assigned to this scenario. A graphical comparison of these scenarios depicting overall job growth is shown in **Exhibit 5**.

#### FASTER GROWTH FORESEEN FOR TUCSON

Metro Tucson's economy grew at a healthy pace last year, adding an estimated 12,000 jobs<sup>2</sup> and 17,000 people. The outlook for 1999 is for even faster growth. This year, a number of companies in manufacturing, software and telecommunications will be expanding which will boost Tucson's export base. Manufacturing payrolls will increase by 2400, led by Raytheon, Bombardier, Universal Avionics and ADE. Increases in software and teleservices payrolls will be led by Keane, Intuit, First Health, Infonxx, ITD Direct Marketing, Anderson Financial, National Information Group, AOL, and Reliant Insurance, among others. This is one of the biggest crops of expansions/additions in a number of years, and it will provide a boost in demand to business and population-serving activities.

Our forecasts show 1999 to be a stronger year for Tucson than 1998. We project 17,000 new jobs and nearly 21,000 new residents. Retail sales are expected to increase in the 7.5-8.0% range during the next two years. Building permits will rise into the 8500-9000 range. If 1999 turns out as expected, it will bring the fastest growth to the Old Pueblo since 1994. \$

- 1 Finance, Insurance and Real Estate (FIRE)
- 2 Employment estimates for counties continue to suffer from large and growing numbers of companies with multiple work sites who fail to report employment counts for individual counties. In these instances, state-wide totals are allocated in their entirety to one county (where the largest numbers are believed to be). The net effect is to boost reported totals for Maricopa County (metro Phoenix) while seriously understating job counts in outlying counties. As such, county employment estimates are unrepresentative of actual economic activity and must be interpreted with caution.

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**THE UNIVERSITY OF ARIZONA.**

FORECAST TABLES

**Forecasts for Arizona**

	1998	1999	2000	2001	2002	2003	2004
Personal Income (\$ mill)	108,089.8	116,172.1	124,584.9	133,883.1	142,811.9	152,575.5	163,284.2
percent change	7.9	7.5	7.2	7.5	6.7	6.8	7.0
Per Capita Personal Income	22,983.2	24,026.9	25,107.9	26,351.1	27,469.8	28,697.2	30,028.7
percent change	4.8	4.5	4.5	5.0	4.2	4.5	4.6
Aggregate Retail Sales (\$ mill)*	45,762.1	48,835.6	51,509.9	54,898.3	58,628.2	62,611.6	67,039.8
percent change	6.5	6.7	5.5	6.6	6.8	6.8	7.1
Population (000s, mid-year)	4,703.0	4,835.1	4,962.0	5,080.7	5,198.9	5,316.7	5,437.6
percent change	2.9	2.8	2.6	2.4	2.3	2.3	2.3
Net Migration (000s)	93.6	91.7	81.8	79.0	78.1	80.0	81.9
Wage & Salary Employment (000s)	2,079.8	2,170.6	2,238.4	2,306.6	2,372.1	2,445.4	2,521.0
percent change	5.1	4.4	3.1	3.0	2.8	3.1	3.1
Goods-Producing	371.4	376.8	377.7	381.9	384.1	390.3	398.6
percent change	5.2	1.5	0.3	1.1	0.6	1.6	2.1
Construction	137.3	142.4	138.7	136.0	135.8	137.8	141.6
percent change	5.6	3.8	-2.6	-2.0	-0.2	1.5	2.7
Manufacturing	221.1	221.3	225.7	232.5	234.9	239.0	243.6
percent change	5.7	0.1	2.0	3.0	1.1	1.7	1.9
Service-Providing	1,708.4	1,793.8	1,860.6	1,924.7	1,988.0	2,055.1	2,122.3
percent change	5.1	5.0	3.7	3.4	3.3	3.4	3.3
Trade (Wholesale & Retail)	496.7	519.6	535.6	554.7	574.7	594.7	614.3
percent change	3.7	4.6	3.1	3.6	3.6	3.5	3.3
Services	643.2	683.4	719.4	753.1	786.6	822.3	858.3
percent change	6.9	6.2	5.3	4.7	4.5	4.5	4.4

**Forecasts for Phoenix-Mesa Metro Area**

	1998	1999	2000	2001	2002	2003	2004
Personal Income (\$ mill)	78,023.4	83,802.3	90,177.2	97,162.3	103,885.5	110,892.7	118,616.3
percent change	10.1	7.4	7.6	7.7	6.9	6.7	7.0
Per Capita Personal Income	26,424.6	27,512.5	28,791.8	30,206.1	31,475.7	32,766.1	34,180.9
percent change	6.2	4.1	4.6	4.9	4.2	4.1	4.3
Aggregate Retail Sales (\$ mill)*	31,530.0	33,573.6	35,484.2	37,589.3	39,642.3	41,760.2	43,997.4
percent change	7.6	6.5	5.7	5.9	5.5	5.3	5.4
Population (000s, mid-year)	2,952.7	3,046.0	3,132.0	3,216.6	3,300.5	3,384.4	3,470.2
percent change	3.6	3.2	2.8	2.7	2.6	2.5	2.5
Net Migration (000s)	67.6	63.0	54.6	52.2	50.6	50.2	51.9
Wage & Salary Employment (000s)	1,479.3	1,536.6	1,585.2	1,632.2	1,674.0	1,719.2	1,768.0
percent change	6.1	3.9	3.2	3.0	2.6	2.7	2.8
Goods-Producing	281.3	280.0	281.9	286.0	286.3	289.4	294.7
percent change	5.7	-0.5	0.7	1.5	0.1	1.1	1.8
Construction	104.5	106.0	102.7	100.1	98.9	99.8	102.4
percent change	7.6	1.5	-3.1	-2.5	-1.3	0.9	2.6
Manufacturing	170.2	167.4	172.6	179.3	180.9	183.1	185.7
percent change	4.6	-1.6	3.1	3.9	0.9	1.2	1.4
Service-Providing	1,198.0	1,256.6	1,303.3	1,346.2	1,387.7	1,429.8	1,473.3
percent change	6.2	4.9	3.7	3.3	3.1	3.0	3.0
Trade (Wholesale & Retail)	360.1	377.8	392.3	407.0	421.1	434.9	449.8
percent change	5.6	4.9	3.8	3.7	3.5	3.3	3.4
Services	470.6	496.0	516.5	535.5	554.6	573.5	592.5
percent change	7.0	5.4	4.1	3.7	3.6	3.4	3.3

**Forecasts for Tucson Metro Area**

	1998	1999	2000	2001	2002	2003	2004
Personal Income (\$ mill)	17,898.7	19,226.9	20,658.3	22,146.7	23,542.1	24,906.6	26,372.7
percent change	6.6	7.4	7.4	7.2	6.3	5.8	5.9
Per Capita Personal Income	22,042.7	23,086.5	24,184.7	25,370.2	26,465.3	27,522.0	28,654.8
percent change	4.4	4.7	4.8	4.9	4.3	4.0	4.1
Aggregate Retail Sales (\$ mill)*	7,277.2	7,754.8	8,312.0	8,874.6	9,400.9	9,904.4	10,430.9
percent change	4.9	6.6	7.2	6.8	5.9	5.4	5.3
Population (000s, mid-year)	812.0	832.8	854.2	872.9	889.5	905.0	920.4
percent change	2.1	2.6	2.6	2.2	1.9	1.7	1.7
Net Migration (000s)	13.7	16.9	17.6	15.1	13.1	12.0	12.1
Wage & Salary Employment (000s)	328.1	345.0	358.6	369.5	378.0	386.3	395.0
percent change	3.8	5.2	3.9	3.0	2.3	2.2	2.3
Goods-Producing	52.6	56.7	58.3	58.9	58.9	58.7	58.9
percent change	4.6	7.9	2.8	1.0	-0.1	-0.3	0.4
Construction	19.6	20.9	21.8	21.8	21.4	20.8	20.6
percent change	4.1	6.2	4.3	0.4	-2.2	-2.6	-0.9
Manufacturing	30.3	33.0	33.5	34.0	34.3	34.7	35.1
percent change	4.8	8.7	1.6	1.4	1.1	1.1	1.1
Service-Providing	275.5	288.3	300.3	310.5	319.2	327.6	336.1
percent change	3.6	4.6	4.2	3.4	2.8	2.6	2.6
Trade (Wholesale & Retail)	69.9	72.7	75.7	78.7	81.2	83.2	85.4
percent change	2.8	4.1	4.1	4.0	3.2	2.5	2.6
Services	104.9	110.4	116.5	121.7	126.5	131.1	135.7
percent change	4.8	5.2	5.6	4.4	3.9	3.7	3.5

\* 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.

# NEW INFLATION MEASURES FOR AZ'S METRO AREAS

By Debra J. Roubik, 602-561-2816  
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*Release of the Consumer Price Index (CPI) by the Bureau of Labor Statistics tends to bring on a type of "seizure" to the financial markets every month. Markets react as if these numbers play a monumental role in the health of our country. The frenzy surrounding these data releases may not be as eccentric as they seem at first glance.*

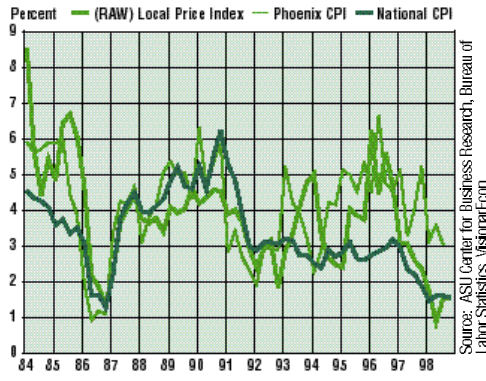
The CPI has wormed its way into almost every fabric of our economy. It affects the labor market through wage agreements, the real estate market through leasing documents, government revenue growth through the adjustment of tax brackets and government spending due to the indexing of government bonds, and the increase in entitlement programs. And, the list goes on. Consequently, if inflation is gaining at an unhealthy pace – the effects are compounded at an unrelenting rate.

Locally, the same could be expected to be true: A local price index could give us an insight into the interworkings of our local economy. Such an index could alert local companies to cost pressures and local decision makers to the growth in revenues that could be expected simply due to local inflation. So, in reality, the financial markets are right. That inflation number does play a big role in measuring the health of our economy.

## DATA COLLECTION DILEMMA

The Bureau of Labor Statistics produces such a local price index for some metropolitan areas. However, that pool of local CPI recipients is limited due to the expense and time factors in producing a high-quality index. As a result, most local decision makers are caught in a quandary. Logically, as any astute businessperson would stress, simply incorporating national CPI increases into labor and rental agreements, or into revenue projections, could produce disastrous results. If local inflation is running higher than it is nationally, incorporating the national inflation rate into your raise policy could chase away good talent. Or, if local inflation rates are running lower than those nationally, increasing the payment on rental properties by the infla-

**CHART 1**  
 Phoenix Inflation Rates  
*Quarterly Over-the-Year Increases in Price Indices*



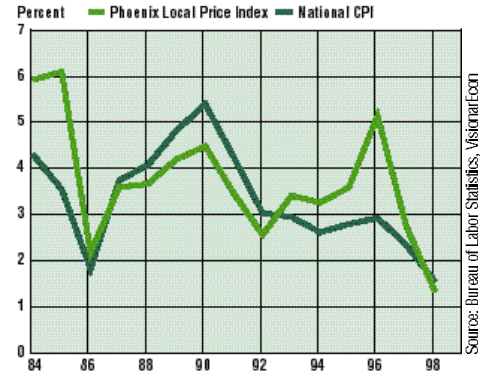
tion rate in the national CPI could show up in high vacancy rates for your property. So, some gauge of local inflation, whether formal or informal, is necessary for business decisions.

Since 1975, state residents have used the Phoenix CPI to gauge their local cost of living index and inflation rates. Unfortunately, Arizona State University's Center for Business Research, which has been altruistic in their efforts to produce the index, announced the abandonment of the index in their February 1998 issue of *Arizona Business*. Due to methodological problems and a lack of funding, the Center can no longer produce the index. So, we are left with ACCRA – the only other local price index. However, the American Chamber of Commerce Researchers Association (ACCRA) stresses that the index was not intended to be a time series, but a cross-sectional indicator of prices. In layman's terms, this means the firm created the data to compare the costs between metropolitan areas (MA) at one point in time, not to compare the costs in one MA over time.

There are other problems associated with ACCRA as well. The association compiles its databank of prices from the efforts of participating local chambers of commerce. This implies that if the chamber does not find the effort worthwhile for a certain quarter, that city will have no data. Historically, this situation has occurred one time each in Phoenix, Tucson and Yuma since 1990. Another problem occurs since the ACCRA index focuses only on those items that represent purchases of a typical individual who upholds a mid-management lifestyle. These items number only 59. Consequently, the index will not capture the pressures felt by the average worker in an urban environment, nor will it capture price movements in high-tech purchases such as cell phones, software, etc.

Nonetheless, the ACCRA index can be likened to a diamond in the rough. While it takes quite a bit of mathematical chiseling, the ACCRA

**CHART 2**  
 Inflation Rates  
*Annual Over-the-Year Increases in Price Indices*



index can provide a glimpse of the inflationary pressures in an area. More importantly, right now, it is all we've got!

## REMEMBER CALCULUS CLASS?

It all boils down to that old concept practiced *ad nauseam* in your calculus class: derivatives. Since the ACCRA index is a ratio of two different variables (local prices and national prices) that change over time, the change in local prices can not be calculated by taking your simple rate of change in the ACCRA index. The desired rate of change is calculated by applying the product rule for derivatives after solving for local prices. The following equations walk you through the mathematics. By definition:

$$\text{ACCRA} = \text{Local Prices} / \text{National Prices}$$

Solving for local prices:

$$\text{Local Prices} = \text{ACCRA} * \text{National Prices}$$

According to the product rule for derivatives, and using Dt to denote the partial derivative with respect to time:

$$\text{Dt (Local Prices)} = \text{Dt (ACCRA)} * \text{National Prices} + \text{ACCRA} * \text{Dt (National Prices)}$$

Finally, recognizing that our measures are discrete rather than continuous, the derivative boils down to the percentage change. Hence, the rate of change of local prices equates to a sum of the rate of change in ACCRA multiplied by the national Consumer Price Index (CPI) and the rate of change in the CPI multiplied by the ACCRA index.

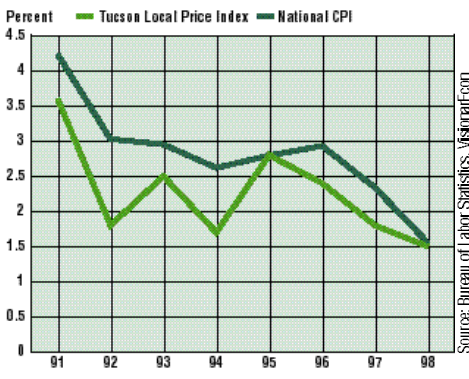
## WITH STATISTICS, THERE'S ALWAYS A CATCH

This procedure is no exception. Economic statistics are always limited by their processes. As mentioned, the price increases calculated by this derivation of the ACCRA index are only representative of inflation for middle-manager-type purchases. Also, the ACCRA survey of

### CHART 3

#### Inflation Rates

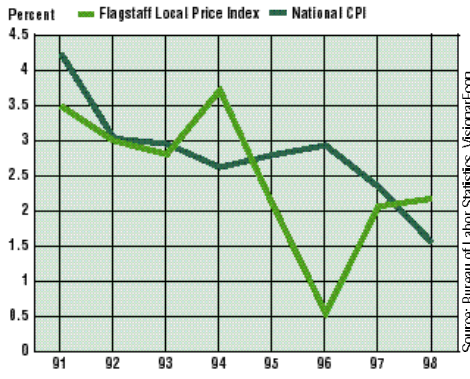
Annual Over-the-Year Increases in Price Indices



### CHART 4

#### Inflation Rates

Annual Over-the-Year Increases in Price Indices



prices comes nowhere close to being as comprehensive as the price surveys produced by the Bureau of Labor Statistics (the agency responsible for the CPI) and the price survey ASU produced. In the early 1980's the Bureau of Labor Statistics incorporated a new concept into the national consumer price index known as homeowner equivalency. This procedure helped to remedy a problem that still runs rampant in the ACCRA index. Just as with the old CPI, ACCRA incorporates the price of a new house and the current mortgage rate, as if an individual was purchasing a new home every month. Hence, just as with the old CPI, the index will become skewed during real estate peaks and valleys. Any analyst must be attentive to these common quirks associated with the local price index.

**Chart 1** illustrates the percentage increases in ASU's Phoenix CPI, the ACCRA derivative (or the raw Local Price Index (LPI)) and the national CPI. As shown, the raw LPI is extremely volatile. However, it is not by coincidence that when comparing increases in ASU's CPI, the raw LPI and the national CPI, price pressures render the raw LPI more accurate than the national CPI when employment growth increases

in an metropolitan area. When employment growth declines, local prices can be expected to mirror national prices more closely. Hence, an intricate statistical technique was applied in order to reduce the volatility in the raw LPI and account for such cyclical fluctuations.

Not only does this make theoretical sense, but, this new local price index also affirms two of ASU's contentions regarding its own Phoenix CPI: (1) the Phoenix CPI appears to have overstated local inflation by almost 1.5% over the last few years and (2) there exists a cyclical nature to the old Phoenix CPI's misspecification error over history.

### LOCAL INFLATION SLOWING

As **Table 1** shows, all of the local inflation rates have fallen from the 3.5 to 6 percent range of the early 1990s to the 1.5 to 2.5 percent range of 1998. But, the patterns of inflation vary considerably geographically.

#### 1. Fervent Phoenix

As **Chart 2** shows, and as witnessed more visibly in the previously quarterly chart, prices in Phoenix began to outpace their national counterparts as soon as the 1990's expansion began. Economic development efforts worked to propel the local economy, and prices reflected this increase in local demand. As a result, price increases in the Valley out-paced national inflation (measured by the national CPI) on average by about one half of one percentage point.

While 1996 shows an inflation differential of over two percent, this jump simply exemplifies the problems with the housing component. The housing index went from 93.6 in the fourth quarter of 1995 to a high of 99.9 in the first quarter of 1997. This fact seems to confirm that the 1996 jump in prices reflected a real estate boom more than any jump in overall price pressures.

### 2. Temperate Tucson

Prices in Tucson have appeared to be more erratic, yet more temperate than their national counterparts (see **Chart 3**). Only in 1995 did Tucson price increases appear to even approach the national rate. On average, since 1991 Tucson prices appear to have increased at about a half of one percentage point under the increase in the national CPI.

### 3. The Slopes of Flagstaff

While it may be tempting to try to attribute all of the movement in Flagstaff's LPI to housing, such is not the case. The LPI suggests that price increases fell from about par, to substantially under the national numbers during a period when housing prices continued to climb (from 1994 to a peak in 1997). Hence, the LPI suggests that Flagstaff has embarked on a definite disinflationary trend over the last four years (see **Chart 4**).

### 4. Eluding Yuma

All early indications from the LPI for Yuma suggest that this MA has a character all of its own. In contrast to the other MAs, when the Yuma economy picks up, the raw LPI drops like a rock. More interestingly, this move seems to be mostly dictated by the cost of utilities. Consequently, a different volatility and cyclical adjustment process was employed for the Yuma LPI.

Of all four MAs, the LPI for Yuma does not appear to adequately capture overall price pressures. This may be due to the fact that the ACCRA index considers only mid-management level purchases. At this present time, such a price index will not adequately represent Yuma's economy. Once Yuma succeeds at their efforts toward developing a more diversified employment base, this LPI will become more useful for the MA. Consequently, the Yuma LPI should still be held suspect when searching for a price measure for the MA's general population.

### MORE WORK TO BE DONE

While these local inflation rates provide much promise, they also reinforce the fact that more work needs to be done to get a good handle on inflation in the smaller metro areas. At the least, however, with ASU's Phoenix CPI now a token of history, the Phoenix, Tucson and Flagstaff LPI can provide a good indicator of the direction of price pressures in the major metro areas of the state. Any way you assess it, the raw LPI and the LPI itself for all the MAs suggest that inflation rates are currently running under 2.5%. Armed with this information, local business managers will be better equipped to make good pricing decisions. \$

**TABLE 1**  
Local Inflation Rates  
(Annual Percentage Changes)

	Nat'l CPI	Phx LPI	Tuc LPI	Flag LPI	Yuma LPI
1991	4.2	3.5	3.6	3.5	5.1
1992	3.0	2.6	1.8	3.0	5.4
1993	3.0	3.4	2.5	2.8	5.8
1994	2.6	3.3	1.7	3.7	2.8
1995	2.8	3.6	2.8	2.1	3.1
1996	2.9	5.1	2.4	0.5	6.1
1997	2.3	2.8	1.8	2.1	6.6
1998E	1.6	1.3	1.5	2.2	2.4

Fourth quarter ACCRA numbers unavailable until March. Hence, estimate represents year-to-date average.

SOURCE: BUREAU OF LABOR STATISTICS, VISION/ECON

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>YUMA METROPOLITAN REGION</b>							
<b>Civilian Labor Force, ADES</b>	73,750	66,400	65,350	62,150	...	2.1	4.3
Employment	49,425	49,775	51,100	49,700	...	1.7	6.0
Unemployment	24,325	16,625	14,250	12,450	...	3.5	-0.1
Unemployment Rate (%)	33.0	25.0	21.8	20.0	...	1.4	-5.4
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	38,675	39,725	41,450	41,575	...	6.3	4.7
Mining	25	25	25	25	...		
Construction	2,700	2,725	2,750	2,750	...	5.8	13.3
Manufacturing	1,800	1,800	1,850	1,875	...	-1.3	0.1
Trans., Comm. & Publ. Util.	1,225	1,100	1,125	1,175	...	-21.7	-12.5
Trade	10,500	11,200	12,200	12,475	...	0.6	0.2
Finance, Ins. & Real Estate	1,175	1,225	1,275	1,275	...	6.3	-1.5
Services	8,600	8,800	9,000	9,100	...	-1.1	1.7
Government	12,650	12,850	13,225	12,900	...	25.2	14.1
<b>Sales (\$000s) ADOR</b>							
Gross Retail	68,435	78,616	86,894	107,093	...	8.1	6.7
Retail	55,989	62,938	70,408	88,375	...	7.9	7.7
Restaurants & Bar	6,436	7,937	8,474	9,547	...	12.2	3.7
Gasoline, EBR	6,010	7,741	8,012	9,171	...	6.0	2.3
Gallons (000s) ADOT	5,790	7,579	8,066	9,624	...	40.4	23.5
Contracting	13,962	16,836	13,438	15,460	...	-10.2	16.0
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	21,776	11,852	11,687	9,715	11,342	-61.8	-20.3
Residential Building	6,636	8,583	7,011	5,588	6,969	78.4	16.4
Non-Residential Building	6,151	3,187	2,586	3,303	2,500	-89.8	-58.5
Non-Building	8,989	82	2,090	824	1,873	61.2	51.7
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	79	97	90	74	76	85.4	24.1
One Family Houses	79	97	90	74	76	85.4	23.8
<b>MOHAVE-LA PAZ REGION</b>							
<b>Civilian Labor Force, ADES</b>	71,625	71,775	71,825	72,125	...	5.2	5.5
Employment	68,525	69,100	69,150	69,175	...	5.9	6.9
Unemployment	3,100	2,675	2,675	2,950	...	-7.8	-18.8
Unemployment Rate (%)	4.3	3.7	3.7	4.1	...	-12.4	-22.9
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	42,700	42,775	42,925	42,750	...	3.0	4.0
Mining	225	225	225	225	...	12.5	12.5
Construction	2,750	2,800	2,775	2,775	...	2.8	-9.1
Manufacturing	3,450	3,450	3,400	3,225	...	0.8	2.9
Trans., Comm. & Publ. Util.	2,150	2,150	2,150	2,150	...	2.4	3.4
Trade	13,425	13,600	13,825	13,900	...	5.3	7.5
Finance, Ins. & Real Estate	1,125	1,100	1,100	1,100	...	-15.4	-13.6
Services	11,025	10,950	10,775	10,675	...	1.7	5.7
Government	8,550	8,500	8,675	8,700	...	4.8	4.5
<b>Sales (\$000s) ADOR</b>							
Gross Retail	85,683	90,914	85,516	102,768	...	-3.2	4.8
Retail	64,644	69,290	66,141	83,449	...	10.6	9.8
Restaurants & Bar	10,970	11,901	10,525	10,663	...	2.6	6.1
Gasoline, EBR	10,069	9,723	8,850	8,656	...	-57.4	-20.2
Gallons (000s) ADOT	9,701	9,520	8,909	9,083	...	-43.6	-4.3
Contracting	19,096	21,577	19,085	25,384	...	61.0	18.0
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	36,748	19,132	16,578	16,716	22,538	-18.3	37.6
Residential Building	13,568	14,285	14,847	12,439	12,933	17.5	19.1
Non-Residential Building	14,815	1,612	1,731	1,531	5,878	134.6	106.3
Non-Building	8,365	3,235	0	2,746	3,727	-73.5	22.5
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	145	143	157	132	136	15.3	20.1
One Family Houses	141	143	157	128	132	13.8	19.7

See notes at bottom of Arizona - Quarterly table.

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>COCHISE-SANTA CRUZ REGION</b>							
<b>Civilian Labor Force, ADES</b>	57,000	55,750	55,175	54,550	...	0.2	1.9
Employment	50,300	50,225	50,650	50,250	...	1.6	4.8
Unemployment	6,700	5,525	4,525	4,300	...	-13.6	-20.0
Unemployment Rate (%)	11.8	9.9	8.2	7.9	...	-13.8	-21.6
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	43,250	43,375	44,275	44,350	...	3.4	4.1
Mining	50	50	50	50	...	...	...
Construction	1,900	1,925	1,950	1,900	...	0.0	-0.3
Manufacturing	2,425	2,400	2,325	2,275	...	3.4	0.6
Trans., Comm. & Publ. Util.	2,250	2,250	2,325	2,350	...	-2.1	-0.7
Trade	12,075	12,100	12,675	12,825	...	4.3	6.3
Finance, Ins. & Real Estate	850	850	875	850	...	6.3	-0.7
Services	9,425	9,450	9,625	9,600	...	-1.0	2.2
Government	14,275	14,350	14,450	14,500	...	6.6	5.6
<b>Sales (\$000s) ADOR</b>							
Gross Retail	67,624	71,739	73,106	93,958	...	8.1	6.3
Retail	52,807	55,986	58,427	75,767	...	5.4	8.4
Restaurants & Bar	7,840	8,258	7,567	9,199	...	10.6	1.9
Gasoline, EBR	6,977	7,495	7,112	8,992	...	33.1	-3.8
Gallons (000s) ADOT	6,722	7,339	7,160	9,437	...	76.4	17.0
Contracting	13,530	15,762	15,569	14,557	...	30.5	9.7
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	16,967	13,526	20,804	11,360	25,653	255	24.6
Residential Building	9,541	7,166	8,134	5,475	6,301	-4.7	1.0
Non-Residential Building	1,058	5,808	11,129	5,475	2,795	353	86.8
Non-Building	6,368	552	1,541	410	16,557	...	54.2
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	95	84	83	62	69	6.2	-5.3
One Family Houses	93	84	81	60	69	6.2	7.8
<b>GILA-GRAHAM-GREENLEE REGION</b>							
<b>Civilian Labor Force, ADES</b>	35,800	35,450	34,900	35,000	...	2.7	4.1
Employment	33,150	33,000	32,525	32,450	...	2.7	5.0
Unemployment	2,650	2,450	2,375	2,550	...	3.0	-5.1
Unemployment Rate (%)	7.4	6.9	6.8	7.3	...	0.3	-8.9
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	27,175	27,175	27,075	27,225	...	4.3	4.2
Mining	2,975	2,975	2,950	2,950	...	-4.8	-0.3
Construction	2,000	1,900	1,925	1,925	...	6.9	1.1
Manufacturing	1,950	1,950	1,975	1,975	...	3.9	2.3
Trans., Comm. & Publ. Util.	875	875	875	875	...	9.4	9.1
Trade	6,325	6,300	6,325	6,350	...	7.6	7.2
Finance, Ins. & Real Estate	400	425	400	425	...	41.7	8.0
Services	4,325	4,275	4,275	4,275	...	-0.6	0.5
Government	8,325	8,475	8,350	8,450	...	5.6	6.2
<b>Sales (\$000s) ADOR</b>							
Gross Retail	41,067	43,348	38,817	46,702	...	-4.6	-0.5
Retail	31,763	33,182	29,432	37,747	...	-5.6	0.0
Restaurants & Bar	4,809	5,388	4,864	4,673	...	-1.6	1.5
Gasoline, EBR	4,495	4,778	4,521	4,282	...	1.5	-6.8
Gallons (000s) ADOT	4,331	4,679	4,551	4,493	...	34.5	12.8
Contracting	10,427	11,983	11,231	7,973	...	-22.5	10.6
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	6,289	12,148	4,668	5,296	4,221	-39.0	-15.2
Residential Building	4,327	4,735	3,965	3,163	3,577	-46.0	-23.4
Non-Residential Building	450	5,894	263	2,000	0	...	4.1
Non-Building	1,512	1,519	440	133	644	113.2	-7.9
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	43	39	38	27	32	-61.4	-25.3
One Family Houses	43	39	38	27	32	-5.9	-7.8

See notes at bottom of Arizona - Quarterly table.

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>APACHE-NAVAJO REGION</b>							
<b>Civilian Labor Force, ADES</b>	49,775	48,750	48,250	48,500	...	0.8	1.4
Employment	43,350	43,000	42,175	41,775	...	0.5	3.9
Unemployment	6,425	5,750	6,075	6,725	...	2.7	-11.4
Unemployment Rate (%)	12.9	11.8	12.6	13.9	...	1.8	-12.5
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	42,475	42,275	41,900	41,575	...	1.2	3.0
Mining	950	950	950	950	...	5.6	5.6
Construction	1,675	1,725	1,700	1,675	...	-11.8	-11.2
Manufacturing	1,700	1,700	1,700	1,700	...	0.0	3.8
Trans., Comm. & Publ. Util.	2,575	2,575	2,575	2,600	...	8.3	0.3
Trade	7,600	7,525	7,350	7,350	...	-0.7	0.0
Finance, Ins. & Real Estate	1,125	1,100	1,100	1,100	...	0.0	0.0
Services	8,400	8,225	8,075	7,850	...	-3.1	-0.7
Government	18,450	18,475	18,450	18,350	...	4.3	8.4
<b>Sales (\$000s) ADOR</b>							
Gross Retail	63,228	59,209	54,758	61,850	...	-6.1	5.5
Retail	51,084	47,921	45,573	52,231	...	0.2	9.6
Restaurants & Bar	6,168	5,357	4,296	4,320	...	-9.2	6.3
Gasoline, EBR	5,976	5,931	4,889	5,299	...	-41.4	-18.0
Gallons (000s) ADOT	5,758	5,807	4,922	5,561	...	-22.3	-1.7
Contracting	13,881	12,771	11,941	7,886	...	-18.0	27.9
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	17,970	9,584	9,161	11,591	5,584	17.2	5.8
Residential Building	6,428	6,362	4,476	5,374	3,352	15.9	-4.7
Non-Residential Building	6,852	82	3,770	5,747	2,000	7.0	22.2
Non-Building	4,690	3,140	915	470	232	...	5.4
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	61	60	42	45	31	10.7	-9.2
One Family Houses	61	53	42	45	31	10.7	-2.7
<b>COCONINO-YAVAPAI REGION</b>							
<b>Civilian Labor Force, ADES</b>	122,250	122,125	120,900	122,000	...	0.1	1.7
Employment	116,375	117,250	115,700	116,350	...	1.0	2.7
Unemployment	5,875	4,875	5,200	5,650	...	-15.4	-13.9
Unemployment Rate (%)	4.8	4.0	4.3	4.6	...	-15.5	-15.5
<b>Employees on Nonagricultural Payrolls, ADES</b>							
Total	99,650	100,600	100,050	97,800	...	0.3	3.5
Mining	975	975	975	975	...	8.3	2.2
Construction	6,700	6,575	6,500	6,375	...	1.2	1.6
Manufacturing	6,725	6,650	6,600	6,825	...	5.0	-0.1
Trans., Comm. & Publ. Util.	3,300	3,350	3,275	3,250	...	1.6	1.7
Trade	25,950	26,175	25,925	25,600	...	-1.5	0.2
Finance, Ins. & Real Estate	2,900	2,875	2,900	2,900	...	3.6	3.3
Services	27,950	27,825	27,300	26,925	...	2.0	5.5
Government	25,150	26,175	26,575	25,950	...	2.2	6.9
<b>Sales (\$000s) ADOR</b>							
Gross Retail	181,562	169,477	161,155	175,131	...	-3.9	1.2
Retail	133,370	122,389	123,700	138,107	...	-3.6	3.3
Restaurants & Bar	34,367	33,388	26,129	25,878	...	5.1	6.9
Gasoline, EBR	13,825	13,700	11,326	11,146	...	-22.5	-24.1
Gallons (000s) ADOT	13,320	13,415	11,402	11,697	...	2.7	-8.6
Contracting	47,965	50,107	47,247	46,888	...	14.5	5.8
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total	67,210	38,219	38,169	31,383	36,042	-8.4	-3.7
Residential Building	24,647	23,969	24,734	22,956	21,627	-16.6	-3.0
Non-Residential Building	2,372	8,111	5,088	2,648	6,307	-31.0	-23.2
Non-Building	40,191	6,139	8,347	5,779	8,108	89.4	18.1
<b>Number of Dwelling Units Awarded, F.W. Dodge</b>							
Total	308	211	251	199	203	-6.0	14.4
One Family Houses	224	205	188	187	182	-2.7	17.8

See notes at bottom of Arizona - Quarterly table.

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>PHOENIX-MESA METROPOLITAN REGION (MARICOPA AND PINAL)</b>							
<b>Civilian Labor Force (000s) ADES</b>							
Employment	1,532.8	1,528.0	1,536.1	1,542.3	...	4.0	5.9
Unemployment	1,483.50	1,487.10	1,496.40	1,501.60	...	3.9	6.4
Unemployment Rate, Seas. Adj. (%)	49.3	40.9	39.7	40.7	...	9.1	-7.9
	2.8	2.5	2.7	2.9	...	7.4	-13.2
<b>Employees on Nonagricultural Payrolls (000s) ADES</b>							
Total	1,474.0	1,481.2	1,503.8	1,512.4	...	4.6	5.5
Mining	6	5.9	5.9	5.9	...	-13.2	-6.6
Construction	102.2	103.4	103.5	103.6	...	8.8	6.1
Manufacturing	169.5	168.8	169	169.4	...	1.8	4.9
Durable	128.6	128.3	128.2	128.5	...	1.3	5.5
Nondurable	40.9	40.5	40.8	40.9	...	3.5	3.1
Trans., Comm. & Publ. Util.	76	76.4	76.9	78	...	6.3	6.2
Trade	352.8	355.8	363.7	370.8	...	3.4	4.8
Wholesale	89.3	89.7	90.2	91	...	3.6	5.0
Retail	263.5	266.1	273.5	279.8	...	3.3	4.8
Finance, Ins. & Real Estate	116.6	117.3	117.4	119.1	...	7.2	8.0
Services	462.4	465.7	471.4	475	...	5.2	6.0
Government	188.5	187.9	196	190.6	...	4.5	4.3
<b>Sales (\$000s) ADOR</b>							
Aggregate Retail Sales	2,528,034	2,624,680	2,663,266	3,262,855	...	7.3	7.3
Retail	1,784,026	1,836,079	1,873,252	2,456,515	...	7.9	7.6
Food, EBR	350,545	364,868	371,835	375,069	...	11.9	10.9
Restaurants & Bars	276,632	302,080	305,501	309,915	...	3.8	9.0
Gasoline, EBR	116,831	121,653	112,678	121,356	...	-6.4	-8.9
Contracting	596,404	562,078	597,871	681,235	...	15.6	16.9
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total Awards	669,047	651,069	597,612	555,794	521,988	-33.8	-5.2
Residential Building	385,274	387,088	346,658	356,439	349,736	3.5	-2.3
Non-Residential Building	158,115	149,134	152,337	102,663	71,155	-77.2	-20.9
Non-Building	125,658	114,847	98,617	96,692	101,097	-26.4	18.1
<b>New Housing Units Authorized, Census C-40</b>							
Total Units	4,124	3,054	4,267	3,835	4,362	50.1	17.9
Single Family Units	2,909	2,924	2,676	2,805	2,936	33.8	18.1
2-4 Unit Structures	72	88	21	26	39	200	72.0
5-plus Unit Structures	1,143	42	1,570	1,004	1,376	96.6	25.0
<b>Housing Sales and Prices, ARMLS</b>							
Total Sales (\$000s)	586,596	656,925	521,128	691,502	565,636	16.0	23.0
Total Units	3,979	4,584	3,528	4,636	3,638	13.4	16.0
Average Price (\$)	147,423	143,308	147,712	149,159	155,480	2.3	6.1
<b>Phoenix Skyharbor International Airport, PSIA</b>							
Total Passengers	2,351,397	2,644,911	2,583,189	2,617,190	...	-0.2	3.9
Total Aircraft Movements	43,354	46,592	43,742	46,452	...	7.0	3.2

	PHOENIX-MESA METROPOLITAN REGION (MARICOPA AND PINAL) - QUARTERLY DATA					% change versus year ago for:	
	IV 97	I 98	II 98	III 98	IV 98	most recent quarter	most recent 4-quarters
<b>Demographics &amp; Vital Statistics (000s, seas adj) ADHS &amp; EBR</b>							
Population	2,889.1	2,915.1	2,940.5	2,964.5	2,987.7	3.4	3.5
Natural Increase	7.0	7.1	7.2	7.3	7.4	5.2	5.4
Births	12.4	12.5	12.7	12.8	13	4.3	4.3
Deaths	5.4	5.5	5.5	5.6	5.6	3.1	2.9
Net Migration	19.2	19.0	18.2	16.7	15.9	-17.0	-1.0
<b>Personal Income by Source (\$mil, SAAR) EBR</b>							
Total Personal Income	73,583	75,666	77,322	78,860	80,245	9.1	10.1
Earnings by Place of Work	54,164	55,815	57,136	58,356	59,446	9.8	10.9
Less: Contributions for Social Insurance	3,724	3,830	3,909	3,982	4,045	8.6	9.7
Plus: Adjustment for Residence	-174	-173	-174	-174	-174	0.2	0.5
Plus: Dividends, Interest & Rents	12,949	13,319	13,577	13,811	14,014	8.2	9.4
Plus: Transfer Payments	10,368	10,534	10,692	10,849	11,004	6.1	6.4
<b>Per Capita Personal Income (\$, SAAR) EBR</b>	25,469	25,956	26,296	26,602	26,858	5.5	6.3

See notes at bottom of Arizona - Quarterly table.

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>TUCSON METROPOLITAN REGION (PIMA)</b>							
<b>Civilian Labor Force (000s) ADES</b>							
Employment	368.3	372.0	372.2	374.7	...	2.2	3.2
Unemployment	357.1	363.0	363.4	365.9	...	2.8	3.9
Unemployment Rate, Seas. Adj. (%)	11.2	9.0	8.8	8.8	...	-16.2	-16.5
	2.8	2.2	2.4	2.5	...	-16.7	-18.7
<b>Employees on Nonagricultural Payrolls (000s) ADES</b>							
Total	320.3	326.5	329.8	331.9	...	3.2	3.0
Mining	2.3	2.3	2.3	2.3	...	-4.2	-3.5
Construction	21.2	21.3	21.3	21.7	...	9.0	7.8
Manufacturing	29.4	29.6	29.5	29.4	...	3.5	3.4
Durable	23.0	23.1	23.2	23.1	...	3.1	2.7
Nondurable	6.4	6.5	6.3	6.3	...	5.0	6.0
Trans., Comm. & Publ. Util.	13.5	13.5	13.7	13.8	...	4.5	1.4
Trade	69.7	70.8	72.5	73.2	...	3.2	3.0
Wholesale	11.3	11.5	11.6	11.7	...	6.4	5.4
Retail	58.4	59.3	60.9	61.5	...	2.7	2.6
Finance, Ins. & Real Estate	12.7	12.8	12.8	13	...	7.4	6.3
Services	101.2	102.0	102.5	103.4	...	2.4	2.4
Government	70.3	74.2	75.2	75.1	...	2.0	2.5
<b>Sales (\$000s) ADOR</b>							
Aggregate Retail Sales	571,356	594,362	611,357	750,297	...	4.7	4.6
Retail	390,113	399,933	421,704	548,722	...	5.1	5.8
Food, EBR	85,951	89,464	91,172	91,965	...	7.6	6.6
Restaurants & Bars	65,606	72,955	69,464	74,598	...	3.2	6.1
Gasoline, EBR	29,686	32,011	29,018	35,013	...	-4.4	-14.6
Contracting	97,183	96,657	107,916	109,677	...	14.9	9.8
<b>Value of Construction Contract Awards (\$000s) F.W. Dodge</b>							
Total Awards	118,386	70,663	82,332	63,938	80,928	-33.7	-22.7
Residential Building	49,532	43,612	55,939	38,382	43,358	-24.5	-22.0
Non-Residential Building	55,370	13,311	24,123	22,139	7,738	-86.3	-29.0
Non-Building	13,484	13,740	2,270	3,417	29,832	258.0	-8.9
<b>New Housing Units Authorized, Census C-40</b>							
Total Units	616	633	1,110	675	...	-6.3	16.2
Single Family Units	587	560	433	511	...	48.7	36.2
2-4 Unit Structures	4	14	24	4	4	-71.4	-3.3
5-plus Unit Structures	0	0	520	112	13	...	-3.5
<b>Housing Sales and Prices, TAR</b>							
Total Sales (\$000s)	110,040	101,985	102,512	119,200	88,831	12.0	22.8
Total Units	830	780	7,770	844	612	3.2	99.4
Average Price (\$)	132,579	130,750	13,193	141,233	145,149	8.5	-3.4
<b>Tucson International Airport, TAA</b>							
Total Passengers	253,226	285,039	289,733	302,701	...	-0.1	-1.8
Total Aircraft Movements	22,796	26,918	25,783	23,885	...	31.1	10.7

	TUCSON METROPOLITAN REGION (PIMA) - QUARTERLY DATA					% change versus year ago for:	
	IV 97	I 98	II 98	III 98	IV 98	most recent quarter	most recent 4-quarters
<b>Demographics &amp; Vital Statistics (000s, seas adj) ADHS &amp; EBR</b>							
Population	800.9	805.1	809.7	814.7	819.8	2.4	2.2
Natural Increase	1.1	1.1	1.0	1.0	1.0	-5.6	-5.7
Births	2.8	2.8	2.8	2.8	2.8	-0.7	-0.6
Deaths	1.8	1.8	1.8	1.8	1.8	2.2	2.6
Net Migration	2.8	3.2	3.5	4.0	4.2	49.6	17.9
<b>Personal Income by Source (\$mil, SAAR) EBR</b>							
Total Personal Income	17,200	17,424	17,729	18,051	18,391	6.9	6.6
Earnings by Place of Work	10,697	10,855	11,094	11,350	11,626	8.7	8.2
Less: Contributions for Social Insurance	750	762	780	799	819	9.2	8.8
Plus: Adjustment for Residence	230	233	239	246	252	9.7	9.0
Plus: Dividends, Interest & Rents	3,706	3,741	3,781	3,821	3,859	4.1	4.1
Plus: Transfer Payments	3,316	3,358	3,395	3,433	3,473	4.7	4.8
<b>Per Capita Personal Income (\$, SAAR) EBR</b>	21,476	21,642	21,896	22,157	22,432	4.5	4.3

See notes at bottom of Arizona - Quarterly table.

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>ARIZONA MONTHLY DATA</b>							
<b>Civilian Labor Force (000s) ADES</b>	2311.3	2300.1	2304.7	2311.5	...	3.3	5.0
Employment	2201.7	2212.4	2221.1	2227.3	...	3.5	5.6
Unemployment	109.6	87.7	83.6	84.2	...	0.5	-9.1
Unemployment Rate, Seas. Adj. (%)	4.2	3.5	4.0	4.1	...	-2.4	-13.4
<b>Employees on Nonagricultural Payrolls (000s) ADES</b>							
Total	2085.5	2101.0	2129.1	2138.9	...	4.2	4.6
Mining	13.2	13.1	13.1	13.0	...	-8.5	-4.3
Construction	141.0	142.3	143.3	143.9	...	8.8	5.1
Manufacturing	217.2	216.7	216.6	217.3	...	2.0	4.3
Durable	163.8	163.5	163.4	164.0	...	1.7	4.6
Nondurable	53.4	53.2	53.2	53.3	...	3.1	3.4
Trans., Comm. & Publ. Util.	100.5	101.2	101.9	103.2	...	4.6	3.8
Transportation	63.9	64.4	65.1	66.3	...	3.8	3.5
Trade	497.6	502.9	513.2	521.4	...	3.1	4.0
Wholesale	111.0	112.0	113.0	113.9	...	4.3	4.7
Retail	386.6	390.9	400.2	407.5	...	2.8	3.8
Finance, Ins. & Real Estate	135.2	136.1	136.5	138.1	...	5.5	6.1
Services	634.7	638.1	643.5	646.7	...	4.2	5.5
Government	346.1	350.7	361.0	355.3	...	5.0	4.1
Federal	44.5	44.0	43.6	44.7	...	2.1	0.3
State & Local	301.6	306.7	317.4	310.6	...	5.4	4.7
Schools	162.8	173.3	177.0	176.1	...	6.3	4.5
<b>Hours Worked Per Week, Manufacturing, ADES</b>	39.4	39.4	39.7	39.9	...	-5.2	-2.5
<b>Average Hourly Earnings (\$) ADES</b>							
Copper Mining	17.56	17.27	17.21	17.04	...	2.8	4.1
Construction	13.88	13.94	14.05	14.17	...	2.4	1.7
Manufacturing	12.48	12.38	12.33	12.43	...	5.9	4.5
Utilities	17.48	17.44	17.96	18.12	...	1.6	-1.7
Retail Trade	11.56	11.52	11.50	11.48	...	-0.8	0.6
Wholesale Trade	13.58	13.27	13.16	13.27	...	1.2	0.6
<b>Sales (\$000s) ADOR</b>							
Aggregate Retail Sales	3,682,157	3,810,585	3,854,565	4,681,081	...	5.6	6.0
Retail	2,563,796	2,627,718	2,688,637	3,480,913	...	6.7	7.1
Food, EBR	511,664	532,571	542,739	547,461	...	7.7	6.6
Restaurants & Bars	412,828	447,264	436,784	448,793	...	3.9	7.9
Gasoline, EBR	193,869	203,032	186,405	203,914	...	-11.2	-11.3
Gallons (000s) ADOT	186,789	198,798	187,662	213,993	...	17.6	6.9
Utilities	512,957	473,535	354,085	375,687	...	1.6	4.5
Communications	167,979	169,369	184,070	177,332	...	14.9	13.6
Amusements	34,329	67,278	55,644	5,324	...	-89.6	-4.5
Rentals - Real Property	1,241	...	...	...	...	-86.2	-94.5
Rentals - Personal Property	260,631	254,604	255,383	268,968	...	8.0	23.0
Contracting	812,448	787,771	824,298	909,060	...	15.1	15.2
Mining - Metal, Oil & Gas	86,649	82,198	80,675	72,562	...	-21.6	-29.6
Hotel/Motel	110,117	147,642	139,077	...	...	5.5	5.5
<b>Value of Construction Contract Awards (\$000s)</b>							
Total Awards	954,393	826,193	781,011	705,793	708,296	-19.2	-4.8
Residential Building	499,953	495,800	465,764	449,816	447,853	-1.0	-4.2
Non-Residential Building	245,183	187,139	201,027	145,506	98,373	-75.9	-19.8
Non-Building	209,257	143,254	114,220	110,471	162,070	878.6	31.3
<b>New Housing Units Authorized, Census C-40</b>							
Total Units	5,232	4,196	5,738	4,865	5,264	45.3	15.2
Single Family Units	3,982	3,995	3,547	3,684	3,772	33.9	17.3
2-4 Unit Structures	97	118	71	43	88	87.2	15.8
5-plus Unit Structures	1,153	83	2,120	1,138	1,404	85.2	16.1
<b>Bankruptcy Filings, U.S. Bankruptcy Court</b>							
Total	2,067	2,230	1,823	1,835	...	0.7	-3.8
Chapter 7	1,707	1,846	1,515	1,442	...	0.0	-1.4
Chapter 11	20	38	20	21	...	-12.5	3.6
Chapter 13	340	343	286	372	...	4.5	-13.5

See notes at bottom of Arizona - Quarterly table.

	IV 97	I 98	II 98	III 98	IV 98	% change versus year ago for:	
						most recent quarter	most recent 4-quarters
<b>ARIZONA QUARTERLY DATA</b>							
<b>Demographics &amp; Vital Statistics (000s, seas adj) ADHS &amp; EBR</b>							
Population	4,619.3	4,652.8	4,686.3	4,719.4	4,752.3	2.9	2.9
Natural Increase	9.7	9.8	9.8	9.8	9.8	1.0	1.1
Births	19	19.2	19.2	19.2	19.3	1.5	1.9
Deaths	9.3	9.4	9.3	9.4	9.5	2.1	2.8
Net Migration	23.8	23.7	23.7	23	23.3	-2.0	0.0
<b>Personal Income Derivation (\$mil, SAAR) EBR</b>							
Total Personal Income	102,821	104,578	107,424	109,176	111,181	8.1	7.9
Earnings by Place of Work	72,851	74,133	76,406	77,751	79,396	9.0	9.2
Less: Contributions for Social Insurance	5,152	5,266	5,402	5,482	5,580	8.3	9.1
Plus: Adjustment for Residence	264	265	267	269	270	2.4	1.5
Plus: Dividends, Interest & Rents	17,534	17,732	18,236	18,515	18,801	7.2	5.6
Plus: Transfer Payments	17,324	17,714	17,917	18,124	18,293	5.6	5.2
<b>Components of Earnings (\$mil, SAAR) BEA</b>							
Wages and Salaries	59,875	60,962	62,465	63,848	...	9.6	9.7
Other Labor Income	5,711	5,796	5,899	5,997	...	6.7	5.5
Proprietor's Income	7,266	7,412	7,601	7,647	...	6.1	7.3
Farm	319	283	328	249	...	-37.1	-23.6
Nonfarm	6,947	7,129	7,273	7,398	...	8.7	9.1
<b>Per Capita Personal Income (\$, SAAR) EBR</b>							
	22,259.2	22,476.7	22,923.2	23,133.5	23,395.1	5.1	4.8
<b>Average Wage Per Employee, Annual Rate (\$) EBR</b>							
	29,283.1	29,390.0	29,830.9	30,168.7	...	4.8	5.0

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>TRAVEL AND TOURISM</b>							
<b>Visits to Parks &amp; Other Recreational Areas, ADOT, NPS &amp; ASPB</b>							
Northern Arizona	1,988,400	1,776,109	1,110,263	757,285	967,549	12.5	0.7
Historical	190,817	174,924	96,467	77,558	89,845	1.7	-5.9
Scenic	617,056	561,261	302,071	227,526	238,376	-5.9	-6.2
Water Based Recreation	1,180,527	1,039,924	711,725	452,201	639,328	23.4	6.0
Southern Arizona	140,348	202,556	208,767	173,889	254,419	-2.8	-0.8
Historical	27,208	39,938	42,438	48,251	59,635	1.4	-2.4
Scenic	82,548	128,648	144,913	113,806	171,113	-6.2	-0.4
Water Based Recreation	30,592	33,970	21,416	11,832	23,671	15.2	-0.4
<b>International Border Crossings, USINS &amp; USCS</b>							
U.S. Citizens	703,819	780,534	758,782	801,502	...	17.9	6.8
Aliens	1,924,130	2,074,952	2,016,456	2,210,322	...	0.0	2.7
Vehicles	798,190	866,724	815,032	842,514	...	5.5	3.3

	SEP 98	OCT 98	NOV 98	DEC 98	JAN 99	% change versus year ago for:	
						most recent month	most recent 12-months
<b>MEASURES OF INFLATION AND PRICES - MONTHLY DATA</b>							
<b>Consumer Price Index (1982-1984=100) BLS</b>							
U.S. - All Urban	163.6	164.0	164.0	163.9	164.3	1.7	1.6
U.S. - Wage Earners	160.2	160.6	160.7	160.7	161.0	1.6	1.4

**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

	IV 97	I 98	II 98	III 98	IV 98	% change versus year ago for: most recent quarter    most recent 4-quarters	
<b>Consumer Price index (1982-84=100) ASU &amp; BLS</b>							
Metropolitan Phoenix	177.4	176.7	180.1	179.7	181.5	2.3	3.0
Western Region (U.S.)	162.8	163.3	164.2	165.1	165.8	1.8	1.8
U.S. - All Urban Consumers	161.5	161.9	162.8	163.4	164.0	1.5	1.6
U.S. - Urban Wage Earners	158.4	158.5	159.4	160.0	160.7	1.4	1.3
<b>Price Indexes (1992=100) BEA</b>							
Gross Domestic Product	112.1	112.3	112.6	112.9	113.2	1.0	1.0
Personal Consumption Expenditures	112.3	112.3	112.6	112.8	113.1	0.7	0.8

See notes at bottom of Arizona - Quarterly table.

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