

Supplement B: Shift-Share Analysis

Shift-share analysis examines the recent performance of a region's economy. It separates the growth explained by the mix of industries located within the region (i.e., the region's industrial structure) and the growth attributed to particular regional influences. Shift-share accomplishes this by comparing the actual growth rate of the region to the growth rate that would have occurred if every industry in Kansas had grown at the national growth rate for that industry.¹ The industry mix (IM) effect will be positive for industries that grew above the overall national average from 1990 to 1999.² The local factors (LF) effect will be positive if the industry in Kansas out-performed the industry at the national level from 1990 to 1999. Overall, when comparing Kansas to the U.S. in the 1990s, Kansas benefited from competitive local factors but had a relatively weak industry mix that dampened employment growth in the state.

- Farming, mining, manufacturing and government are all industries growing more slowly at the national level than the U.S. average, and employment concentrations in these industries in Kansas were hurt by U.S. trends. In the case of manufacturing and government, positive local factors helped these industries grow over the 1990s.
- The oil and gas industry is in decline at the U.S. level and the industry declined even more in Kansas, shrinking by almost 11,000 jobs. Low fuel prices in the second half of the 1990s exacerbated this problem.
- Though the other transportation, equipment, food and kindred products industries struggled nationally, they posted strong gains in Kansas. Retail trade and local government stand out as industries with strong local factors for employment growth.
- While the services industry grew by over 100,000 jobs from 1990 to 1999, it did not grow as quickly as the U.S. average. A similar trend is found for finance, insurance and real estate.
- Construction is the one major industry with stronger than average growth at the U.S. level and even stronger growth in Kansas—a total of almost 30,000 new jobs added from 1990 to 1999.

¹Three criticisms are leveled against shift-share analysis: (1) calculation of the structural component takes no account of linkages between the industries of a region and that, for example a fast growing industry may promote growth in other industries which supply it, (2) industrial classifications are to some degree arbitrary, and (3) it offers no explanation of the residual or unexplained growth.

²The national share (NS) concept simply measures the growth of an industry if it grew at the overall national rate. It is not particularly instructive for analyzing a region's performance, but is necessary for the calculations.

Table B.1 Shift-Share Analysis, 1990-1999
Kansas Versus U.S.

	National Share	Industry Mix	Local Factors	Total
Farm	14,785	-14,274	-4,213	-3,702
Agricultural services, forestry, fishing	2,652	3,574	-690	5,536
Mining	5,125	-12,494	-3,551	-10,920
Construction	11,057	6,326	12,166	29,549
Manufacturing	33,345	-37,686	29,294	24,953
Fabricated metal products	1,868	-917	-377	574
Other transportation equipment	7,422	-18,199	19,596	8,819
Food and kindred products	4,650	-4,097	4,155	4,708
Transportation and public utilities	13,096	2,940	-821	15,215
Wholesale trade	13,177	-4,625	374	8,926
Retail trade	41,722	-59	14,661	56,324
Finance, insurance, and real estate	16,700	3,542	-1,945	18,297
Services	62,981	57,761	-5,502	115,240
Government and government enterprises	44,274	-31,587	6,815	19,502
Military	6,935	-16,350	-1,312	-10,727
Local	22,929	-2,387	11,698	32,240
TOTAL	258,913	-26,582	46,588	278,920

Source: U.S. Bureau of Economic Analysis and Cambridge Systematics.

- When comparing Kansas against its competitor states, the results change a bit. Now, the total local factors concept is negative, indicating that as a whole, competitor states had more employment growth than Kansas. This is largely due to Colorado, which enjoyed strong economic growth over the past decade.
- The primary success stories in Kansas compared to the region are manufacturing, led by the aviation industry, and local government.
- Every other major industry performed better in the competitor states than in Kansas. This is particularly the case in construction, finance, insurance, and real estate, and services.
- Kansas may have diversified the economy since the mid-1980s, but the economy is still not performing as well as competitor states in key growth industries.

Table B.2 Shift-Share Analysis, 1990-1999
Kansas Versus Competitor States

	National Share	Industry Mix	Local Factors	Total
Farm	18,670	-21,332	-1,040	-3,702
Agricultural services, forestry, fishing	3,348	2,778	-590	5,536
Mining	6,472	-15,139	-2,252	-10,920
Construction	13,962	21,750	-6,163	29,549
Manufacturing	42,107	-32,252	15,098	24,953
Fabricated metal products	2,358	-631	-1,153	574
Other transportation equipment	9,372	-19,964	19,411	8,819
Food and kindred products	5,872	-2,801	1,637	4,708
Transportation and public utilities	16,537	2,570	-3,892	15,215
Wholesale trade	16,639	-6,634	-1,079	8,926
Retail trade	52,684	5,497	-1,857	56,324
Finance, insurance, and real estate	21,088	10,248	-13,038	18,297
Services	79,530	49,980	-14,270	115,240
Government and government enterprises	55,907	-34,966	-1,439	19,502
Military	8,757	-15,723	-3,760	-10,727
Local	28,954	-5,148	8,434	32,240
TOTAL	326,944	-17,501	-30,523	278,920

Source: U.S. Bureau of Economic Analysis and Cambridge Systematics.