

The Economic Development Board (EDB), in partnership with the Workforce Investment Board, is pleased to bring you the Summer 2002 issue of the *Sonoma County Local Economic Report Series*.

In this issue, you will find several pieces of good news about current trends in the local economy:

- Unemployment was down to 4.2% in April
- Signs of recovery for portions of the technology industry are evident
- Construction employment is up 4% since January
- Steady consumer spending is partially offsetting recession trends
- Permits for new buildings are increasing

For multiple perspectives on the status of the local economy, this issue contains commentary from several people. First, Brian Kelsey, the EDB's Research Director, has offered a comprehensive perspective on the local employment situation, including a brief analysis of recent industry trends. In addition, Dr. Steven G. Cochrane, Director of Regional Services at Economy.com, has provided updated analysis on Sonoma County's strengths and weaknesses, sector performance, and other key economic indicators. Finally, Dr. Robert Eyer, a Professor in the Economics Department and Director of the Center of Regional Economic Analysis at Sonoma State University, has provided a qualitative forecast for the short-term future of local business conditions.

As always, please feel free to offer feedback on ways to improve the reports released under this series. You can contact Brian Kelsey at (707) 565-6456 or bkelsey@sonoma-county.org with any feedback or questions.

Thank you again for your interest in Sonoma County's economy and the Economic Development Board's research efforts.

Yours sincerely,

Ben Stone



Sonoma County

Local Economic Report



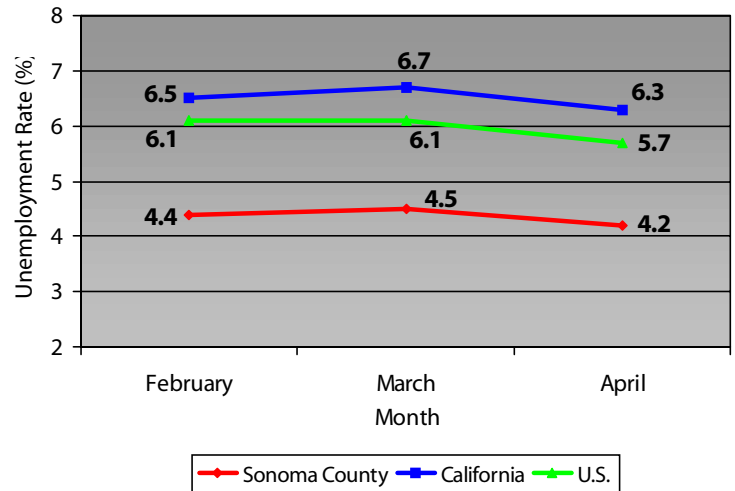
Issue 3, Summer 2002

Employment Situation

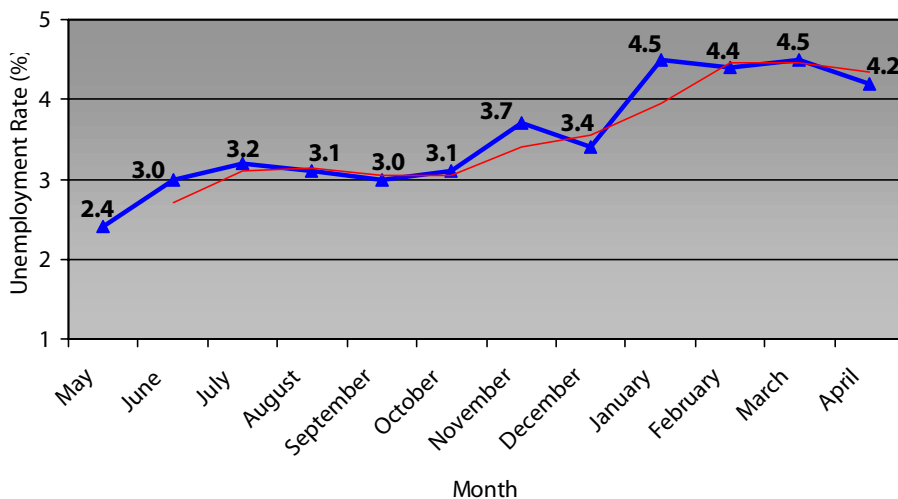
Unemployment in Sonoma County dropped to 4.2% in April 2002, the lowest level since December 2001. However, despite recent signs of improvement, the employment situation in the region remains historically weak. The February - April period registered the highest three month unemployment average (4.4%) in Sonoma County since mid 1996.

Nevertheless, as the adjacent graph illustrates, Sonoma County is still outperforming both the State of California and the U.S. during this current downturn. In addition, Sonoma County's unemployment rate for April was the seventh lowest figure among all counties in California, a testament to this region's relative economic stability. Unemployment in Marin and Napa Counties, by comparison, was 3.5% and 3.8%, respectively.

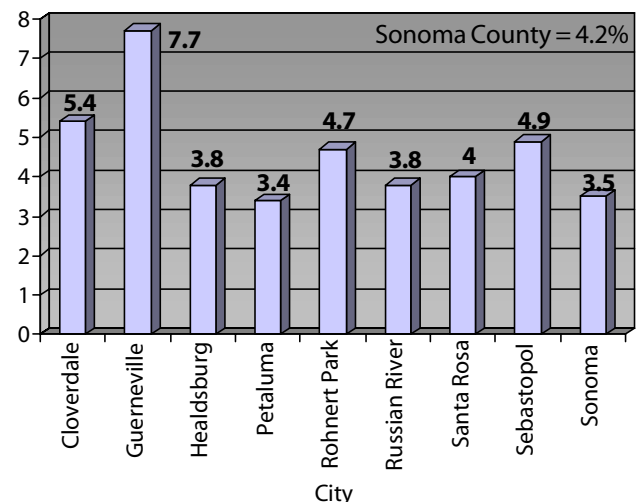
Unemployment Rates: Sonoma County, California, U.S.



Sonoma County Unemployment Rates



Unemployment Rate by City in Sonoma County April 2002



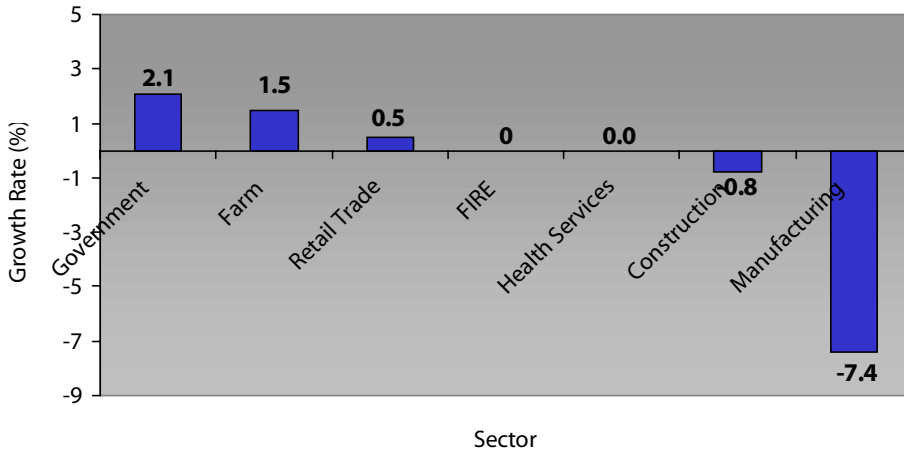
This report was authored by Brian J. Kelsey, Research Director at the EDB, and Dr. Steven G. Cochran, Director of Regional Services at Economy.com. The data was gathered from widely accepted sources, however, the EDB does not guarantee its complete accuracy.

Industry Outlook

With more than 96,000 jobs and almost 38% of Sonoma County's total employment in April 2002, Retail Trade, Manufacturing, and Government provide the backbone of local employment.* This relatively equitable distribution of employees across many industry segments, compared to less diversified regions of California and the U.S., has helped Sonoma County weather the current recession with fairly minimal negative impact to the overall economy.

The chart found below illustrates growth rates for Sonoma County's primary industries over the past year. Unfortunately, manufacturing, the second largest employment base in the region, has been the most adversely affected sector. Indeed, local manufacturing operations have eliminated 2,400 jobs since April 2001, reducing the industry's overall employment share of the local economy from 12.8% to 11.9%.

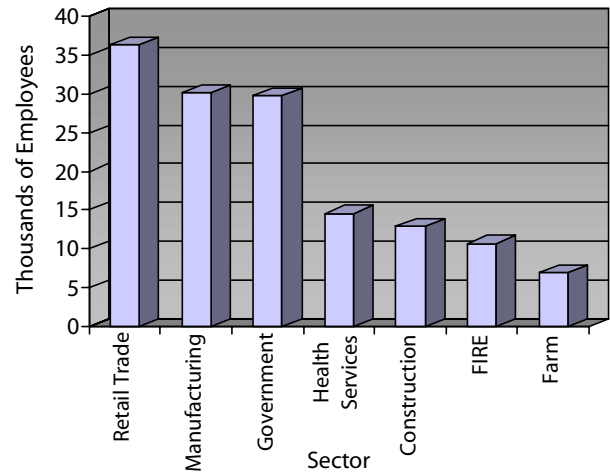
**Employment Growth Rates by Sector in Sonoma County
April 2001 - April 2002**



Technology companies engaged in manufacturing activity, totaling 57 firms, 4800 employees, and generating more than \$995 million in sales last year, provide around 12% of all manufacturing employment in Sonoma County. Accordingly, while not completely technology-driven, the downturn in local manufacturing during the past year was, of course, affected by the decline in demand for telecommunications and related products.

However, several bright spots have recently emerged in the technology industry. Employment in the electronic equipment sector, for example, has increased 7.4% since February, an encouraging sign of sustained recovery for the industry.

**Total Employment by Primary Industry in Sonoma County
April 2002**



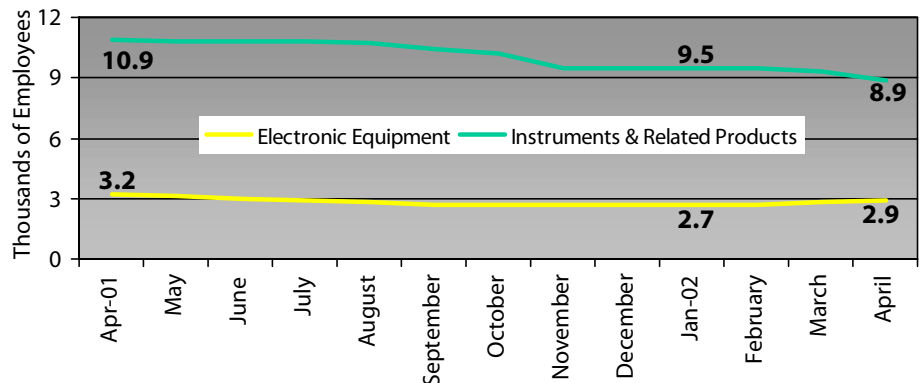
However, as noted above, other industries have recently provided a measure of stability to the overall employment picture for Sonoma County. Farm, Retail Trade, and Government have added 900 jobs to the local economy during the past year, partially offsetting losses in Construction and Manufacturing.

In addition, increased employment at financial services firms kept FIRE** from losing ground since April 2001; Health Services showed similar resiliency. A more detailed analysis of recent employment trends is provided on p. 5.

*Services is the largest sector with 55,500 employees

**Finance, Insurance, and Real Estate

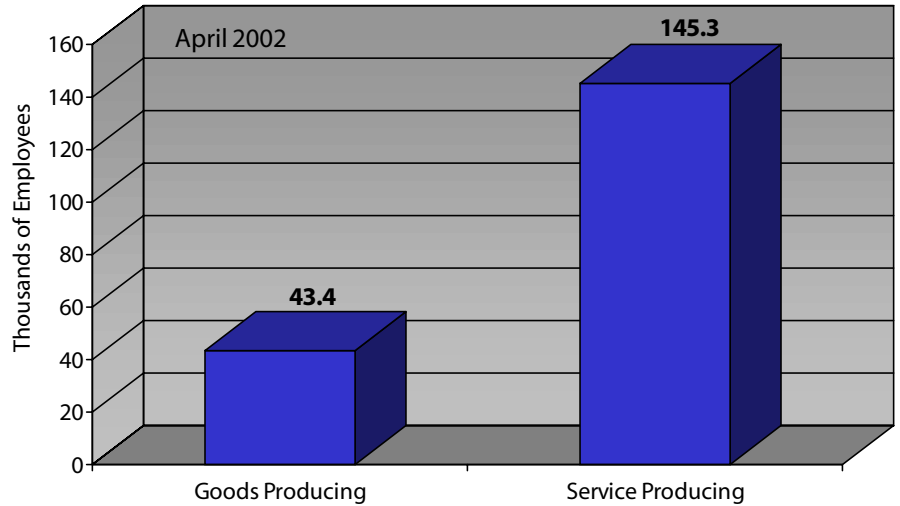
**Employment Change in Selected Technology Industries in
Sonoma County
April 2001 - April 2002**



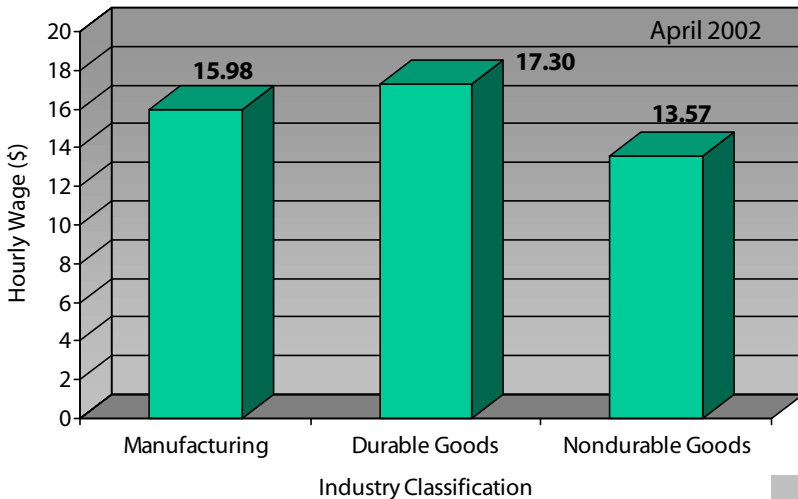
Employment in local Goods Producing industries totaled an estimated 43,400 people in April, down from 43,700 in March (-0.7%). The local Service Producing industries employed approximately 145,300 people, up from 145,000 the previously month (0.2%). In fact, outside of slight declines in health services, aggregate employment in service industries has steadily increased since January, with companies adding 2100 jobs to the local economy.

The average hourly wage paid to manufacturing employees in Sonoma County decreased for the fourth consecutive month in April, but it remains well above the statewide average of \$14.93. Of the four Bay Area MSAs, Sonoma County firms paid the third highest average hourly wage in April.*

Employment by Basic Industry Type in Sonoma County



Average Hourly Wage by Industry Classification in Sonoma County



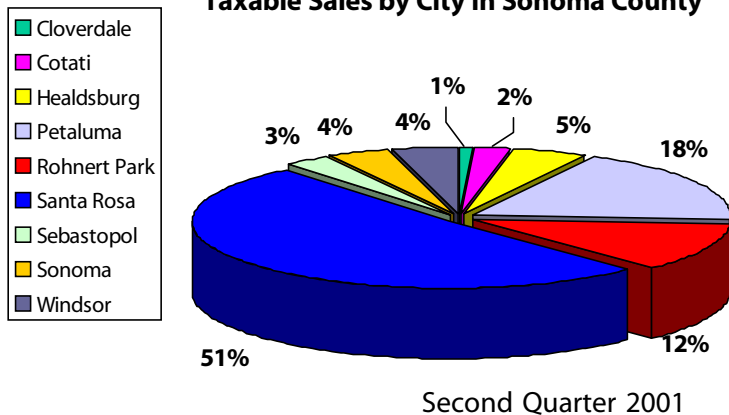
Taxable Sales

According to the latest available data, taxable sales in Sonoma County totaled \$1.73 billion in Second Quarter 2001, a 10.6% increase from the previous quarter.

While down significantly from 2000, consumer spending levels at local businesses in Spring 2001 displayed the same resiliency that has largely tempered the current recession nationwide. In Sonoma County, taxable sales in retail stores jumped to almost \$1.19 billion in Second Quarter 2001, a 10.8% increase from the pervious quarter.

The quarter-to-quarter growth rate of taxable sales was the highest in Cloverdale during Second Quarter 2001 at 33.5%. Santa Rosa experienced the lowest gain at 8.4%.

Taxable Sales by City in Sonoma County



Taxable Sales by City in Sonoma County for Second Quarter 2001

(Taxable Transactions in Thousands of Dollars)

	Retail Stores	Total All Outlets
Cloverdale	8,553	11,134
Cotati	17,504	27,971
Healdsburg	46,101	64,352
Petaluma	174,742	235,521
Rohnert Park	112,825	155,968
Santa Rosa	563,795	675,838
Sebastopol	28,190	36,276
Sonoma	44,151	49,452
Windsor	29,022	54,649
Total	1,186,274	1,728,547

*Metropolitan Statistical Areas (Oakland \$17.10, Napa \$16.68, and San Francisco \$15.12)

Construction & Real Estate

After posting the largest monthly increase in a year in March, new privately-owned residential building permits slowed in April, totaling 116 buildings, 128 units, and \$20.4 million in construction costs for the month. In March, by contrast, permits for 172 buildings, 408 units, and \$33.1 million in construction costs were issued.

Despite the relatively high number of permits issued for "Five or More Family" buildings in March (16 buildings, 245 units), total permits for the year are substantially down from 2001. Cumulative figures for 2002 are 362 buildings, 665 units, and \$71.2 million in costs. Figures for 2001 at the end of April were 439 buildings, 627 units, and \$89.9 million in costs.

According to research by Keegan & Coppin Company, Inc., office vacancy rate estimates in Sonoma County for First Quarter 2002 ranged from 12.2% in Rohnert Park to 16.3% in Petaluma. Vacancy rates in Rohnert Park, Santa Rosa, and the North Corridor* slightly declined from Fourth Quarter 2001; Rates in Petaluma increased 2.4 percentage points.

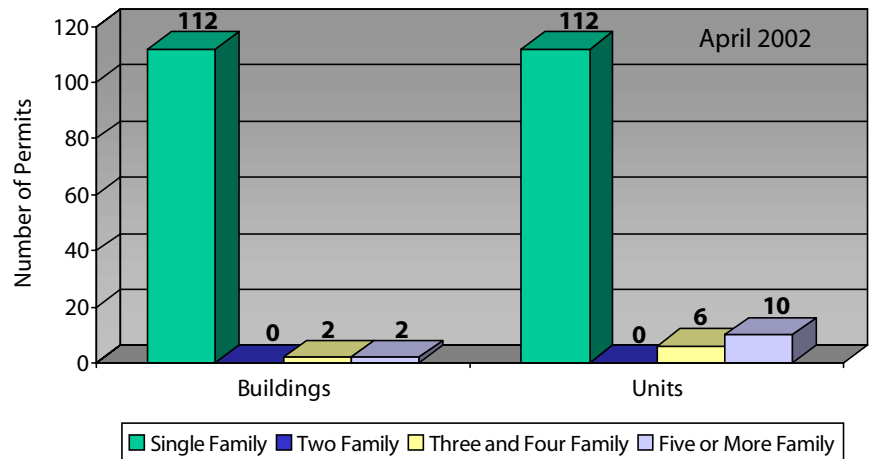
The total office vacancy rate estimate for Sonoma County was 13.4%.

Industrial vacancy rates, by contrast, increased across the board in First Quarter 2002. While Rohnert Park experienced only a slight increase from 2.3% to 2.5%, other areas of Sonoma County displayed significant gains: Petaluma increased from 14.9% to 19.6%; Santa Rosa from 6.7% to 10.2%; and the North Corridor from 7.7% to 12.7%.

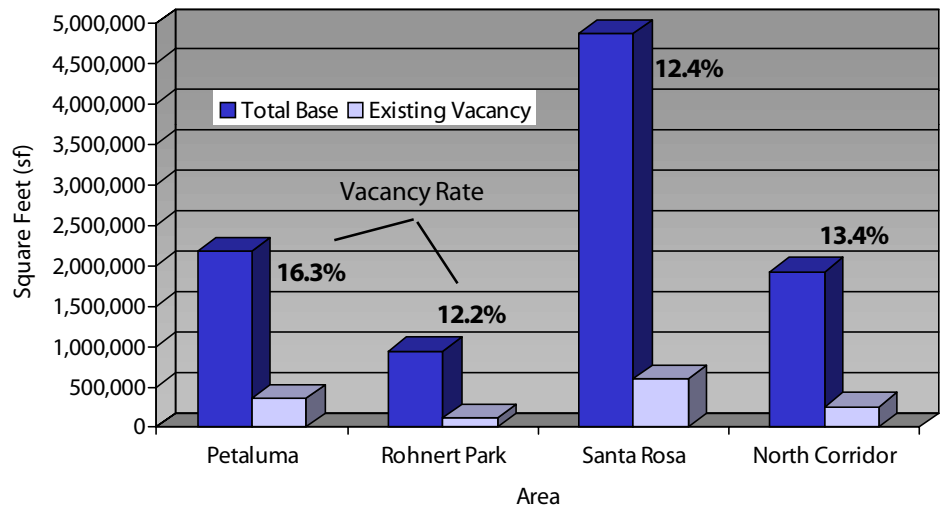
According to retail vacancy estimates, Healdsburg has the highest retail vacancy rate (10.6%) of any city in Sonoma County. Cloverdale has the lowest rate at 1.2%.

*North Corridor includes Windsor, Healdsburg, & Airport Blvd.

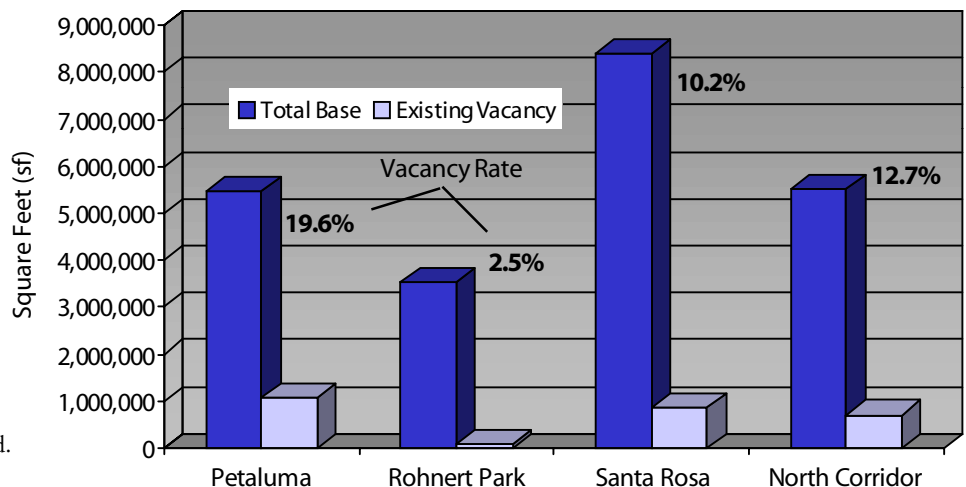
New Privately-Owned Residential Building Permits in Sonoma County



Office Vacancy Estimates for Selected Areas in Sonoma County First Quarter 2002



Industrial Vacancy Estimates for Selected Areas in Sonoma County First Quarter 2002



Job Market Trends

Like the rest of the Bay Area, as well as many other areas around the country, Sonoma County's job market has been extremely volatile over the past few years. From venture capital fueled hirings at technology companies in 1999-2000 to mass layoffs and company relocations during the current recession, Sonoma County workers have been exposed to a roller coaster ride of a business cycle - in only four years.

However, amid all of this volatility, definitive trends are beginning to reshape the composition of Sonoma County's employment landscape. The adjacent charts attempt to illustrate this shift from a short-term and long-term perspective.

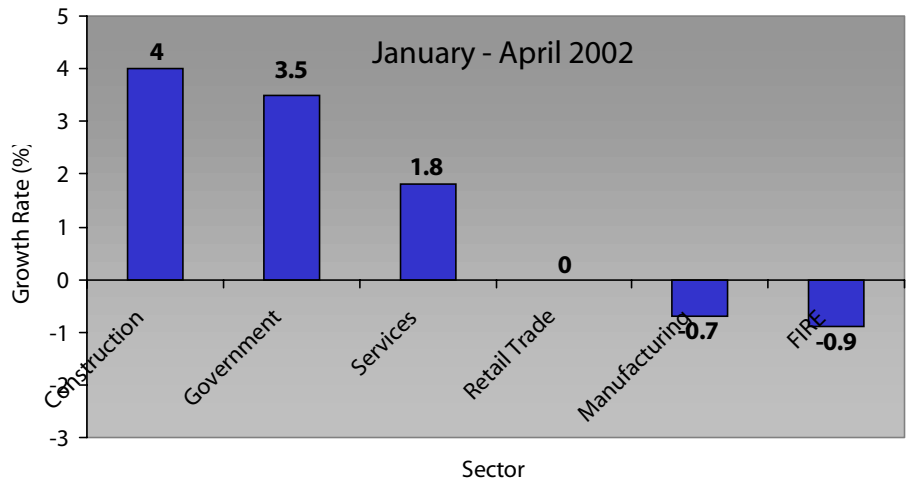
First, the top chart shows employment growth rates by sector for the past four months. The point made earlier in this report bears repeating: Sonoma County's diverse employment base, from an aggregate standpoint, is standing up relatively well against the current recession. Indeed, growth in overall employment, including self-employment, has grown 1.5% since January. Not remarkable, especially compared to the 2.2% growth during this time two years ago, but still positive.

Second, the short-term losses during the past year should not overshadow the remarkable long-term performance of several emerging job growth industries in Sonoma County. In the manufacturing sector, for example, Electronic Equipment (SIC 36), Food & Kindred Products (SIC 20), and Instruments & Related Products (SIC 38), have all registered job growth rates of more than 20% since 1998. Finance and Business Services have also posted double-digit gains. The growth rate for all industries during 1998-2001, by contrast, was 3.2%.

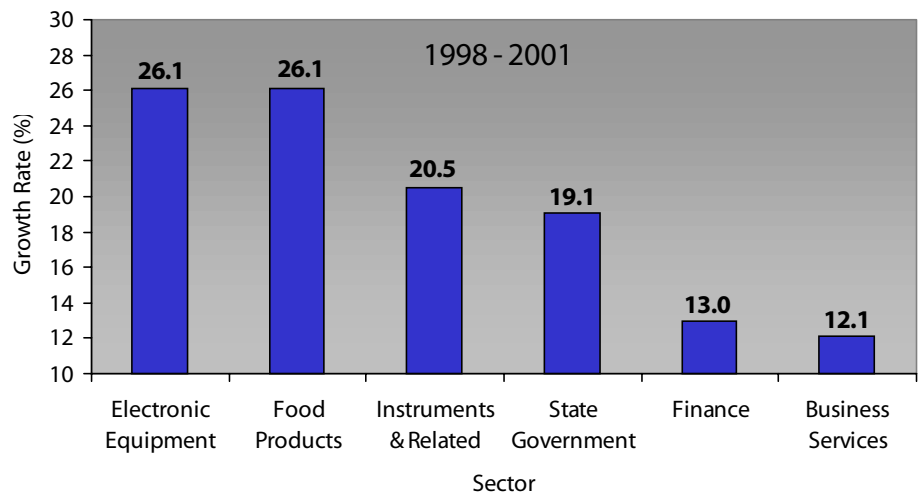
Education has also displayed substantial employment growth during the past few years. Indeed, State and Local education have added a combined 2,800 jobs since January 1998.

Bottom line: New industry sectors are providing crucial employment opportunities, and the labor force must adapt accordingly.

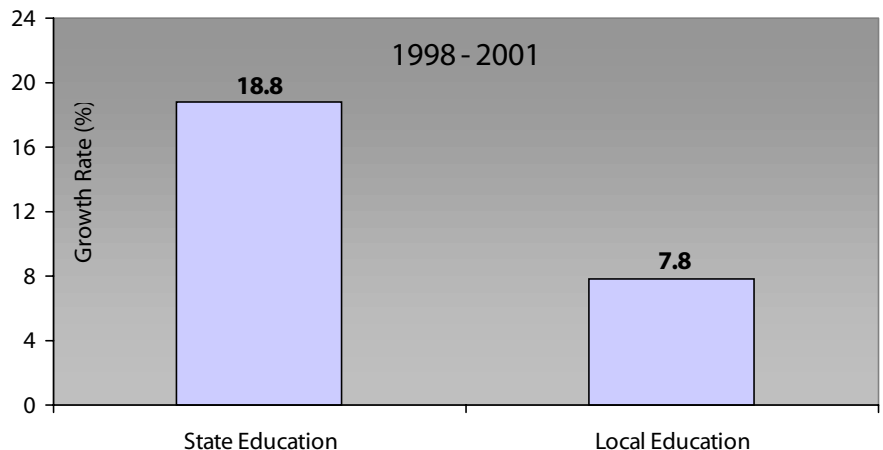
Employment Growth Rates by Sector in Sonoma County



Fastest Growing Employment Industries in Sonoma County



Education Employment Growth in Sonoma County



Data Source: EDD

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SONOMA COUNTY

EMPLOYMENT GROWTH 2001-03

90

2001-06

83

Best=1 Worst=325

MSA LIFE CYCLE PHASE

Growth/Mature

VITALITY

Best=1 Worst=325

80

U.S. = 100%

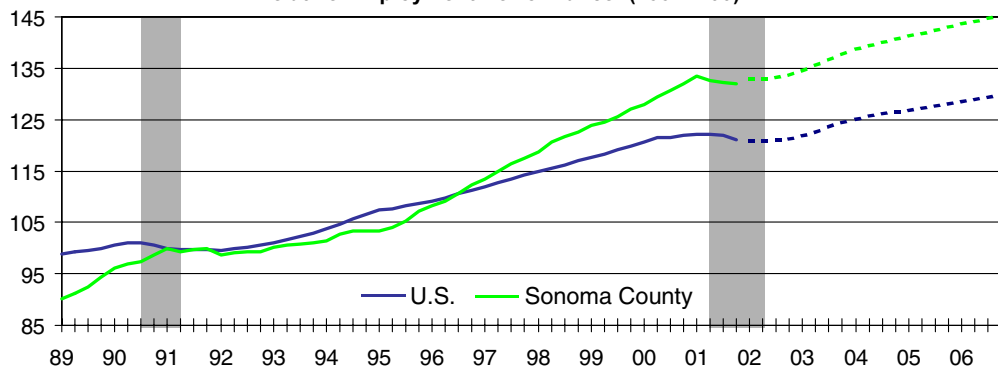
99%

COST OF LIVING

U.S. = 100%

123%

Relative Employment Performance (1991=100)



1995	1996	1997	1998	1999	2000	2001	Indicators	2002	2003	2004	2005	2006
10.9	11.2	12.1	13.0	14.1	15.4	15.7	Gross Metro Product, C\$B	16.2	16.9	17.5	18.1	18.8
4.1	3.3	8.1	7.4	7.9	9.8	1.9	% Change	2.9	4.2	3.7	3.6	3.7
150.2	157.5	165.4	173.1	179.3	186.1	189.8	Total Employment (000)	190.8	194.9	200.0	203.5	206.8
2.2	4.8	5.0	4.7	3.6	3.8	2.0	% Change	0.5	2.1	2.6	1.7	1.6
5.5	4.4	3.8	3.3	2.7	2.6	2.9	Unemployment Rate	4.0	3.8	3.6	3.6	3.4
4.1	6.4	8.4	7.3	7.9	10.5	3.9	Personal Income Growth	3.0	6.0	6.9	6.5	6.2
420.4	426.1	434.5	443.0	450.3	458.6	467.9	Population (000)	476.8	485.4	496.9	506.7	515.8
1,608	1,412	1,785	2,098	2,348	2,013	1,721	Single-Family Permits	2,168	2,679	2,700	2,671	2,647
322	75	176	964	688	492	867	Multifamily Permits	587	594	594	617	620
219.0	216.3	226.4	246.9	276.7	326.3	365.8	Existing Home Price (\$Ths)	375.6	387.5	405.2	418.7	436.3
2,013	2,619	2,868	5,157	4,512	3,734	7,984	Mortgage Originations (\$Mil)	4,626	3,632	3,751	3,989	4,389
3.6	3.9	6.6	6.9	5.8	6.7	7.7	Net Migration (000)	7.2	6.8	9.7	7.9	7.1
1,571	2,011	2,090	2,173	1,627	1,158	1,183	Personal Bankruptcies	1,416	1,310	1,239	1,271	1,268

STRENGTHS & WEAKNESSES

STRENGTHS

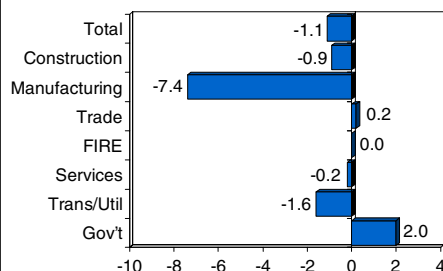
- High per capita income.
- Links to stable consumer economy are strong.
- Attractive environment.

WEAKNESSES

- Exposure is significant to weak telecom demand.
- Very high housing costs.
- High cost of doing business.
- Strict regulatory environment.

CURRENT EMPLOYMENT TRENDS

April 2002 Employment Growth % Change Year Ago



FORECAST RISKS

SHORT TERM ↓ LONG TERM ↓ RISK-ADJUSTED RETURN, '01-06 **0.01%**

UPSIDE

- Broadband deregulation generates surge in demand for telecom equipment.
- Weakening dollar boosts Sonoma County wine exports.

DOWNSIDE

- Extended overcapacity in domestic telecom industry stifles demand for SON tech products longer term.
- Labor shortages and unaffordable housing continue to limit capacity for economic growth.

ANALYSIS

Recent Performance. Sonoma County's economy is stagnant and is struggling to overcome recession. Employment is down over the year in all private industry categories, with no improvement since the middle of last summer. SON's technology industries have suffered the most. Its tourism industry is getting by with substitution of local visitors for longer-staying distant visitors. Its wine industry sees stable demand, but a shift toward lower-priced products. Still, the regional economy does demonstrate remarkable resilience. The unemployment rate remains below average at 4.3% as of March. Personal bankruptcy filings are rising as a very moderate pace. House prices continue to rise at a mid-single digit pace.

Procyclical economy. SON's economy is one of the least diverse metro areas in the nation. However, the economy has, at a minimum, three distinct long-term growth drivers—high-tech telecom and optical equipment manufacturing, wines and other food products, and tourism. A fourth driver, retail trade, is also significant, not only as part of the local tourism industry, but also as a regional trade center for the north coast region. Unfortunately, each of these industries is rather procyclical, moving up and down with the broader national economy.

Of these industries, manufacturing is hit the hardest, suffering from the sharp downturn in nationwide capital investment and corporate profitability. Moreover, telecom firms continue to slash capital spending plans, indicating little chance of recovery for telecom equipment for at least another year.

Income. Not only does manufacturing play an outsized role in terms of its size, but also average wages in durable goods production exceed all other major industry groups. Thus, the downturn in the telecom-related and other high-tech industries has a significant multiplier impact through retail and housing markets. Income has indeed been growing more slowly in recent months. Hourly earnings in

manufacturing rose by less than 1% on an annualized basis during the first quarter of this year, well below the 3.5% rate for the entire 12-month period ending in March.

Consumer goods. Given that wine and food products and tourism are more closely related to the consumer economy, they have held up better as nationwide consumer spending has held steady and leisure travel has improved since last fall's downturn. Vintners' profitability, and thus income generated by the industry, is at some risk, however. Not only are budget-conscious consumers turning to lower price products, but the strong dollar and a plethora of new labels make imported wine increasingly competitive.

Tourism has shown a measure of stability as high-income Bay Area travelers, choosing to stay closer to home, have helped keep SON's hotels and inns busy. Hotel occupancy is down from a year ago, but not by as much as elsewhere in the Bay Area.

Longer term, improvements to Highway 101 will finally open this congested access route from San Francisco. Travel time to and from the airport will improve, benefiting SON's tech and tourism industries.

Sonoma County's long-term outlook remains favorable. The remainder of this year, however, will be tentative at best until telecom equipment demand stabilizes. In the meantime, SON's other drivers will provide only moderate growth prospects. Given the economy's procyclical nature, however, the economy will return to its long-term potential when the broader U.S. economy rebounds. SON's pleasant environment and climate will always be an attraction. Its significant development regulations, however, will limit housing supply, keeping living costs well above average. SON will perform only slightly above average over the long term.

Steven G. Cochrane
May 2002

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

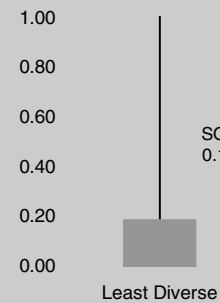
Public

Federal	1,868
State	5,235
Local	20,858

2001

INDUSTRIAL DIVERSITY

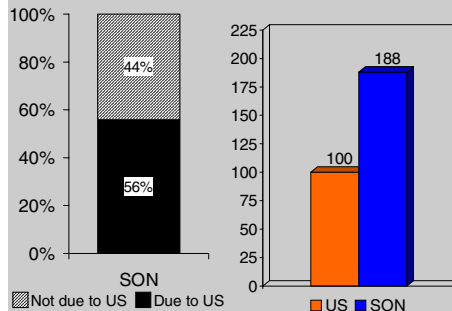
Most Diverse (U.S.)



EMPLOYMENT VOLATILITY

DUE TO U.S. FLUCTUATIONS

RELATIVE TO U.S.

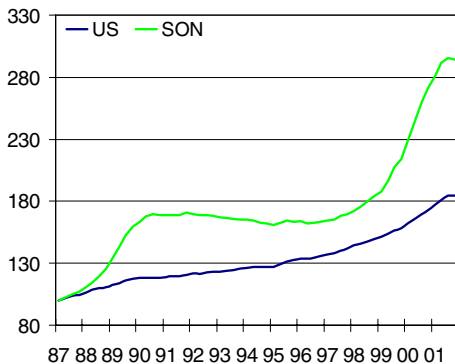


COMPARATIVE EMPLOYMENT AND INCOME

Sector	% of Total Employment			Average Annual Earnings		
	SON	CA	US	SON	CA	US
Mining	0.2%	0.2%	0.4%	\$142,762	\$73,443	\$64,864
Construction	7.1%	5.2%	5.2%	\$53,833	\$45,172	\$37,841
Manufacturing	17.0%	13.0%	13.4%	\$57,835	\$62,758	\$50,184
Durable	67.0%	63.0%	60.1%	nd	\$73,697	\$52,480
Nondurable	33.0%	37.0%	39.9%	nd	\$44,433	\$46,694
Transport/Utilities	3.4%	5.1%	5.3%	\$47,126	\$56,689	\$50,180
Wholesale Trade	3.6%	5.5%	5.3%	\$42,582	\$51,661	\$49,710
Retail Trade	19.4%	17.2%	17.8%	\$22,820	\$23,801	\$19,357
Finance, Ins., Real Estate	5.7%	5.7%	5.8%	\$30,206	\$42,367	\$42,487
Services	29.1%	31.9%	31.0%	\$30,873	\$40,112	\$33,317
Memo: Health Services	7.7%	6.5%	7.8%	nd	\$45,358	\$40,053
Government	14.7%	16.2%	15.8%	\$41,550	\$47,006	\$41,559

Source: Percent of total employment - BLS, 2001; Average annual earnings - BEA, 2000

HOUSE PRICES



Source: OFHEO, 1987Q1 = 100, NSA

LEADING INDUSTRIES

SIC	Industry	Employees (000)
208	Beverages	5.8
385	Ophthalmic goods	5.3
382	Measuring & controlling devices	5.0
FR	Farms	4.1
PH	Private household workers	3.8
150	Res & nonres building construction	3.4
801	Offices & clinics of medical doctors	3.3
799	Misc amusement & recreational servic	3.2
174	Masonry, stonework, & plastering	3.2
829	Schools & educational services, nec	3.1
832	Individual & family services	2.6
551	New & used car dealers	2.3
323	Products of purchased glass	2.0
616	Mortgage bankers & brokers	2.0
594	Miscellaneous shopping goods stores	2.0
	High-tech employment	16.7
	As % of total employment	8.4

Source: BLS, Economy.com, 2001

CREDIT QUALITY

MOODY'S RATING

COUNTY

Aa3

MIGRATION FLOWS

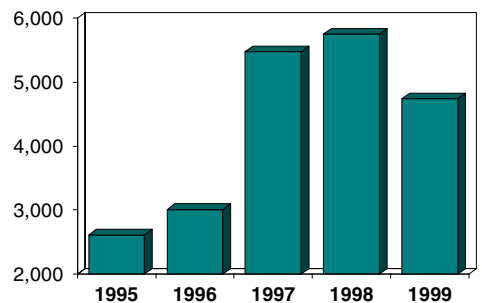
Into Sonoma County	Number of Migrants	Median Income
San Francisco	4,612	40,949
Oakland	1,508	37,078
San Jose	990	59,538
Vallejo	861	29,083
Los Angeles	793	26,874
Sacramento	632	28,243
San Diego	450	25,262
Orange County	292	29,666
Riverside	284	29,756
Seattle	261	38,296
Total Immigration	19,736	30,660

From Sonoma County

San Francisco	1,992	31,178
Sacramento	1,835	34,138
Vallejo	1,355	38,113
Oakland	1,002	29,418
Los Angeles	510	22,972
San Diego	500	18,635
San Jose	434	32,124
Riverside	390	24,920
Redding	321	26,943
Phoenix	308	28,928
Total Outmigration	20,354	28,159

Net Migration	-618	2,501
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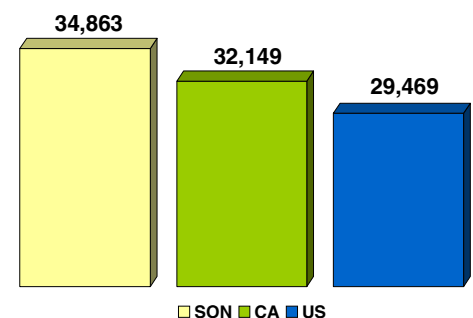
Net Migration, SON



	Domestic	Foreign	Total
1995	1,474	1,135	2,609
1996	1,458	1,550	3,008
1997	3,376	2,100	5,476
1998	3,663	2,092	5,755
1999	2,671	2,068	4,739

Source: IRS (top), 2001; Census Bureau, 1999

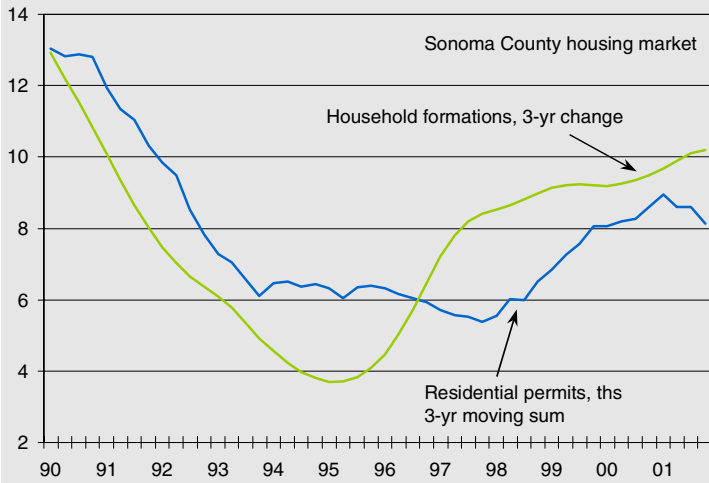
PER CAPITA INCOME



Source: Bureau of Economic Analysis, 2000

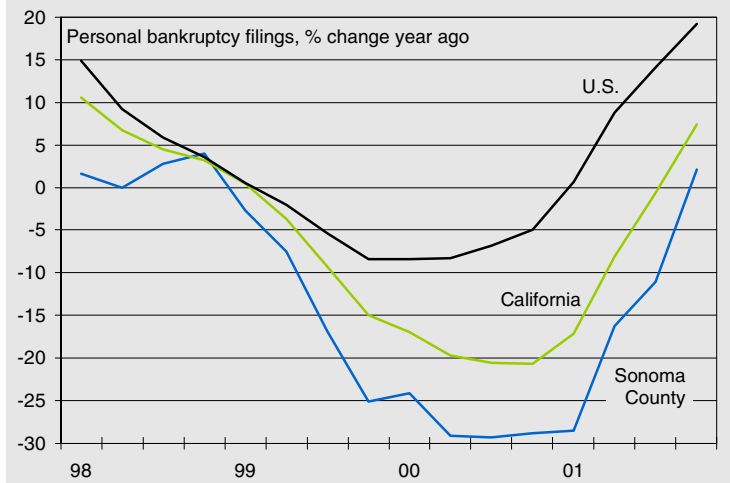
Sonoma County

Housing Supply Growth Set for Another Push



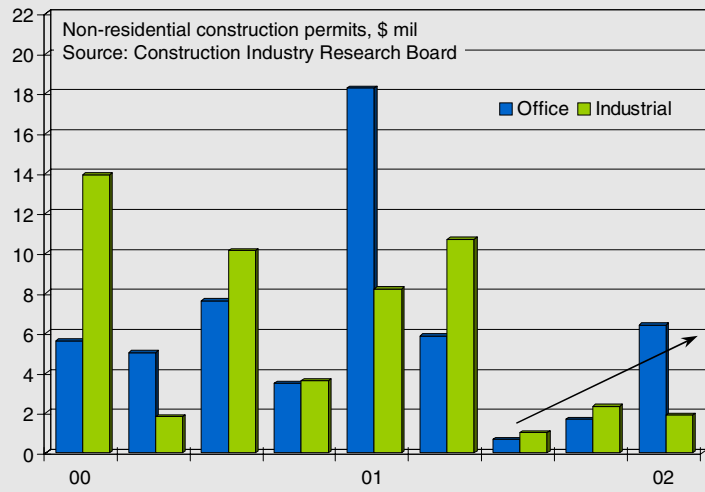
SON's job market downturn helped to prompt a lull in construction activity through the end of 2001. The ill effects from the recession, however, appear minimal as permit issuance surged ahead in the first quarter of this year. As such residential permit issuance could be set for another strong push like that seen from 1998 to 2000 in order to meet demand. Home prices in SON have reached a plateau since mid-2001. Prices should resume healthy growth, though, as the region's economy improves.

Credit Quality Is Deteriorating but Conditions Are Worse Elsewhere



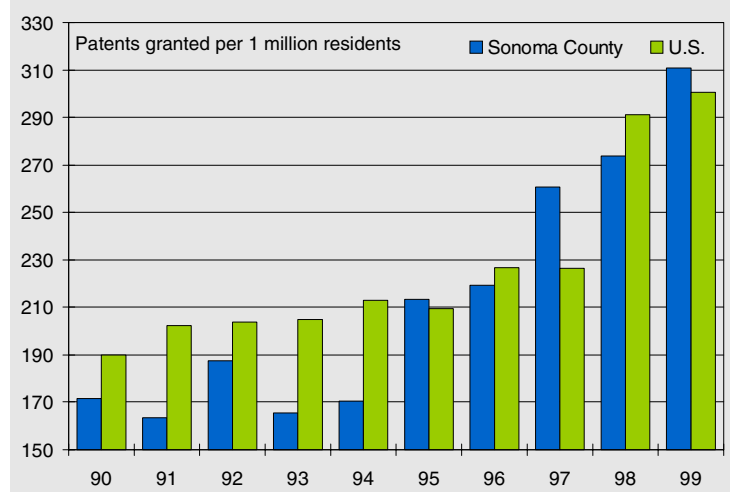
Employment declines through the past year's recession translated into only a minor deterioration in credit quality through the fourth quarter of 2001. This in turn compares with a more rapid rise in personal bankruptcy filings statewide and nationally since mid-2001. Unemployment in SON continued to rise through the first quarter of 2002, indicating that household finances may see further weakening before the metro area returns to healthy growth toward the end of this year. Stable home equity and above-average incomes will minimize the impact of recession on household balance sheets, however.

Non-residential Permitting Is Bouncing Back



Construction activity will help support SON's economy in the near term. Non-residential permit issuance slowed with the recession, after seeing record highs through the past three years. However, the value of office and industrial construction permits has already begun a comeback through the first months of this year. This illustrates some optimism on the part of builders since vacancies have risen. It also generates some downside risk of an oversupply of space over the next two years if the economy does not pick up, as expected, toward the end of this year.

Tech Boom Pushed SON Innovative Capacity Above Average



SON has garnered considerable growth in patents issued per capita. Although the metro area is on the outskirts of the region, its technology-intensive industries, which include optical devices, telecommunications equipment, and also wine making, illustrate the area's innovative capacity. As business investment begins its rebound later this year, SON is well positioned to continue developing high-value added employment in these industries, and by attracting new firms that are searching for a high quality labor force and environment.

Qualitative Forecast For Sonoma County

After reviewing the latest data that arrives from governmental and private sources concerning Sonoma County, one feels as if caught in a paradox. Some of the data: productivity, cost of living, employment growth, point to stability in the least and good potential at best. However, with the stock market floundering and housing prices locally beginning to move up again, there seems little hope of vacating the economic quagmire in which Sonoma County residents presently find themselves.

Much has been made, by me also, about the diversity in the local economy. There is a lot of diversity in each industry, but we are a service-oriented economy. Sonoma County does not have large manufacturing firms employing tens of thousands of people each. But that is a good thing!! Workers in service industries (accounting, finance, real estate, insurance, etc.) can find work easily if laid off, and their skills are in demand. The largest problem this county faces, which is not going away soon, is the cost of living problem. The cost of doing business should be close to the cost of living if workers are to afford their homes and lifestyles. Many say that the local lifestyle is a plus to living in this county, but who can afford it?

Of course, that is not the business owner's problem as much as finding demand for goods, which is the real reason why the current slowdown is upon us. The uncertainty in the stock markets, which is more from a hangover of 25% growth rates per year than true economics, is driving consumer and manufacturer confidence. Our local, high-tech industries are naturally enslaved by both forces, and we are at another stop in economic history where both types of confidence are waning. What are businesses to do in this environment, and what is the forecast for this regional economy?

The following points summarize my qualitative forecast.

1. Unemployment seems to be stabilizing countywide, although certain industries (specifically high-tech industries) have not exited their downturn yet.
2. Services are tied to other industries, and lag behind in their unemployment and reactions to economic news. Once employment contractions in services end, it is a good sign that the business cycle has troughed.
3. The expected second dip in housing prices looks unlikely. Most realtors believe that once housing prices go down there is a second movement down after the initial shock. Much like the stock market, overinflation of housing prices are controlled by buyers, not sellers. People are still buying here and supporting high housing prices.
4. The lack of affordable housing is going to be an issue unless governments and businesses work together when the business cycle is moving upward again.
5. It is a good time to refinance loans, because interest rates are not going to be lower and will probably rise soon.
6. Watch the stock market as a business owner with both eyes: one on the movements and one on how you see consumers reacting. You may get a jump over your competitors if you read the signals right.

Thanks.

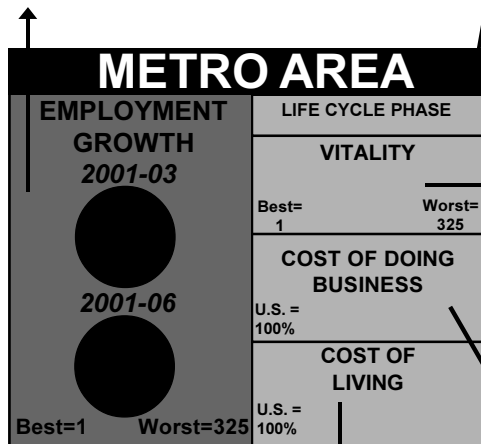
Robert Eyler.

USER'S GUIDE

Employment Growth

These numbers represent the MSA's rank among all 319 MSAs in the U.S., the 4 metro areas of Puerto Rico, 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.

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:

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

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 \$300,700. 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.