

# FRBSF WEEKLY LETTER

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## Manufacturing Bias in Regional Policy

For many regional economic development agencies, attracting new manufacturing enterprises is pursued with the same fervor as the search for the Holy Grail. The rationale for this strategy is that manufacturing is perceived to be more important to an economy than services. Manufacturing, the argument goes, creates physical goods, while services simply carry out the delivery of those products. Moreover, manufacturing jobs are viewed as superior to services jobs because they are thought to be higher paying.

The challenge of attracting (and retaining) manufacturing jobs has been made difficult by recent trends in economic activity. Nationally, manufacturing employment fell from 26 percent of the work force in 1973 to only 16 percent in 1993. A variety of factors are commonly used to explain this shift. One is high productivity gains that allow fewer workers to produce more output. Another is growing international trade that has allowed firms to move standardized production activities to low-cost foreign sources. As a consequence, the traditional strategy of a preference for manufacturing firms may be at odds with long-term trends in job creation.

More fundamentally, manufacturing's superiority and its contribution to regional growth is debatable. This article focuses on several related issues. First, it looks at evidence from compensation data which suggests that the Sunbelt region has had the fastest income growth in the last twenty years, yet it also is the region that started with and continues to have the smallest share of employment in manufacturing.

Second, changes in industrial structure may disguise the sources of regional growth. For example, increased out-sourcing of some functions (accounting and design, for example) has pushed some workers formerly classified in manufacturing industries into service industry classifications with no real change in function.

More fundamentally, the importance of services may have increased. Service functions, such as advertising, marketing, and customer service, have become more important to business strategies and success. "Total quality management,"

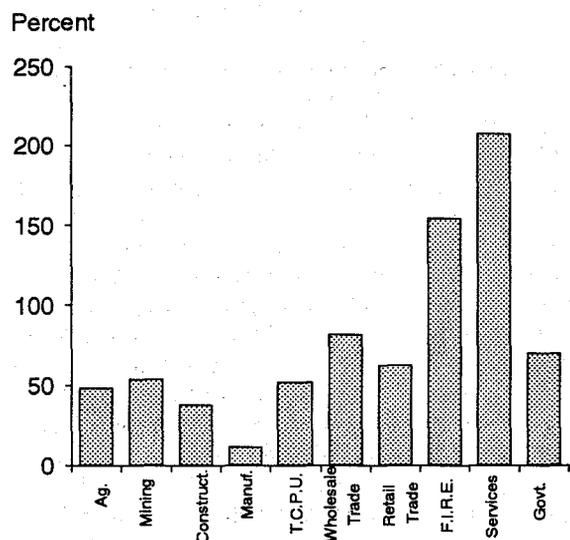
for example, is predicated on the importance of services—identifying and satisfying customer needs. Thus, service jobs may have become more integral to the manufacturing process.

### Industry contributions to income

Differences in industry structure are widely believed to be responsible for differences in economic growth among regions. Income in Texas clearly is linked to the fortunes of the oil industry, while northern California and Massachusetts have had strong income gains tied to the development of high-tech industries. A key measure of the differential importance of industries to a region is the relative growth of compensation paid to labor by those industries. This statistic, which includes wages, benefits, and proprietor's income, provides an estimate of the direct impact of those industries on the region's economy.

As shown in Figure 1, services accounted for a large share of the total compensation gains between 1969 and 1990. Adjusting for general inflation, total compensation paid in services industries rose 207 percent, while compensation paid in manufacturing rose only 12 percent. The figure

**Figure 1**  
U.S. Real Compensation Growth by Industry, 1969–1990



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also shows that all the other major service-producing industries have had faster total compensation growth than manufacturing. Transportation, communication and public utilities (T.C.P.U.), wholesale and retail trade, finance, insurance, and real estate (F.I.R.E.), and government all had faster growth in compensation than manufacturing. Even the other goods-producing industries—mining and construction—had faster compensation growth.

Because of this faster growth in nonmanufacturing compensation, it no longer is the case that broadly defined service-producing jobs are lower paid than goods-producing jobs. Work by Dupuy and Schweitzer (1994) suggests that the distribution of wages in services-producing jobs—both average wages and the dispersion of wages—now is almost identical to the distribution of wages in the goods-producing industries.

Average compensation per worker in narrowly defined services remains below that in manufacturing, but the gap is narrowing. The average wage was 70 percent of that in manufacturing in 1969, but it has risen to 77 percent of manufacturing's average by 1990. Moreover, in other service-producing industries, average wages are comparable to those in manufacturing. Wages in financial industries and wholesale trade are similar to the manufacturing average, while utilities had higher average compensation and average government compensation was only slightly lower than in manufacturing.

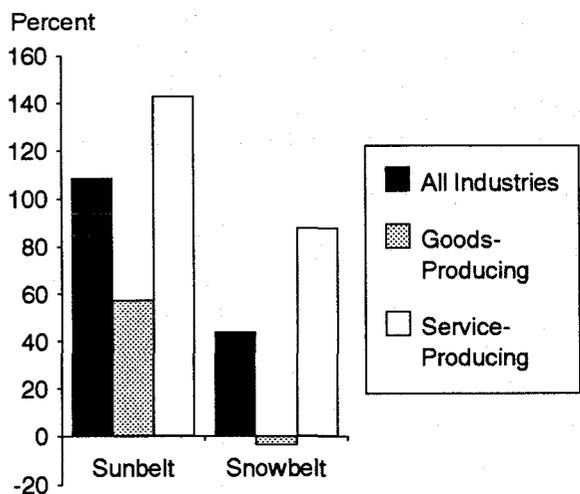
## Regional growth implications

At the regional level, differences in income growth attributed to different industries generally follow the national pattern. Figure 2 presents a comparison of total real compensation growth by major region, and breaks out growth rates of goods producing and service-producing industries.

Clearly, the Sunbelt regions—the Far West, Rocky Mountain, Southeast, and Southwest regions—have experienced faster income growth than the Snowbelt regions—the Great Lakes, Mideast, New England, and Plains regions. Between 1969 and 1990, real compensation in the Sunbelt region rose 108 percent, while compensation in the Snowbelt region rose only 44 percent.

The industry breakout is revealing. In both regions, service-producing industries reported very strong growth in compensation relative to that reported in goods-producing industries. The Sunbelt region had growth in service-producing indus-

**Figure 2**  
**Real Compensation Growth by Region and Industry, 1969–1990**



tries of 137 percent, while the Snowbelt region had growth of 80 percent. In contrast, goods production compensation rose 57 percent in the Sunbelt, while falling 4 percent in the Snowbelt.

While stronger goods-producing industries in the Sunbelt region explain part of the better overall performance of that region, service-producing industries provided most of the total gain. As a share of total compensation, goods-production fell from 35 percent in 1969 to 27 percent in 1990 in the Sunbelt region, while falling from 43 to 29 percent in the Snowbelt region.

The two regions have roughly converged to the same lower share of goods-producing industries, therefore. The Snowbelt reduced its share through an actual decline in goods production coupled with modest gains in service-producing industries. The Sunbelt, on the other hand, increased both sectors, but not proportionally. The service-producing sector rose considerably faster than did the goods-producing sector. Notably, the Sunbelt maintained higher average compensation growth than the Snowbelt despite having a lower share of goods-producing industries.

## Manufacturing and the new economy

Another source of evidence questioning manufacturing's importance in regional and national economic growth stems from significant changes in economic structure. First, increasing communication and transportation networks have allowed manufacturing to become more diffuse, with parts, assembly, design, marketing, and strategic control for a given product potentially scattered around the globe.

As a result of this change, traditional characterizations of the production process have become

less meaningful. For example, hiring outside lawyers and accountants may not change the actual production process for a manufacturing plant, but those workers may be reclassified from manufacturing to legal or business services industries. (All employees at a work site are given the same industry designation based on the principal activity taking place at that location.) Similarly, replacing inside programmers with outside computer consultants adds workers counted in business services, while potentially decreasing the number of workers classified in manufacturing.

Apart from this shift due to out-sourcing, changes in output markets have emphasized the role of services in the value-added chain. Part of this change has been the result of improvements in production technology. For example, increased flexibility in production has made it possible to generate customized products at near mass production prices. Thus, firms have focussed their attention on defining market niches and meeting varying customer demands.

In this new method of organizing economic activity, business services account for a more important part of the production process. Between 1969 and 1990, compensation gains in business services accounted for 6.1 percent of the total increase. This contribution was especially strong in the Sunbelt regions.

Moreover, consumer demand has changed significantly, with greater emphasis on services consumption. For example, between 1969 and 1990, health care accounted for 9.6 percentage points of the nation's 69.1 percent increase in total compensation. In other words, more than one-seventh of total gains in real compensation over the period were reported by the health care sector. Furthermore, wholesale and retail trade, and finance, insurance, and real estate showed disproportionately large increases in compensation growth.

Some industries also shrank during the period or remained fixed. Primary metals, fabricated metals, textiles, apparel, and leather manufacturing all had real decreases in total compensation during this period nationally. And many of these industries have emerged fundamentally changed; for example, the steel industry has shifted emphasis from high-volume generic steel production to higher value-added specialized steel products.

Food production is another example of change. Agriculture showed little change in real compen-

sation over the 1969–1990 period, while total expenditures on food rose 36 percent. The additional value is captured not only by manufacturers that created higher value-added products (microwave dinners), but also by the marketing and advertising firms that provide key input into identifying and targeting specialized consumer niches.

The implications of these changes in industrial structure for regional economic development plans are profound. In particular, the old model of manufacturing as a relatively vertically integrated source of jobs is less prevalent than a model in which manufacturing activity is diffused geographically and most of the value added is created by service activities designed to identify market niches, coordinate production from a network of worldwide suppliers, and market the product. Thus, the actual physical production activity is contributing a smaller part of the product's total value compared to the service activities that surround that activity.

### Conclusions

The bias towards attracting manufacturing held by many regional economic development planners appears to be increasingly questionable. In fact, evidence presented here suggests that non-manufacturing industries have added most of the income growth, as well as most of the employment growth. Moreover, regions that have grown the fastest have been those with the fastest growth in services.

Long term, this shift suggests an evolution of the economy. While some of the shift is definitional—out-sourcing, for example—much of the shift reflects fundamental changes in the nature of output markets and the value added by service industries. Increasing globalization is leading to a more geographically dispersed production process. Moreover, standardized assembly line production is becoming less important as a share of value added, while other activities, traditionally viewed as services, are becoming the most important source of value added.

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Index to Recent Issues of *FRBSF Weekly Letter*

DATE	NUMBER	TITLE	AUTHOR
12/3	93-42	Monetary Policy and Long-Term Real Interest Rates	Cogley
12/17	93-43	Banks and Mutual Funds	Laderman
12/31	93-44	Inflation and Growth	Motley
1/7	94-01	Market Risk and Bank Capital: Part 1	Levonian
1/14	94-02	Market Risk and Bank Capital: Part 2	Levonian
1/21	94-03	The Real Effects of Exchange Rates	Throop
1/28	94-04	Banking Market Structure in the West	Laderman
2/4	94-05	Is There a Cost to Having an Independent Central Bank?	Walsh
2/11	94-06	Stock Prices and Bank Lending Behavior in Japan	Kim/Moreno
2/18	94-07	Taiwan at the Crossroads	Cheng
2/25	94-08	1994 District Agricultural Outlook	Dean
3/4	94-09	Monetary Policy in the 1990s	Parry
3/11	94-10	The IPO Underpricing Puzzle	Booth
3/18	94-11	New Measures of the Work Force	Motley
3/25	94-12	Industry Effects: Stock Returns of Banks and Nonfinancial Firms	Neuberger
4/1	94-13	Monetary Policy in a Low Inflation Regime	Cogley
4/8	94-14	Measuring the Gains from International Portfolio Diversification	Kasa
4/15	94-15	Interstate Banking in the West	Furlong
4/21	94-16	California Banks Playing Catch-up	Furlong/Soller
4/29	94-17	California Recession and Recovery	Cromwell
5/6	94-18	Just-In-Time Inventory Management: Has It Made a Difference?	Huh
5/13	94-19	GATS and Banking in the Pacific Basin	Moreno
5/20	94-20	The Persistence of the Prime Rate	Booth
5/27	94-21	A Market-Based Approach to CRA	Neuberger/Schmidt

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