FRBSF Weekly Letter

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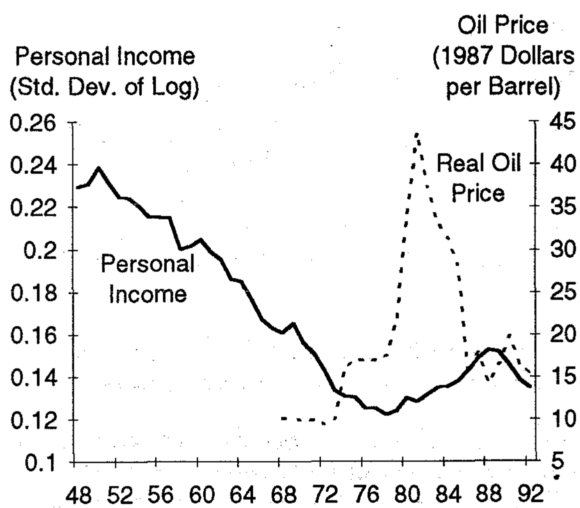
# Regional Income Divergence in the 1980s

During most of the twentieth century, state per capita incomes have converged within the U.S. For example, in 1929, the highest state per capita income was 4.3 times the lowest; by the 1970s, the ratio of highest to lowest state per capita personal income had fallen to 1.7. However, between 1978 and 1988, that trend reversed, and state per capita incomes diverged significantly. Speculation about what caused the divergence typically has focused on the drop in per capita income in oil-dependent states, which was associated with collapsing oil prices.

This *Weekly Letter* argues that changes in oil prices generally have not explained changes in regional income dispersion very well. In particular, the 1980s episode appears to have been more closely associated with a positive shock to some Northeastern states, which had an unusually large effect on the area's income.

**Figure 1**
**Dispersion of Per Capita Personal Income**
**48 States**




### The oil price hypothesis

Figure 1 shows that dispersion in per capita personal income in the continental U.S. fell for much of the post-war period but rose significantly between 1978 and 1988. The measure of dispersion used is the weighted standard deviation of log per capita personal income; a smaller number indicates smaller differences among states' per capita incomes.

Given the long period of convergence in state per capita incomes, the ten-year period of divergence is somewhat puzzling. In the literature on income dispersion, one recurring hypothesis to explain this divergence centers on the plunge in oil prices during the early 1980s. This hypothesis is based on the observation that energy-producing states tended to have low and falling relative incomes during the 1980s.

However, the timing of the divergence is not consistent with the timing of oil price changes. As Figure 1 shows, oil prices were rising throughout the 1970s, and spiked in 1980. Given the generally low incomes in energy-producing states, these oil price increases would have been expected to contribute to accelerating income convergence. Instead, convergence appears to have moderated somewhat during the 1970s. An even greater problem for the oil price hypothesis is that the divergence of incomes began in 1978, four years *before* the oil price collapse which has been credited with generating the divergence.

Another reason to question the oil price explanation is that omitting energy-producing states from the sample (Figure 2) moderates the divergence somewhat, but still leaves a significant diverging trend through most of the 1980s.

### Other possible explanations

Further insights into changes in dispersion during the 1980s can be gained by looking at relative per capita personal income for the individual states. Individual states could have contributed to the divergence either because their incomes were high in 1978 and rising between 1978 and 1988, or because their incomes were low and falling. Only one of the states with high and rising incomes during this period—Maryland—is outside of the Northeast Census Region. All of the states

**Figure 2**
**Dispersion of Per Capita Personal Income**
**48 States Minus Energy States**

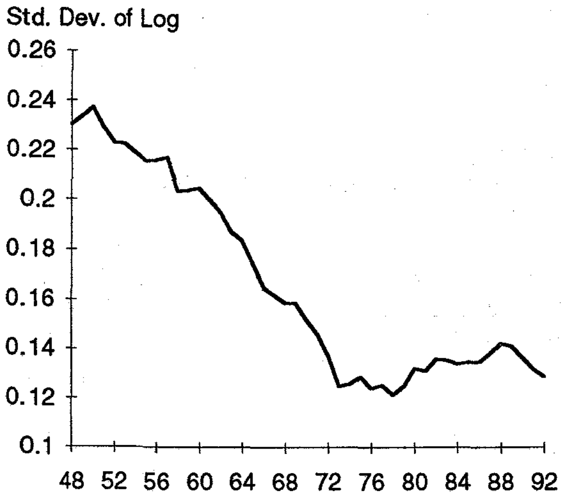
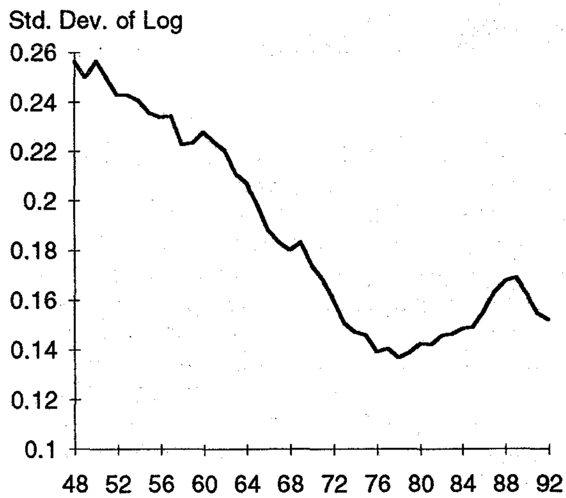


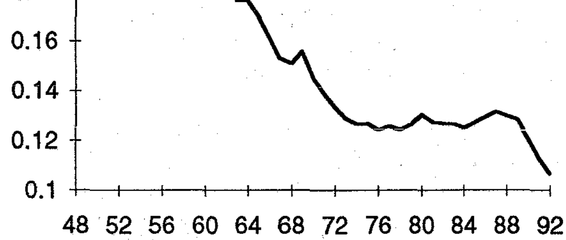

**Figure 3**
**Dispersion of Per Capita Personal Income**
**48 States Minus Farm States**




with low and falling incomes during the period are either energy states or agricultural states.

Since the energy states alone do not account for the divergence, I examine whether agriculture or Northeastern states were primarily responsible for the divergence of the 1980s. Figure 3 excludes agricultural states, with results similar to those when energy states are excluded. That is, the pace of divergence is moderated somewhat, but incomes still diverged significantly between 1978 and 1988. Figure 4 removes the states in the Northeast Census Region from the sample, and yields much more stable dispersion during the 1978 through 1988 period of divergence. Indeed, Figure 4 suggests that dispersion stabilized even earlier, around 1974. Taken together, the Figures suggest that problems in the energy and agricultural sectors contributed to the divergence, but that a positive shock to some of the Northeastern states was the most important source of income divergence during the 1980s.

**Figure 4**
**Dispersion of Per Capita Personal Income**
**48 States Minus Northeast States**




**What happened in the Northeast?**

Explanations of why the Northeast fared so well during the 1980s typically focus on the booming high-tech, defense, finance, and real estate sectors. However, these factors by themselves do not explain the unusually dramatic nature of this episode, since many regional business cycles are caused by dependence on an industry (or group of industries) that performs exceptionally well or exceptionally poorly over some period of time.

Case (1991) argues that excessive construction and real estate activity contributed to and significantly amplified the boom as well as the subsequent bust in New England. According to this argument, sharp increases in real estate values created a boom atmosphere in which the demand for labor rose, generating increased prices and wages throughout the region's economy. In New York City as well, rising real estate values and general costs appear to have been associated with the area's boom and bust (Brauer and Flaherty 1992).

There is no question that the cost of doing business in New England had risen substantially by 1987. Home prices and office rents were well above the national average, a big change from the early 1980s when the cost of doing business in New England had been competitive with other regions. Thus, it seems plausible that a positive shock to the Northeast was associated with an unusually dramatic runup in the general level of prices and wages in the region. However, this argument leaves open the question of why the positive shock had such an unusually dramatic effect on the economy in the Northeast.

## Conclusion

This *Weekly Letter* has shown that the common interpretation of the 1980s divergence as the result of plunging oil prices is not consistent with the evidence. While the collapse of oil prices, along with problems in the agricultural sector, did contribute to the divergence, a positive shock to some Northeastern states appears to have been the most important reason why incomes diverged during the 1980s.

The 1980s episode also may have implications for the longer-term converging trend that was evident in the U.S. for much of this century. If regional shocks can cause periods of divergence that last as long as ten years, does that mean that incomes have essentially stopped converging? Or was the 1980s episode an aberration in a converging trend that has resumed once again? A forthcoming article in this Bank's Working Paper series (Sherwood-Call 1994) examines these issues, and concludes that the possibility that incomes have stopped converging is one that should be taken seriously.

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**Economist**

### References

Brauer, David, and Mark Flaherty. 1992. "The New York City Recession." Federal Reserve Bank of New York *Quarterly Review* (Spring) pp. 66–71.

Case, Karl E. 1991. "The Real Estate Cycle and the Economy: Consequences of the Massachusetts Boom of 1984–87." *New England Economic Review* (September/October) pp. 37–46.

Sherwood-Call, Carolyn. 1994. "The 1980s Divergence in Per Capita Personal Incomes: What Does it Tell Us?" Federal Reserve Bank of San Francisco Working Paper (No. 94-11, forthcoming).

**MONETARY POLICY OBJECTIVES FOR 1994**

On July 20, Federal Reserve Board Chairman Alan Greenspan presented a mid-year report to the Congress on the Federal Reserve's monetary policy objectives for the remainder of 1994. The report reviews economic and financial developments in 1994 and presents the economic outlook heading into 1995. For single or multiple copies of the report, write to the Public Information Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco, CA 94120; phone (415) 974-2246 or fax (415) 974-3341.

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