Industrial Diversification in Nonmetropolitan Counties and Its Effect on Economic Stability

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Applying indexes of economic instability and industrial diversification to Idaho's forty-three nonmetropolitan counties, this paper tests the hypothesis that unemployment is more stable in a more diverse economy. While results support the hypothesis, other aspects of a county's economic structure are just as influential. Indiscriminate diversification will not necessarily bring economic stability.

Key words: economic stability, industrial diversification, nonmetropolitan, rural development.

Interest in economic diversification has increased in nonmetropolitan areas because of unstable and generally declining employment opportunities in the traditional resource based industries of agriculture, forestry, mining, and related manufacturing industries. Many nonmetropolitan counties depend to a large degree on one of these industries as their economic base (Bender et al.). The sensitivity of rural unemployment and employment to swings in the business cycle has been examined by Findeis. She concludes that communities must focus not only on providing jobs but on providing stable jobs. Communities and state and local economic planners concur and have made diversification a focus of development efforts.

Stability implies that employment and income in a community are not subject to extreme swings over a business cycle (Tiebout). Diversification—a wide(r) variety of industrial categories—is seen as a means to achieve economic stability or to cushion the adverse effects of economic cycles. It is argued that as a region becomes more industrially diversified, the economy of the region becomes less responsive to fluctuations in extraregional economic activity (Hackbart and Anderson). If a region is too specialized, it is often subject to a boom-or-bust syndrome. A traditional thesis in regional economics is that if a region's industrial structure is not well diversified or is a single-industry region, its economy is more subject to fluctuations as a result of changes in extraregional economic activity (Wasylenko and Erickson).

The relationship between diversity and stability has been examined with a range of measures of both concepts. Brown and Pheasant (1985, 1987) applied a portfolio variance technique to county economies to identify the relative stability of specific sectors in response to statewide employment changes. They found that several service and manufacturing sectors cyclically stabilized county economies. Attaran, using an entropy measure of diversity, found a negative relationship between diversity and unemployment. Kort also used an entropy measure of industrial diversification and an index of economic instability to examine differences in instability between large and small cities. For a sample of 106 Standard Metropolitan Statistical Areas (SMSAs), using nonagricultural employment, he found that larger economies were more diversified and

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more stable. The more highly specialized economies were more unstable, with exceptions being economies specialized in education and government. This supported findings by Wasylenko and Erickson, who found that although six of ten least diversified SMSAs were highly specialized in public administration and education, such regions typically were among the most stable of regional economies. Regions specializing in mining, lumbering, automobile equipment, and textiles were subject to substantial fluctuation.

In earlier work, Thompson observed a wider range of instability for smaller cities than for larger cities. Hackbart and Anderson supported this with their findings that larger regions also tend to have more balanced employment structures than do smaller, more economically specialized regions.

Research is not uniformly consistent in finding that increased industrial diversification leads to more stability. Attaran reported weak to insignificant support for the hypothesis of more stability in diversified areas. Smith and Weber found that Oregon's economy became absolutely and relatively (to the nation) more diverse in the 1960s and 1970s, but it also became more cyclically unstable. They concluded that diversification must be toward industries with different cyclical patterns than existing industries, or they will not act as a buffer for instability. Barkley's findings on the locational and survival instability of branch plants in nonmetropolitan counties indicates that while such plants are a common diversification focus, they need not lead to stability. On the other hand, Smith and Peters found that manufacturing lowered the cyclical instability relative to coal and agricultural counties for several Kentucky counties.

The previous work relating industrial diversification to economic or employment stability focused on metropolitan areas, states, and large regions. With the exception of the recent study by Brown and Pheasant (1987), there is a lack of information on the subject for rural economies. This study will add to that literature by focusing on a set of relatively small, resource-based nonmetropolitan counties and will include the agricultural sector. The counties are the forty-three nonmetropolitan counties (out of 44 total) in the state of Idaho. The principal hypothesis is that unemployment in a more diverse economy is more cyclically stable than in a less diverse economy. Other questions to be examined are the relative contributions of various industry sectors to county stability and whether or not differences in diversification contribute to a lessening of instability.

The remainder of the paper is organized as follows. The next section presents the methodology and data. The third section contains results, focusing on rankings of counties by instability and diversification indexes and on regression models, to explain the relationship between changes in an instability index and county economic structure. The final section summarizes the results and discusses their implications.

Methodology and Data

The study applies the economic diversification and instability indexes used by Kort in his study of metropolitan areas. Kort's regional economic instability index becomes a county economic instability index (*CEI*), calculated as follows:

$$CEI_i = \left[\sum_{t=1}^{T} \frac{\left(\frac{u_{it} - \hat{u}_{it}}{\hat{u}_{it}} \right)^2}{T - 2} \right]^{1/2}.$$

The CEI_i is an index of unemployment instability for each of Idaho's forty-three nonmetroplitan counties, u_{it} is annual average monthly unemployment in county i for year t, $\hat{u}_{it}$ is a linear approximation of the long-run unemployment trend, and T equals 11 (1970 through 1980). Thus, the value of the *CEI* index increases as the difference between u_{it} and $\hat{u}_{it}$ increases, i.e., as the deviation of unemployment from the trend increases. Higher values of *CEI* indicate greater relative unemployment instability. The purpose of this measure is to isolate the cyclical component of the unemployment time series.[1]

The estimate of industrial diversification (*DIV*) is calculated by the following equation:

[1] As this is a linear detrending technique, the result may be biased for counties where the trend was nonlinear. However, since it was not feasible to determine trends and apply different detrending techniques for each of the 43 counties, it was assumed that linear trends approximated reality.

$$DIV = \sum_{s=1}^{S} \left(\frac{e_{is}}{e_i}\right) \ln\left(\frac{1}{\frac{e_{is}}{e_i}}\right)$$

$$= -\sum_{s=1}^{S} \left(\frac{e_{is}}{e_i}\right) \ln\left(\frac{e_{is}}{e_i}\right),$$

where e_{is} is employment in county i and industry s, e_i is total employment in county i, and ln is the natural logarithm. The index is an entropy measure of industrial diversification, defined as the negative summation of the product of county employment proportions in the S industries times the natural logarithm of these proportions. A higher DIV indicates greater relative diversification, while lower values indicate relatively more specialization.

The entropy measure of diversification compares the existing distribution of employment among industries in a county to an equiproportional distribution. That is, the maximum value of the measure results with equal distribution of employment among all the county's industries. The minimum value of zero (maximum specialization) would be reached if employment were concentrated in one industry.

The use of unemployment as a measure of instability differs from most previous work, which usually has applied the instability index to employment (Brewer). Attaran, however, used unemployment level, its growth rate, and standard deviation of unemployment in a test of diversity and economic performance for states. The main reason for using unemployment instability in this study is that interest at the local level in nonmetropolitan counties focuses heavily on unemployment. These are the figures most reported and discussed by citizens and policy makers. Also, those unemployed are the concern of local and state officials and the focus of policy, with respect to both the immediate issues of welfare support, tax receipts and retail sales, and to the longer-term issues of job creation.

There is a potential problem with the use of unemployment. This is usually described as the discouraged worker phenomenon. When new local employment opportunities appear, these people enter the labor force in numbers larger than can be employed. The result is that unemployment increases, even though diversification may be occurring. This is not likely to be a major influence in this case, however. One reason is that the state has not been characterized, particularly in the 1970s, by historically depressed conditions and high levels of un- and underemployment, which create a pool of discouraged workers. Also, the labor force participation rate of women is near the national average. In addition, the use of unemployment and not unemployment rates, the seasonal adjusting, and the averaging would lessen distortions due to noncyclical or nonstructural factors.[2]

The county unemployment data were obtained from the Idaho Department of Employment (DOE). These were annual average monthly figures, seasonally adjusted, for 1970 through 1980, for all forty-three nonmetropolitan counties in the state of Idaho. The employment data were obtained from the Regional Economic Information System, Bureau of Economic Analysis (BEA), and supplemented with published and unpublished figures from the Idaho Department of Employment to obtain more complete coverage. Seasonally adjusted employment data for the years 1970, 1975, and 1980 were obtained at the county level for 2-digit Standard Industrial Classification categories.

Because the study period covers 1970 through 1980, most of the employment loss in the lumber, wood products, and mining industries in the early 1980s is not included, nor are the effects of the farm financial crisis. Given the severity of these events, however, they likely would outweigh "normal" fluctuations and probably should not be included until later data years are available. Nevertheless, the period covers three periods of recession and employment decline in the United States (December 1969–November 1970, November 1973–March 1975, January 1980–July 1980).

To examine the relationship between unemployment instability and economic structure, the following ordinary least squares regression models were used.[3] The first is a simple regression with DIV as the only independent variable:

[2] The relatively constant labor force participation rate in Idaho from 1970 to 1980 also indicates a lack of discouraged workers. During a period of rapidly growing population and employment, the mean change (positive and negative) from the previous year in the labor force participation rate was .64.

[3] Previous studies (Thompson, Wasylenko and Erickson, Kort) found heteroscedasticity in their studies of metropolitan areas. This was not present here, perhaps because of a more homogenous region and industrial structure and also because the study area was limited to nonmetropolitan counties which had limited population sizes (maximum 65,000).

$$CEI_i = b_0 + b_1(DIV_i) + e_i.$$

A second model includes the percentage of county employment in several industry sectors. These variables were included to measure the effect of specific industrial sectors on stability.

$$CEI_i = b_0 + b_1(DIV_i) + b_2FedCiv_i + b_3Mining_i + b_4Ag_i + b_5S\&LGov_i + b_6Mfg_i + b_7Const_i + b_8BaseSer_i + e_i,$$

where the independent variables are in percentages of total county employment and are federal civilian employment (*FedCiv*), mining, agriculture and agricultural services (*Ag*), state and local government (*S&LGov*), manufacturing (*Mfg*), construction (*Const*), and base services (*BaseSer*). Federal civilian employment was chosen over federal military and the sum of the two because of the presence of multicollinearity, and because federal civilian employment exists in all counties as two-thirds of the state is federal land. State and local government was included, as Bretzfelder and Friedenberg found it to be a stabilizing sector. The coefficient was not significant in any model, however, and has not been reported in the results. The base services variable (*BaseSer*) comprises service sector industries that are not necessarily dependent on local economic activity and population. The category also includes sectors designed to capture the important recreation and tourism industry. The sectors included in the base services category are transportation and public utilities; wholesale trade; finance, insurance, real estate; hotels and lodging; motion pictures; amusement and recreation; museums, botanical, and zoological gardens.

A third model includes a slightly disaggregated manufacturing sector. The disaggregated sectors are food processing (*FoodProc*), lumber and wood (*Lumber & Wood*), and all other manufacturing (*Other Mfg*). Further disaggregation was not possible because of industries not being present or because of disclosure problems. In models 4 and 5 the base services sector is disaggregated into tourism-related and nontourism base services in an attempt to isolate the effects of tourism. One tourism sector (*Tourism*1) includes hotels and lodging (*SIC* 70) and amusement and recreation (*SIC* 79). The second tourism sector (*Tourism*2) adds eating and drinking establishments (*SIC* 58).

Size was found in previous research to be an important influence on stability and diversification. In this study, county population was included as a dependent variable but was insignificant at the .10 level in all formulations of the model and is not reported. All variables also were adjusted for size, but the results were much worse than the basic models. An explanation may be that in nonmetropolitan counties of the West it is not uncommon to find relatively diverse, and thus more stable, economies in small communities because these communities provide goods and services to large, sparsely populated geographical areas.[4]

Results and Discussion

The indexes of industrial diversification and economic instability (*CEI*) for each nonmetropolitan county are shown in Table 1. The counties are ranked by the *CEI* index, where a rank of 1 is the most unstable over the 1970–80 period. Each county's diversification index also is ranked for 1970, 1975, and 1980, where the most diversified has a rank of 1. The table shows, for example, that the economies of Bonneville, Twin Falls, and Valley counties were relatively highly diversified in each year (low ranks) and also had relatively stable economies (*CEI* ranks of 42, 35, and 33, respectively). At the same time, Power, Camas, and Clark counties show relatively little diversification (high ranks) and unstable economies (*CEI* ranks of 2, 3, 4). Camas and Clark counties were highly specialized in agriculture, and Power county was specialized in agriculture and food processing.

There are also examples supporting previous findings that counter the diversification-stability hypothesis. Butte, Elmore, and Latah counties show relatively less diverse, but relatively stable, economies. The first two were specialized in military and federal-sponsored research employment, respectively, and the last is the site of the state's land grant university.

In addition, the level of unemployment instability does not appear to differ because of the type of industrial concentration in a county. Counties were grouped into agriculture, manufacturing, and base service categories if 24% or more of total county employment was in one of the four industries. (Two counties with 24% in two industries were excluded.) An

[4] Size was positively correlated with *DIV*, but only at $R^2 = .12$.

Table 1. Industrial Diversification Indexes for 1970, 1975, and 1980 and County Economic Instability Indexes from 1970-80 for the Forty-three Rural Idaho Counties

County	*CEI* Index	Rank	1970 Diversification Index	Rank	1975 Diversification Index	Rank	1980 Diversification Index	Rank
Blaine	.3984	(1)	1.9533	(23)	2.0220	(23)	2.0185	(30)
Power	.2912	(2)	1.4933	(41)	1.5133	(41)	1.6077	(42)
Camas	.2862	(3)	1.5573	(40)	1.5965	(40)	1.8552	(38)
Clark	.2843	(4)	1.5891	(38)	1.6379	(38)	1.7127	(41)
Bearlake	.2637	(5)	1.8956	(28)	2.0386	(21)	2.0571	(22)
Gooding	.2636	(6)	1.8849	(30)	1.9214	(32)	2.0537	(24)
Custer	.2509	(7)	1.9544	(22)	2.0146	(24)	2.0425	(26)
Boise	.2442	(8)	1.7606	(35)	1.6134	(39)	1.8389	(39)
Caribou	.2411	(9)	2.0620	(12)	2.1409	(10)	2.1703	(7)
Madison	.2281	(10)	1.9470	(24)	2.1269	(12)	2.1719	(6)
Fremont	.2261	(11)	1.9406	(25)	2.1156	(13)	2.1164	(18)
Washington	.2251	(12)	1.9559	(21)	2.0612	(18)	2.1557	(8)
Franklin	.2184	(13)	1.8195	(32)	1.9210	(33)	2.0188	(29)
Shoshone	.2049	(14)	1.9231	(26)	1.9739	(30)	1.9912	(31)
Adams	.2030	(15)	1.9748	(20)	1.9996	(27)	2.0459	(25)
Teton	.1920	(16)	1.3799	(43)	1.4645	(42)	1.8225	(40)
Owyhee	.1915	(17)	1.5708	(39)	1.7752	(36)	1.9621	(35)
Bonner	.1830	(18)	2.1004	(7)	2.1444	(9)	2.1540	(10)
Cassia	.1815	(19)	2.0332	(15)	2.1106	(15)	2.1552	(9)
Nez Perce	.1794	(20)	2.0963	(8)	2.1133	(14)	2.1100	(19)
Gem	.1758	(21)	1.8945	(29)	2.0418	(20)	2.1484	(13)
Lincoln	.1753	(22)	1.7228	(36)	1.7733	(37)	2.0546	(23)
Lemhi	.1681	(23)	2.0669	(10)	2.2028	(2)	2.2786	(1)
Kootenai	.1658	(24)	2.1340	(5)	2.1292	(11)	2.1481	(15)
Jerome	.1647	(25)	1.8723	(31)	1.9948	(28)	2.0656	(20)
Idaho	.1616	(26)	2.0634	(11)	2.1019	(17)	2.1536	(11)
Minidoka	.1603	(27)	1.9000	(27)	2.0126	(25)	1.9719	(33)
Bannock	.1505	(28)	2.1912	(2)	2.1790	(5)	2.1483	(14)
Benewah	.1480	(29)	2.0420	(14)	1.9798	(29)	2.0385	(27)
Bingham	.1460	(30)	2.0522	(13)	2.1635	(6)	2.1447	(16)
Payette	.1456	(31)	2.0140	(17)	2.1061	(16)	2.1415	(17)
Canyon	.1452	(32)	2.0962	(9)	2.1562	(7)	2.1824	(5)
Valley	.1351	(33)	2.1428	(3)	2.2003	(3)	2.2274	(4)
Latah	.1428	(34)	2.0149	(16)	1.9645	(31)	1.9700	(34)
Twin Falls	.1272	(35)	2.2210	(1)	2.2423	(1)	2.2499	(2)
Boundary	.1261	(36)	2.1341	(4)	2.1535	(8)	2.2282	(3)
Butte	.1177	(37)	1.4168	(42)	1.2777	(43)	1.1297	(43)
Elmore	.1150	(38)	1.7931	(34)	1.8506	(34)	1.8783	(37)
Oneida	.1095	(39)	1.7160	(37)	1.7841	(35)	1.8944	(36)
Jefferson	.1090	(40)	1.7969	(33)	2.0336	(22)	2.0376	(28)
Clearwater	.1072	(41)	1.9760	(18)	2.0114	(26)	1.9779	(32)
Bonneville	.1033	(42)	2.1121	(6)	2.1939	(4)	2.1501	(12)
Lewis	.0973	(43)	1.9756	(19)	2.0570	(19)	2.0595	(21)

education category included the six nonmetropolitan counties with major post-secondary institutions. Table 2 shows the range of *CEI* values in each group. Analysis of variance of the mean *CEI* for these groups showed no statistically significant difference among the means.

The regression results examining the relationship between unemployment instability and economic structure are presented in table 3. Model 1, with the diversification index (*DIV*) as the only independent variable, is statistically significant, and *DIV* has the hypothesized sign. Greater diversification leads to lower county unemployment instability (*CEI*). It is clear, however, that with $R^2 = .048$, *DIV* alone accounts for very little of the variation in *CEI*.

Models 2–5 provide considerably more information on the relationship between county unemployment instability and industrial structure. The estimated equations are statistically significant at greater than the .01 level,

Table 2. *CEI* Values for Four Types of Counties

Education	Base Service	Agricultural	Manufacturing
.1328	.1505	.2637	.2030
.1658	.3984	.1460	.1480
.1272	.1033	.2862	.2442
.2281	.1658	.1815	.1072
.1505	.1272	.2843	.1794
.1794	.1351	.2509	
		.2184	
		.2261	
		.1758	
		.2636	
		.1090	
		.1647	
		.0973	
		.1753	
		.1095	
		.1915	
		.1456	
		.1920	
		.2251	
$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$
.1640	.1800	.1951	.1764

with $R^2 = .47$ to .55. The sign for *DIV* shows that as industrial diversification increases in a county, the unemployment instability decreases. The positive signs on the coefficients for the percentage of employment in specific industry sectors mean that as a county becomes more specialized in an industry, *ceteris paribus,* instability (*CEI*) increases.

The regression coefficients for the separate industry sectors show that there are considerable differences in the effects on *CEI* from a given change in the percentage of county employment in one of these industries, *ceteris paribus.* For example, in models 2 and 3 a change of 1% in the share of construction employment and base services in total county employment would have about three and two times the effect, respectively, on *CEI* as would similar changes in manufacturing and agriculture. Apparently, from 1970 through 1980, manufacturing and agriculture were the most stabilizing components and construction and base services the least.

Model 3 examines the disaggregated manufacturing sectors. Food processing or lumber and wood products were present in thirty-nine of the forty-three counties and made up 61% of Idaho's manufacturing employment in 1980. Food processing is not significantly related to unemployment instability, but lumber and wood is. Other manufacturing sectors are significantly related, but with a lower level of influence. Thus, food processing and other nonresource-based manufacturing are relatively stabilizing influences, while lumber and wood products is more destabilizing.

Models 4 and 5 include the disaggregated base services sector and show considerably different relationships. The most important difference is that the diversification index (*DIV*) no longer is statistically significant, along with the federal civilian and construction sectors. The proxy variables for tourism are highly significant and indicate strong effects on unemployment instability. Apparently, in these relatively undiversified, resource-based economies, tourism has a decidedly adverse effect on stability, even after seasonal adjustment of the figures. The effect is so strong that it appears to swamp other sectors.

These results lead to interesting interpretations. First, the conclusion can be drawn that diversification into manufacturing, rather than services, would result in greater employment stability. This supports the traditional thrust of economic development programs toward recruiting and encouraging manufacturing. The disaggregation of manufacturing shows, however, that this generalization does not hold for all manufacturing sectors, as demonstrated by other researchers (Smith and Weber, Brown and Pheasant 1985, 1987). Further increases in manufacturing employment in lumber and wood products would lead to greater instability than increases in food processing.

An implication for state development policy also can be drawn from these results. A common policy thrust in resource-based economies is to encourage industries that add value to a region's resources before they are exported. In Idaho, such a policy would be better directed at food, rather than wood processing, if stability is a goal. At a minimum, traditional lumber and wood products plants that are heavily dependent on the housing industry perhaps should not be a high priority. In this context, the heavy (and permanent) employment and establishment losses in this industry in the early 1980s likely have reduced the vulnerability of counties to destabilizing influences from lumber and wood products.[5]

[5] This circumstance emphasizes the point that changes in *DIV* over time also change the *ceteris paribus* conditions, which would lead to different relative effects on *CEI* by each industry sector.

Table 3. Regression Models Explaining County Economic Instability

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
DIV	−.6447 (−2.53)**[a,b]	−.1932 (3.65)***	−.1994 (3.58)***	−.0622 (.863)	−.0805 (1.13)
FedCiv		.4407 (2.12)**	.3159 (1.26)	.0210 (.078)	−.0752 (.263)
Mining		.5064 (3.24)***	.5534 (2.94)***	.3485 (1.86)*	.4045 (.215)**
Ag		.3582 (4.64)***	.3846 (4.59)***	.3375 (4.28)***	.3562 (4.45)***
Const		1.1173 (1.95)*	.16135 (1.98)*	.4422 (.680)	.3536 (.539)
BaseSer		.7203 (3.72)***	.7623 (3.75)***		
Tourism1 (*SIC* 70 + 79)				1.5084 (4.48)***	
Tourism2 (*SIC* 58 + 70 + 79)					1.01621 (4.50)***
Nontour Ser				.3125 (1.02)	.2034 (.674)
Mfg		.3000 (3.20)***			
FoodProc			.2154 (1.24)	.1465 (.886)	.1508 (.914)
Lumber and Wood			.3695 (2.95)**	.3033 (2.41)**	.2826 (2.27)**
Other Mfg			.2609 (1.82)*	.3069 (2.23)**	.2824 (2.08)**
F	6.38***	4.36***	3.38***	3.82***	3.84***
R^2	.048	.466	.480	.544	(.546)

[a] Numbers in parentheses are *t*-values.
[b] Single asterisk is significant at .10 level; double asterisk is significant at .05 level; triple asterisk is significant at the .01 level.

The results for the base services sector appear to contradict previous empirical evidence showing that manufacturing tends to be more unstable over the business cycle than the service sector (Rosen, Fuchs). This is of particular interest since the service sectors have been, and are projected to continue to be, the growth areas of the economy (Personick). They have been recommended, therefore, as logical candidates for economic development efforts (Smith). Tourism and recreation-related activities, in particular, are a common state development focus.

The relative instability in base services is because tourism and recreation-related businesses make up a large part of the base service sector in Idaho counties. Tourism was shown to be strongly related to unemployment instability. For the state as a whole, 36.5% of the base service sector is tourism and related. And for the six counties defined as base service oriented (at least 24% of county employment in these sectors), 43% of the base service employment was in tourism and recreation. This sector is generally adversely affected by economic slowdowns because of reductions in spending on leisure activities, and even business travel. The two oil price shocks in the 1970s had this effect on Idaho's tourism. In addition, weather conditions have a large impact on recreation and tourism.

If tourism is defined as eating and drinking establishments (*SIC* 58), hotels and lodging (*SIC* 70), and amusement recreation (*SIC* 79), then these results are consistent with Brown and Pheasant's. For nonmetropolitan/rural counties, they found that the two former sectors were highly unstable. Although they did not explicitly consider tourism, in nonmetropolitan counties it is likely that this is a large component of the business in these industries.

Conclusion

The research reported in this paper tested the hypothesis that unemployment in a more diverse economy is more stable over business cycles than in a less diverse economy. Previous work on this subject was for regions, states, and metropolitan areas. In this paper, the hypothesis was tested for the forty-three primarily resource-based nonmetropolitan counties in Idaho. Using indexes calculated for county unemployment instability and industrial diversification, the results support the hypothesis. Thus, it can be concluded that, in general, economic diversification in small, largely resource-based nonmetropolitan economies should lead to greater cyclical stability. At the same time, diversification was not the sole explanation of unemployment instability. A combination of the diversification index and the percentage of county employment in several basic industry sectors provided more complete insight.

At the aggregated level, the analysis showed that the agricultural and manufacturing sectors were the main stabilizing components in the 1970–80 study period. This lends support to efforts to maintain the agricultural sector and to increase manufacturing activity. This will not be true for all manufacturing, however. The lumber and wood products sector was strongly related to unemployment instability, while food processing and other, nonresource-based manufacturing were less so. This result has implications for manfacturing development policies of natural resource-based states. Much potential manufacturing in such states is likely to be tied to the resource, that is, adding value to the raw material. States should be aware that such manufacturing may be as unstable as the extraction activity because it is governed by the same demand forces. Processing for nontraditional markets could be explored to counter this problem.

Another key finding was that the base services sector (made up of service-producing activities not necessarily based on local population and income) was strongly related to unemployment instability. This is a somewhat anomalous result, given previous findings that services are generally more stable over business cycles and that they are the growth sectors of the economy. Again, however, the different effects of specific industries must be considered. The destabilizing influence appears to come from Idaho's tourism-related sectors, which are particularly vulnerable to exogenous economic forces. Recent research in Indiana also determined these sectors to be highly unstable in nonmetropolitan counties.

In conclusion, the results imply that neither simple unemployment stability nor indiscriminant diversification should be the desired goals. This conclusion supports previous research, primarily focusing on states and metropolitan areas, which found that diversification reduces cyclical instability. Nevertheless, such aggregate measures provide little in the way of specific policy recommendations. As suggested by other researchers (Attaran, Barkley, Smith and Peters, Smith and Weber), this requires more detailed information on specific industry and community characteristics and how they also may affect economic stability.

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