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Development of a Regional Economic Dashboard

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Development of a Regional Economic Dashboard

Everyone seems to like lists that rank the nation's metro areas on a variety of topical characteristics such as quality of life, economic performance, housing market conditions, and entrepreneurship, just to name a few. These rankings usually get some media play, and local leaders either support the strong showing their metro area achieves or strongly protest the area's low ranking in the new and clearly erroneous study.

At the same time, many metro areas have completed benchmarking studies that compare their performances with that of a set of similar areas on dozens of economic and social indicators. These studies aim to provide guidance to the metro's community leaders and stakeholders, but the large number of indicators can be mind numbing. Furthermore, uncertainty can arise because the report rarely offers any guidance about which of the often conflicting indicators should be given greater importance.

The Dashboard of Indicators for the Northeast Ohio Economy, by the Upjohn Institute and Kleinhenz & Associates, addresses both of those concerns. The report was prepared for The Fund for Our Economic Future, a multiyear collaboration of organized philanthropy in northeast Ohio established to foster a regional economic development agenda that can lead to long-term economic transformation of the region. The uniqueness of the study is threefold.

1) It is based on a constructed regional framework that contains five components of regional development, including productivity and innovation, education, social inclusion, quality of life, and collaborative governance.

2) It identifies key factors that influence a region's growth and ranks 118 metro areas according to factors that are statistically correlated to economic growth measures—employment, output, worker productivity, and per capita income.

3) It adheres to the belief that "less is more" and limits its set of growth factors to only eight.

When regional economies exhibit strong growth, they tend to rank high in these eight factors, and when regional economies experience weak growth, they tend to score poorly. By tracking these factors, area stakeholders and decision makers can obtain a better understanding of the performance of their area and are better informed to select possible development policies.

Development of the Growth Factors

The *Dashboard* is derived from analyses of 40 variables for 118 metropolitan areas between the population size of 200,000 and 3 million. The variables encompass a comprehensive view of metro areas in terms of education and skills, fairness and equity, quality of life and place, business activity, and regional cooperation and governance. Since 40 is an unwieldy number, we performed a factor analysis on the data that statistically grouped the 40 variables into eight factor groups based on statistical commonality. Factor analysis not only sorts the original 40 variables into eight factors, but in doing so, the resulting factors become statistically uncorrelated, making them suitable inputs to be entered into a regression analysis. This is the second step of the process. We regressed the eight factors' "scores" on the growth rates of each of the four measures listed below to estimate their statistical correlation with regional growth.

Measures of Regional Growth

The Dashboard was devised by finding factors that are statistically correlated with the following four broad measures of regional economic activity for the period 1994–2004. These measures capture different aspects of growth.

Gross regional output measures the overall economic activity of a region. It is the regional counterpart of the nation's gross domestic product, and is the clearest measure of a region's business performance.

Employment measures the opportunities for local residents and those who migrate to the region to earn wages and salaries and to pursue a career. Some would argue that employment is what attracts people to a region.

Productivity is a measure of the output per employee, which is critical to determining a region's overall competitiveness.

Per capita income is the preferred measure of regional activity for most economists because, while employment opportunities are important, for the standard of living to increase, a region must generate pay increases and a greater share of high-paying jobs.

Eight Factors of Regional Growth

All eight factors that were derived from the factor analysis were found to be statistically related to at least one of the economic performance measures.

The skilled workforce factor is a weighted combination of the percentage of the population with bachelor and graduate degrees; the number of occupations with high education content, such as professional occupations; patents per employee; productivity of the information sector; and skills of the workforce.

Urban assimilation includes ethnic diversity (percent Asian, Hispanic, and foreign born); minority business ownership; percentage of home ownership; and cost of living.

Racial inclusion measures racial inclusion (social dimension, excluding the economic dimension); racial dissimilarity; and percentage of African-Americans.

Legacy of place takes into account the costs associated with a declining industrial base, an older infrastructure,

Table 1 Rankings of Growth Factors According to Their Importance to Economic Growth

	Growth rate of			
Factors	Employment	Per capita income	Productivity	Output
Skilled workforce	5	1	1	1
Racial inclusion	3		3	3
Urban assimilation	6		2	2
Income equality	4	4		5
Business dynamics	2			6
Legacy of place costs (negative)	1	2		4
Location amenities		5		
Urban/metro structure		3		7

high unemployment, a population with lower educational attainment and fewer opportunities, a disproportionate need of human services, and a tax base insufficient to support the demand for services. This factor also includes the percentage of housing stock erected before 1940, which reflects the cost of maintaining an older system of roads and sewers, the crime rate, and the number of municipalities per capita.

Income equality measures economic inclusion by taking the difference between 90th percentile income and the 10th percentile income and dividing by the 10th percentile income. It also includes the percentage of children under 18 living in poverty.

Locational amenities includes quality of life variables such as the transportation systems, recreational opportunities, arts, health services, and the presence of a major research university. This factor only measures quality of life variables that a region can construct publicly or privately, as opposed to those over which it has little or no control, such as climate.

Business dynamics measures the proportion of small business establishments, concentration of manufacturing, and churning, which is a measure of the gross change in jobs, both those created and those lost. (Note that gross change in jobs is different from net change in employment.) Regions that score highly in business dynamics are characterized by a high degree of business activity outside the manufacturing sector.

Urbanization/metro structure measures the core city's share of poverty relative to its share of the metropolitan population. Cities that have a higher share of the poverty relative to the general population are less able to cover the costs of poverty through their tax bases.

Relative Importance of the Eight Factors to Economic Growth

The eight factors of the *Dashboard* vary in their influence on the four measures of economic growth. In Table 1, each of the eight factors is ranked by its statistical correlation to the four growth measures. Only when the relationship is statistically significant at a 95 percent confidence level is the factor's ranking shown.

Not surprisingly, a skilled workforce is strongly correlated with three of the four measures of economic growth. Education and training are clearly tied to the worker being more productive and being paid more. In addition, areas with an educated workforce are more competitive and able to generate greater production than their rivals. However, it is not the most important factor in influencing employment growth.

Legacy of place, which contains variables that are associated with the age of the area's infrastructure, declining industrial base, and housing stock, has the strongest correlation (negative) with employment growth. This factor only confirms the well-known challenge that older metropolitan areas in the Northeast and Midwest face as they try to transform their economies from being based largely on manufacturing activities to more knowledge-based functions.

Several other results from the regression model are of interest. Business dynamics, which includes the amount of business churning and the proportion of small businesses in the area, is strongly related to employment growth but is not statistically related to per capita income growth. Many of the jobs created by small businesses pay relatively low wages. The factor, location amenities, is moderately related to per capita income, suggesting that higher-income workers are attracted to locations with public or privately constructed "quality of life" attributes; however, it appears to have little influence on the other three growth measures.

Finally, the analysis suggests that social factors matter in terms of economic growth. Metro areas that rank high as urban assimilation centers, which is a measure of their openness to immigrants and new cultures, experienced higher growth. Moreover, racial inclusion and income equality are statistically tied to three of the four growth measures. Areas enjoying higher growth are more racially integrated and do not have a high disparity of income.

Rankings of Metropolitan Areas Based on Indicators

The report ranks each of the 118 metro areas according to their score for each of the factors. One of the more important relationships identified in the report is the clear correlation between the skilled workforce factor and per capita income growth. An effective workforce training effort and/or the ability to attract quality workers into the area are important ingredients to a meaningful economic development policy.

Conclusions

Several general conclusions can be derived from the study.

- There is no single factor or variable that single-handedly determines whether or not a region's economy grows. This should be no surprise for most; however, it does reconfirm the importance for metro area stakeholders to carefully reexamine the relative importance of different factors to overall economic growth before selecting regional economic development policies.

• A skilled workforce and strong business dynamics are highly correlated with regional economic growth. Both indicate the importance of human capital development in the increasingly knowledge-based, global economy. Metro areas that successfully create an environment where training and educational opportunities are available and where entrepreneurs are welcomed and encouraged have a greater chance of generating greater economic growth.

• Openness to new cultures (urban assimilation), racial inclusion, and income equality are positively correlated with economic growth.

• Locational amenities, a measure of quality of life variables such as universities, recreation, and transportation, is positively correlated to per capita income growth but not to the other three growth measures.

• Finally, regions burdened with negative legacy of place costs are at a disadvantage when repositioning their economies for growth relative to newer metro areas.

The Dashboard of Indicators for the Northeast Ohio Economy is available at http://www.upjohninstitute.org and http://www.clevelandfed.org/Research/Workpaper/2006/index.cfm.

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