Economic Base Analysis Notes:

- We calculate basic jobs using either an *ad hoc assumption* approach or a location quotient (or a modified LQ) approach.

- Assumed basic sectors generally fall into these categories: all agriculture, forestry, and fisheries; all mining; all manufacturing; all tourism-related industry; federal government; and state government.

- Location Quotients are calculated using a reference economy, usually the U.S. economy. A LQ is simply the ratio of a local job in a sector to the national ratio in the same sector:

\[
LQ = \frac{\text{Employment in an industry in a region}}{\text{All regional jobs}} \div \frac{\text{Employment in an industry nationally}}{\text{All national jobs}}
\]

*Where “all regional jobs” or “all national jobs” can be substituted using another reference variable in the denominator, i.e., all of the categories listed in the next bullet.*

- LQs can be calculated using the following bases:
  - Jobs
  - Total Personal Income
  - Population
  - Income minus transfer payments
  - Total earnings
  - Plus other variations

- We use the LQs if and only if they are greater than 1.0 to calculate expected basic employment in an industry, using employment as the basis, where:

\[
\text{Basic jobs in } i = \left(\frac{e_i}{E_i} - \frac{e_I}{E_I}\right)E_i \quad \text{or} \quad \text{Basic jobs in } i = e_i(1-1/LQ)
\]

- Once basic jobs have been calculated for each sector, we can sum all of the basic jobs and calculate what the total basic jobs are as a ratio to the whole economy.

- The basic multiplier, then, is simply: *Multiplier = Total Jobs / Basic Jobs*

Basic procedures:

1. Calculate LQs by the different methods
2. Calculate basic employment (if LQ > 1.0)
3. Sum the basic employment
4. Calculate the basic multiplier
Calculating an Economic Impact

In this example, I am using the basic jobs count determined from the jobs LQ in Knox County, Illinois.

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</thead>
<tbody>
<tr>
<td></td>
<td>492,286</td>
<td>1,702</td>
<td>20.734</td>
<td>1620</td>
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</tbody>
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I am going to close the Maytag refrigerator plant, which had 1,702 jobs.

This is an outlandish example, I know, because Maytag, that veritable paragon of manufacturing strength and American industrial might would never abandon a profitable plant to the vagaries of the world market and short-term quarterly gains.

Here were my pertinent numbers for Knox County, Illinois:

Base Multiplier = 3.34
Total job loss (Maytag) = 1,702
Maytag LQ = 20.734
Base jobs loss (Maytag) = (1-1/20.734)* 1702 = 1,620
Nonbase Maytag jobs lost: 1,702 – 1,620 = 82

Economic Impact Calculation: Total Job Loss = Nonbasic_i + (Basic_i * Multiplier)
Total Job Loss = 82 + (1,620 * 3.34)
Total Job Loss = 5,492

New Basic Jobs: 8,287 – 1,620 = 6,667
New Total Jobs: 27,719 – 5,492 = 22,227
New Multiplier: 22,227 / 6,667 = 3.33