
S O C R A T E S

SHIFT SHARE ANALYSIS NARRATIVE

1/25/2002

COASTAL BEND (22)

Starting Period: 1st Quarter 1995

Ending Period: 1st Quarter 2001

SOCRATES/Shift-Share Overview

The Career Development Resources (CDR) SOCRATES software system is designed to help sub-state areas describe and analyze labor market conditions. Generally, local regions experience changes within their industrial employment that are more or less concentrated in certain industries than the nation as a whole. This difference is frequently attributable to the industrial structure of the region.

For example, an area with several rapidly growing industries might display a high rate of employment gain as a result of the expansion. Likewise, a region with several declining industries might experience a high rate of job loss. In examining the regional labor market, it is not sufficient to know merely that employment changes have occurred. However, dividing those changes into various structural effects lends insight into local industrial trends. The underlying purpose of this analytical tool is to assist local planners and analysts in describing and documenting changes in their local employment in a way that enables them to support business and community leaders in making sound and informed decisions. Ideally, shift-share analysis will contribute to the regional selection of key leading industries and provide a guidepost in forming local industry partnerships.

What is a Shift-Share Analysis?

Shift-share analysis is one way to account for the competitiveness of a region's industries and to analyze the local economic base. This analysis is primarily used to decompose employment changes within an economy over a specific period of time into mutually exclusive factors. It paints a picture of how well the region's current industries are performing by systematically examining the national, local, and industrial components of employment change. A shift-share analysis will provide a dynamic account of total regional employment growth that is attributable to growth of the national economy, a mix of faster or slower than average growing industries, and the competitive nature of the local industries.¹

Like other analytical economic tools, the shift-share technique is only a descriptive tool that should be used in combination with other analysis to provide a summary of a region's key employment potential industries. Once completed, the analysis provides a representation of changes in employment growth or decline, and it is useful for targeting industries that might offer significant future employment opportunities. By interpreting data provided by shift-share, you can explore the advantages your local area may enjoy, as well as identify growth, or potential growth industries that are worthy of further investigation.

Components of Regional Industry Employment Change

As stated above, the shift-share analysis divides the change in local industry employment into three components:

- **National growth share** - The share of local job growth that can be attributed to growth of the national economy. Specifically, if the nation as a whole is experiencing employment growth, ("a rising tide lifts all boats"), one would expect total national growth to exert a positive growth influence on the local area. This factor describes the change that would be expected simply by virtue of the fact that the local area is part of a changing national economy. In the analysis, we first examine the *national growth share*, or the number of jobs lost or gained in a region if total employment in the region had changed at the same rate as overall total national employment.
- **Industrial mix** - The share of local job growth that can be attributed to the region's mix of industries being analyzed. This second factor is the change in a local industry that would be attributable to the growth or decline of the industry nationally. This component isolates the fact that nationwide, some industries have grown faster or slower than others. It represents the contribution that a specific industry nationally has made to the change in the number of jobs in the region.
- **Local share (Regional shift)** - This share of local job growth describes the extent to which factors unique to the local area have caused growth or decline in regional employment of an industrial group. We observe that even during periods of general prosperity, some regions and still some industries grow faster than others do. This is usually attributed to some local comparative advantage such as natural resources, linked industries, or favorable local labor situations. The local component aids in identifying a local area's economic strengths. This element of the analysis is a representation of how a region's competitive position can contribute to regional job growth. Shift-share, and the local share component in particular, can point to industries that enjoy local comparative advantage. It cannot, however identify what the actual comparative advantage is. It is important to identify what factors have contributed to the local area in outperforming the nationwide growth. This wide range of factors is very diverse and often includes elements such as:
 - Local raw materials or local inputs
 - Transportation methods
 - Local wage rates

- Influence of local industries
- University influences
- Local consumption and savings
- Other comparative advantages

It is also important to identify whether the large gainers or losers are basic, or export industries of your region. These industries are important to your local economy for job creation. In addition these industries are key to pulling in dollars from outside of the local region and thus have a "multiplier" effect. By this we mean that these "basic" industries will generate larger revenues in the long run because they are attracting money from outside of your workforce area as well as creating new jobs within the region.

Using the Shift-Share Program

Once you have opened the SOCRATES Shift-share program, you will see a few options, or rather required inputs that are necessary for actually executing the analysis. Obviously, you must first select the workforce region that you wish to examine. The second step is to enter the base time period, or starting year and quarter to set the required initial time frame for examination. Next, you should select the terminal time period, or the ending year and quarter, for your examination. It is very important to keep in mind that shift-share analysis is highly sensitive to the stretch of time being examined, and that the results of an analysis on a particular region can vary greatly depending upon the health of the economic environment at the particular time period.

For example, if one were to examine a region during a period of a national economic recession, one could expect the regional shift-share results to reflect the impact of the national influence. Similarly, if one were to run an analysis of a region using a time period where the nation as a whole was experiencing an economic expansion, we would expect the results of the analysis to reflect positive employment conditions in several industries. In other words, it is important to keep in mind the economic trends that were prevalent during the analyzed time period, since they will directly influence the outcome of the shift-share model. *As a general rule of thumb it is useful to select the same quarter for both the base and terminal year, select a terminal year and quarter as current as possible and limit the time period of analysis to five years or less.*

Interpreting the Shift-Share Analysis Printout Table

Once you have performed the shift-share analysis, the next step is interpreting the printed table. The first columns on the left side of the table represent the **Standard Industrial Classification (SIC) code** and corresponding **Industry Title**.

Under the **Employment** heading, the next two columns of data **Local 1st Qtr 1995** and **Local 1st Qtr 2001**, represent the local industry employment for the two time periods in the analysis.

Also under the **Employment** heading, the third and fourth data columns, **National 1st Qtr 1995** and **National 1st Qtr 2001**, represent national industry employment for the same two time periods as the local employment data.

The column labeled **% Chg Loc Emp** refers to the percent change in local employment by industry for the time period under study. The last data column labeled **Abs Chg** represents the absolute change in employment by industry for the time period under study. It is interesting to observe industries with noticeably large positive or negative absolute employment changes. Even if the analyst is not interested in the shift-share components, the program output is useful to determine absolute and percent change for local employment by industry.

The data columns labeled **Nat'l Share**, **Indust Mix**, and **Local Share** are the previously mentioned shift-share components national share, industrial mix, and local share respectively. These three components together should add to the absolute change in employment of the local area (any minor deviations are due to rounding). The detailed explanation of each component was discussed in a prior section.

Region and Time Period

For this particular analysis, the State of Texas is divided into 28 sub-regions called Local Workforce Development Areas. The shift-share analysis examines a specific workforce region over a historical period of time. This analysis examines the **Coastal Bend** region of Texas. Our base time frame is the **1st quarter of 1995** and the terminal time frame is the **1st quarter of 2001**.

Data Analysis

From our analysis of the **Coastal Bend** region, we can observe that certain industries display the greatest employment potential. Other industries display positive growth and may exhibit some local potential comparative advantage, but not quite as high as industries in the first group. Still other industries are less promising in terms of employment growth, they display negative employment growth, or they display no definite growth pattern at all.

The first step is to identify those industries with very large positive or negative absolute changes. It is important to remember that if an industry is declining nationally, the local industry could still show a positive local share effect if it were declining at a slower rate than the industry nationally. *Ideally, you should identify those industries with both a positive industry mix effect and a positive local share.* These will be your industries with the greatest likelihood for potential job opportunities.

Secondly, the analyst should look at the **local share** column. This column will give the first indication as to whether the local area is performing well or poorly and will help identify industry sectors in which the local area may have comparative advantage. Where

the local share is larger than the industrial mix, and both figures are positive, this is an indication that the local area may have some comparative advantage.

As mentioned previously, it is necessary to research the actual cause of the local comparative advantage. You will also want to identify what factors the local area may not be taking advantage of that allow an industry nationwide to outperform the local area. Similarly, where the local area shows a positive local share and a negative industry mix, you would want to identify why the local area industry was able to prosper despite poor national industry performance.

Greatest Likelihood for Potential Job Opportunities

From an industrial perspective, certain industries within the **Coastal Bend** region exhibited high employment potential between the **1st quarter 1995** and the **1st quarter 2001**. That is, from our analysis, these industries displayed a positive industry mix and a positive local share during this time period. Business Services (SIC 73) displayed the largest change in absolute employment with a gain of 5,093. General Contractors, Ex Bldg (SIC 16) followed with a gain of 3,678 jobs. Social Services (SIC 83) followed closely in absolute employment change with a gain of 1,325, followed by Communications (SIC 48) with 799 and Auto Repair Services & Parking (SIC 75) with 535. Also significant for the Coastal Bend region during this time period were Local & Interurban Transit (SIC 41), Transportation by Air (SIC 45), Amusement & Recreation Services (SIC 79), Motion Pictures (SIC 78), Bldg Materials/Garden Supplies (SIC 52), and Transportation Services (SIC 47).

Total employment for the **Coastal Bend Workforce Development Region** grew by **22,134** jobs during the examined time period, a change of **12%**.

Nationally, total industrial employment for the United States grew by **14,670,045** jobs during the examined time period, a change of **12.61%**.

Potential Comparative Advantage

This second group of industries displayed a positive local share with a negative industrial mix during the examined time period. This is an indication that the local area may have some comparative advantage in these industries, despite sub par national performance.

Limitations

It should be noted that shift-share is a simple analytical technique and does not account for many factors. Most notably, it minimizes the impact of issues such as business cycles, identification of actual comparative advantages, and differences caused by levels of industrial detail. Program outputs should be interpreted with caution, given limitations of the methodology, and used in conjunction with other regional analysis techniques to come to a more complete representation or accurate picture.

The shift-share analysis cannot explain the causes of each component. Moreover, this shift-share analysis examines employment changes, not changes in income, earnings, or value-added, which are alternative measures of an industry's size and strength. While the shift-share technique can be applied to these additional measures, they are not included here.

A shift-share industrial analysis is a "snap-shot" of 2 particular time frames and may not give an entirely clear picture of the local, and national economies because the results are sensitive to the period of time chosen. Shift-share analysis does however offer a simple, straightforward approach to separating out the national and industrial contributions from local or regional employment growth. **For questions or more information regarding the Shift-Share analysis system, contact CDR at (512)837-7484 or SocratesQuestions@cdr.state.tx.us.**

¹ This is a limited use dynamic model. Regions can have positive shares even with negative growth if national declines exceed those at the regional level.

[Print this Report](#)