Introduction to Fiscal Impact Analysis

Elements of Fiscal Impact Assessment

➢ A general understanding of the basics of public finance and service provision
➢ Introduction of spatial dimensions into our assessments – where to people live and where do they work?
➢ Linking economic impact with spatial possibilities with demands for public goods.
Local Governments

Usually have their own elected governing body:

- School districts
- Municipalities (cities, towns, villages, burghs)
- County governments
- Special districts
Economies are dynamic

Questions:
• How does an economy and a community grow?
• What are the constituent portions of the regional labor base?
• What are the factors and forces affecting labor force size?
• What is the likelihood that my population will grow?
• What will it do to my community?

Why are fiscal impacts important?

All economic change has consequences for a community and for its citizens. We care about the

- Kind of jobs that are emerging or disappearing
- The impacts of change in public services – roads, schools, public safety costs.
- We want to know that development will “pay its own way” if not at first, after a reasonable amount of time
We need to use elemental research tools and understandings

Economic activity takes place in space. We need to understand where economic activity is taking place, where residential preferences are, and whether there is a mismatch between growth and the costs of growth or decline and the cost of decline.


There are strong determinants job growth and locational preferences

We’ve already seen the maps –

– Urbanization forces - growth begets growth
– Regional preferences – Mid Atlantic, “Sun Belt,” Rocky Mountain States, Florida, SW and Pacific NW.
– Amenities and culture
– Lifestyle and lifetime opportunity
– Simultaneity of jobs and people change
Understanding a Labor Force

Labor force = employed + unemployed

But our employed people can be composed, spatially of three types of workers:
1. Those who live and work in their community
2. Those who live in a community but work elsewhere (out-commuters)
3. Those who work in a community but live elsewhere (in-commuters)

Urban Economy
Rural Economy Near a Trade Center

Isolated Rural Economy
There is a differential local fiscal and social impact to job growth
That depend on
– Area employment and unemployment
– The overall composition and age of the workforce
– The size of competing regional economies
– The distance to trade centers
– The worth of working
– The value of area public goods and services
  (Tiebout model – people “vote” with their feet)

We are adding 250 jobs to an area
Who will / can fill those jobs?
✓ The unemployed
✓ Existing outcommuters
✓ New incommuters
✓ Residents entering the workforce
✓ In-migrants

Only the last one involves a population increase, so
gauging the likelihood of in-migrants relative to job
growth is very important
Let’s Re-order our Labor Force Formula

Labor Force = Place of work employment + Outcommuters - Incommuters + Unemployed

The likelihood of population growth depends on growth in place of work employment caused by immigration. The trick, then, is guessing how many new workers will accrue – we do that in the last module.

When we do this mathematically

We compute a system of simultaneous equations where, for example

Labor Force \( \Xi \) (Place of Work Employment, Incommuters, Outcommuters, Unemployed)

or

Unemployed \( \Xi \) (Labor Force, Place of Work Employment, Incommuters, Outcommuters)

Where

1. Labor Force = \( f(Employment, Total Participation Rate) \)
2. Incommuters = \( f(Employment, Contiguous Employment, Contiguous Labor Force) \)
3. Outcommuters = \( f(Employment, Contiguous Employment, Contiguous Labor Force) \)
4. Population = \( f(Labor Force, Total Participation Rate) \)
5. Enrollment = \( f(Labor Force, Male Participation Rate, Female Participation Rate) \)
Gravity becomes an issue

In- and out-commuters depend on the size of your economy and the size of neighboring economies.

Using “gravity” as our mathematical model, then two bodies have attractions to one another based on the product of their size (mass) and distance from one-another squared.

Gravity from an urban area would be strong on a surrounding rural area.
Percent of neighboring labor force commuting to central city

![Graph showing the percent of neighboring labor force commuting to central city as a function of miles from Des Moines.]

Change in Labor Force Growth

Population Change

Change in Public Goods Demand and Cost

Employment Change

Labor Force Growth
Doing a Fiscal Impact

• Reading: Garrett and Leatherman. Web Book of Regional Science, Chapter 6.
  http://www.rri.wvu.edu/WebBook/Garrett/chaptersix.htm


We can build models to do this

Problems with the models
Work great when there is a “normal” pattern of job and people growth
Break down where we have a disconnection between jobs and population.
More applicable to growing places than declining places.
Without a model

• Use per capita factors to allocate impacts
  – E.g.,
• Can use summaries of state and local revenues and expenditures organized at the state level
• Can use actual local area revenue and finance figures – this is preferred. If you are a local planner or analyst, you will have access to local government cost information.

Steps

• Figure the economic impact – you have done that in assignments one, and especially two.
  – It is important to know the total job and the total labor income impacts (assignment 2)
• Next must allocate the new jobs to determine expected labor force growth
• Next must estimate likely income growth in the area from the labor force gains
• Last we figure out the likely local government revenue and expenditure consequences
Initially: a Hypothetical Impact

We have a job gain in Dallas County, IA. This county borders Polk County, and is the fastest growing county in the state.

– Total job impacts = 200
– Average job pays $34,000 considering all direct and indirect impacts.

Step 1: allocating jobs to the county

We need to go to the [www.bea.gov](http://www.bea.gov) web site.

– Then to the [state and local area personal income](http://www.bea.gov) link
– Then to [Census Journey to Work](http://www.bea.gov) link
– Then to Option 1, then we pick our state and our county. First go to [Place of Residence/](http://www.bea.gov)
  
  We find that the Dallas County residential workforce = 21,520
  
  We find that the number of county residents working in the county = 8,135
  
  and the outcommuters = 21,520 – 8,135 = 13,385

– Next go to [Place of Work /](http://www.bea.gov)

  We find that 15,601 people work in Dallas County

Step1. Cont’d

We can now calculate our percentages for allocating the jobs:

Live-and-work = (workforce – outcommuters)/ workforce
   = (21,520 – 13,385) / 21,520 = 37.8 percent

Jobs-to-Locals = (workforce – outcommuters) / employment
   =(21,520 – 13,385)/ 15,601 = 52.1 percent

Step 2.

Next we average these two percentages. In effect we are saying the average propensity to work locally plus the local composition of jobs are two competing probabilities.

Initial factor for allocating our jobs = (37.8% + 52.1%) / 2
   = 44.95 %

So, .4495 X 200 = 89.9 jobs are candidates for living and working in Dallas Co.

Next we make a good or a bad jobs adjustment. These jobs paid $34,000 and let’s assume that the county average was $32,000: 34000/32000 = 1.0625

So, 1.0625 X 89.9 ≈ 96 jobs are expected to live and work in Dallas Co.
Step 3. Determining the Fiscal Impact

First, our total income in the region

\[ = 96 \text{ jobs} \times $34,000 = $3.264 \text{ million} \]

We are going to allocate this income to the community’s local government revenue and expenditure accounts.

We can use local revenues and spending or the state averages.

<table>
<thead>
<tr>
<th>Revenues</th>
<th>All Iowa Local Governments in ($000)</th>
<th>Percent of Personal Income</th>
<th>Fiscal Impact: Dallas County ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Federal</td>
<td>431,368</td>
<td>0.5%</td>
<td>15.0</td>
</tr>
<tr>
<td>From State</td>
<td>3,451,522</td>
<td>3.7%</td>
<td>120.0</td>
</tr>
<tr>
<td>Taxes</td>
<td>3,954,232</td>
<td>4.2%</td>
<td>137.4</td>
</tr>
<tr>
<td>Charges, Misc. &amp; Other</td>
<td>2,619,000</td>
<td>2.8%</td>
<td>91.0</td>
</tr>
<tr>
<td>Total</td>
<td>10,456,122</td>
<td></td>
<td>363.4</td>
</tr>
</tbody>
</table>

| Spending                  |                                      |                            |                                   |
|---------------------------|                                      |                            |                                   |
| Education                 | 4,973,446                            | 5.3%                       | 172.8                             |
| Public Safety             | 759,770                              | 0.8%                       | 26.4                              |
| Transportation           | 888,130                              | 0.9%                       | 30.9                              |
| Health & Welfare         | 1,363,613                            | 1.5%                       | 47.4                              |
| All other                | 3,188,711                            | 3.4%                       | 110.8                             |
| Total                    | 11,173,670                           |                            | 388.3                             |

| Iowa Personal Income ($000) | 93,918,906                              | 100.0%                     |

Economic Impact Income ($000) 3,264
We can also use Government Finance Files

• Go to the census of governments at the U.S. census web site. (www.census.gov)

• Download a REALLY, REALLY BIG FILE AND PROCESS 100s OF VARIABLES

• HARDER THAN THE DICKENS.

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Impacts Using Government Finance Reports for Dallas County, Fiscal 2002

<table>
<thead>
<tr>
<th></th>
<th>All Iowa Local Governments in $000</th>
<th>Percent of Personal Income</th>
<th>Fiscal Impact: Dallas County $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Revenue</td>
<td>120,146</td>
<td>8.6%</td>
<td>280.1</td>
</tr>
<tr>
<td>From Federal</td>
<td>846</td>
<td>0.1%</td>
<td>2.0</td>
</tr>
<tr>
<td>From State</td>
<td>44,266</td>
<td>3.2%</td>
<td>103.2</td>
</tr>
<tr>
<td>Taxes</td>
<td>48,159</td>
<td>3.4%</td>
<td>112.3</td>
</tr>
<tr>
<td>Charges, Fees, &amp; Misc</td>
<td>26,875</td>
<td>1.9%</td>
<td>62.7</td>
</tr>
<tr>
<td>General Spending</td>
<td>133,607</td>
<td>9.5%</td>
<td>311.5</td>
</tr>
<tr>
<td>Education</td>
<td>83,479</td>
<td>6.0%</td>
<td>194.6</td>
</tr>
<tr>
<td>Public Safety</td>
<td>6,940</td>
<td>0.5%</td>
<td>16.2</td>
</tr>
<tr>
<td>Transportation</td>
<td>7,781</td>
<td>0.6%</td>
<td>18.1</td>
</tr>
<tr>
<td>Health and Welfare</td>
<td>816</td>
<td>0.1%</td>
<td>1.9</td>
</tr>
<tr>
<td>All Other</td>
<td>34,591</td>
<td>2.5%</td>
<td>80.6</td>
</tr>
</tbody>
</table>

Dallas County Income 2002 1,400,107

Economic Impact Income $000 3,264
Alternatively

- For a well-defined area, you can compile annual summaries of government receipts and government spending based on your definition of what is important in your county.
- Use BEA data to get an indication of county income.
- Prepare your own factors to apply to the income impact.

Alternately, too

- You can also create marginal change data:
  - Look at your region from two points in time,
  - But then calculate your relevant percentages as the
    \[ \frac{\Delta \text{Revenue } t_0 \text{ to } t_n}{\Delta \text{Local Income } t_0 \text{ to } t_n} \]
    By revenue item
  And
    \[ \frac{\Delta \text{Spending } t_0 \text{ to } t_n}{\Delta \text{Local Income } t_0 \text{ to } t_n} \]
    By expenditure item