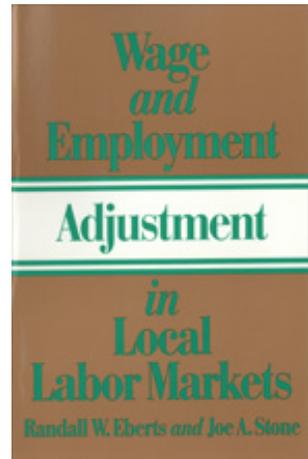


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Introduction

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Wage and Employment Adjustment in Local Labor Markets

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Introduction

Metropolitan labor markets are in constant flux. At various times during the last two decades, different regions of the country have been bombarded by a variety of economic disturbances, or shocks. Oil price shocks, interest rate changes, technological advances, foreign competition, interregional migration, and foreign immigration have had significant and long-lasting effects on regional economies and their workers. These shocks have affected cities and their outlying regions in different ways and at different times. Some cities have experienced unprecedented growth from an increase in population or from an increase in the demand for workers. Other cities have undergone painful periods of employment loss and economic restructuring, cutting their economic base and displacing a large proportion of their workforce.

The severity of these disturbances on local economies depends on a host of factors: the linkage of the local economy with the rest of the country; the concentration of industries that are particularly vulnerable to national business cycles and longer-run structural changes; the ability of local industries to compete with other regions of the country and the rest of the world; and the ability of local workers to adjust to a changing labor market principally through retraining or migration.

Problems in Local Labor Markets

The contrast in performance of individual local economies resulting from these disturbances is striking, particularly within the last 10 years in which the East and West Coast economies have boomed while much of the middle section of the country has languished. The economic boom for cities on the West Coast, for example, was fueled to a large extent by the seemingly endless stream of migrants to California both from other

regions of the country and from other nations. Even the severe twin national recessions of the early 1980s, the worst since the Great Depression, were barely noticed by that region. East Coast cities boasted a similar growth spurt during the late 1970s and early 1980s, but for different reasons. The East Coast expansion was driven more by labor demand than by labor supply, as government demand for advanced military hardware escalated and the financial securities industry flourished.

Much of the rest of the country told an entirely different story. Texas and Louisiana cities, after riding high on the oil price increases during the mid-1970s, entered a severe recession in the early 1980s as oil prices plummeted. Cities in the farming states of the West North Central region experienced a similar fate entering the 1980s. Falling commodities prices, resulting from the national recession and from a weak export market, forced many farmers into receivership. In the Midwest, rapid technological changes and increased foreign competition had dire effects on the manufacturing sectors of various cities. Precipitated by the recessions of the early 1980s, Buffalo, Cleveland, and Pittsburgh, for example, lost as much as half of their manufacturing jobs as durable-goods firms in these areas found it difficult to compete with firms elsewhere in the country and in the world.

Significant adjustment in labor markets accompanied these episodes of economic disturbance. Workers moved from one region of the country to another in response to job opportunities, higher wages, and more favorable amenities. Displaced by economic restructuring, workers were forced to seek jobs in other sectors of their local economies, to move, or to face lengthy spells of unemployment.

Between 1979 and 1984, 5.1 million workers with at least three years of tenure lost their jobs.¹ The remaining 40 percent of these workers remained unemployed. Many, discouraged by poor job prospects, eventually dropped out of the labor force. Sixty percent were eventually reemployed, but upwards of 60 percent of these employed workers were forced to find jobs in industries other than the ones in which they were previously employed. Some sought jobs in other areas.

Economists and policymakers have taken a broad range of positions regarding the wide disparities in regional economic conditions. Some have credited the phenomenal increase in jobs over the last three decades to regional diversity, in which diversity offers ample opportunities for the kind of industrial restructuring necessary to promote future growth. According to this view, the reallocation of jobs across regions, in which regions gain and lose jobs depending upon their competitive advantage, is seen as a net gain to the U.S. economy. Others dismiss regional diversity as a temporary state of disequilibrium that will disappear as regional growth rates eventually converge through the migration of households and the location of businesses. If the disequilibrium effects of shocks on regions dissipate quickly through the adjustment of wages and employment, then there is little justification for public policy to promote firm location and household migration, except perhaps to enhance a region's physical and human capital. However, if the adjustment is protracted, then policies designed to ease the adjustment process are more justified.

Labor Market Adjustments A Tale of Two Cities

The dimensions of these labor market adjustments can be illustrated more concretely by chronicling the experiences of two metropolitan areas that lie at opposite ends of the range of experiences. One city, Pittsburgh, experienced the pains associated with the downsizing of a key industry that for decades had been the foundation of its economy. The other city, San Jose, was faced with accommodating the explosive growth of an infant industry that eventually became for San Jose what steel had once been for Pittsburgh. While the transitions that these two cities underwent did not result from a sudden and unexpected shock, as was the case for some other cities, they do serve to underscore the salient features of the adjustments that occur within local economies.

For over a century, Pittsburgh was known as the nation's steel center. In 1950, for example, Pittsburgh produced 25 percent of the nation's

steel output. This concentration came to an abrupt end in 1979, when U.S. Steel Corporation announced the permanent closing of 12 plants. Within three years, employment in these plants fell from 22,554 to 8,000 and the area's total employment in primary metals was cut 36 percent. Today, Pittsburgh produces only 10 percent of the nation's steel and employs only 7 percent of the nation's steelworkers.²

The tremendous downsizing of the industry quickly spilled over into much of the rest of Pittsburgh's economy, which was so closely linked to steel. Between 1980 and 1983, during the depths of the recession, 57,000 manufacturing jobs were eliminated, half of which were in primary metals. As the recovery generated steam to become the longest peacetime expansion since World War II, it became evident that the loss of steel production and of manufacturing jobs in general was not merely a cyclical event. By the end of the decade, Pittsburgh proceeded to lose another 15,000 steel jobs and another 36,000 manufacturing jobs, bringing the total number of lost manufacturing jobs to 93,000.

The transition was painful for many labor groups in the Pittsburgh community. The unemployment rate soared to over 14 percent during the first two years of 1980. This level exceeded the national unemployment rate by 40 percent. Many workers, particularly the younger and more highly skilled, left the region. During the 1980s, Pittsburgh experienced the greatest population loss among the 23 largest metropolitan areas in the United States. Those manufacturing workers who remained behind were not readily absorbed into other sectors. For those who could find jobs, overall job quality deteriorated, and half of the reemployed displaced workers earned less than they had in their previous jobs.

During the decade, other sectors within Pittsburgh's economy stepped in to replace the 93,000 jobs lost in manufacturing. The metropolitan area gained 74,000 jobs in services, 26,000 in wholesale and retail trade, and 9,000 in finance, insurance, and real estate. By the end of the decade, Pittsburgh had managed to replace the 93,000 lost manufacturing jobs with private sector jobs from these various other sectors. While in many respects this was a remarkable feat, Pittsburgh's overall employment

growth during the heart of the national expansion (1983 to 1987) was still the lowest among the nation's 23 largest metropolitan areas. Only Houston, which was particularly hard hit by low oil prices, had lower employment growth during this period. As a result of this restructuring, Pittsburgh's economy shifted from 30 percent of employment in manufacturing in 1980 to only 14 percent in 1989.

The story of San Jose is the tale of the birth and development of a new industry, the computer and semiconductor industry.³ In some respects, the growth of San Jose and the semiconductor industry in the years after World War II is reminiscent of the growth of Pittsburgh and the steel industry at the turn of the century. Prior to World War II, the San Jose area was a sparsely populated agricultural valley, which for the most part was detached from the large urban areas of San Francisco and Oakland lying to the north. The seed for the growth of the area and current dominance of the electronics industry was planted during and immediately after the war when a few electronics companies established operations in the area in order to gain access to war-related markets and to be close to the research taking place in and around Stanford University. Since then the area's population has increased by almost a million people, and 350,000 new jobs have been created, of which over 33 percent are in electronics-related companies. Most of the country's semiconductor companies can trace their roots to this area.

Because of the rural origins of the region, workers for the electronics industry, many of whom were engineers and technicians, came from outside the area. Much of the adjustment San Jose has faced has been in accommodating the streams of newcomers and the congestion and social problems that followed them. The area constantly confronted shortages—in workers, in housing, and in adequate infrastructure.

Total employment in the San Jose metropolitan area increased 53 percent between 1975 and 1986. Interestingly, population increased by only 17 percent. The difference was made up almost entirely by an increase in the percentage of the working-age population actually employed, swelling from 46 percent in 1975 to 57 percent by 1986. The increase in labor force participation alone could have accounted for half the increase in employment, without one additional worker moving into the area or any change in the unemployment rate. In comparison, assuming the

same population size and labor force participation in 1986 that existed in 1975, the reduction in the unemployment rate, resulting from tight labor market conditions, added only 4 percent more workers. Even though more individuals joined the labor force, pressure on the local labor market pushed wages from 10 percent above the national average in 1975 to 20 percent above the national average by 1986.

Institutional factors and local development initiatives played significant roles in the labor market adjustments of both cities. For Pittsburgh, several factors have been cited as affecting the transition. The high degree of unionization was said to be a barrier to labor adjustment. Unions were blamed for impeding the substitution of various types of workers and the substitution of capital for labor. Unions also exacted a wage premium, which can raise the cost of production if not accompanied by higher productivity. Opponents of unions argued that the relatively higher production costs discouraged firms from locating or expanding in the area and prompted some firms to leave.

Many have argued that Pittsburgh's transition was aided by several local development efforts. The Allegheny Conference, under an initiative known as *Strategy 21*, set out to promote economic development by improving labor force skills and training, converting underutilized resources to new uses, enhancing the region's quality of life, and expanding opportunities for women, minorities, and the structurally unemployed. Pennsylvania's Ben Franklin Partnership for Advanced Technologies, initiated in 1982, was an active partner in promoting high-tech development in the area by supporting entrepreneurial development and by allotting funds to train displaced workers for high-tech jobs.

The initial stimulus for the development of the electronics industry in the San Jose area had its origins in government initiatives. These activities included opening a military technical training facility at a nearby naval air station and infusing large amounts of federal funds for basic electronics research and development at Stanford University. In addition, several local communities in the area established industrial parks that provided land, financial assistance, and infrastructure benefits to attract electronics industries. More recent local government programs have been directed toward problems resulting from too much growth, such as housing shortages, congestion, and poor air quality. For instance,

in the 1970s Santa Clara County legislated public controls over industrial growth—one of the first such measures in the country.

While more dramatic than the experience of many cities that faced economic restructuring, the adjustment process in Pittsburgh and San Jose may be typical in many respects. Unfortunately, little is known about the dynamics of wage and employment determination in local labor markets. What are the relative roles of migration, changes in unemployment, and changes in labor force participation in the adjustment of a region's labor supply following economic shocks? Conversely, what are the relative contributions of business births and deaths, expansions and contractions to changes in labor demand? How elastic are demand and supply curves for labor in major metropolitan labor markets? How long does it take for wages and employment to respond to supply and demand shocks? Do public policies (for instance, local public expenditures, including public sector infrastructure investments) make a difference to local wage and employment determination? These questions are important for understanding the workings of local labor markets and assisting policymakers in constructing and implementing programs that may address the labor adjustment issues that continue to face so many metropolitan areas.

The importance of understanding the adjustment process in order to implement effective state and local economic development policy cannot be understated. Many such policies have been implemented with a quick fix in mind. Constrained by the short political horizons facing elected officials, many states and localities have sought to address long-term adjustment problems with short-term remedies. One of the most prevalent, and possibly least effective, is the strategy popularly known as "smokestack chasing." In recent years the strategy has taken on an international dimension with Japanese or other foreign transplant facilities having become the coveted prize. However, communities that pursue such strategies and offer substantial subsidies to entice companies to locate within their jurisdictions may find that in the long run the costs outweigh the benefits. Furthermore, these communities may be ignoring the very reasons for lackluster growth in their areas, such as poor infrastructure and an inferior educational system, which eventually may cause the businesses that they have convinced to move in to leave.

Outline and Major Conclusions

The objective of this study is to provide a deeper understanding of the processes by which local labor markets adjust to economic disturbances and the potential role for public policy in improving local labor markets. We begin chapter 2 by specifying a general framework for analyzing supply and demand behavior in local labor markets. Changes in the supply of labor are divided into three major components: changes in the unemployment rate, changes in labor force participation, and migration flows. An increase in labor demand presumably will offer more job opportunities to the unemployed, increase the incentive for individuals to enter the workforce and search for jobs, and entice workers from outside the region to seek employment within the local economy.

The process and speed of adjustment to an external shock depends on the relative contribution of each of these components to the change in the labor supply. The composition of change in the labor supply also influences the extent to which the indigenous population is affected by an economic shock, and, consequently, the efficacy of public policy. For instance, suppose a local government offered generous public subsidies in an attempt to combat chronic high unemployment by attracting new businesses. The success of the program would depend not simply on the number of new jobs generated but also on who filled them. If most of the jobs are snatched up by workers from outside the area, then the subsidy program has largely missed its mark, except for the secondary effects induced by the injection of new jobs.

Labor market adjustments also take place on the demand side. Regions with a large influx of households, such as the Southeast and the West Coast, attract new businesses. While service-related businesses are the most obvious ones to be sensitive to population increases, manufacturing firms are increasingly locating near market areas, as production becomes more customized and just-in-time inventory control requires closer proximity to suppliers. Therefore, we would expect openings of new firms to be an important component of the labor market adjustment process.

In addition, labor demand is also a source of shocks to the local market. Identifying the relative contribution of the components to a net change

in labor demand helps to isolate the source of these disturbances. Four components are identified: openings, closings, expansions, and contractions. By comparing the rate of job creation (openings and expansions) to the rate of job destruction (closings and contractions), one can get a sense of the reallocation of jobs within an area and, consequently, the change in employment opportunities.

In chapter 3 we extend our analysis first by describing specific types of economic disturbances, which include technological changes, sharp changes in oil prices, monetary policy, and government spending and taxation. We next bring to focus existing evidence on how wages, employment, and unemployment in local labor markets adjust to those disturbances.

In chapter 4 we establish an empirical framework for estimating the relationships between wages and employment and present estimates of dynamic supply and demand relationships based upon data from 21 metropolitan areas during the period 1973 to 1987. We also present estimates for the separate goods and service sectors that include interactions between the two groups of industries. We use these estimates to simulate the wage and employment responses to demand and supply shocks to understand the properties of the dynamic adjustment.

In chapter 5 we test for the influence of specific local factors on metropolitan labor markets, including rates of unionization, government taxation, and investments in public infrastructure (e.g., roads, bridges, street lights, schools, hospitals, sewers, and airports). With regard to unionization, we are interested in the possible effects of unionization on both the levels of labor supply and demand in local labor markets and the responsiveness of labor supply and demand. For example, are higher rates of unionization associated with lower elasticities of labor supply?

With regard to government policies, we are interested in the familiar issues related to the effects of taxation on local labor supply and demand, and also in the importance of investments in local public infrastructure. Recent work suggests that public infrastructure investments play a key role in urban economic development, but fiscal pressures on a wide array of other budget priorities have led many cities to neglect investments in infrastructure. How serious are the consequences of this neglect?

A final chapter summarizes and evaluates our major conclusions. To briefly preview those conclusions, we find evidence in support of the following:

1. In the course of a year, the largest component of change in local labor supply in recent years has been change in labor force participation, rather than in unemployment rates or migration.
2. In the course of a year, the largest component of change in local labor demand in recent years has been change in the openings of new firms, rather than closings, expansion, or contractions.
3. Wage differentials among cities are much more persistent over time than unemployment rate differentials, which tend to erode over periods as short as a decade.
4. Labor supply and demand tend to exhibit a recursive structure, with firms initially adjusting employment rather than wages in response to economic disturbances.
5. Labor supply and demand responses are elastic, but protracted, so that full adjustment to a major economic disturbance takes more than a decade.
6. In the course of adjustment, both wages and employment tend to “overshoot” the new equilibrium. For example, in response to a negative shock, local economic conditions get much worse before they get better.
7. In the separate goods and service sectors of local economies:
 - (a) Labor demand is more elastic in the goods sector than in the service sector.
 - (b) Labor supply is nearly perfectly elastic in the separate sectors.
 - (c) Job reallocation between the two sectors accounts for much of the protracted response of the local labor market to a disturbance.
 - (d) Expansions in the goods sector induce a modest increase in the service sector, but expansions in the service sector tend to “crowd out” employment in the goods sector.
8. Unionization is associated with a decline in overall labor demand and a decline in the speed of the response of overall labor supply.

9. High local taxes, holding investments in public infrastructure constant, tend to *decrease* both labor supply and labor demand.
10. Increased investments in local public infrastructure, holding local taxes constant, tend to *increase* both labor supply and labor demand.

NOTES

1. See Flaim and Sehgal (1985).
2. Employment data are from Bureau of Labor Statistics, *Employment and Earnings*.
3. See Saxenian (1984) for a description of the emergence of the Silicon Valley.