



Arrowhead Center

What is a Location Quotient?

Location Quotients (LQs) are ratios that provide a convenient way to examine the specialization of economic activity in a region. LQs can be based on employment, income or value added data. LQs are easy to compute and interpret.

The following formula assumes that we are calculating location quotients for industries in New Mexico in 2005.

The location quotient for each industry is calculated as follows:

$$LQ = (\text{Employment in industry } j \text{ in NM} / \text{total employment in NM})$$

Divided by

$$(\text{Employment in industry } j \text{ in US} / \text{total employment in US})$$

The data for this example were obtained from the U.S. Department of commerce, Bureau of Economic Analysis, Regional Economic Information System (REIS) available at: www.bea.gov.

LQ EXAMPLE BEA EMPLOYMENT DATA 2005

	US	NM	Percent US	Percent NM	LQ
Total Nonfarm employment	171,335,600	1,039,666	100.00	100.00	1.00
Forestry, fishing, related activities, and other 3/	1,012,200	7,224	0.59	0.69	1.18
Mining	820,000	21,024	0.48	2.02	4.23
Utilities	594,100	4,217	0.35	0.41	1.17
Construction	10,845,700	73,164	6.33	7.04	1.11
Manufacturing	14,860,900	41,896	8.67	4.03	0.46
Wholesale trade	6,401,300	28,566	3.74	2.75	0.74
Retail trade	18,941,100	117,770	11.05	11.33	1.02
Transportation and warehousing	5,510,100	24,901	3.22	2.40	0.74
Information	3,577,100	17,320	2.09	1.67	0.80
Finance and insurance	8,186,600	32,101	4.78	3.09	0.65
Real estate and rental and leasing	6,934,300	37,892	4.05	3.64	0.90
Professional and technical services	11,488,700	68,994	6.71	6.64	0.99
Management of companies and enterprises	1,857,000	5,921	1.08	0.57	0.53
Administrative and waste services	10,645,100	56,653	6.21	5.45	0.88
Educational services	3,552,900	15,551	2.07	1.50	0.72
Health care and social assistance	17,267,000	109,575	10.08	10.54	1.05
Arts, entertainment, and recreation	3,517,300	21,962	2.05	2.11	1.03
Accommodation and food services	11,728,300	81,679	6.85	7.86	1.15
Other services, except public administration	9,758,900	53,689	5.70	5.16	0.91

Federal, civilian	2,790,000	30,099	1.63	2.90	1.78
Military	2,027,000	16,258	1.18	1.56	1.32
State government	5,112,000	69,786	2.98	6.71	2.25
Local government	13,908,000	103,424	8.12	9.95	1.23

Interpretation: An LQ = 1 means that the area under consideration (New Mexico in this case) has the same percentage of employment in that industry as does the area it is being compared to (in this case, the nation). New Mexico industries with LQs close to 1.0 include: (1) Retail Trade, (2) Professional and technical services, and (3) Arts, entertainment and recreation. The New Mexico LQ for manufacturing is 0.46 which means that manufacturing employment in New Mexico is under-represented in the sense that New Mexico has a smaller percentage of manufacturing employees than does the nation. In contrast, New Mexico has an LQ of 4.78 for the mining industry (which includes oil and gas), which means that the proportion of employment in the mining sector in Mexico is nearly five times greater than the proportion of mining employment in the nation.

The LQ is used often to determine basic and non-basic industries in economic base studies. Basic industries are those in which the LQ is greater than 1.0 –although many analysts use 1.25.

While the LQ can be a very useful tool some words of caution are in order. First, LQs can vary considerably from year to year. Second, LQs can be very different depending on the data source used. Third, LQs can vary depending on the level of aggregation of industries. For example, if we group all government employment together, the LQ for New Mexico in 2005 is 1.52. The table above lists government sector LQs from 1.23 for Local Government to 2.25 for State Government employment. Finally, LQs will vary considerably if we use wage or income data rather than employment data to compute them.

The U.S. Bureau of Labor Statistics has a very handy Location Quotient Calculator that you can find at: http://data.bls.gov/LOCATION_QUOTIENT/servlet/lqc.ControllerServlet The BLS LQ calculator uses the quarterly survey of wages and employment (establishment data) to calculate LQs for any state or county in the U.S. Try it. You will like it.