

Economic Development Board

Volume 1, Issue 1, Fall 2001

Sonoma County Quarterly *Local Economic Report*

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Developed in partnership with the Sonoma County Workforce Investment Board



SONOMA COUNTY

EMPLOYMENT GROWTH 2000-02

134

2000-05

64

Best=1 Worst=325

MSA LIFE CYCLE PHASE Growth/Mature

VITALITY

Best=1 **236** Worst=321

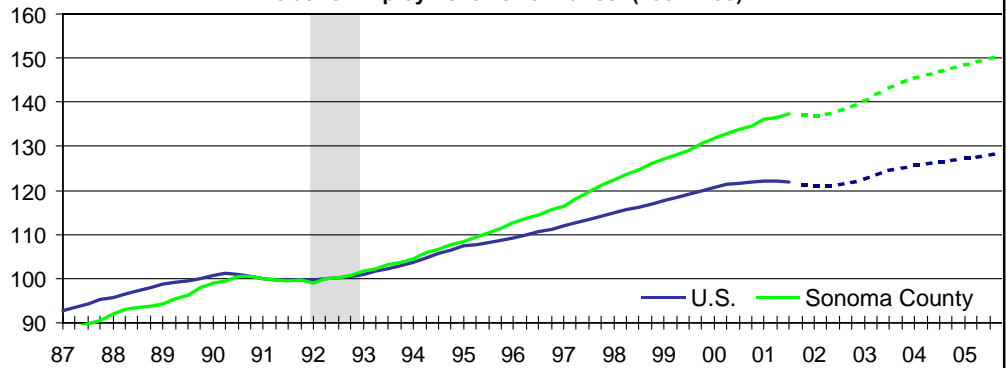
COST OF DOING BUSINESS

U.S. = 100% **99%**

COST OF LIVING

U.S. = 100% **123%**

Relative Employment Performance (1991=100)



1994	1995	1996	1997	1998	1999	2000	Indicators	2001	2002	2003	2004	2005
10.4	10.8	11.2	12.1	13.0	14.0	15.6	Gross Metro Product, C\$B	15.9	16.1	17.0	17.7	18.3
2.7	4.0	3.3	8.2	7.6	8.0	10.9	% Change	2.3	1.1	5.7	3.8	3.3
147.0	150.2	157.5	165.4	173.0	179.3	186.6	Total Employment (000)	189.5	189.1	195.7	200.7	204.0
2.0	2.2	4.8	5.0	4.6	3.6	4.1	% Change	1.5	-0.2	3.5	2.5	1.7
5.8	5.5	4.4	3.8	3.3	2.7	2.6	Unemployment Rate	2.7	3.6	3.3	3.1	3.0
4.3	4.1	6.4	8.4	6.3	8.1	11.0	Personal Income Growth	4.8	4.3	7.5	6.7	6.0
414.7	420.4	426.1	434.5	443.0	450.3	458.6	Population (000)	467.9	477.3	486.4	497.9	507.2
2,177	1,608	1,412	1,785	2,098	2,348	2,013	Single-Family Permits	1,586	2,254	3,138	3,113	3,100
334	322	75	176	964	688	492	Multifamily Permits	490	522	660	661	674
218.5	219.1	216.5	226.8	247.4	277.5	328.7	Existing Home Price (\$Ths)	370.7	382.1	403.6	420.7	437.3
2,875	2,013	2,619	2,868	5,157	4,512	3,734	Mortgage Originations (\$Mil)	6,027	3,674	3,332	3,310	3,265
2.6	3.6	3.9	6.6	6.9	5.8	6.7	Net Migration (000)	7.7	7.8	7.4	9.6	7.4
1,246	1,571	2,011	2,090	2,173	1,627	1,158	Personal Bankruptcies	1,126	1,424	1,464	1,349	1,261

STRENGTHS & WEAKNESSES

STRENGTHS

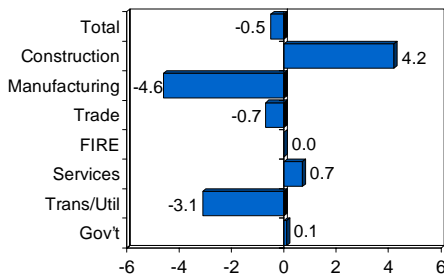
- Home to world class Sonoma County wineries.
- High concentration of cutting-edge R&D activity in optical and telecom equipment.
- Attractive environment.

WEAKNESSES

- Very high cost of housing.
- Rising traffic congestion.
- Limited access to highways, rail and air transport.
- Winemaking, tourism and telecom equipment are procyclical industries.

CURRENT EMPLOYMENT TRENDS

October 2001 Employment Growth % Change Year Ago



FORECAST RISKS

SHORT TERM ↓ LONG TERM ↓ RISK-ADJUSTED RETURN, '00-05 **-0.33%**

UPSIDE

- Longer-term growth in global communications industry supports Telecom Valley industries.
- Demand for premium wines remains resilient through economic downturn.

DOWNSIDE

- Extended overcapacity in domestic telecom industry stifles demand for SON tech products.
- Global competition for wines puts price pressure on SON vintages.
- Housing remains unaffordable over the long term.

ANALYSIS

Recent Performance. Sonoma County's economy is on the brink of recession. Employment peaked in January and is now declining on a year-to-year basis as well. Home building is slowing and house-price appreciation has come to a halt. Yet the downturn has been quite mild so far. The county's jobless rate has risen by just one percentage point and remains well below statewide and national averages. Service-producing industries are holding steady, as is non-residential construction activity. The nationwide recession cuts deeply into demand for the county's driving telecommunications equipment industry and puts at risk spending on wine and travel and tourism, but so far, the local economy is showing some resilience. SON may not avoid recession, but it will be brief and mild.

Technology. SON's high-tech equipment industry is taking the brunt of the downturn as demand has fallen sharply for a broad range of its products. Layoffs at Agilent Technologies, for example, one of the area's largest equipment makers, could amount to more than 1,000 by early next year. Many of SON's smaller telecom firms are also paring staff as venture capital investors turn cautious and business investment slows. The industry downturn will last through much of 2002 and the turnaround critically depends upon when national corporate profitability begins to improve, perhaps by mid-2002.

Wineries. The nationwide downturn in restaurant, hotel and travel spending since September 11 is dampening sales of wine and spirits. This aggravates already softening demand evident since the recession began this past spring. Wineries continue to push for improved quality and to increase direct marketing to consumers to maintain market share in light of dampened demand and increased competition from high-quality imports. But cost cutting is evident in a downturn in payroll employment within the food products industry, which is largely dominated by SON's wineries. Over the year, employment is down by approximately 400 or nearly 5%. While

the 2001 crush was down from a bountiful 2000, grape production is on an upward trend, as vineyards planted in the mid-1990s begin producing, causing some downward pricing pressure for growers. A rising supply of grapes and bulk wine is a boon for vintners, which now can be more demanding of quality at lower prices, but it also boosts wine inventories and thus puts some downward pressure on wine prices. The near-term outlook, therefore, is for rising quality, and thus improved competitiveness against imports. But moderate pricing power will still encourage cost cutting, thus limiting employment and income growth.

Construction. A slowing economy is generating an increased supply of office space, driving SON's office vacancy rate in the third quarter to nearly 9% according to Keegan & Coppin-ONCOR International. Rates are lowest in Santa Rosa and highest near the airport. A sub-10% vacancy rate remains low by Bay Area standards this year, but there is potential for further increases as the telecom and other industries continue to pare their operations and new construction from a record number of office permits in the first quarter comes on line. Potential for overbuilding in residential markets is modest, however, as residential permit issuance has edged down from a 1998 peak.

Sonoma County's near-term outlook is fraught with risk and depends critically upon the timing of renewed demand for telecom and other tech industries, and upon stability in SON's wine and tourist industries. An entrepreneurial spirit evident within these industries over the past decade is indicative of their potential to weather the current downturn, however. Longer term, the outlook is more positive as excellent quality-of-life factors attract further Bay Area development. SON will perform slightly above average over the long term.

Steven G. Cochran
November 2001

EMPLOYMENT & INDUSTRY

TOP EMPLOYERS

Agilent Technologies	5,000
Santa Rosa Junior College	3,606
Medtronic AVE	2,257
St. Joseph Health System	1,800
Sonoma State University	1,459
OCLI, JDS Uniphase System	1,350
State Farm Insurance Company	1,200
Advanced Fibre Communications	800
Pacific Bell	773
North American Mortgage Company	728
Pacific Gas & Electric Company	725
Kendall-Jackson Wine Estates	625
Sutter Medical Center	621
Kaiser Permanente	600
Hansel Dealer Group	593
Legacy Marketing Group	532
Alcatel, USA	525
Cisco Systems	510
The Press Democrat	430
Exchange Bank	426

Source: The Business Journal serving Sonoma & Marin Counties, May 2001

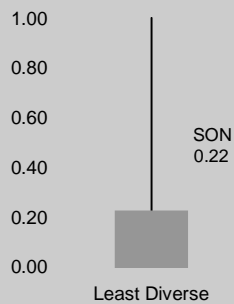
Public

Federal	2,207
State	5,023
Local	20,454

2000

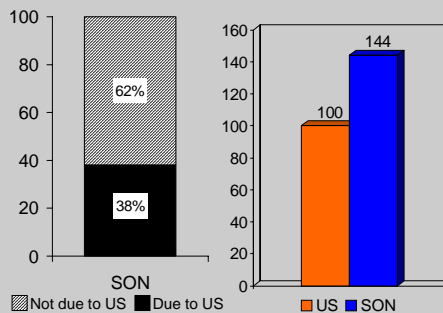
INDUSTRIAL DIVERSITY

Most Diverse (U.S.)



EMPLOYMENT VOLATILITY

DUE TO U.S. FLUCTUATIONS RELATIVE TO U.S.



MIGRATION FLOWS

Into Sonoma County	Number of Migrants	Median Income
San Francisco CA	4,174	36,553
Oakland CA	1,374	32,597
San Jose CA	904	41,943
Vallejo CA	801	30,237
Los Angeles CA	677	23,332
Sacramento CA	589	24,684
San Diego CA	377	20,760
Orange County CA	305	25,961
Riverside CA	293	23,379
Portland OR	199	26,729
Total All MSA's	17,190	26,943

From Sonoma County

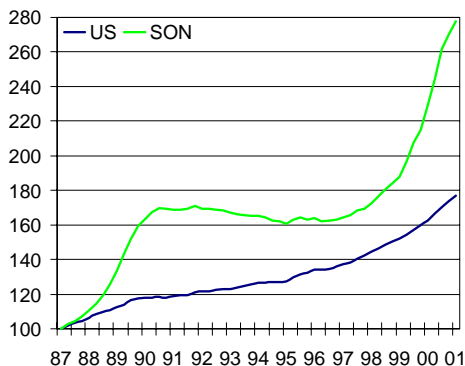
San Francisco CA	1,948	29,873
Vallejo CA	1,143	33,147
Sacramento CA	1,078	26,547
Oakland CA	919	27,168
San Jose CA	447	28,332
San Diego CA	410	17,937
Los Angeles CA	385	19,241
Riverside CA	290	30,655
Phoenix AZ	219	23,332
Chico CA	189	15,892
Total All MSA's	15,486	24,343

COMPARATIVE EMPLOYMENT AND INCOME

Sector	% of Total Employment			Average Annual Earnings		
	SON	CA	US	SON	CA	US
Mining	0.2%	0.2%	0.4%	\$104,445	\$65,850	\$60,254
Construction	7.2%	5.1%	5.1%	\$42,186	\$40,937	\$35,571
Manufacturing	16.8%	13.4%	14.0%	\$48,970	\$54,808	\$47,080
Durable	66.0%	62.6%	60.1%	ND	\$62,927	\$49,111
Nondurable	34.0%	37.4%	39.9%	ND	\$41,305	\$44,049
Transport/Utilities	3.4%	5.1%	5.3%	\$45,172	\$53,788	\$47,663
Wholesale Trade	3.8%	5.7%	5.4%	\$43,757	\$48,119	\$46,750
Retail Trade	19.2%	17.0%	17.6%	\$21,279	\$22,311	\$18,710
Finance, Ins., Real Estate	5.5%	5.7%	5.8%	\$29,704	\$40,832	\$39,570
Services	29.2%	31.9%	30.7%	\$28,348	\$36,411	\$31,484
Memo: Health Services	7.9%	6.4%	7.7%	ND	\$43,563	\$38,846
Government	14.8%	16.0%	15.6%	\$39,658	\$45,024	\$40,078

Source: Percent of total employment - BLS, 2000; Average annual earnings - BEA, 1999

HOUSE PRICES



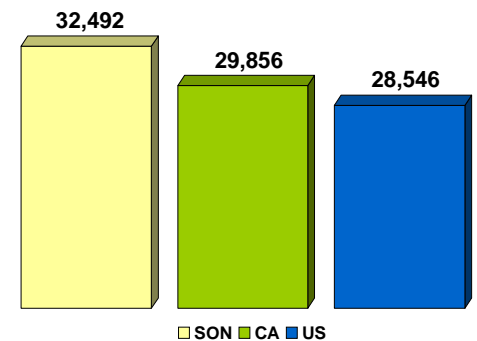
Source: OFHEO, 1987Q1 = 100, NSA

LEADING INDUSTRIES

SIC	Industry	Employees (000)
208	Beverages	5.5
382	Measuring and controlling devices	5.0
385	Ophthalmic goods	4.8
FR	Farms	4.1
PH	Private household workers	3.7
150	Res & nonres building construction	3.5
801	Offices & clinics of medical doctors	3.3
799	Misc amusement & recreational service	3.0
174	Masonry, stonework, and plastering	3.0
829	Schools & educational services, nec	2.6
832	Individual and family services	2.4
551	New and used car dealers	2.3
594	Miscellaneous shopping goods stores	2.0
616	Mortgage bankers & brokers	1.9
836	Residential care	1.8
	High-tech employment	15.5
	As % of total employment	7.9

Source: BLS, Economy.com, 2000

PER CAPITA INCOME



Source: Bureau of Economic Analysis, 1999

CREDIT QUALITY

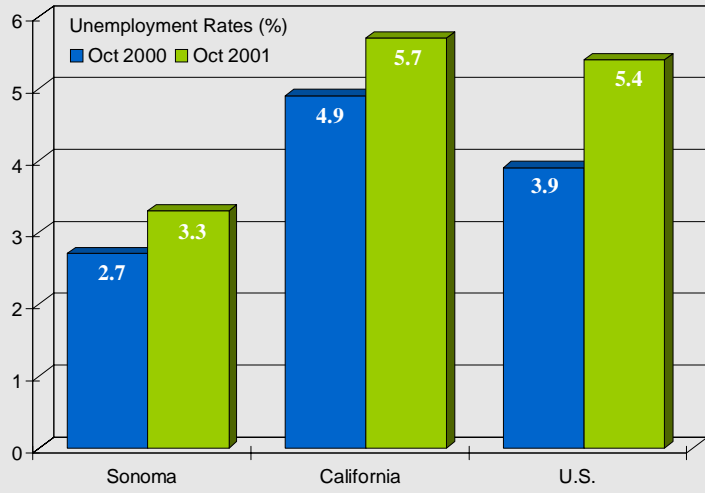
MOODY'S RATING

COUNTY

Aa3

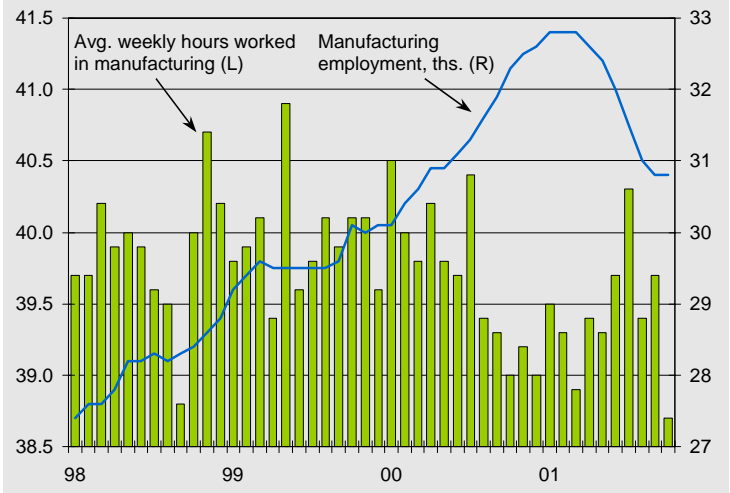
Sonoma County

Sonoma's Labor Market Is Proving to Be Resilient



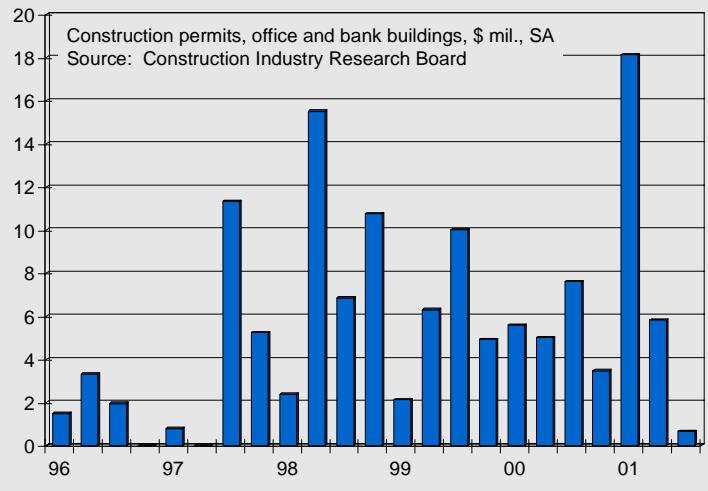
SON's economy and labor force exhibit considerable resilience considering the procyclical nature of all of its major industries. The unemployment rate is rising, as it is nearly everywhere, but its rise of 0.6 percentage points over the year is well below the increase elsewhere in the Bay Area, statewide, or nationwide. Nonetheless, the number of unemployed in the county is up by nearly 25% from one year ago and further increases are expected before the economy begins to improve. Thus, retail sales and other local consumer spending will be weak until recovery starts in earnest in mid-2002.

Manufacturing Payrolls Down; Hiring Outlook Is Dim



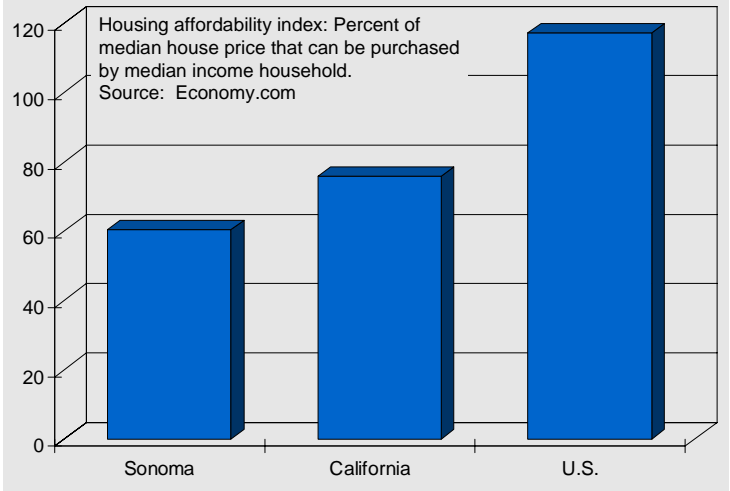
Manufacturing is leading the downturn. Employment in SON's tech-based industries as well as winemaking and food processing are both down from a year ago. The downturn appears to be leveling off, but there is no sign of a rebound yet. Hours worked per employee is at a six year low, indicating little pressure to hire at this point. Weekly hours are beginning to approach the 38.3 average that prevailed during the 1990-1991 recession. Once hours rise on a consistent basis, then renewed hiring will become evident.

Office Construction Pipeline Is Full



So far SON's office market downturn has been mild with the vacancy rate still below the national average of 12% and well below rates now seen elsewhere in the Bay Area. Yet there is potential for the vacancy rate to rise further as more sublet space is available and construction begun over the past year comes on line. Fortunately, the construction tap was shut off in the third quarter, so supply should stabilize by the middle of next year. The upside to the increased supply is lower rents and thus an improved cost of doing business for the SON.

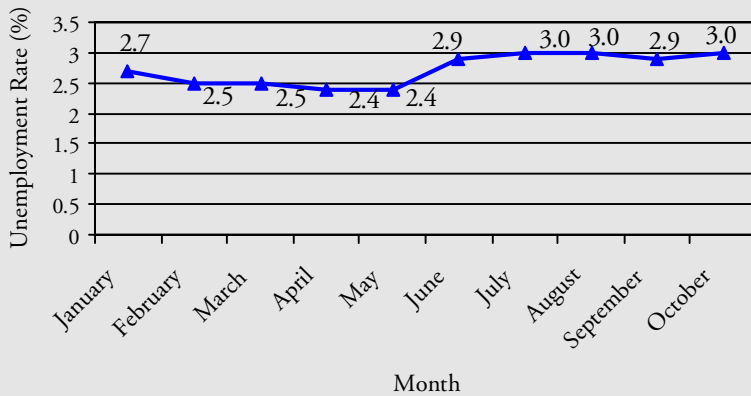
Housing Affordability Remains a Significant Drawback



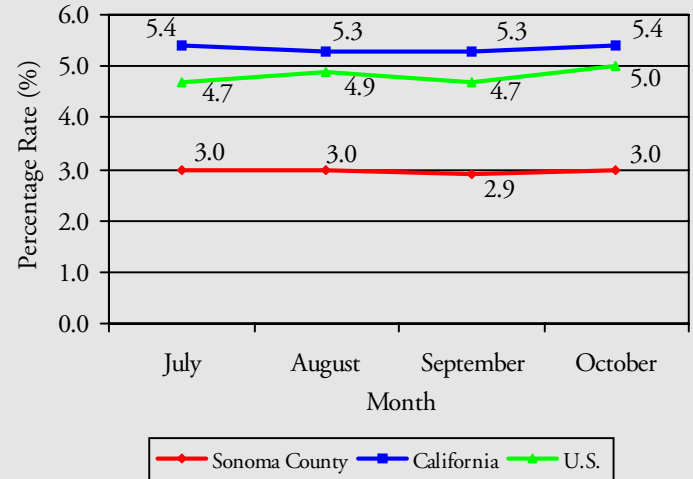
Housing affordability remains very low and represents a significant drawback to SON's ability to attract an ample labor force. SON is one of the least affordable areas in the state and is well below the national average. While current interest rates have helped to improve affordability in recent months, particularly for moderate income households, a chronic shortage of supply still exists and affordability will only improve when supply is allowed to catch up with demand. The only offset is the excellent quality of life in SON which makes households more willing to pay higher prices.

DETAILED EMPLOYMENT & SALARY DATA

Sonoma County Unemployment Rates (2001)



Unemployment Rates (2001)



Employment Data by City in Sonoma County (October 2001)

	<u>Labor Force</u>	<u>Unemployment</u>	<u>Unemployment Rate (%)</u>
Sonoma County	267,500	7,900	3.0
Cloverdale-Geyserville	7,300	280	3.9
Guerneville	1,030	60	5.5
Healdsburg	6,460	170	2.7
Petaluma	31,210	750	2.4
Rohnert Park	26,720	890	3.3
Russian River-Coastal	15,780	420	2.7
Santa Rosa	76,570	2,210	2.9
Sebastopol	4,640	160	3.5
Sonoma	24,320	610	2.5

Despite the recent volatility in regional, statewide, and national labor markets, Sonoma County's unemployment level has remained relatively stable since mid-summer, staying in the 2.9 - 3.0% range.

October data shows only a slight increase in aggregate unemployment for Sonoma County.

Median salaries in Sonoma County are notably higher than national averages across the entire employment spectrum.

As the adjacent chart indicates, median salaries in Sonoma County are typically 8 - 9% higher than national averages.

The job categories outlined in this chart provide basic information about salaries earned by employees with two to five years experience in the noted field. Exact local salaries will, of course, vary.

Job descriptions and additional salary information can be found at Salary.com.

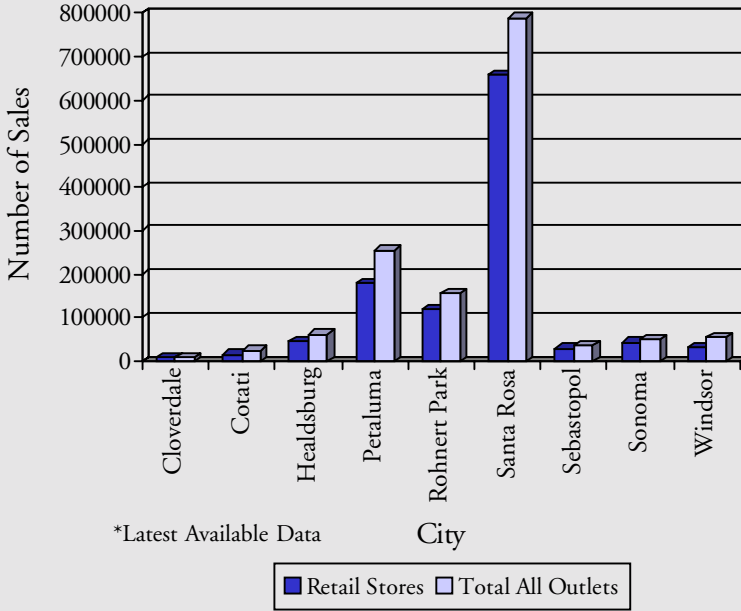
Sources: State of California Employment Development Department & U.S. Bureau of Labor Statistics

Median Salaries for Selected Jobs in Sonoma County (November 2001)

<u>Job Category</u>	<u>Salary</u>	<u>National Average</u>
Accountant	\$48,478	\$44,721
Administrative Assistant	\$37,748	\$34,823
Advertising Coordinator	\$44,271	\$40,841
Architect	\$55,564	\$51,259
Attorney	\$94,789	\$87,443
Automotive Mechanic	\$39,536	\$36,473
Bartender	\$16,644	\$15,354
Cashier	\$17,522	\$16,164
CEO	\$483,273	\$445,824
Civil Engineer	\$61,338	\$56,585
Financial Analyst	\$64,611	\$59,604
Plumber	\$40,812	\$37,649
Police Officer	\$37,867	\$34,932
Public Relations Specialist	\$58,179	\$53,670
Retail Salesperson	\$35,108	\$32,388
Secretary	\$30,994	\$28,592
Telecom Engineer	\$58,302	\$53,784
Veterinarian	\$67,366	\$62,146
Web Designer	\$57,173	\$52,742

OTHER ECONOMIC INDICATORS

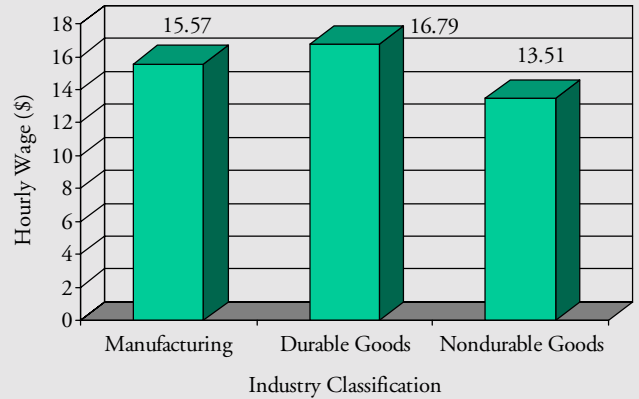
**Taxable Sales by City in Sonoma County
(Fourth Quarter 2000)***



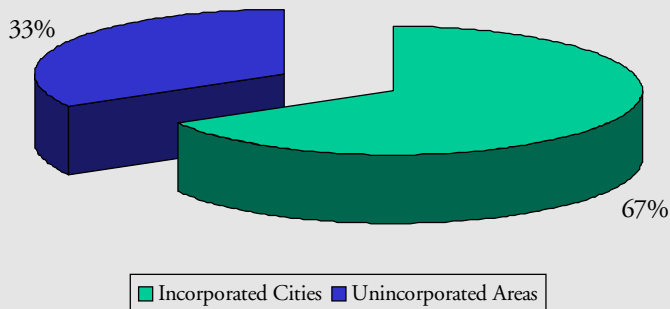
Taxable Sales by City in Sonoma County (Fourth Quarter 2000)

	<u>Retail Stores</u>	<u>Total All Outlets</u>
Cloverdale	7,586	9,370
Cotati	15,533	24,750
Healdsburg	44,768	60,208
Petaluma	178,990	254,605
Rohnert Park	119,822	156,825
Santa Rosa	658,592	789,093
Sebastopol	28,569	36,358
Sonoma	42,955	49,188
Windsor	30,824	54,784

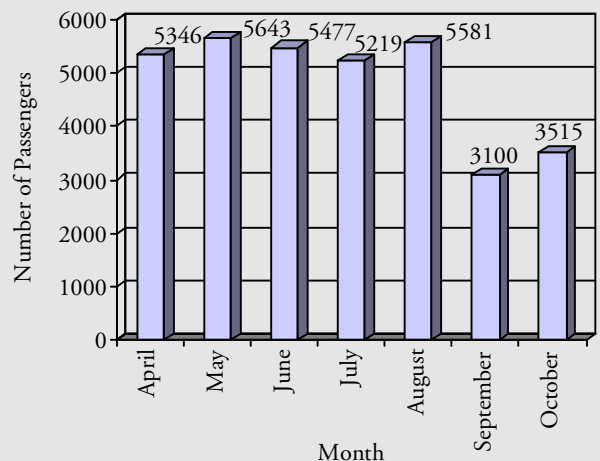
**Average Hourly Wage by Industry Classification
in Sonoma County (October 2001)**



Sales Tax Permits in Sonoma County (Fourth Quarter 2000)



Airline Passengers at the Sonoma County Airport (2001)



Sales Tax Permits in Sonoma County (Fourth Quarter 2000)

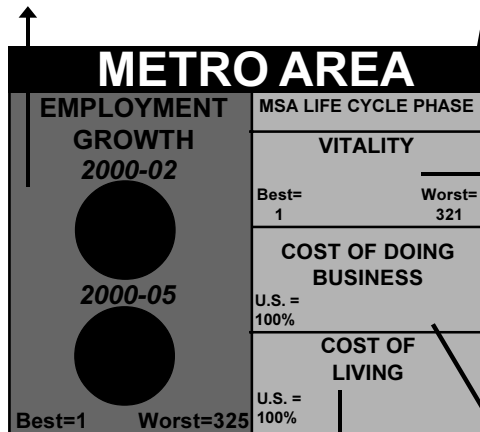
<u>Region</u>	<u>Taxable Transactions (\$Ths)</u>
Incorporated Cities	1,435,181
Unincorporated Areas	269,528
Percentage change from Fourth Quarter 1999 = 10.6%	

USER'S GUIDE

Employment Growth

These numbers represent the MSA's rank among all 319 MSA's, four Puerto Rican MSA's and two special areas in its short-term employment growth (over the next two years, top) and its long-term growth (over the next five years, bottom). The actual expected short-term and long-term employment growth rates can be found on Page 9.

FYI: Depending on the distribution of the forecast growth rates, large differences in MSA forecast rankings may or may not indicate large differences in MSA forecast growth rates. For the current distribution of MSA employment growth rates, see Page 25.



Cost of Living

The cost of living index measures the relative cost to the average household in the nation to maintain its standard of living in each metropolitan area. The index is created by summing expenditures on various components of consumption in each metro area relative to average U.S. expenditures on the components. The components that vary across metro areas include housing, food and apparel, utilities, transportation and auto insurance.

Metro Area Life Cycle Phase Indicator

The indicator is designed to gauge each MSA's long-term growth prospects. Economy.com has developed a weighted index based on the fundamental elements that determine long-term economic performance including high-tech share of GDP, educational attainment, climate, export share of employment and relative business costs. **High-tech share of GDP** (14% weight) is measured by calculating the share of GDP contributed by high-technology industries. **Educational attainment** (27% weight) is determined by the share of the population 25 and older that has earned a Bachelor's degree or higher. **Climate** (19% weight) measures the absolute average temperature deviation from 65 degrees. **Export share of employment** (18% weight) measures the percentage of employment in export-oriented industries relative to the national average. **Relative business costs** (22% weight) are measured by Economy.com's Cost of Doing Business Index.

Vitality Index

The metropolitan area economic vitality index measures the contribution of economic factors, which are determined to be important to location decisions. Three categories are considered: current economic conditions, factors pertaining to prospective conditions, and potential economic risks. Current economic conditions include (1) the growth of nonfarm employment, (2) the civilian unemployment rate, (3) real median household income, (4) growth in real median household income, (5) wealth (ratio of capital gains to total income), (6) productivity (output per unit of labor), growth in productivity, and (7) net migration. The following factors determine prospective economic conditions: (1) difference between actual and estimated natural unemployment rate, (2) cost of doing business, (3) cost of living, (4) housing affordability, share of jobs in high technology industries, (5) export share of gross product, and (6) share of population over 25 with a bachelor's degree. The economic risk component includes the following determinants: (1) output volatility (standard deviation of the year-over-year growth in gross product over the past decade), (2) industrial diversity, (3) housing supply and demand balance and (4) real estate supply and demand balance.

Each of the factors is converted to an index between zero to one. The complete index is a weighted sum of the individual indexes. Current economic conditions together are assigned a 50% weight; prospective economic conditions receive a 33% weight and economic risks a 17% weight. Finally, the indexes are ranked across MSAs.

See *Regional Financial Review*, "Metropolitan Area Vitality Index," December 2000 for a detailed explanation.

Cost of Doing Business

In order to better gauge regional economic prospects, Economy.com has developed a cost of doing business index for each MSA. The relative business cost index is composed of labor costs, tax burdens, energy costs, and office costs. **Labor costs** are measured by unit labor costs, or earnings per dollar of output. Unit labor costs are determined for each 3-digit SIC industry for each MSA and compared to unit labor costs for the same industries nationally. **Energy costs** are measured by average cents per kilowatt-hour (Kwh) charged to commercial and industrial users. **Tax burdens** are measured by total taxes and fees as a percent of total personal income in each metro area. Business contributions to unemployment and workers' compensation programs are also included in the tax measure because they represent costs for labor hired. **Office costs** are measured as the average price paid per square foot for class A office space. In the overall business cost index, tax burdens are given a 10% weight, energy costs are given a 15% weight, office rents are given a 10% weight, and labor costs are given a 65% weight. The index is configured so that the cost of doing business nationally equals 100. Thus, an MSA with a cost index of 110 has business costs 10% above the national average; an index of 90 means an MSA has business costs 10% below the national average.

Indicator	Units	Source	Note
Gross Metro Product	Chain-weighted dollars	Economy.com	GMP is the sum of all income produced in a MSA, including corporate profits. Thus, it does not necessarily track employment growth.
Total Employment	Thousands	BLS 790 employment series; for NECMAs series estimated by Economy.com	Defined as sum of mining, construction, manufacturing, transportation/public utilities, wholesale/retail trade, finance/real estate, services, and government.
Unemployment Rate	Percent	Household employment series	
Personal Income Growth	% change previous year	Bureau of Economic Analysis	Measures income received by households from employment (including self), investments, and transfer payments.
Population	Thousands	Bureau of Census	
Single-Family Permits	Number of units	Bureau of Census	
Multifamily Permits	Number of units	Bureau of Census	
Existing Home Price	Thousands dollars	Nat'l Assoc Realtors	Index is affected by mix of homes sold.
Mortgage Originations	Millions dollars	Federal Financial Institutions Council	
Net Migration	Thousands	Bureau of Census	Calculated as number of domestic and international people moving into a state minus those leaving.
Personal Bankruptcies	Number of household filings	Admin. Office U.S. Courts	

EMPLOYMENT AND INDUSTRY STRUCTURE

INDUSTRIAL DIVERSITY

Industrial diversity is defined as the extent to which an MSA's industrial structure approximates the U.S. industrial structure.

Diversity is derived using the following formula:

$$\text{Diversity} = 1/\sum((\text{EMP}_j/\text{EMPUS}) * \text{EMP}_j)$$

Where EMP = share of employment in three-digit SIC industry j during period 1999-00; i = MSA; US = U.S. The Diversity measure is bounded between 0 and 1. 1 means the metro area has the same industrial structure as the U.S.; 0 means it has a totally different industrial structure than the U.S.

Formula derived from Hachman index, Bureau of Business and Economic Research, Univ. of Utah, December 1994.

EMPLOYMENT VOLATILITY

Employment volatility is defined as the standard deviation in an MSA's monthly year-over-year percentage nonagricultural employment growth relative to the standard deviation in U.S. year-over-year percentage nonagricultural employment growth over the 1991 to 2000 period. Volatility of 100 means that employment volatility in an MSA is equal to employment volatility in the nation. MSAs tend to be inherently more volatile than states.

EMPLOYMENT VOLATILITY DUE TO U.S. FLUCTUATIONS

Volatility due to U.S. fluctuations (also known as "systematic volatility") is defined as:

$$\text{SYSVOL} = (R^2)^{1/2}$$

where SYSVOL = systematic volatility; R^2 = is the proportion of total variance in MSA i's growth rate that is associated with contemporaneous fluctuations in national growth.

Volatility not due to U.S. fluctuations (also known as "nonsystematic volatility") is defined as:

$$\text{NONSYS} = 1 - (R^2)^{1/2}$$

where NONSYS = nonsystematic volatility in MSA i; R^2 is the proportion of total variance in MSA i's growth rate that is associated with contemporaneous fluctuations in national growth.

Formulas modified from "Assessing Regional Economic Stability: A Portfolio Approach," *Economic Review* (Federal Reserve Bank of San Francisco), Winter 1990.

RISK ADJUSTED RETURN

The risk adjusted return is designed to determine whether a regional economy's growth compensates for its volatility. A positive value indicates that projected job growth compensates for the volatility in the region's job growth. Although metro areas may have similar projected employment growth rates, the volatility of their respective employment growth may be very different, which leads to different risk adjusted returns. The risk adjusted return of a regional economy is defined as expected job growth less the expected volatility of job growth over the next five years.

There are eight determinants of regional volatility: (1) five-year employment growth, (2) construction's share of output, (3) mining's share of output, (4) largest employer concentration, (5) industrial concentration, (6) investment income, (7) metro size, and (8) industry risk-adjusted return.

See *Regional Financial Review*, "Regional Risk Adjusted Return," August 2000 for a detailed explanation.

MIGRATION FLOWS

IRS data. When a taxpayer notifies the IRS of a change in address, the IRS records the household's current county of residence, the county to which the household is moving, the number of household members, and household income. Economy.com aggregates this data by metro area into gross migration. The data are then sorted to show the ten MSAs providing the largest number of new residents and the ten MSAs to where the largest number of current residents move. Subtracting the gross out-migration flows from the gross in-migration flows gives net out-migration.

The IRS migration data have several advantages. One advantage of the IRS data is that it is the only migration data set to show where out-migrants are moving to and where in-migrants are coming from. Another advantage is that the average income levels can be associated with both in-migrants and out-migrants. The disadvantages of the IRS migration data are that it only covers households that have filed income-tax returns and thus is not a complete record of all migration; and that it lags by two to two-and-one half years.

Census data. The Census measure of net migration attempts to capture all migration to and from counties. Economy.com aggregates this data to metro areas and to states. The Census measure of net migration differs from the IRS measure in several ways. First, Census measures only net migration; gross in and out flows are not available. Second, Census data cover all migrants, including international migrants, not just those who file income tax returns. Third, Census data are more timely than IRS data. However, Census data lack accompanying income data.

LEADING INDUSTRIES

Leading industries are defined as the largest industries with location quotients greater than 1.1. A location quotient greater than 1 indicates an industry that serves more than the local market. Location quotients are calculated according to the formula: $LC_m^i = (E_m^i/E_m^t)/(E_{us}^i/E_{us}^t)$

where LC = location quotient in MSA m for industry i; E = employment in industry i for MSA m or the U.S.; and t = total employment for MSA m or the U.S.

Economy.com defines high-tech employment as the sum of employment in the following industries:

SIC	Industry
283	Pharmaceuticals
357	Computer & Office Equipment
366	Communications Equipment
367	Electronic Components & Accessories
381	Search & Navigation Equipment
382	Measuring & Controlling Devices
384	Medical Instruments & Supplies
385	Ophthalmic Goods
489	Communications Services, NEC
737	Computer & Data Processing Services
873	Engineering & Architectural Services

HOUSE PRICES

OFHEO Conventional and Conforming Home Price Index. The Office of Federal Housing Enterprise Oversight (OFHEO) estimates and publishes quarterly house price indexes for single-family detached properties using data on conventional conforming mortgage transactions obtained from the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae). These indexes use a repeat-purchase method. The chief advantage of the repeat-purchase method versus other house price measures is that the repeat-purchase method is not affected by the mix of homes sold. For example, using traditional house-price measures, a rise in the number of low-priced homes sold relative to higher-priced homes will bias house prices downward even though relative prices may not have changed. Because repeat-purchase house price indexes keep track of successive selling prices for the same property, they avoid this bias. Freddie Mac and Fannie Mae are private corporations with federal charters whose mandate is to provide liquidity to the nation's residential mortgage market. OFHEO is an independent office within the Department of Housing and Urban Development with responsibility for ensuring that Fannie Mae and Freddie Mac are adequately capitalized and operating in a safe and sound manner.

FYI: The House Price Index is based on transactions involving conforming, conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac. Only mortgage transactions on single family properties are included. A conforming mortgage is one that both meets the underwriting guidelines of Fannie Mae or Freddie Mac and that does not exceed the conforming loan limit. The conforming limit for single-family homes is \$275,000 as of January 2001. Conventional means that the mortgages are neither insured nor guaranteed by the FHA, VA, or other federal government entity. Because of the conforming limit, the OFHEO repeat-purchase index is less reliable in those states, such as California, Connecticut, and New Jersey, where many homes are typically priced above the purchase limits.

MOODY'S BOND RATING

This is the bond rating for general obligation bonds issued by cities and counties. Not all governments issue GO bonds and thus some areas will have an "NA" here. Moody's interpretation of their bond ratings is as follows:

Aaa	Best quality, smallest degree of investment risk.
Aa	High quality, margins of protection not as large as in Aaa.
A	Upper medium grade obligations, adequately secured.
Baa	Medium grade obligations, neither highly protected nor poorly secured.
Ba	Speculative; future cannot be considered as well assured.
B	Lacking characteristics of desired investment.

The modifier 1 indicates that the issue ranks in the higher end of its generic category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates that the issue ranks in the lower end of its generic category.

The bond rating reported in Précis applies to the core county or city that best represents the metropolitan area; the selection is noted next to the rating. As local governments are organized at the city and county level, not as metropolitan governments, Moody's bond ratings apply to cities and counties only. No summary metropolitan bond rating exists.