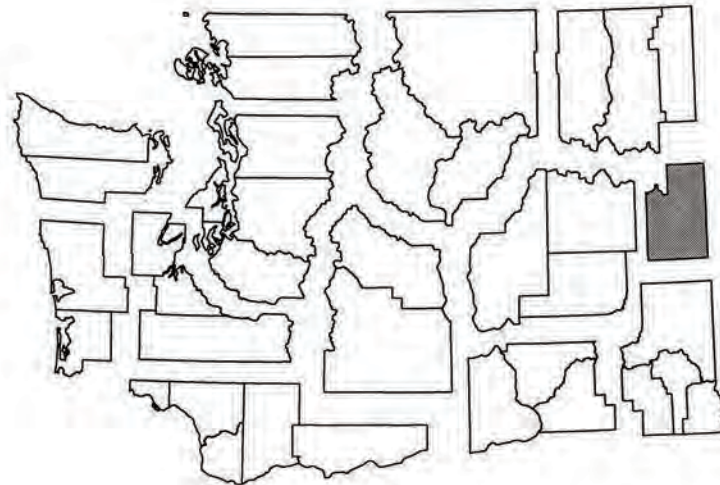




## **Shifting Fortunes:**

### **A Closer Look at Per Capita Income**

### **Trends in Spokane County**



#### **Acknowledgements**

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## **Abstract**

This paper examines various factors contributing to shifts in the gap between Spokane's per capita income and that of the nation over the past several decades. The evidence indicates that shifts in the local industry mix played an insignificant role. Relative earnings per capita plummeted in the 1980s, but not because Spokane experienced an adverse shift in employment from high- to low-wage industries. Similarly, relative earnings per capita improved over 1989-93, but not because employment grew exceptionally faster in high-wage relative to low-wage industries.

The growth and decline of average earnings per job across all industries, exclusive of the effect of shifts in Spokane's industry mix, has been the most consistent and influential factor affecting the relative growth of local per capita income over the past several decades. Changes in the number of jobs relative to the size of the local population (the job ratio) has also played a key role over time. The rise in the local job ratio was a particularly significant factor contributing to the 1989-93 recovery in Spokane's per capita income when compared with the national average.

The composition of personal income in Spokane has changed markedly over the past several decades owing to the striking growth of property income and transfer payments. Yet, results reveal that the influence of these two income sources on the growth of local per capita income relative to the national average has been fairly minor. The growth and increasing local importance of property income and transfer payments generally followed the nationwide trend.

The playing field for local economic development initiatives has been transformed by fundamental and systematic changes in the fabric of economic activity, such as shifts in the role and relation between goods-producing and service-producing activities. Despite such changes, there persists a bias and preoccupation toward recruiting high-wage manufacturing jobs. A development strategy centered on attracting manufacturing firms runs counter to the sources of current and future job growth. Policymakers and economic development practitioners should be mindful of this changing role and of the potential of services as a driver in local economic development.

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### National Comparison

Expressing a region's per capita income as a percent of the national average serves two purposes. First, it establishes a benchmark for gauging the prosperity and performance of a region in a relative context. Second, it provides a common denominator and handy index for comparing different regions. Spokane's per capita income growth and performance in comparison to the other counties and regions of Washington State has been examined elsewhere.<sup>2</sup> This article examines more closely Spokane's per capita income performance in terms of the gap between the local and national average. We begin with a sketch of the overall trends.

Figure 3 traces Spokane's per capita income as a percent of the national average over 1969-93. Figure 4, in turn, charts the difference between Spokane's real per capita growth rate and that of the nation. This difference lets us monitor more keenly the year-over-year changes depicted in Figure 3, and is the primary measure used in this paper to calibrate and analyze Spokane's relative per capita income performance.

Although the per capita income gap between Spokane and the nation varied considerably over the past several decades, Spokane remained below the national average (Figure 3). After slipping from 95.1% to 90.2% over 1969-73, Spokane's per capita income closed to 96.2% of the national average by 1977, where it remained for the next couple of years. But the trend reversed after 1979. By 1988, Spokane's per capita income receded to 85.4% of the national average. Comparatively, Spokane's per capita income gap deteriorated by more than 10% over the 10-year period 1979-88.

In the late 1980s the trend shifted again. Over 1988-91, economic activity in Spokane began to pick up while the national economy turned sluggish and ultimately slipped into recession. Although most economic expansions have been characterized by sharp upswings in the earliest stage of recovery, the 1992-93 debut of the current national expansion was conspicuously weak. Meanwhile, Spokane's growth remained robust over 1992-93. As a result, by 1993 Spokane's per capita income reached 90.1% of the national average, regaining some of the ground lost over the previous decade.

What accounts for these shifts? Were the factors contributing to Spokane's widening per capita income gap during 1978-88 different from those that contributed to the narrowing gap over 1989-93? To address these questions we must begin by looking more closely at the various sources of personal income.

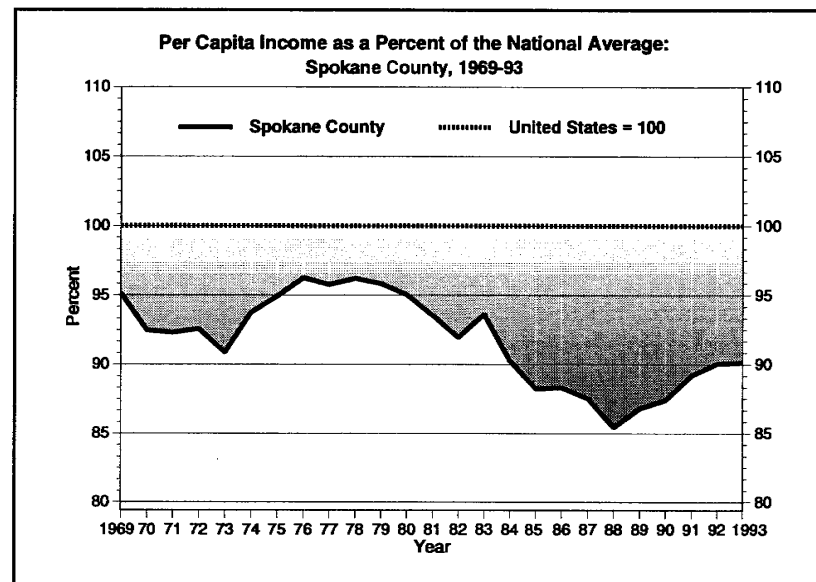


Figure 3

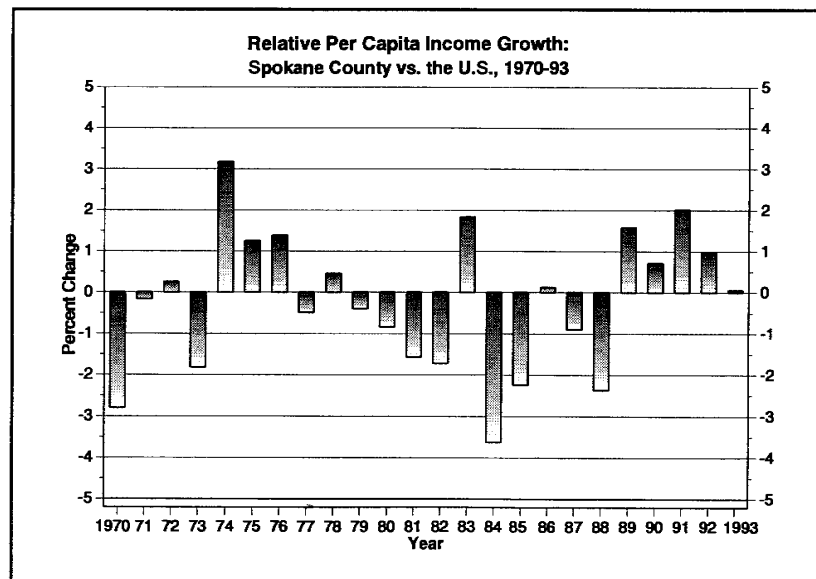


Figure 4

### Components of Per Capita Income

Personal income is made up of three major components: earnings, property income, and transfer payments (Figure 5). Earnings, which accounted for 70.0% of Spokane's personal income, can be viewed as payments for labor services. Earnings include wages and salaries, proprietors' income and other labor incomes, which are mostly employer contributions to private pension and welfare funds. Measured in current dollars Spokane's earnings per capita amounted to \$13,120, or about 87.5% of the national average of \$14,999.

Property income represents payments in the form of dividends, interest and rent for the services of capital owned by persons. Property income comprised 15.9% of Spokane's personal income in 1993, and on a per capita basis amounted to \$2,985, or 91.2% of the U.S. average. Interest payments make up the bulk of property income.

Transfer payments are payments not related to the current provision of services. In 1993, transfer payments made up 21.2% of county personal income, versus 17.0% at the national level. Transfer payments per capita came to \$3,967, or 111.9% of the national average of \$3,544. The most important element of transfer payments relates to retirement-related incomes in the form of social security payments and retirement benefits paid to former federal civilian employees, military personnel, and state and local government workers. A sizable fraction of transfers is made up of medical payments for such programs as Medicare and Medicaid. Unemployment insurance, income maintenance, and veterans' benefits payments are examples of the other varied components included under the transfer payments category.

An adjustment to income to account for where workers live and social insurance contributions must be included in order to keep the county income accounts in balance. Personal income, whether it is represented in total or per capita terms, is intended to measure the incomes of the residents of a region. While property income and transfer payments represent incomes received by county residents, earnings data are reported based on where workers' jobs are located, not where workers live. Thus the earnings category of income mentioned above includes the wages and salaries of workers who live in Coeur d'Alene, but who work in Spokane. In order to develop an estimate for earnings based on where workers live, BEA prepares an "adjustment for residence" to take into account the earnings of intercounty commuters. Also, workers' personal contributions to social insurance are netted out to derive an overall estimate of earnings consistent with the place of residence concept of personal income. To take these factors into account, Figure 5 presents an offsetting "income adjustment" component of personal

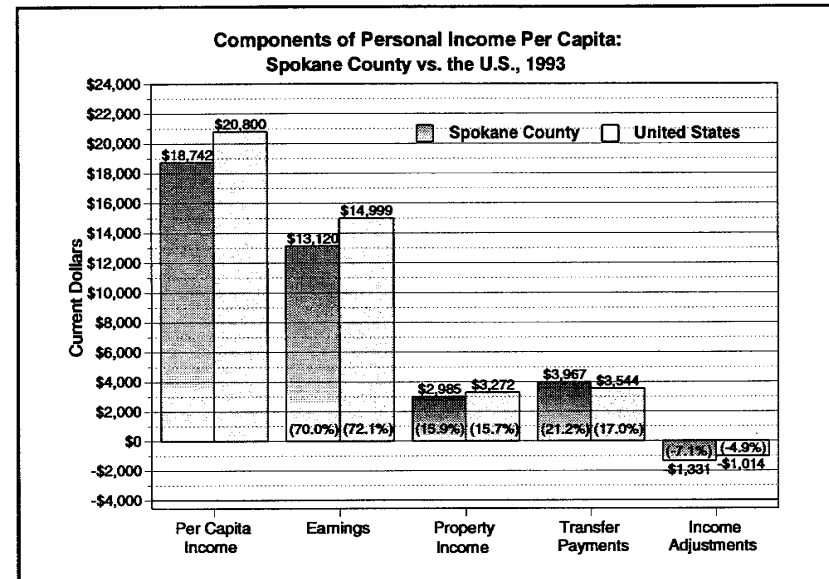


Figure 5

income. This component amounted to -7.1% of Spokane's personal income, versus -4.9% nationally. At the national level the resident adjustment component is inconsequential. But adjustment for residence accounts for about one-third of the income adjustment component of Spokane's personal income.

Throughout most of the post World War II period, the growth of property income and transfer payments generally outpaced that of earnings. As a result, earnings declined as a share of total personal income, and property income and transfer payments increased (Figure 6). Transfer payments' share of income advanced fairly steadily, increasing from 12.2% in 1969 to 20.7% in 1993. Property incomes' share of personal income rose dramatically over 1978-92 as a result of the escalation of interest rates to record highs coupled with the sharp drop in earnings associated with the double-dip recession of the early 1980s. Property incomes' share peaked at 19.1% in 1989, and receded to 15.9% by 1993. Since the 1970s, property income and transfer payments accounted for 62.6% of the growth of Spokane's personal income, even though they made up less than 30% of total income at the outset. Bear in mind, however, that their growth in the early 1980s in tandem with the sharp decline in earnings contributed greatly to this outcome.

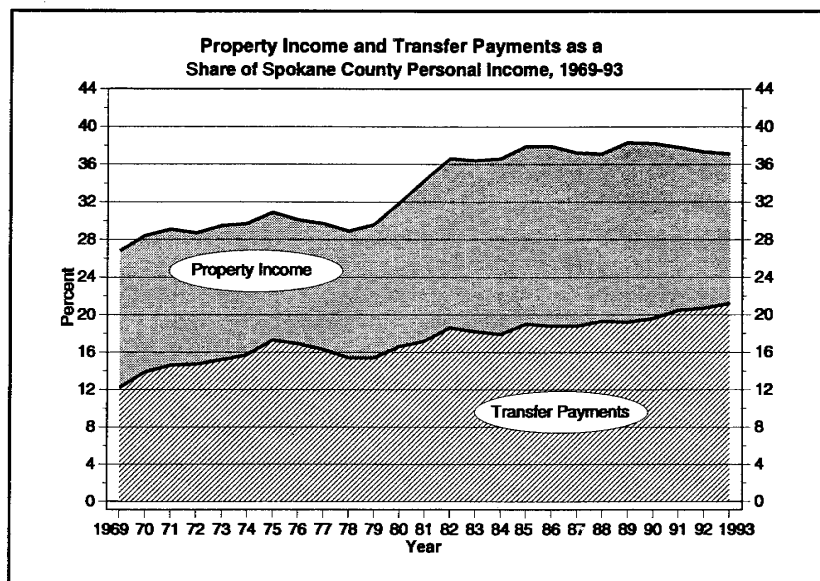


Figure 6

Did differences in the growth among these sources of income and the resulting shifts in their relative importance influence the growth of Spokane's per capita income relative to the nation's? That is, did the growth of property income and transfer payments contribute to the relative shifts in Spokane's per capita income over the past several decades, or were earnings the major cause?

It is possible to answer these questions by using a technique that directly measures the contribution of each income component to Spokane's per capita income growth relative to the nation.<sup>3</sup> We begin by representing per capita income in terms of the four components discussed above:

$$(1) \text{ TPI/N} = \text{E/N} + \text{P/N} + \text{T/N} + \text{IA/N}$$

where:

- N = population,
- TPI = total personal income,
- E = earnings,
- P = property income,
- T = transfer payments, and
- IA = income adjustments.

Equation (1) can now be rewritten in terms of per capita income growth, or annual percent change ( $\%\Delta$ )<sup>4</sup>:

$$\begin{aligned} (2) \quad \%\Delta(\text{TPI/N}) &= (\text{E/TPI})_{-1} \times \%\Delta(\text{E/N}) \\ &+ (\text{P/TPI})_{-1} \times \%\Delta(\text{P/N}) \\ &+ (\text{T/TPI})_{-1} \times \%\Delta(\text{T/N}) \\ &+ (\text{IA/TPI})_{-1} \times \%\Delta(\text{IA/N}). \end{aligned}$$

The sum of each component on the right side of the equation is equal to the percent growth of overall per capita income on the left. The results depicting each income component's contribution to Spokane per capita income growth relative to the national average are depicted in Figures 7-10.<sup>5</sup>

Changes in earnings per capita have been the major contributor to changes in Spokane's relative per capita income (Figure 7). Since the 1970s changes in property income tended to reinforce the effects of changes in earnings. A recent exception to this pattern was 1990-91 when property income's contribution was negative (Figure 8).

Despite the extraordinary growth of transfer payments, their effect appears slight on first inspection (Figure 9). However, one of the most variable components of transfers is the unemployment insurance payments. When employments and earnings turn down, unemployment insurance payments swing up. Thus the sharp decline in per capita earnings recorded over 1984-85 was in part offset by transfer payments gains. Similarly, transfer payments dipped in 1992 following several successive years of strong per capita earnings gains. At the national level unemployment insurance payments are viewed as a counter-cyclical economic stabilizer, and they performed as such also at the local level. Over the past decade the income adjustments component has exerted a slightly negative influence on Spokane's relative per capita income growth (Figure 10).

Changes in earnings are the primary reason for the swing in Spokane's per capita income relative to the national average over the past several decades. Swings in per capita earnings dwarfed the overall effects of the other income components. Although transfer payments and property income became a much more important component of Spokane's income composition, their growth locally generally mirrored their growth nationwide. Differences in the rates of growth of earnings per capita were the key to Spokane's relative per capita income performance.

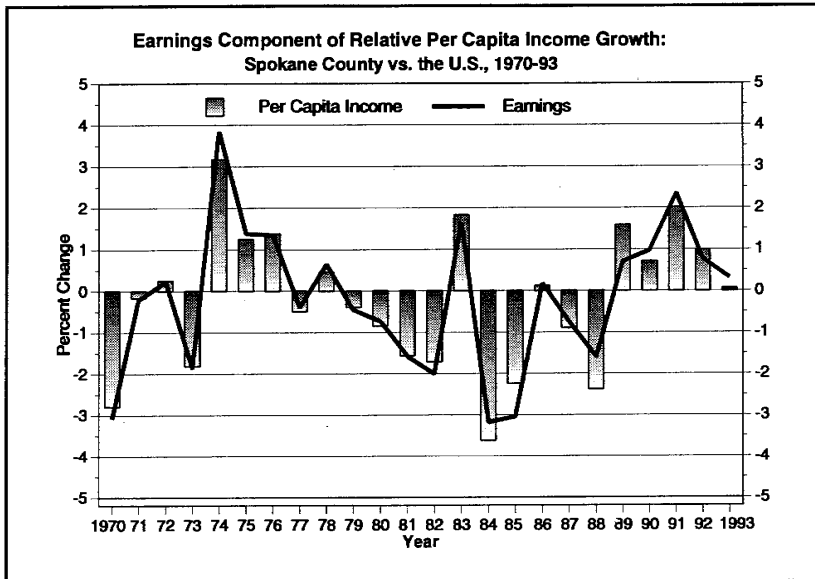


Figure 7

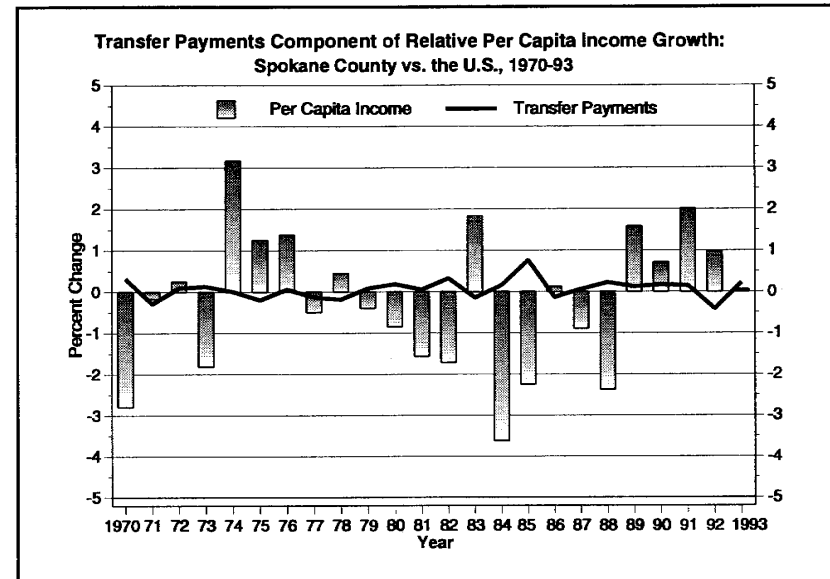


Figure 9

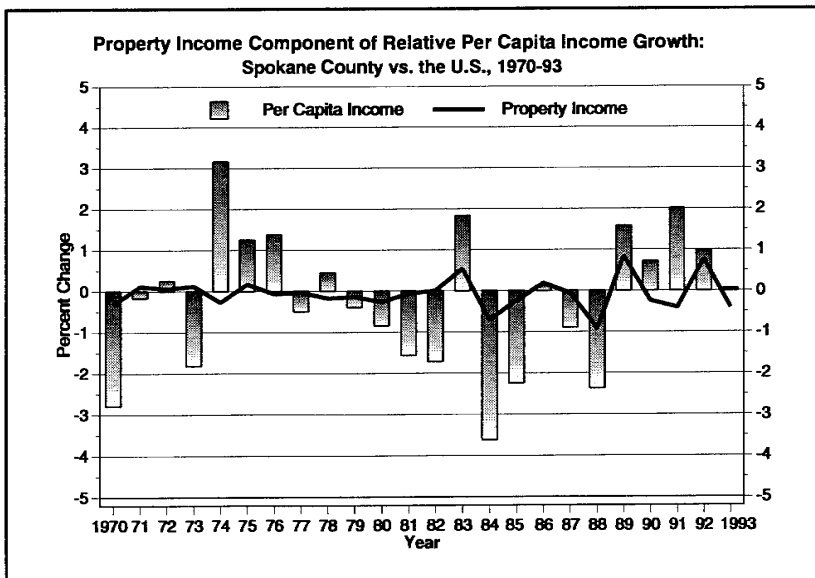


Figure 8

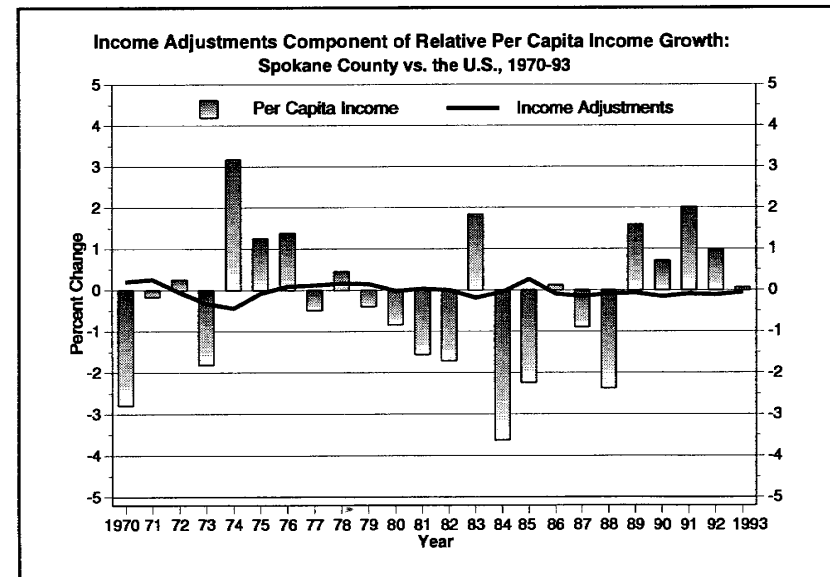


Figure 10

### Spotlight on Earnings

We tend to equate high earnings per capita with high wages. But earnings per capita also depends on the number of workers compared to the total population. If a large fraction of the population works, then earnings per capita may be relatively high even if earnings per worker are not. Moreover, even though average earnings per job within each industry may be relatively high when compared with their national counterparts, the distribution of jobs may be concentrated toward low-wage industries such that the overall average may be comparatively low. Thus, earnings per worker also depends on the distribution of jobs among high-wage and low-wage activities. Over time, differential changes in any of these factors can cause local per capita earnings to grow faster or slower than the national average.

The following equation shows the interaction among these various components of per capita earnings.

$$(3) \quad E/N = H/J \times E/H \times J/N$$

where:

$H$  = hypothetical earnings,

$J$  = number of jobs (full-time and part-time),

$H/J$  = industry mix component,

$E/H$  = differential earnings component

$J/N$  = job ratio component

The product of the components on the right side of this equation is equal to the earnings per capita ( $E/N$ ).

### What are the Sources of Disparity in Per Capita Earnings?

Differences in the industry composition of employment are the most obvious sources of the disparity between local earnings per capita and the national average. A greater local concentration of jobs within the high-wage manufacturing industry, for example, will tend to push up earnings per capita relative to the national average. Similarly, a greater local concentration of jobs in the low-wage retail trade category would tend to depress local earnings per capita below the national average. Differential shifts in the industry mix of jobs in either direction over time will accordingly affect the overall trend.

Often it is assumed that average earnings per job in Spokane County have declined relative to the national average because Spokane has experienced a more pronounced shift toward industries with low-wage jobs. The following analysis lets us test this assumption.

The *industry mix component* is introduced as a means of identifying the extent to which the local industry job mix affected Spokane's earnings per capita relative to the national average. First we estimate what total earnings would be hypothetically ( $H$ ) if we assume that all jobs in each industry were compensated at the national average for that industry.<sup>6</sup> The industry estimates of earnings based on this assumption are then summed to derive an estimate of total *hypothetical earnings* ( $H$ ). When this estimate for hypothetical earnings ( $H$ ) is divided by total number of jobs ( $J$ ) we derive the *industry mix component* ( $H/J$ ). If the mix of jobs in Spokane were concentrated in high-wage industries, then the overall estimate for average earnings per job as measured by the industry mix component would be higher than the national average. Similarly, if the mix of jobs were concentrated in low-wage industries, then the industry mix component would be lower than the national average. The industry mix component removes the influence that actual industry earnings per job may exert on the situation, and isolates just the influence of the local mix of industry jobs.

The bars in Figure 11 trace our estimates for Spokane's industry mix component of earnings per job over 1969-93. They fall below the dashed line depicting average earnings per job nationally over the entire period. However, the difference was never less than 4 percent, and not especially dramatic. Moreover, since the mid-1980s the difference has generally diminished. Thus, the industry mix of jobs has not appreciably depressed earnings per job in Spokane County relative to the national average. More importantly, over 1980-88 Spokane did not experience an adverse shift in its industry mix which would have provoked a decline in local earnings per job relative to the national average. Indeed, the shifts that occurred over the past decade have been slightly favorable. Significant shifts in Spokane's industry job mix did transpire during this period, but the shifts which took place generally paralleled those that occurred nationwide.

The industry mix results clearly show that Spokane did not experience an adverse shift in employment toward industries with low-wage jobs relative to the nation. However, the solid line in Figure 11 shows that average real earnings per job nonetheless declined precipitously over 1980-88. Since an adverse shift in Spokane's industry mix was not a contributing factor, the only explanation for this decline that remains is a differential drop in average earnings across all industries relative to their national counterparts. The *differential earnings component* ( $E/H$ ) reflects differences in average earnings per job after accounting for differences in industry mix (Figure 12). This component is computed as the ratio between actual earnings ( $E$ ) and hypothetical earnings ( $H$ ). It accounts for the relative differences in average earnings trends within all industries.

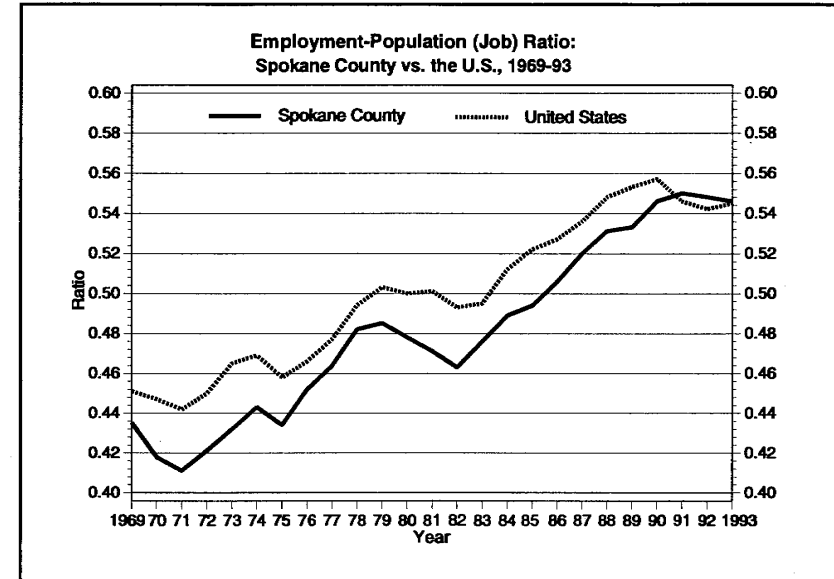
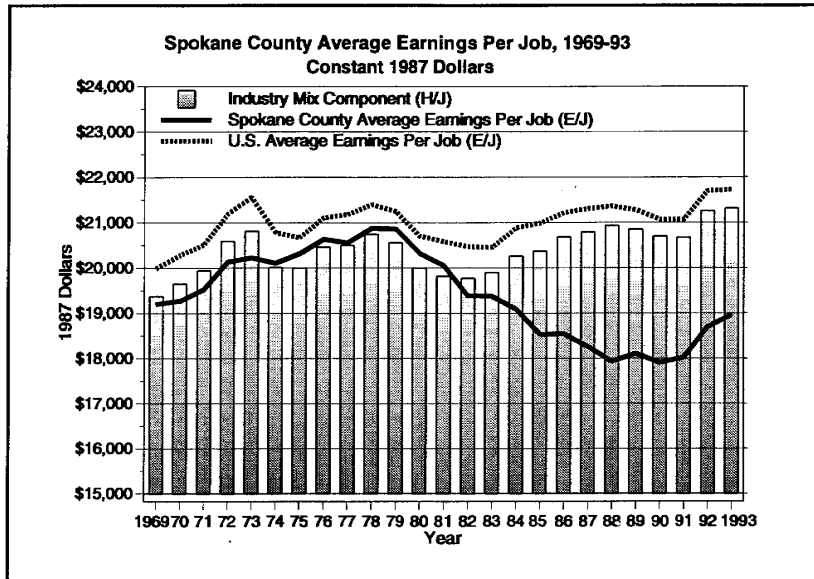


Figure 11

Figure 13

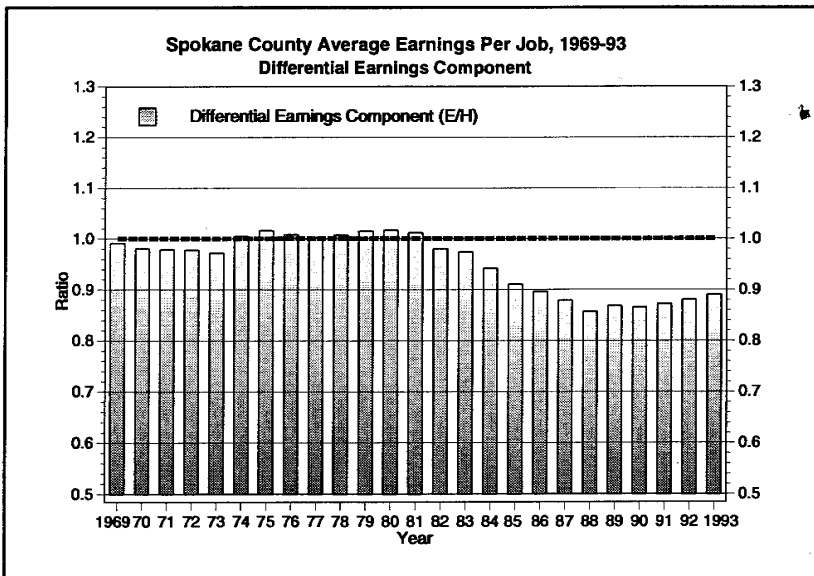


Figure 12

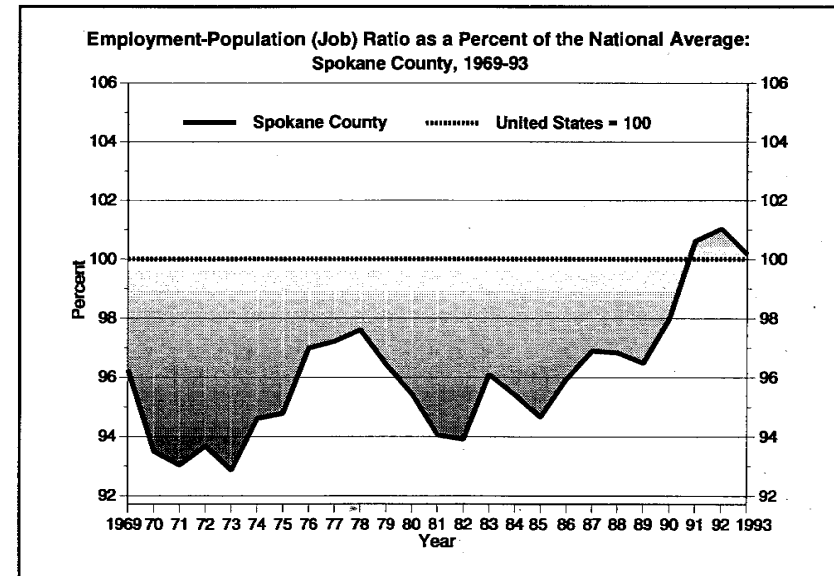


Figure 14



The differential earnings component traced in Figure 12 shows that throughout the 1970s average earnings per job in Spokane County were generally on par with the national average after we control for differences in industry mix. Over 1981-88, average earnings per job fell markedly across all industries relative to their national counterparts. Since 1988, however, the differential earnings component for Spokane County edged slowly—and favorably—up. We shall see later that the differential earnings component has exerted a major influence on Spokane per capita income growth over the past several decades.

A highly variable, important, and often overlooked source of difference in regional earnings per job is the employment-population or job ratio (J/N). The job ratio serves as a thumbnail guide to evaluating a local economy's capacity to generate jobs fast enough to absorb the increasing number of workers that accompany an expanding population. Figure 13 tracks Spokane's and the nation's job ratio over 1969-93, while Figure 14 traces the local job ratio as a percent of the national average.

Several observations regarding the job ratio are in order. First, Figure 13 shows that the ratio for both Spokane and the nation increased significantly over 1969-93. Increases in the labor force participation rate—particularly of women—underlie these long-term trends.

Second, Spokane's job ratio surpassed the national average in 1991 after registering steady gains since the mid-1980s. Third, superimposed on the upward trends in the local and national job ratios are pronounced variations associated with cyclical economic activity. The job ratios fell during the cyclical downturns since 1969: the early 1970s, mid-1970s, early 1980s, and early 1990s. Moreover, the ratios have typically risen during the periods of expansion and growth. Job ratios not only reveal important long-term trends, they also capture short-run cyclical variations in economic activity.

Earlier we measured the contribution of Spokane's earnings per capita to the growth of Spokane's per capita income relative to the national average by using the method summarized by Equation (2). In a similar fashion we can also measure how each of the three components of earnings per capita just discussed influenced the relative growth of local per capita income over time. The formulation for this is as follows:<sup>7</sup>

$$\begin{aligned} (4) \quad (E/TPI)_{-1} \times \% \Delta E &= (E/TPI)_{-1} \times \% \Delta H/J \\ &+ (E/TPI)_{-1} \times \% \Delta E/H \\ &+ (E/TPI)_{-1} \times \% \Delta J/N \end{aligned}$$

Per capita earnings' contribution to per capita income growth, as expressed on the left side of the equation, is equal to the sum of the three components as expressed on the right, (i.e., industry mix, differential earnings and the job ratio). Results portraying the contribution of these three components to Spokane's relative per capita income growth are illustrated in Figures 15-17.

Commentators on Spokane's disappointing per capita income performance relative to the national average often cite the growth of low-wage industries in the area economy as the culprit. In other words, they see the area's industry mix as depressing Spokane's relative per capita income growth. However, Figure 15 reveals that industry mix has not been a major factor underlying Spokane's relative per capita income growth—never accounting for more than 0.5 percent in either direction. Industry mix did not contribute to the relative deterioration in Spokane's per capita income over 1978-87, nor did it contribute to the ensuing improvement over 1988-93.

Are these particular research results of relevance in planning strategies, policies and programs for economic development? If policymakers assumed that the shift in Spokane's industry mix was the cause of the relative decline of Spokane's per capita income during the 1980s, then the results presented here fail to support that assumption. If policymakers presumed from their diagnosis of Spokane's ills that a program focused on recruiting high-wage manufacturing jobs was an appropriate prescription, should we question the prescription if the diagnosis was wrong?

A successful economic development program directed toward recruiting high-wage manufacturing jobs could enhance Spokane's industry mix and thereby improve its relative per capita income performance. However, the results reveal that the role of industry mix component was inconsequential in relation to the marked improvements in Spokane's relative per capita income growth since 1988.

Instead, the deterioration of the differential earnings component—or the decline in average earnings across all industries relative to their national counterparts—contributed enormously to the relative drop in local per capita income over 1981-88 (Figure 16). The subsequent rebound in this component was a major contributor to the recovery in Spokane's relative per capita growth over 1989-93. The relative growth of average earnings across all industries, exclusive of the effects of Spokane's industry mix,

has been the most consistent and influential factor affecting the relative growth of local per capita income over the past several decades.

The job ratio component has been nearly as important a determinant of Spokane's relative per capita income growth as the differential earnings component (Figure 17). The declines posted by this component over 1979-82 suggest that Spokane County was more acutely affected than the nation by the back-to-back recessions of the early 1980s. Yet, the job ratio component's contributions over the past decade has generally been more positive than the differential earnings component.

The lure of attracting quality high-paying manufacturing jobs to improve local per capita earnings has been at forefront of popular thinking. Yet, the results indicate that differential earnings and the number of jobs created—relative to the growth of population—have been the major factors affecting Spokane's per capita income growth in a relative context.

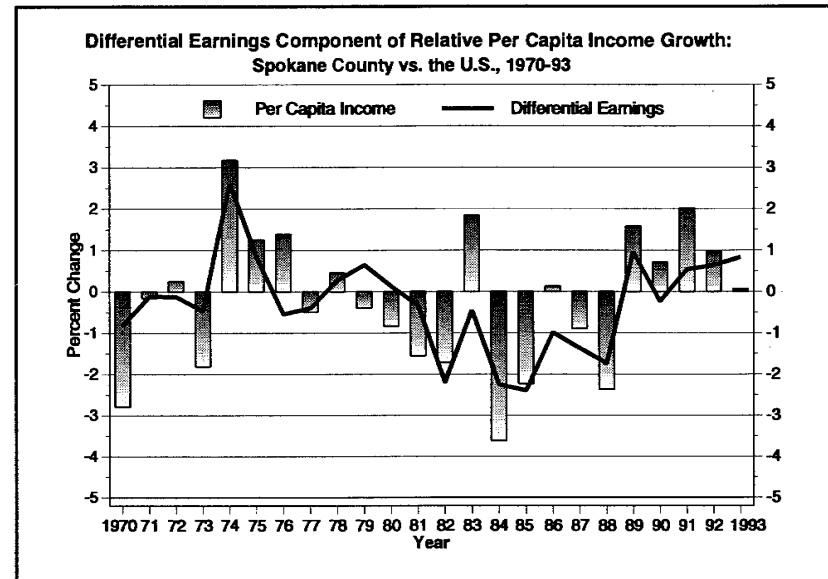


Figure 16

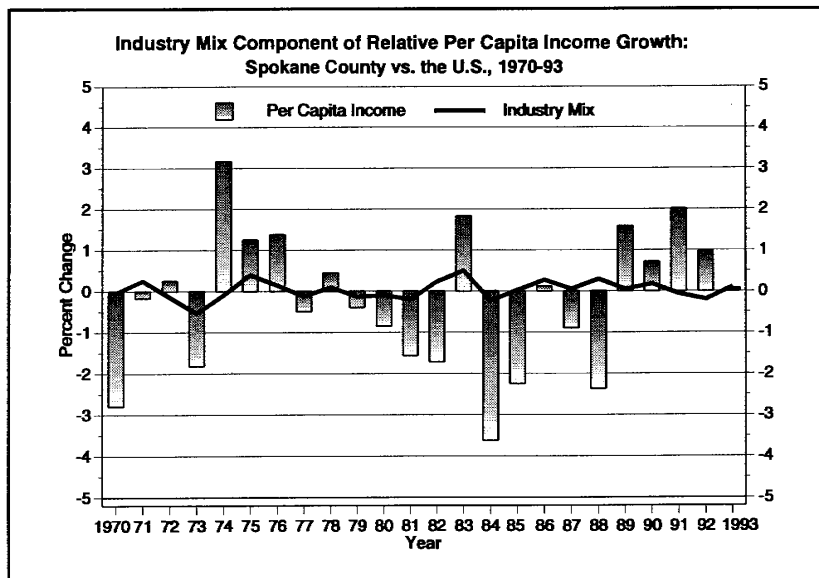


Figure 15

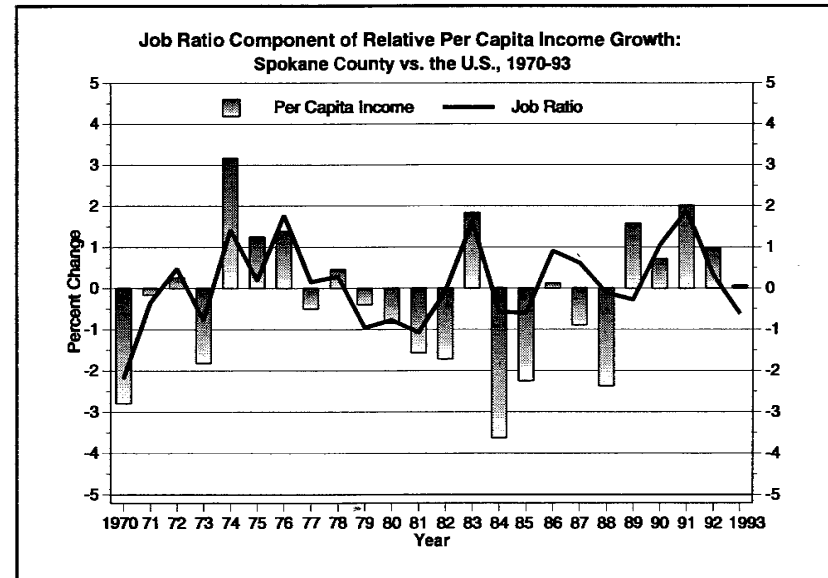


Figure 17

### Synopsis of Results

Over the 10-year period 1979-88, Spokane's per capita income relative to the nation declined 1.17% on average per year. Over 1979-93, it gained ground at a 1.07% clip. Earlier we asked what accounts for these shifts. Were the factors that contributed to Spokane's widening per capita income gap over 1979-88 different from those that contributed to the narrowing gap over 1989-93? Figure 18 summarizes the answers.

First, shifts in Spokane's industry mix played an insignificant role in the changes in relative per capita income since the 1970s. In other words, Spokane's relative earnings per capita did **not** plummet in the 1980s because employment shifted inordinately from high-wage to low-wage activities. Similarly, relative earnings per capita did not improve over 1989-93 because employment grew exceptionally faster in high-wage industries relative to low-wage industries. Rather, the shifts in the industry composition of job in Spokane were generally similar to those which took place nationwide.

Second, most of the changes in Spokane's relative earnings per job and per capita income, during the early 1990s as well as the 1980s, resulted from changes in average earnings per job across all industries

(the differential component). Relative earnings per job across all industries dropped at a 1.10% yearly rate over 1979-88, and accounted for most of the -1.17% decline in relative per capita income. The 0.54% average annual growth of earnings per job contributed to just over half of the average yearly improvement in relative per capita income (1.07%) over 1989-93.

Third, changes in the number of jobs to the size of the population (the job ratio) has played a key role over time. Over 1989-93, Spokane's relative job ratio increased at a 0.46% yearly rate, contributing significantly to the recovery in Spokane's relative per capita income growth.

Finally, despite the striking shifts in income composition over the past several decades resulting from the dramatic growth of property income and transfer payments, the influence of these income components on Spokane's per capita income performance compared with the nation has been fairly minor. The growth and increasing importance of these sources of per capita income locally generally followed the nationwide trend, and so did not contribute to the shifting income gap between Spokane and the nation.

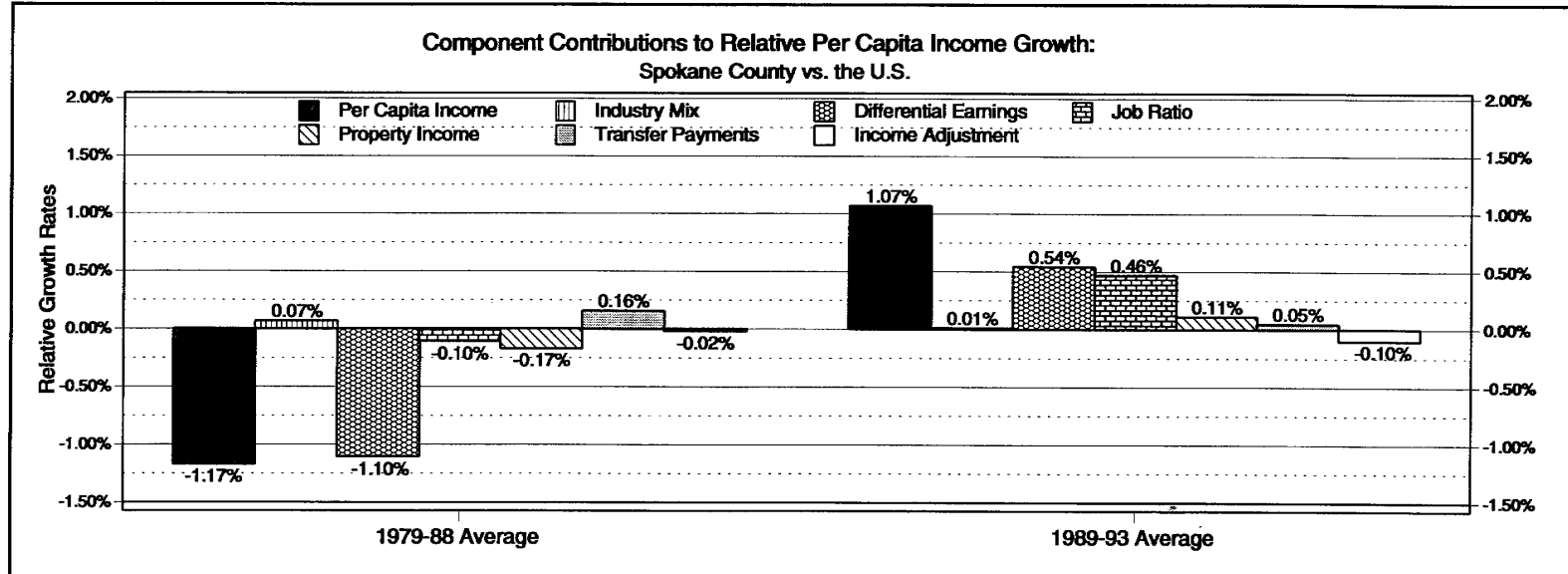


Figure 18

## A Broad Interpretation of Trends

The foregoing analysis shows that shifts in the local industry mix of jobs exerted a negligible influence on the growth of Spokane's per capita income compared with the national average. Instead, two factors largely accounted for the wide swings in Spokane's per capita income gap over the past several decades: the fluctuations in ratio of local jobs to population, and the changes in earnings per job *within* industry sectors relative to their counterparts at the national level. One of the most important and nagging questions remaining unanswered is why earnings per job declined as much as they did during the 1980s, and why they began to recover into the 1990s?

A thorough approach to deal with this question would involve an in-depth examination of the pattern of job and earnings growth among individual sectors in their local, regional and national context. But this goes far beyond the intended reach of this paper. We can, however, begin to address this question by drawing on regional economics theory.

The ebb and flow of the Spokane economy compared with the rest of the nation likely provided much of the push and pull to local average earnings per job. There are two views of regional growth and change which in combination offer reasonable approaches to interpreting events since the 1970s. They are the export base theory, and the theory of wage convergence and cost equalization.

The export base interpretation focuses attention on the short run impacts that positive and negative shocks can exert on local export-oriented industries. Such impacts affect more locally oriented industries through the multiplier effect. Economic shocks, even when they originate at the national or global level, can more significantly affect some regions than others as a result of regional differences in industry composition. Negative shocks which weakened Spokane's economic performance during much of the 1980s include the rise and decline of energy and commodity prices, the sharp upswing in the international exchange rate value of the U.S. dollar, and business cycle downturn in the national economy.

Spokane's primary metal industry (aluminum) is an example of one portion of Spokane's export base which serves national and international markets and whose performance has been directly affected by such shocks. A significant segment of the services-producing sources of jobs and earnings originating in Spokane are highly export-oriented, in the sense that they serve broader regional markets popularly dubbed as the Inland Northwest. The economic shocks noted above dramatically affected the region's agriculture, mining and wood products industries and, in turn, the services-producing components of Spokane's economy

driven by exports to this regional market. Given the economic travails which continued to nag the region's resource-based sectors throughout most of the 1980s, it should come as no surprise that lackluster growth of jobs and earnings also permeated Spokane's regional export-oriented services economy. The decline and persistent weakness of Spokane's export base industries had a powerful multiplier effect on more locally oriented industries including the local real estate, construction and financial services industries.

Thus, the economic weakness of the Spokane economy in the early through mid-1980s was induced by the local and regional concentration of basic (export-oriented) industries that were especially vulnerable to the cyclical downswing of the national economy, the drop in energy and commodity prices, and the upswing in the international value of the dollar. Multiplier effects further weakened local economic activity, culminating in migration outflows as workers sought out better employment opportunities elsewhere. The decline and stagnation of Spokane's economy during this period was reflected in a decline in wages and earnings per job across all industries relative to their counterparts nationally.

The eventual dampening of the energy cycle, the recovery of commodity prices, and the lowering of the dollar exchange rate in the second half of the decade brought about a return to conditions more favorable to the export-oriented industries of Spokane and the region at large. Accordingly, conditions in the local labor market improved, and the downward spiral in relative earnings per job was finally muffled.

Labor costs among regions tend to converge. This is another way to explain regional development patterns and understand the swings in Spokane's relative earnings per job. The cost equalization interpretation of regional patterns of economic growth centers on the tendency of capital to flow toward low-wage areas, while labor is motivated to migrate toward higher-wage regions. This view is not necessarily incompatible with the export base notion. But the cost equalization view focuses on the longer-term tendency toward the convergence of wages among regions, while the export base approach gives attention to the short-term impacts of economic shocks.

The economic shocks that adversely affected Spokane's basic industries in the early 1980s overwhelmed any offsetting longer term tendencies toward cost convergence. Yet, the wage gap that developed by the mid-1980s nourished a situation where the longer-term influence of market forces toward cost equalization would likely exert greater influence. Thus, a reversal of the shocks that derailed the Spokane economy earlier in the decade reinforced the equilibrating forces of cost equalization, and induced a rebound in job and relative earnings growth which persisted through the national recession and beyond.

### Economic Development Issues and Implications

What does this mean about how or where Spokane should address its economic development efforts? Do the results suggest anything different from the conventional wisdom? Does the analysis offer anything which would suggest changes in the current thinking underlying economic development policies?

These questions are, of course, interrelated. Addressing them requires that some heroic inferences be made about what is "the conventional wisdom" and "current thinking underlying economic development policies." The risk associated with any venture to constructively address these questions is that such inferences may be well off the mark. While our intent is not to set up a straw man, the reader may use his or her own judgment.

Abundant evidence has appeared in the popular press and in the public pronouncements of local economic development practitioners that the problem underlying Spokane's dismal performance in the 1980s has been attributed to its failure to adequately attract and retain high-paying manufacturing jobs. From this perspective, Spokane was adversely affected by the growth of low-skill, low-paying jobs among the services-producing sectors of the economy.

This interpretation attributes Spokane ills to an adverse shift in its industry mix described above. Analysis of the data, however, fail to support this view. Instead, the data indicate that Spokane's earnings per job consistently fell below the national average. But the industry mix factor did not change appreciably over time. Rather, the results reveal that the root cause was the deterioration in earnings per job across all industry categories relative to their counterparts nationally, regardless of whether they were high- or low-wage industries.

These results are consistent with an economic base explanation. This attributes Spokane's dismal performance in the early 1980s to the confluence of several external shocks which adversely affected the export industries of Spokane and also the resource-based industries throughout the Inland Northwest. In some sense, Spokane indirectly suffered from an industry mix problem due to the way Spokane related to the region at large. Although Spokane's services industries continued to grow during this period, they too under-performed relative to their national counterparts. It is accurate to say that job growth was faster among Spokane's lower-paying industries. But in relative terms the shift in Spokane's industry mix was not appreciably different from the shift which took place nationwide. In short, the view that the decline in Spokane's relative per capita income and earnings per job resulted from an adverse shift toward low-paying industries simply does not jibe with the facts.

### Why Is there a Manufacturing Bias in Local Economic Development Policy?

There is also ample evidence in the popular press that the industry mix diagnosis of Spokane's economic malady produced a policy prescription for local economic development which centers on recruiting high-wage manufacturing jobs. Even though the industry mix diagnosis of Spokane's economic ills may have been off the mark, there are many reasons why recruiting high-wage manufacturing jobs may have been a suitable prescription.

First, as a result of the earnings gap that materialized during the 1980s, Spokane was historically positioned toward the end of the decade to kick-start the economy based on the cost equalization theory of regional growth. Moreover, it is not just any capital, but primarily manufacturing capital, that seeks out low-wage areas. Making the most of Spokane's low-wage advantage simply made sense.

Second, even though the evidence fails to support the notion that adverse shifts in the local industry mix aggravated Spokane's problems during the 1980s, the idea that conditions could improve by enhancing Spokane's industry mix is intuitively appealing. The logic that attracting manufacturing jobs that pay higher than the overall average will bolster that average seems very simple. Was the policy and program of industry recruitment successful? If the development policy objective was to improve the overall mix of jobs toward high-wage industries, then the results based on evidence through 1993 do not show it. Relative to the changes in industry mix that have occurred nationwide, Spokane's situation has not discernibly improved. And while earnings per job have improved, they generally improved across all industry groups.

One can reasonably argue that the numerical analysis and tracking of trends presented here fails to identify and sort out important ingredients relating to cause and effect. And certainly local industry recruitment policies and programs would be identified as one causal factor. But one can similarly suggest that the recent recovery of job and earnings growth in Spokane are also congruent with the export base and cost equalization notions of regional economic performance.

Third, economic development professionals encourage manufacturing industry recruitment programs because they can easily demonstrate that manufacturing jobs are higher paying than the overall local average. Also, this strategy has greater widespread appeal as goods-producing export activities are generally considered to make up the underlying economic base of regions. Services-producing activities are traditionally regarded as the nonbasic component of the local economy. This means that many see the growth of services as a result of the growth of exports generated

from the local goods-producing segment of the economy. Only recently has the notion that exports stemming from services-producing activities also comprise the economic base of regions begun to gain greater recognition.

Fourth, success in attracting a manufacturing firm is highly visible. The direct employment and income effects are measurable, and the local development team receives abundant media coverage for its effort. Economic development programs can be high-risk and high-cost. Therefore, tangible, measurable and highly visible results that can be readily recognized by the public at large are desired. On all counts, recruiting a high-wage manufacturing firm fills the bill. A successful program that improves relative per capita income by increasing the quantity and quality of child day care facilities—thereby increasing the labor participation rate among less affluent two-wage earner families—would probably not meet these requirements.

A fifth reason for focusing on recruiting manufacturing jobs as the prescription for Spokane's economic development is that everyone else seems to be doing it. In some circles recruiting manufacturing firms and economic development are considered to be one and the same. Policymakers may feel compelled to devote scarce resources to industry recruitment out of apprehension that they may place the community at a disadvantage should they do anything else. It is probably safe to say that a community the size of Spokane would be both unique and conspicuous if it did not include industry recruitment at the top of their economic development priorities.

Sixth, opting to focus on industry recruitment does not require local business and community leaders to devote their time and energy to strategic analysis and planning in order to carefully identify and implement other less obvious options. Mobilizing scarce resources and energizing disparate community interests in support of any economic development project is not easy. Industry recruitment is generally the line of least resistance.

Finally, recruiting manufacturing jobs will likely endure as the economic development priority in Spokane because of the notion of cumulative causation. Cumulative causation draws from the concept in regional economics that growth—or decline—tends to feed on itself. We should expect a bias toward recruiting manufacturing jobs, especially after community and business leaders have already channeled scarce resources, established a cadre of competent recruitment professionals, and projected the community's external and internal image based on the perceived results of the program. Further, we should also expect there would exist an abundance of data assembled pointing toward just one conclusion: the program was well worth the investment.

In the absence of a critical examination of the rationale and results of current policy, or consideration of other viable options, the causes for a bias toward continued further investment of scarce community resources toward recruiting manufacturing jobs remain self-reinforcing.

### **Recruiting Manufacturing Jobs: A Debatable Strategy?**

Even with all these factors, a development strategy centered on attracting manufacturing firms runs counter to the sources of current and expected future job growth. Nationally, the number of manufacturing jobs slipped from 21.5 million in 1979 to 18.7 million in 1993, and as a share of total jobs, manufacturing slipped from 19.0 percent to 13.3 percent. A variety of reasons help explain this phenomenon.

First, technological change has had a greater impact on goods-producing activities. Scientific and technological advances permitting more output with fewer workers have been especially important to productivity gains in manufacturing, agriculture, construction and mining. Thus, employment growth in manufacturing has been limited more by rapid advances in productivity than by a decline in the demand for manufacturing output. Goods-producing activities will remain a competitive and vital component of the national economy. But prospects are bleak that there will be much of an increase in the absolute number of manufacturing workers required. Local development policies that focus on recruiting manufacturing jobs appear to be at odds with the trends in job creation.

Second, the globalization of trade has limited the growth of manufacturing jobs in this country. The U.S. and the Spokane economies have become increasingly open to foreign trade with respect to both imports and exports. While U.S. exports have penetrated foreign markets, many standardized manufacturing processes—such as computer keyboard assembly—have moved to lower-cost areas overseas. This places Spokane in direct competition nationally and internationally for a dwindling, rather than growing, source of future jobs. Moreover, trends also suggest that manufacturing firms choosing to locate within the Spokane area because of lower wage costs may be equally willing and likely to locate elsewhere in the future in their continuing search for low wages. Manufacturing jobs—be they high- or low-wage—have been among the most vulnerable to being displaced by overseas competition.

Third, one must question the superiority of manufacturing jobs and their contribution to regional economic vitality when one looks at the disparate economic performance of regions. Nationwide, some of the most rapidly growing areas over the past several decades began with, and still have the smallest share, of manufacturing employment. Closer to home, the Central Puget Sound region continues to thrive in the 1990s despite the

dire outcome originally expected from the loss of more than 30,000 high-wage aerospace manufacturing jobs.

Fourth, changes in the way manufacturing firms do business have shifted the industry distribution of job growth. Manufacturing firms have "contracted-out" many activities—hiring outside firms to undertake work that was formerly done by workers in-house. Many service jobs relating to accounting, computer programming, design, engineering, legal, and even personnel services are now classified under services because manufacturing firms have farmed-out their functions. Thus, an important component of the employment growth in services would formerly have taken place in manufacturing. The transfer in the reporting of jobs from manufacturing to services in the official statistics has in part disguised, and also understated, the role and importance that manufacturing still plays in a changing economy.

However, these changes are more than a definitional artifact. They reflect a new approach to organizing production activity. Technological change and specialization has made it far more efficient, and cost effective, for firms to purchase specialized professional services. The complexity and sophistication required of many tasks necessitates greater reliance on specialized and reputable outside firms, rather than attempting to develop, maintain, and monitor in-house expertise. By purchasing such services, entrepreneurs and small businesses share the fixed costs with others like themselves.

Services, particularly producer services, (those used mostly by business), are becoming a far more significant input in the production of goods and services. Firms increasingly focus their attention on identifying and targeting niche markets and meeting varying consumer demands. Technological improvements have enhanced flexibility in production making it possible to create customized products at costs that come close to mass production. Producer service inputs play an ever greater role in the value added chain. Such changes in output markets have fostered the growth of employment in services apart from shifts due to contracting out.

A fourth reason for the decline in the share of manufacturing employment stems from the notion that as the affluence and incomes of consumers increase, their demands shift toward consumption of services relative to goods. This shift has been prevalent historically as nations have grown more prosperous. Some services—such as amusement, recreation and personal services—contribute vitally to the convenience, comfort and quality of life. Other consumer-oriented services, such as health and medical services, educational services, and even hotel and lodging services, are indispensable to improving labor force productivity, and are therefore also vital to business prosperity.

### **A New Role for Services?**

In our changing economy, the vertically integrated, local character of the traditional manufacturing process is becoming less prevalent. Advances in communications technology and transportation networks have allowed the manufacturing process to become more diffuse with regard to research, product design, parts, assembly, management and control. As a result, the inputs and sources of value added for a given product may originate from a worldwide network of suppliers. National and local economic prosperity remain closely tied to the fortunes of goods-producing industries. But they are not as vital to the long-term prosperity of regions as they were in the past. The automobile, with its inextricable link to manufacturing, transformed the social and economic landscape during this century. Similarly, the computer—with its inextricable link to knowledge-based services activities—will transform the social and economic terrain in the next century.

The changing composition and increased complexity of economic activity has profound implications for local economic development strategy planning. The bias toward recruiting manufacturing jobs held by many local economic development strategists and practitioners warrants questioning for the reasons discussed. Such bias can be a double-edged sword. A preoccupation with focusing on recruiting high-wage manufacturing jobs may divert attention away from the need to undertake a careful and comprehensive analysis of potentially more resourceful development opportunities. In the aggregate, little or no employment growth can be expected from manufacturing. Perhaps the changing role and potential of services as a driver in local economic development has been overlooked.

### **What Makes Up Services**

For good reason there is considerable misunderstanding about what makes up the services sector. The label "services" is used to represent a broad grouping of industries call "service-producing" industries, and it is also used to denote a particular industry category within this group. Besides services, other industry categories included within the "service-producing" grouping are trade; finance, insurance and real estate (F.I.R.E.); transportation, communication and public utilities; and government. The "goods-producing" industry grouping includes agriculture, forestry and fishing; mining; construction; and manufacturing. The much discussed shifts toward services pertain to shifts from the goods-producing group to the service-producing, as well as shifts from the manufacturing industry category to the services category.

The services industry category itself is confusing and often misunderstood since it is so diverse that it is nearly impossible to characterize. At one time services was a kind of "miscellaneous" category consisting of vastly different activities many of which were too small to justify their own identification. Today, health services and business services are by far the two largest components within the services category. In 1993 national employment in health services (10.0 million) and business services (8.9 million) accounted for 46 percent of total services employment (40.8 million). In combination, employment within these two categories exceed total manufacturing employment (18.3 million). Other major services categories are personal services (e.g., beauty shops and cleaning services—2.5 million), social services and membership organizations (e.g., family services, child day care services and fraternal associations—4.2 million), amusement and recreation services and motion pictures (2.6 million), other services (e.g., engineering, management and research services—4.4 million), and educational services (i.e., primarily private—2.1 million). Employment in all the services categories expanded over the past several decades, except for private household services.

### Long-term Employment Projections

Long-term economic projections are necessarily speculative, judgmental, and usually are based mainly on extrapolation of historical trends. Yet, they provide useful insight when considering potential targets for economic development priorities. Recent 50-year industry employment projections prepared by the Bureau of Economic Analysis (BEA) provide an interesting profile of sources of future job growth (Figure 19).

Over 1993-2045, BEA projects employment in health services to more than double, expanding from 10.0 to 21.2 million. Business services employment is projected to swell at a similar pace, from 8.9 to 18.6 million. Pairing these projections with those for manufacturing employment yields some rather striking results. Manufacturing employment is projected

### Employment by Place of Work for the United States

Industry	1993 Estimates		2045 Projections		1993-2045 Percent Change
	Employment (1,000s)	Percent of Total	Employment (1,000s)	Percent of Total	
<b>Total</b>	<b>140,616.5</b>	<b>100.0</b>	<b>208,789.0</b>	<b>100.0</b>	<b>48.5</b>
<b>Goods-Producing</b>	<b>31,123.8</b>	<b>22.1</b>	<b>35,728.6</b>	<b>17.1</b>	<b>14.8</b>
Agriculture and farming	4,577.6	3.3	5,468.3	2.6	19.5
Mining	891.7	0.6	644.5	0.3	-27.7
Construction	6,943.0	4.9	10,425.2	5.0	50.2
Manufacturing	18,731.5	13.3	19,190.6	9.2	2.5
<b>Service-Producing</b>	<b>109,472.7</b>	<b>77.9</b>	<b>173,060.5</b>	<b>82.9</b>	<b>58.1</b>
Transportation and public utilities	6,623.3	4.7	9,375.9	4.5	41.6
Wholesale and retail trade	30,194.5	21.5	44,088.8	21.1	46.0
Finance, insurance and real estate	10,341.6	7.4	14,982.2	7.2	44.9
Services	40,801.3	29.0	76,883.9	36.8	88.4
Hotels and other lodging places	1,783.2	1.3	2,959.1	1.4	65.9
Personal services	2,519.2	1.8	3,404.2	1.6	35.1
Business and misc. repair services	8,899.4	6.3	18,654.6	8.9	109.6
Auto repair, services and parking	1,451.2	1.0	2,433.9	1.2	67.7
Amusement and recreation	2,649.6	1.9	4,684.8	2.2	76.8
Health services	10,027.7	7.1	21,310.0	10.2	112.5
Legal services	1,404.6	1.0	2,283.1	1.1	62.5
Educational services (private)	2,140.0	1.5	3,404.6	1.6	59.1
Social services and membership org.	4,226.0	3.0	8,130.5	3.9	92.4
Private households	1,345.0	1.0	954.2	0.5	-29.1
Other services	4,355.4	3.1	8,664.9	4.2	98.9
Government	21,512.0	15.3	27,729.7	13.3	28.9

Source: BEA Regional Projections to 2045. Volume 1, States, July 1995.

Figure 19

to increase from 18.7 million in 1993, to 19.2 million by 2045. Thus, by 2045 health services employment is expect to exceed that of manufacturing, and business services employment will nearly match it.

Manufacturing's share of total employment will slide to 9.2 percent, while the share from business and health services will expand to 19.1 percent. *More telling, however, is that for each new job likely to originate from manufacturing, about 45 additional jobs are expected to emerge from health and businesses services.* As for the remaining balance of categories under services, over 1993-2045 employment is projected to grow by around two-thirds, from 21.9 to 36.9 million—or roughly 32 jobs for every one manufacturing job.



### Earnings in Services

Because earnings per job in services are perceived to be low relative to manufacturing, there is a great concern about the growth potential of this sector. There are a variety of factors to consider relating to this point. First, there is a great deal of disparity in average earnings within the services sector owing to the wide variety of activities included in this category. Average earnings in personal services and hotel and lodging places are almost one-half that of manufacturing. Earnings in the professional services categories, such as health, business, legal and educational services, match those in manufacturing. It is among the higher-wage categories within services where the greatest growth in employment is projected.

Second, self-employment is more prevalent in services than in manufacturing and most other industries. Many doctors, lawyers, accountants and professional consultants are not only self-employed, but members of a high-wage group. When we think of an economic development strategy that intends to foster the growth of small business, it must target on the self-employed within the services category.

Third, some of the differences in earnings and job-growth between services and manufacturing are gender-related. Regardless of the industry category, women on average earn far less than men. When we think of the disappearance of high-wage blue-collar manufacturing jobs, we should remember that such jobs were generally unavailable to women. The earnings of women employed in services are very similar to the earnings of women employed in manufacturing. However, the barriers to the employment of women in services have been substantially less than in manufacturing. Therefore the proportion of women employed in services is much greater than in manufacturing.

While jobs in services have been more accessible to women, we should not infer that services jobs are more egalitarian in terms of wages paid to women. Indeed, the opposite is true. The average earnings in services for men is actually above that of manufacturing. Thus, men hold a disproportionate share of the high-wage jobs in services even though their share of employment in services is much lower than manufacturing. The growth of employment and changing structure of wages between men and women in the economy is a complex and evolving affair. Developments in the services sector will likely remain at the forefront of this issue.

Fourth, part-time jobs are more widespread in services than in most other industries, with the retail trade sector being the most notable exception. Persons holding part-time jobs are not only paid less, they

are also less likely to qualify for and receive pension, insurance and other employer benefits. Such benefits are becoming an increasingly important component of the total compensation package accruing to workers.

But it may be misleading to infer that part-time jobs are undesirable. The flexible hours and ease of entry provided by part-time jobs gives more people greater access to employment than would be otherwise possible. Of course, there are people who hold part-time jobs who wish they were fully employed. But most people who work part-time generally do so by choice. We should not assume that a teenager who works after school, or the dentist who works just four days a week, are underemployed.

By expanding the potential for employment across a wider proportion of the work force, part-time service jobs obviously contribute to lowering the overall average for earnings per job. But the arithmetic also works in another way, and this should not be ignored. Part-time jobs enhance the level of total earnings for the work force and population overall, (remember the job ratio), and thereby augment local per capita income.

Fifth, comparisons of earnings in services with those of other industries are greatly affected by the treatment of part-time jobs. Differences in compensation are not nearly as great when hourly wages in services are compared with hourly earnings in other industries, or when the annual earnings of full-time workers in services are compared with those of manufacturing. Also, the worker who holds two part-time jobs is counted twice when average earnings per job are computed.

Sixth, in contrast to manufacturing, services has a greater proportion of both low-wage and high-wage jobs, and a smaller proportion of jobs within the mid-range of earnings. Some services firms are relatively small, require minimal worker training, and little capital. Entry is comparatively easy, worker productivity is low, and wages are paltry. By contrast, other services activities require high levels of human as well as physical capital, and formal education is critical to gaining employment. High wages prevail. The dwindling high-wage, blue-collar jobs that still provide for the large bulk of the middle range of earnings within the manufacturing sector are virtually absent in services.

Finally, for many workers, services jobs provide nonmonetary satisfaction and self-fulfillment that cannot be found elsewhere. People become teachers, researchers, entertainers, health and social workers for personal rewards other than monetary gain. In general, wages in such jobs are correspondingly lower. Nonpecuniary returns compensate for the difference.

### The Emerging Role of Services in Local Economic Development

Local economic development policies have been dominated by the notion that public investment in infrastructure should be aimed at stimulating the growth of goods-producing industries, especially manufacturing. These policies call for the development of industrial parks, the provision of financial incentives, and the implementation of industry recruitment programs. These strategies follow from the traditional view that the primary means to improve a community's economic well-being is to produce and sell more goods to outside buyers.

Goods-producing industries are conventionally viewed as the basic source of most wealth, value added and high-paying jobs. Services, on the other hand, are viewed as the dependent, nonbasic component within the local economy, which merely recycle the incomes created from manufacturing and other goods-producing sectors. Services activities are thought to grow only as a result of a healthy manufacturing sector. From this standpoint they do not create new wealth or serve as a source of new income in an area. Thus, attracting manufacturing jobs has been viewed as the most effective vehicle for creating high paying jobs and providing the basis for income growth.

Although the export-base model is the simplest explanation for regional growth and trade, it has many aspects that remain relevant today. However, the role played by services has changed considerably from the traditional goods-oriented view of the export-base model. Although services are not storable and may not be physically transported, they nonetheless are exported directly, generate new income, and stimulate local economic expansion and development.

Services are exported directly in two ways: individuals travel to the area to purchase services, or service activities are transported and sold to persons or firms outside the area. For example, in the health or legal services sectors, clients visit the service provider or the service provider calls on the client. Increasingly, many services activities can be transported electronically. Electronic communication is becoming the backbone for transporting the output of services activities relating to computer programming, data processing, research, and engineering services to name but a few. Dollars drawn into an area from services exports provide the same stimulus to the local economy as dollars earned from manufacturing firms. The export-base model is as relevant today as in the past if we recognize the need to include services as a viable component of the economic base of regions.

Also important from a development viewpoint is that many services activities formerly reported under manufacturing have become far more

footloose than they were in the past. Locational proximity is no longer an issue for many of the high-skill, high-wage service-related jobs that enter the value added chain of the goods-producing sector today. Thus, many well-paid services activities formerly housed under manufacturing no longer need to be located near the scene of production.

This has two important implications from the standpoint of pursuing industry recruitment as the primary vehicle for local economic development. First, many services activities formerly linked with manufacturing have become fair game for local recruitment. Second, the potential spin-offs from recruiting manufacturing firms may now be much lower than in the past. High-skill, high-wage service-related managerial and technical jobs may no longer accompany or relocate with manufacturing jobs as they have in the past. Economic developers are playing with a new deck of cards as a result of the changing role of services in our economy.

The discussion thus far has focused on giving greater recognition to the potential role of the expanding services sector as a vital component of the export base of the local economy. Just as exporting services can draw dollars into a region, importing services may be a source of dollar outflows. Creating new jobs and income by focusing on expanding the economic base of a region should not occur at the expense of overlooking the potential for creating new jobs and income by furthering the development of the local services sector through import substitution.

Import substitution seeks to replace goods and services imported from outside the area with local sources of supply. Producing services locally to displace those that are imported enhances the recirculation of the dollars that are drawn into an area, strengthens linkages and amplifies local value added, and augments the economic impact and multiplier effect of the region's export-base.

Policymakers and economic development practitioners need to be aware of the changing role and emerging importance of the services sector in furthering the development of the local economy. They should be mindful that not all services jobs are low wage—as some would suggest—and that part-time services jobs are not necessarily undesirable. It is critical they be conscious that services can be exported outside the region, and not overlook the potential for furthering the growth of the local services sector through import substitution. Attracting and accommodating the expansion of services jobs should not be neglected when formulating and implementing a local economic development program.

## Summary

The gap between Spokane's per capita income and that of the nation has changed dramatically over the past several decades. Spokane's per capita income closed to within 96% of the national average in the late 1970s, only to recede to 85.4% of that average by 1988. The trend again reversed and Spokane recouped some of the ground lost over during the previous decade, and by 1993 Spokane's per capita income reached 90.1% of the U.S. average. This paper examined various of the factors which contributed to these shifts.

The research results presented here run contrary to the popular notion that Spokane's per capita income plummeted during the 1980s because of an inordinate adverse shift in employment from high- to low-wage industries. Although significant shifts in Spokane's industry job mix did transpire, they were generally parallel to those occurring nationwide. Moreover, the results also reveal that changes in the local industry mix of jobs played an inconsequential role in the marked improvement in Spokane's relative per capita income since the late 1980s.

Most of the change in Spokane's per capita income relative to the nation resulted from the rise and fall of average earnings per job within almost every industry—compared to their counterparts nationally. The growth and decline of average earnings per job across all industries, exclusive of the effect of the shifts in Spokane's industry mix, has been the most consistent and influential factor affecting the relative growth of local per capita income over the past several decades.

Changes in the fraction of the number of jobs relative to the size of the local population (the job ratio) has also played a key role over time. The rise in the local job ratio was a particularly significant factor contributing to the recovery in Spokane's relative per capita income growth since the late 1980s.

The composition of Spokane's personal income has changed markedly over the past several decades owing to the striking growth of property income and transfer payments. Yet, results reveal that the influence of these income components on local per capita income relative to the national average has been fairly minor. The growth and increasing importance of property income and transfer payments sources of local per capita income generally followed the nationwide trend. They did not contribute to the shifting income gap between Spokane and the nation at large.

The playing field for local economic development initiatives has been transformed by fundamental and systematic changes in the fabric of economic activity, such as shifts in the role and relation between goods-producing and service-producing activities. Despite such changes, many communities remain preoccupied with recruiting manufacturing jobs to foster local economic prosperity and development. Services jobs are viewed as low-paying activities that do not generate new incomes and which grow only as result of a healthy manufacturing sector.

In the absence of a critical examination of the results and rationale underlying current policies or consideration of other viable options, communities which persist in their bias toward recruiting manufacturing jobs may be surrendering a portion of their future economic base to other regions. Implicitly, they may relinquish the opportunity to capture their equitable share in the economic future of this country. Attracting and accommodating the expansion of services jobs is not a silver bullet that will assure local job growth and income prosperity. However, in the contemporary setting it is one option that must be an essential part of a balanced approach toward local economic development.

## Notes

1. The per capita income and industry earnings and employment data used in this report are compiled by the Regional Economic Measurement Division of the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. Constant 1987 dollar estimates are computed using the Implicit Price Deflator for Personal Consumption.
2. For a comparison of Spokane's per capita income growth and performance with the other 38 counties in Washington State, see Smith (1994).
3. The methodology presented in this paper draws in part from Garnick (1990) and *State of Washington Economic and Revenue Forecast* (November 1990).
4. The arithmetic involved in getting from Equation (1) to Equation (2) entails the following steps. First, Equation (1) can be expressed as differences between time periods.

$$(1A) \quad (TPI/N) - (TPI/N)_{-1} = [(E/N) - (E/N)_{-1}] \\ + [(P/N) - (P/N)_{-1}] \\ + [(T/N) - (T/N)_{-1}] \\ + [(IA/N) - (IA/N)_{-1}].$$

Using difference notation Equation (1A) becomes,

$$(1B) \quad \Delta(TPI/N) = \Delta(E/N) + \Delta(P/N) + \Delta(T/N) + \Delta(IA/N).$$

Dividing equation (1B) by  $(TPI/N)_{-1}$  yields,

$$(1C) \quad \Delta(TPI/N)/(TPI/N)_{-1} = \Delta(E/N)/(TPI/N)_{-1} \\ + \Delta(P/N)/(TPI/N)_{-1} \\ + \Delta(T/N)/(TPI/N)_{-1} \\ + \Delta(IA/N)/(TPI/N)_{-1}.$$

For the successive terms on the right-hand side of equation (1C), multiply and divide by  $(E/N)_{-1}$ ,  $(P/N)_{-1}$ ,  $(T/N)_{-1}$ , and  $(IA/N)_{-1}$ , respectively. This is equivalent to multiplying each term on the right-hand side by 1.0.

$$(1D) \quad \Delta(TPI/N)/(TPI/N)_{-1} = \Delta(E/N)/(TPI/N)_{-1} \times (E/N)_{-1}/(E/N)_{-1} \\ + \Delta(P/N)/(TPI/N)_{-1} \times (P/N)_{-1}/(P/N)_{-1} \\ + \Delta(T/N)/(TPI/N)_{-1} \times (T/N)_{-1}/(T/N)_{-1} \\ + \Delta(IA/N)/(TPI/N)_{-1} \times (IA/N)_{-1}/(IA/N)_{-1}.$$

4. (con.)

Multiplying and rearranging term in equation (1D) yields Equation (2),

$$(2) \quad \% \Delta(TPI/N) = (E/TPI)_{-1} \times \% \Delta(E/N) \\ + (P/TPI)_{-1} \times \% \Delta(P/N) \\ + (T/TPI)_{-1} \times \% \Delta(T/N) \\ + (IA/TPI)_{-1} \times \% \Delta(IA/N).$$

5. Figures 7-10 show the percentage-point difference between Spokane and the national average in the contribution of each income component to the total percent change in per capita income.
6. Actual and hypothetical average earnings per job by industry were calculated at the division (13 sector) level of disaggregation. BEA reports county industry earnings at the 2-digit level of disaggregation, but industry employment data are reported only at the division level.
7. When Equation (3) is transformed into logarithmic form and expressed as differences between time periods, the right-side components are additive,

$$(3A) \quad [\ln(E/N) - \ln(E/N)_{-1}] = [\ln(H/J) - \ln(H/J)_{-1}] \\ + [\ln(E/H) - \ln(E/H)_{-1}] \\ + [\ln(J/N) - \ln(J/N)_{-1}].$$

Equation (3A) can be interpreted in terms of growth rates. The value on the left is the percent change in earning per capita  $(E/N)$  between the current period and one period earlier. It is exactly equal to the sum of the percent changes on the right.

$$(3B) \quad \% \Delta(E/N) = \% \Delta(H/J) + \% \Delta(E/H) + \% \Delta(J/N).$$

Multiplying the terms on each side of Equation (3B) by  $(E/TPI)_{-1}$  yields Equation (4),

$$(4) \quad (E/TPI)_{-1} \times \% \Delta E = [(E/TPI)_{-1} \times \% \Delta H/J] \\ + [(E/TPI)_{-1} \times \% \Delta E/H] \\ + [(E/TPI)_{-1} \times \% \Delta J/N].$$

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