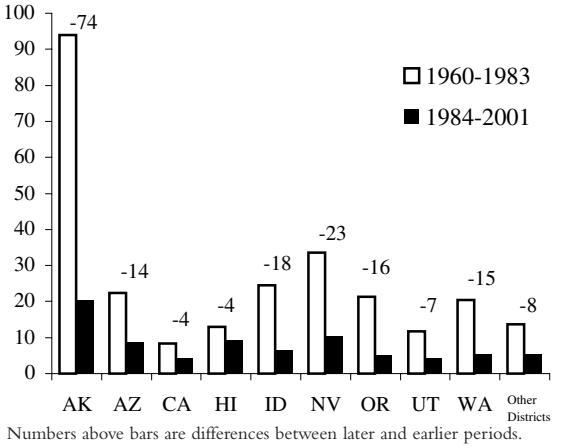
FRBSF ECONOMIC LETTER

Number 2003-02, January 31, 2003

Increased Stability in Twelfth District Employment Growth

Since the mid-1980s, virtually all states in the nation have seen nonfarm employment growth rates become much more stable than they were in the 1960s, 1970s, and early 1980s. However, the volatility of employment growth has declined by different amounts in different regions. In addition, although the general reasons for greater stability are similar across regions, the individual sectors making the greatest contribution to smoother growth differ. This *Economic Letter* discusses the major reasons for differences between each of the Twelfth District states and the country outside the Twelfth District in how much employment volatility has declined and in the primary causes of the declines.

Figure 1
Variances of percent employment growth



Numbers above bars are differences between later and earlier periods.

Smoother sailing

Many kinds of economic data have shown much more stability in recent years. For example, McConnell and Perez-Quiros (2000) chronicle the dampening of GDP fluctuations in the U.S. They note that the variance (a measure of volatility) of output fluctuations during 1953–1983 was more than four times as large as the variance during 1984–1999. Using formal statistical techniques, the authors find evidence that 1984 was indeed a "break point," indicating a one-time drop in the variance at this point, rather than a gradual downward drift.

The smoothing of fluctuations also is evident in employment for U.S. regions. For example, although variance was a little higher in the Twelfth District than in the rest of the country, both before and after 1984, variance declined by more than half in both regions.

The variance of employment growth for each Twelfth District state and the median of the variance of employment growth for the non-Twelfth District states ("Other Districts") also declined. However, as seen in Figure 1, the decline in the variance of annualized quarterly employment growth between 1960–1983 and 1984–2001 differed widely across these areas.

Why the decline in employment volatility?

The pervasive decline in the volatility of employment growth is due partially to reduced variability within industries. Figure 2 depicts the medians, taken across all states in the U.S., of the variances of employment growth for 1960–1983 and 1984–2001 for the eight broad employment sectors defined by the Census Bureau's Standard Industrial Classification system: construction; finance, insurance, and real estate (FIRE); government; manufacturing; mining; services; transportation, communications, and public utilities (TCPU); and wholesale and retail trade. For all sectors, the figure shows more stable growth in the latter period than the earlier period, with the largest changes in mining, construction, and manufacturing. The changes for the latter two sectors are consistent with McConnell and Perez-Quiros, who find reduced volatility in residential and inventory investment. They also find consumer spending to have been a chief contributor

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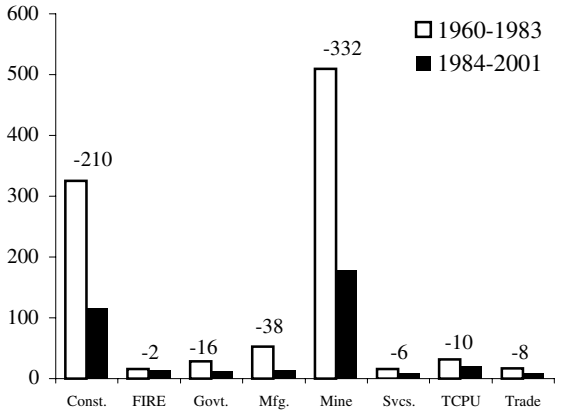
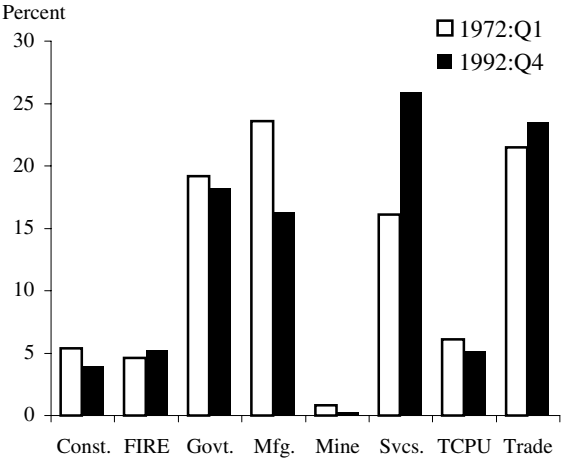
Figure 2
Variances of percent sector employment growth



Numbers above bars are differences between later and earlier periods.

Figure 3
Sector employment shares



to increased stability in U.S. output, which helps account for the broad-based reduction in the volatility of employment. Other developments, such as the greater use of outsourcing for workers, also may have helped to smooth employment growth in recent years.

Smoother total employment growth also is due to a redistribution of employment across sectors. Figure 3, depicting median U.S. sector employment shares as of the period midpoints, shows declines in the more volatile goods-producing sectors and increases in the less volatile service-related sectors.

Which factor—declining sector volatility or changes in the sectoral composition of employment—played the bigger role in bringing about smoother overall employment growth? Decompositions of estimates of the variances suggest that, for the country as a whole, declines in sector volatilities have been somewhat more important than the redistribution of workers.

Which sector played the biggest role? A sector's contribution to the total variance is greater, the greater is its own variance and the higher is its share of total employment. Taking both factors into account, for the U.S. overall, manufacturing's contribution to employment growth volatility declined the most of any sector. Manufacturing is a high volatility sector which experienced sharp declines in both the variance of employment and employment share.

What happened in Twelfth District states?

In each Twelfth District state and in Other Districts, sector volatility declines also appear to have been somewhat more important than sector share shifts to smoother overall employment growth. However, differences between the Twelfth District states and Other Districts in sector contributions to smoother employment growth have meant that the sector that contributed the most to greater stability in the Twelfth District states was not always manufacturing, whereas, for Other Districts, it was. Such differences also caused the differences in the declines in employment growth variances of the Twelfth District states compared to the decline seen for Other Districts.

For example, as seen in Figure 1, Alaska posted a much greater decline in the variance of employment growth than did Other Districts. In fact, Alaska showed the largest decline in employment volatility among all the states in the nation. (Adjusting for Alaska's high initial period employment variance, its percent decline in employment variance, at eighth in the nation, also was relatively high.) Alaska's larger decline in employment growth variance was due primarily to a larger decline in the variance of its construction employment than that seen in Other Districts. Alaska's relatively large decline in construction volatility may be due partially to diversification within the sector to include more residential building and population-based commercial construction in addition to government projects and pipelines. The greater decline in construction volatility in Alaska also put changes affecting construction ahead of those affecting manufacturing in explaining the decline in overall employment volatility that did take place in Alaska.

Other states that showed larger declines in employment growth variance than Other Districts were Nevada (ranked 4th in the nation), Idaho (6th),

Oregon (9th), Washington (11th), and Arizona (13th). In Nevada, a larger decline in the variance of services employment growth than in Other Districts was instrumental in explaining that state's larger decline in overall employment volatility. In addition, Nevada's decline in services volatility counted for more in that state than it would have in Other Districts, due to Nevada's large gaming industry and consequent higher services share. In fact, services' contribution to smoother employment growth in Nevada was the largest of any sector in the state.

As in Other Districts, manufacturing made the largest contribution to the decline in employment growth variance in Idaho, Oregon, and Washington. In Idaho and Oregon, manufacturing's contribution was even greater than in Other Districts, due to larger declines in the volatility of manufacturing in those particular states. These relatively large declines may be due partially to less emphasis on resource-based manufacturing and more on information technology and machine manufacturing. In Oregon, the larger decline in manufacturing employment volatility was the main factor behind that state's larger decline in overall employment variance than in Other Districts. In Idaho, on the other hand, a sharp decline in volatility within the FIRE sector, in contrast to a very slight increase for Other Districts, was even more important than changes in Idaho's manufacturing sector in explaining that state's relatively large decline in total employment growth variability.

Manufacturing's contribution to greater stability in Washington was about the same as in Other Districts. It has been a larger decline in trade sector volatility in Washington than in Other Districts that has accounted for most of the difference between that state's decline in total employment growth variance and that seen in Other Districts.

Arizona's larger decline in employment growth volatility was due mainly to Arizona's larger reduction in the volatility of mining employment and its larger mining sector. In addition, mining's contribution to the variance of total employment growth fell the most of any sector in Arizona. The latter also held in Utah. However, in Utah, the boost to smoother growth through the mining sector was countered by the effect of a smaller reduction in manufacturing volatility, applied to a smaller manufacturing sector. On net, the decline in employment growth volatility in Utah was about the same as in Other Districts.

California and Hawaii showed smaller declines in volatility than Other Districts. As in Other Districts, in each of these states, manufacturing was the most important sector in explaining smoother employment growth. However, California's manufacturing share and its manufacturing employment growth variance started from lower bases and declined less than in Other Districts. Manufacturing's contribution to greater stability was about the same in Hawaii as in Other Districts, but Hawaii experienced a considerably smaller decline in services volatility than in Other Districts.

Conclusion

Employment growth for the Twelfth District states and for Other Districts is considerably more stable than it used to be, due to smoother growth within broad industry sectors and the general redistribution of employment away from the more volatile goods-producing sectors and towards the less volatile service-related sectors. For both the Twelfth District states and Other Districts, smoother growth within sectors appears to be somewhat more important than sector share shifts in explaining smoother growth in total employment. However, due to differences in sector contributions to smoother employment growth, the volatility of employment growth has declined by different amounts in the Twelfth District states than in Other Districts. Of particular note here are the larger contributions to employment growth stability made by developments in the construction, services, and mining sectors in Alaska, Nevada, and Arizona, respectively. In addition, the sectors which have been most important in explaining the declines that have taken place in the District states have not always been manufacturing, the sector of prime importance for Other Districts.

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Reference

McConnell, Margaret, and Gabriel Perez-Quiros. 2000. "Output Fluctuations in the United States: What Has Changed Since the Early 1980s?" *American Economic Review* 90 (December) pp. 1,464–1,476.

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