FRBSF WEEKLY LETTER

The Regional Concentration of Recessions

On a national basis, this downturn can be considered mild when compared to previous recessions. In the seven other post-war recessions, real GNP declined more than 2 percent and the downturns lasted just under a year, on average. In this recession, however, real GNP declined a little over 1 percent, and at this point the fall-off appears to have lasted barely three quarters, depending on the exact timing of the trough.

Some regions have been hit much harder than others, however. The Northeast, mid-Atlantic states, and California have experienced significant economic hardship reflected in job losses and burgeoning state budget deficits. The Pacific Northwest, Rocky Mountains, and North and South Central states, on the other hand, have sustained relatively robust conditions.

Is this divergence surprising? This *Letter* attempts to answer the question by considering how to measure the variation of employment growth across states, and particularly how to measure the concentration of a recession. The results suggest that job losses in the current recession are unusually concentrated when compared to previous economic downturns. While job declines in manufacturing sectors have spread across regions in their usual pattern, job losses in non-manufacturing sectors have been unusually concentrated.

Where have job losses occurred?
Our point of departure is an examination of percentage employment change between July 1990, considered the peak of the previous expansion, and August 1991, the latest month for which Bureau of Labor Statistics data are available for all states at this writing. Employment has grown in most Twelfth District states during this period at rates ranging from 4.0 and 3.7 percent in Utah

and Idaho, respectively, to 1.2 percent in Oregon. The significant exception in the Twelfth District is California which has seen an employment *decrease* of 0.7 percent. (Recently published information, based on disappointing tax receipts, suggests that actual job losses in California may have been much greater.)

Nationally, 21 states now have experienced employment declines since the peak month of July 1990. This is a small number when compared to the troughs of past recessions. In the mild 1969: 12-1970:11 recession the number was 27; in the severe 1981:07-1982:11 recession the number was 46.

The employment losses in these 21 states (plus the District of Columbia) totaled 1,185,000, and were only partially offset by employment gains of 436,000 in the remaining 29 states. The job losses were heavily concentrated in the Northeast. Three states—Massachusetts, New York, and New Jersey—account for 40.3 percent of the employment declines. This is striking because at the beginning of the recession in July 1990 only 13.5 percent of the nation's jobs were in these states. Adding declines from the rest of New England shows that the Northeast accounted for 50.6 percent of job losses, though it contained only 16.6 percent of the nation's jobs. In contrast, California had 7.6 percent of the job losses but 11.7 percent of national employment.

Measuring employment loss concentration
Is this concentration of job losses unusual when compared to previous recession periods? To explore this requires a consistent measure of concentration of job losses in an economic downturn. This measure can be constructed by first arranging all 50 states in rank order according to the severity of employment losses—that is, as measured by the percentage decline or increase

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in employment. The next step is to divide the rank-ordered list into fifths—or quintiles. One could simply do this by taking the first ten states as the first quintile, the next ten as the second quintile, and so forth. But this would ignore the differences in the size of each state's population. To adjust for population size, then, each state is weighted by beginning-of-period employment, and the list is divided into quintiles accordingly. Therefore, the first quintile represents 20 percent of the working population that live in regions hardest hit by recession, the second represents the next 20 percent, and so on until the fifth quintile represents the 20 percent of the working population living in regions least affected by the economic downturn. (States that fall at the dividing point of two quintiles are distributed proportionately.)

To measure the concentration of job losses, I then distribute the job losses across these quintiles to observe the proportion of job losses occurring in different regions. The percent of job losses that occurs in the first quintile can be interpreted as the proportion of economic distress occurring in the hardest hit areas.

Chart 1 reports the proportion of job losses occurring in the quintiles of the current recession, and compares this to the average experience of seven previous recessions. For the current recession, the measure reveals that 59 percent of the job losses were suffered in states where the first quintile of the working population lives, the second quintile suffered 26 percent of the job losses, the third quintile the remaining 15 percent. The fourth and fifth quintiles, however, largely did not incur any job losses (less than 1 percent in the fourth), but instead were in states that had employment gains. This degree of concentration is not only striking compared to the average as the chart shows; it is also much more concentrated than in any of the recessions examined. For example, in the most concentrated previous recessions (60:4-61:2 and 80:1-80:7) the first quintile suffered 49 to 50 percent of the job losses.

Sources of Concentration

This measure illustrates that in the current recession, job losses are more heavily concentrated than in the previous seven recessions. To explore the source of this concentration, the same kind of analysis can be used to compare manufacturing and nonmanufacturing job losses. The results suggest that manufacturing job losses are more evenly distributed than nonmanufacturing losses.

Chart 1
Recession Concentration
Job-Loss Distribution Across Quintiles

Percent of Job Losses

Average of Past 7 Recessions   Current Recession
Working Population Quintiles
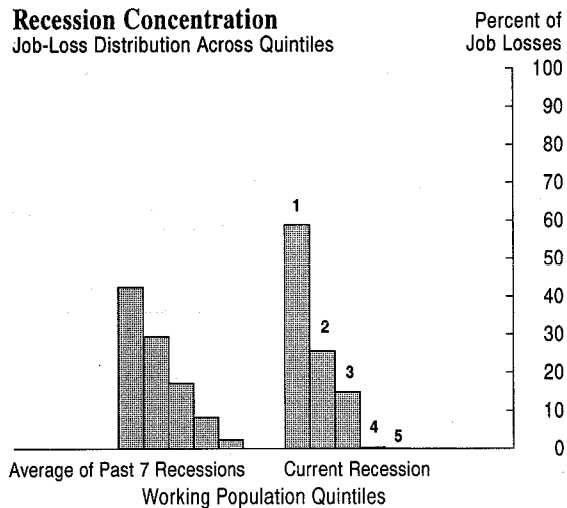
Job Loss in the Current Recession

Quintiles rank-ordered from most to least severe job loss

1	2	3	4	5	
MA	GA	TN	OK	KY	NV
ME	DE	CA	WV	MS	ND
NH	VA	IN	WI	WY	AZ
RI	MD	AL	IA	LA	CO
VT	FL		IL	NM	SD
NJ	NC		SC	TX	AR
CT	MO		AK	OR	ID
MI	PA		OH	MT	UT
DC			KS	HI	NE
NY			WA		
			MN		

The concentration of manufacturing job losses in the current recession is close to the average of previous recessions. In contrast, while nonmanufacturing job losses are *always* more heavily concentrated than manufacturing losses, in the current recession nonmanufacturing job losses are even more concentrated than usual.

One implication of these results is that as employment shifts away from manufacturing to the service and other nonmanufacturing sectors, future recessions might tend to be more geographically concentrated. Manufacturing job losses are more evenly distributed across states, perhaps because manufacturing facilities serve national markets. Service employees, however, are more tied to local or regional markets. The shift to a service-based economy thus suggests that a greater portion of employment will be subject to local or regional shocks.

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DISTRICT INDICATORS
(Seasonally Adjusted)

	91Q3	91Q2	91Q1	90Q4	90Q3	90Q2	90Q1	89Q4	% CHANGE FROM: 91Q2	% CHANGE FROM: 90Q3
AGRICULTURE										
U.S. CROP PRICES, 1985=100	115.5	117.3	114.1	114.5	116.9	117.5	118.2	115.4	-1.55	-1.14
DISTRICT CROP PRICES, 1985=100	125.0	132.5	107.2	109.7	113.2	111.6	131.0	115.9	-5.68	10.49
FARM CASH RECEIPTS, MILLION $	2463.8	2567.1	2451.8	2632.6	2627.6	2634.3	2621.9	2608.6	-4.03	-6.24
CATTLE ON FEED, 1985=100	84.1	93.2	93.1	85.8	88.4	89.2	89.9	91.4	-9.82	-4.92
CATTLE PRICES, CALIFORNIA, $/CWT.	63.2	66.4	64.5	63.9	65.9	66.6	63.6	62.4	-4.82	-4.15
FORESTRY										
LUMBER PRODUCTION, MILLIONS BOARD FEET	1584.5	1524.3	1397.3	1347.0	1550.9	1654.3	1751.9	1795.0	3.95	2.16
NORTHWEST LUMBER INVENTORY, MIL. BOARD FEET	2432.3	2327.1	2366.1	2328.2	2481.1	2624.8	2608.8	2535.9	4.52	-1.96
U.S. LUMBER PRICES, 1986=100	132.5	139.3	112.7	120.0	130.6	132.3	129.6	128.0	-4.90	1.46
ENERGY										
SPOT PRICE OF OIL, $/BARREL	21.6	20.8	22.1	32.1	26.2	17.8	21.8	20.3	4.16	-17.50
U.S. RIG COUNT	796.1	909.8	980.7	1084.1	994.1	1038.2	921.7	1002.3	-12.50	-19.92
DISTRICT RIG COUNT	72.7	82.5	75.8	73.6	74.4	72.8	56.8	69.2	-11.82	-2.29
FUEL MINING EMPLOYMENT, 1985=100	72.5	73.3	75.5	73.8	73.9	73.9	75.5	75.2	-1.12	-1.88
U.S. SEISMIC CREW COUNT	100.7	110.6	117.9	120.2	122.3	128.4	127.2	128.5	-9.00	-17.68
MINING										
MINERAL PRICES, 1986=100	106.6	109.4	107.6	111.9	129.7	127.6	123.7	125.4	-2.56	-17.85
METAL MINING EMPLOYMENT, 1985=100	184.2	185.3	192.9	198.0	197.4	199.2	196.6	193.9	-0.58	-6.67
CONSTRUCTION										
NONRESIDENTIAL AWARDS, 1985=100	95.0	106.8	108.4	100.5	110.9	112.9	123.0	104.7	-11.07	-14.38
RESIDENTIAL PERMITS	18519	20675	17576	18219	22860	26468	31871	32866	-10.43	-18.99
WESTERN HOUSING STARTS, THOUSANDS	24.1	25.5	15.6	18.6	29.1	31.2	30.7	29.3	-5.37	-17.18
CONSTRUCTION EMPLOYMENT, THOUSANDS	1009.3	1018.5	1041.7	1043.0	1058.2	1068.5	1066.8	1044.5	-0.90	-4.62
MANUFACTURING										
WAGES, CALIFORNIA, $/HOUR	11.9	11.8	11.7	11.7	11.6	11.4	11.3	11.3	0.93	3.17
EMPLOYMENT, THOUSANDS	3014.5	3037.1	3081.4	3097.7	3124.8	3143.6	3158.3	3160.4	-0.74	-3.53
DURABLES, 1985=100	96.1	97.0	98.4	99.7	101.3	102.2	103.0	103.6	-0.90	-5.07
CONSTRUCTION DURABLES, 1985=100	100.5	101.0	103.2	104.3	108.0	110.1	112.0	112.5	-0.44	-6.89
AEROSPACE, 1985=100	106.3	108.3	110.8	113.1	115.3	117.7	118.3	117.5	-1.88	-7.81
ELECTRONICS, 1985=100	89.9	91.3	92.2	92.4	92.7	93.1	93.8	93.9	-1.53	-2.98
SEMICONDUCTOR ORDERS, MILLIONS $, NOT S.A.	1253.5	1293.0	1216.9	1219.9	1227.0	1234.0	1199.8	1267.9	-3.06	2.16
WHLS/RETAIL TRADE EMPLOYMENT, THOUSANDS	4809.2	4810.9	4836.9	4823.7	4827.2	4805.6	4773.0	4752.6	-0.04	-0.37
RETAIL SALES, PACIFIC DISTRICT, MIL. $	25359	24949	24412	25138	25195	24979	24720	23992	1.64	0.65
SERVICES EMPLOYMENT, THOUSANDS	5607.6	5570.4	5547.7	5509.4	5474.7	5400.7	5320.3	5261.6	0.67	2.43
HEALTH CARE, 1985=100	130.2	129.2	128.4	127.6	125.7	124.1	122.7	122.0	0.81	3.59
BUSINESS SERVICES, 1985=100	117.3	118.9	118.6	115.7	115.7	116.1	115.0	111.7	-1.37	1.38
HOTEL, 1985=100	137.4	137.5	138.2	139.7	136.3	135.0	133.4	131.9	-0.09	0.85
RECREATION, 1985=100	140.2	140.1	141.0	142.0	138.1	135.8	133.1	135.8	0.07	1.53
FINANCE, INSUR. AND REAL ESTATE EMPLOYMENT	1268.4	1271.3	1274.5	1270.2	1269.7	1264.6	1256.2	1250.8	-0.23	-0.11
GOVERNMENT EMPLOYMENT, THOUSANDS										
FEDERAL GOVERNMENT	618.4	614.9	619.8	616.7	636.4	655.0	629.0	624.6	0.58	-2.82
STATE AND LOCAL	2923.3	2879.1	2860.7	2833.1	2825.9	2777.9	2755.8	2724.0	1.54	3.45

Data are weighted aggregates of available 12th District state data and are expressed as monthly rates unless otherwise noted. District indicator data are constructed by FRBSF research staff from public and industry sources.

PERSONAL INCOME
ANNUALIZED PERCENT GROWTH RATES

	91Q2	91Q1	90Q4	90Q3	90Q2	ANNUAL GROWTH 1991*	1990	1989
ALASKA	2.6	8.4	6.1	5.8	4.5	5.4	6.6	10.5
ARIZONA	5.6	7.1	3.3	6.5	6.7	6.3	6.1	5.7
CALIFORNIA	4.9	0.2	4.4	6.3	5.5	2.5	7.5	7.1
HAWAII	4.8	4.1	8.9	12.4	10.8	4.5	11.0	11.1
IDAHO	10.7	-3.2	15.1	-1.0	8.5	3.5	8.5	10.2
NEVADA	3.2	4.2	4.5	12.8	9.1	3.7	9.8	13.0
OREGON	4.6	4.4	5.9	6.0	7.0	4.5	7.1	9.8
UTAH	7.8	6.0	6.7	9.3	9.9	6.9	8.6	7.5
WASHINGTON	4.3	3.7	8.3	7.7	6.7	4.0	8.6	10.4
12TH DISTRICT	5.0	1.6	5.2	6.7	6.1	3.3	7.7	7.8
U.S.	4.3	1.3	3.8	5.4	5.9	2.8	6.1	6.9

* Year-to-date

Twelfth District Business Sentiment*
GNP

Percent

Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
1989   1990   1991

☐ Recession
▨ Growth less than 2.5%
▨ 2.5% to 3% growth
■ Growth greater than 3%
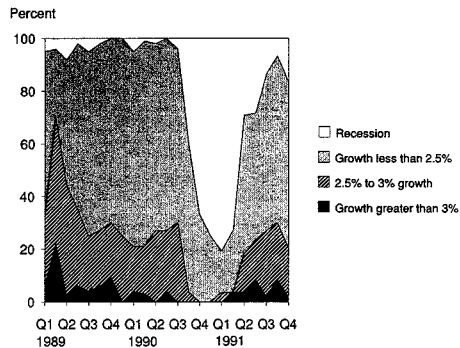
* Expectations for national GNP growth during the next four quarters based on a survey of approximately 75 business leaders in the 12th Federal Reserve District.

NON-AGRICULTURAL EMPLOYMENT
ANNUALIZED PERCENT GROWTH RATES

	91Q3	91Q2	91Q1	90Q4	90Q3	ANNUAL GROWTH 1991*	1990	1989
ALASKA	-4.4	-0.1	7.6	-0.9	-2.7	1.0	3.6	5.4
ARIZONA	4.2	-0.2	1.9	0.8	4.9	2.0	2.7	2.4
CALIFORNIA	0.4	-1.5	0.5	-2.0	1.4	-0.2	1.1	3.3
HAWAII	0.8	0.3	0.5	3.3	1.3	0.6	3.1	6.4
IDAHO	0.7	-0.6	6.4	4.5	3.9	2.2	5.4	4.9
NEVADA	0.8	-3.6	0.4	6.6	7.6	-0.8	6.9	8.0
OREGON	3.3	-2.4	3.5	0.7	1.4	1.5	2.3	4.0
UTAH	1.1	2.4	4.3	5.5	2.3	2.6	4.3	5.0
WASHINGTON	-0.9	-2.4	3.7	2.8	3.5	0.1	3.8	5.7
12TH DISTRICT	0.7	-1.4	1.5	-0.3	2.1	0.3	2.0	3.8
U.S.	0.4	-1.2	-2.3	-1.4	-0.2	-1.0	0.7	2.1

* Year-to-date

UNEMPLOYMENT RATES
AVERAGE QUARTERLY DATA

	91Q3	91Q2	91Q1	90Q4	90Q3	ANNUAL AVG. 1991*	1990	1989
ALASKA	8.3	7.3	7.4	7.0	6.6	7.7	6.9	6.7
ARIZONA	5.2	4.6	5.3	5.5	5.3	5.0	5.3	5.2
CALIFORNIA	7.5	7.8	7.4	6.5	5.6	7.6	5.6	5.1
HAWAII	2.7	2.6	2.6	2.7	2.7	2.6	2.8	2.5
IDAHO	5.9	6.4	6.1	6.2	6.0	6.1	5.9	5.1
NEVADA	5.6	5.9	5.6	5.7	4.9	5.7	5.0	5.0
OREGON	5.7	5.8	6.1	5.9	5.6	5.9	5.5	5.7
UTAH	5.3	4.6	4.3	4.3	4.2	4.7	4.3	4.7
WASHINGTON	5.8	6.3	6.2	5.3	4.4	6.1	4.9	6.2
12TH DISTRICT	6.8	6.9	6.7	6.1	5.3	6.8	5.4	5.2
U.S.	6.8	6.8	6.5	5.9	5.6	6.7	5.5	5.3

* Year-to-date