FACT SHEET

SHIFT-SHARE ANALYSIS FOR MEASUREMENT OF COUNTY ECONOMIC DEVELOPMENT IN TEXAS

Joseph E. Diamond*

Introduction

Shift-share analysis is primarily a technique to describe historical changes in a local area unit, city or county, relative to a reference area such as a county, state or nation. Generally, one uses shift-share analysis as an economic tool.

First used by Daniel B. Crainer in 1942 in conjunction with the United States National Resource Planning Board, it has become a widely accepted economic technique for regional economists and has been used by the U.S. Department of Commerce.

This information explains the application of shift-share analysis to long-range county Extension programs and how it can be developed with minimal time and effort.

*Extension community development specialist, The Texas A&M University System. The author would like to acknowledge Donald D. Stebbins, Richard L. Floyd and Lonnie L. Jones for their work on shift-share analysis which was published previously by the Texas Agricultural Extension Service and James R. Mayhew, former Extension community development specialist, The Texas A&M University System, who coauthored the original manuscript for this publication.

Use

Use shift-share analysis as the *first step* in developing a rural economic development program. It can describe the historical changes and existing composition of industries and identify the relative industrial strengths, especially of those industries that have a comparative advantage, a relatively greater efficiency in the production of goods and services.

Shift-share analysis is historical and cannot be used in forecasting future growth. Furthermore, it does not explain the underlying causes of a county's comparative advantage and the condition of the county's industrial structure. A study of the economic impact of industrial development is necessary to achieve an optimal county growth strategy.

Case Study: Hidalgo County 1978-1980

This case study demonstrates the use of shift-share analysis in the Hidalgo County long-range Extension program. The data are from the Texas Employment Commission. Employment coverage includes workers whose employers are subject to the Texas Unemployment Act. Excluded from coverage

are self-employed individuals, unpaid family workers and workers whose employers are subject to the Railroad Retirement Act.

The Texas Employment Commission data are classified according to the 1972 version of the Standard Industrial Classification (SIC) code, recorded at the two-digit level; each code represents a major group industry. From this data, nine sectors were identified for Hidalgo County and Texas and these reflect a level of aggregation which would adequately meet the needs of county decision makers.

Table 1. Computation of Industrial Mix Effects and Component for Hidalgo County (1978-1980)*

Industry	Hidalgo County Employment 1978 (Number)	Texas Growth Rates for Individual Industrial Sectors** (Percent)	Texas Growth Rate*** (Percent)	Industrial Mix Effect (Number)
Agriculture	8,715	27.3	13.4	1,211.4
Mining	1,209	27.3	13.4	168.0
Construction	4,085	19.1	13.4	232.8
Manufacturing	7,424	10.4	13.4	-222.7
Transportation & Commerce	2,111	13.6	13.4	4.2
Trade	18,343	13.4	13.4	-0-
Finance, Insurance	2,050	15.1	13.4	34.8
Service & Other	6,577	15.2	13.4	118.4
State & Local Government	17,380	8.0	13.4	-938.5
Industrial Mix Component				608.4

*We chose data starting from 1978 since it was the first year a series of comparable date (because of changes in the Texas Unemployment Compensation Act) was developed. Also in 1975, 1972 SIC codes were used. Before 1975 industrial classification was under several different SIC manuals.

**This is the growth rate by industrial sector for Texas from 1978-1980.

***This is the aggregate growth rate for Texas from 1978-1980.

Source: Texas Employment Commision *Covered Employment and Wages by Industry and County*, 1st Quarter 1978 and 1980.

Two major reasons explain why Hidalgo County may grow at a different rate than Texas or other counties within Texas. First, Hidalgo County may have a different mix of economic activity. This is called the *industrial mix component*. This component measures the additional employment gain or loss resulting from industry growth rates which are different than the average rate of employment growth in Texas.

Use the information in Table 1 to derive the industrial mix component. Multiply the 1978 Hidalgo County employment for each industrial sector by the difference in that industry's statewide growth rate and the average employment growth rate in the state. This calculation yields the industrial mix effect. Obtain the industrial mix component by adding the industrial mix effect over all industries.

Hidalgo County's economy grew by 608.4 more jobs than it would have if its economic structure had been identical to Texas. More of Hidalgo County employment was in fast-growing industries such as agriculture, mining and construction as opposed to slower-growing industries such as manufacturing and state and local government.

The second major reason for differential employment growth among counties is more rapid growth of county industrial sectors. The *competitive share component* is the gain or loss which results from a difference between local growth in an industrial sector as compared with that sector's growth rate for the entire state. If the competitive share effect is positive, it measures the county's ability to capture an increasing portion of a specific industrial sector's state growth.

See Table 2 for the derivation of the competitive share effects and the competitive share component for Hidalgo County. To obtain the competitive share effects, multiply the Hidalgo County 1978 employment in each industrial sector by the difference in Hidalgo County and Texas growth rates for each industrial sector. Obtain the competitive share component by summing the competitive share effects over all industries.

Hidalgo County lost 1,978.9 jobs as measured by the competitive share component. Agriculture, mining, construction, the services and other categories led the way in this relative loss.

If we add the industrial mix component and the competitive share component together for Hidalgo County, we get a net local shift of -1,370.5. The *net local shift* is the change in a study area's economy due to factors local decision makers control, such as, the industrial structure (industrial component) and the competitive share (competitive share component). If we add the effect of the state's overall growth rate upon the study region (and this can easily be done by multiplying the Hidalgo County 1978

employment of each industrial sector times the state's total growth rate and then summing across all industries) to the net local shift, the actual local change for Hidalgo County can be caluculated. Thus, by adding 9,098 to -1,370.5 we arrive at an actual local change of 7,727.5 for Hidalgo County.

Table 2. Computation of Competitive Share Effects and Component for
Hidalgo County (1978-1980)

Hidalgo County Employment 1978 (Number)	Hidalgo County Growth Rates for Individual Industrial Sectors (Percent)	Texas Growth Rates for Individual Industrial Sectors (Percent)	Competitive Share Effect (Number)
Industry			
Agriculture			
8,715	2.1	27.3	-2,196.2
Mining			
1,209	10.3	27.3	- 205.5
Construction			
4,085	0.9	19.1	- 743.5
Manufacturing			
7,424	20.9	10.4	779.5
Transportation & Communication			
2,111	10.8	13.6	- 59.1
Trade			
18,343	17.5	13.4	752.1
Finance, Insurance			
2,050	12.7	15.1	- 49.2
Service & Other			
6,577	6.8	15.2	- 552.5
State & Local Government			
17,380	9.7	8.0	295.5
Competitive Share Component			-1,978.9

*This is the Hidalgo County Growth Rate by industrial sector for 1978-1980.

Source: Texas Employment Commission. *Covered Employment and Wages by Industry and County,* 1st Quarter 1978 and 1980.

Summary

Shift-share analysis identifies employment changes which are a result of a county's industrial mix (the industrial mix component) and specific industrial growth (the competitive share component). A case study of Hidalgo County was performed and could be repeated for any county in Texas. As more recent employment data becomes available, analysis can easily reflect these changes.

However, this economic method of analysis cannot be used to identify the underlying causes of county employment shifts. To assess a county's employment change, additional research would be needed to determine the significance of standard locational factors, such as, sources of raw materials, transportation costs, nearness of product markets and labor costs.

Once you explain a county's comparative advantage, you can estimate possible future types of economic expansion. Then, it would be feasible to estimate the impacts of alternative growth scenarios and assess these results relative to county growth goals.

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