INTERPRETING AND REPORTING IMPLAN DATA, IMPACT RESULTS, AND MULTIPLIERS

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PRESENTATION OUTLINE

- **Model data** – common points of confusion
- **Multipliers** – comparing and interpreting
- **Impacts** – setting up analyses and reporting results

MODEL DATA

COMMON POINTS OF CONFUSION

IMPLAN SECTORS

- All sectors up to and including the Private Households sector are private industries
  - The Postal Service and following sectors are government enterprises, non-sectors, and government payroll sectors
- IMPLAN sectors include both for-profit and non-profit businesses, and both corporations and proprietorships

EMPLOYMENT

- Annual average job count
  - Mix of full-time, part-time, seasonal/temporary
  - One person can have more than one job
  - Same definition used by BEA and BLS
- Adjustment methods available for job inputs that represent FTEs and/or are not annual
- Includes proprietors
  - Makes EC/Employment ratios subject to misinterpretation for sectors with high proprietor counts (similar for sectors with high number of PT workers, like real estate)
  - Will eventually be reported separately

CONTRACT EMPLOYMENT

- For all non-construction sectors, contract employment appears as an intermediate purchase (part of the purchasing sector's production function)
  - Will not show up us direct employment but rather as indirect employment
  - Will be a mix of W&S employment and proprietor employment
- For construction sectors, contract employment is part of direct proprietor employment
- Local employment vs. traveling crews

INCOME

- Labor income includes proprietor income
  - Thus, it is possible for it to be negative and to fluctuate year-to-year
  - Employee compensation is fully-loaded wages and is always positive
- Personal income includes all sources of income
  - In addition to labor income, personal income includes Social Security payments, investment income, etc.
  - An informational value only – not used in impact calculations

OUTPUT

- Output = value of production that occurred in that year
- Not always the same as sales!
  - Inventory
  - Output for the wholesale and retail sectors is the wholesale or retail margin only (not sales)
- Output can rise or fall even if physical production levels remain the same.
  - Price changes, tax rate changes, wage rate changes, etc.
  - Thus, output/worker ("productivity") can also change for the same reasons
- Output "double-counts" relative to GDP (see article)

RPC, RSC, S/D RATIO

- RPC = % of local demands that is met by local supply

  = LULS / Local Demand

- RSC = % of local supply that goes to meet local demand

  = LULS / Local Supply

- High ratio of RSC to RPC is one indicator that there is room to increase local production of the commodity

- Domestic Supply/Demand Ratio = Net Commodity Supply / Gross Commodity Demand
  - % of local demand that could possibly be met by local domestic production (i.e., if the commodity were not exported domestically)

MULTIPLIERS

COMPARING AND INTERPRETING

INTERPRETATIONS AND COMPARISONS

- The 2 Rule-Of-Thumb
  - Only applies to output multipliers (other types of multipliers have wide ranges, though VA multipliers tend to be lower than all others)
  - Only applies to sub-national models
- Multipliers are influenced by many things, including:
  - RPCs of the industry's main inputs and of its suppliers' main inputs
  - Wage rates of the industry and its suppliers
  - Labor-intensity of directly-impacted industry relative to suppliers
  - Commuting rates

INTERPRETATIONS AND COMPARISONS

- Geography Size
  - Larger study areas generally, but not always, have higher multipliers (spreadsheet example)
  - Depends on the industry and geographies being compared
  - MRIO multipliers
  - Customized events
- Bigger multiplier ≠ bigger industry

INTERPRETATIONS AND COMPARISONS

- Effects vs. Multipliers
  - Effects are on a per-million-dollars-of-output basis
  - Multipliers are unitless – the units of the numerator and denominator are the same.
- Type I Multiplier = (Direct + Indirect) / Direct
  - Assumes no institutions internalized
  - No induced effects
- Type SAM Multiplier = (Direct + Indirect + Induced) / Direct
  - Standard is to internalize households only
  - Internalizing State/Local Government may be justified in some specific cases (will increase induced effects)
  - Generally not recommended to internalize other institutions (see paper)

IMPACTS

SETTING UP ANALYSES AND REPORTING RESULTS

EMPLOYMENT

- Jobs vs. Individuals
  - Job-years
- Multi-year impacts
  - Workers in subsequent years will likely be the same as those in the first year – shouldn't be counted more than once
- Short-term impacts
  - Employment/output may need to be adjusted upward
  - Most employent should be reported in terms of job-years and reported as temporary

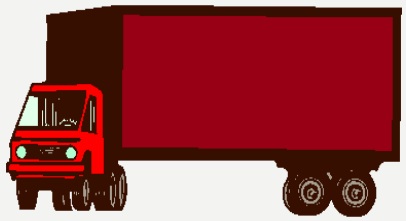
OTHER COMMON PITFALLS

- Event Year should more appropriately be called Dollar Year or Input Year – WHY?
- Net new activity? All about presentation and context.
  - Counter-factual or "but-for" analysis
    - support vs. create
    - contribution vs. impact
  - New economic activity versus shifting economic activity from one sector to another
  - Taxes
    - Net new tax revenue for a county may not be net new tax revenue for the state

WHEN DO MARGINS COME INTO PLAY?

- Anytime you are modeling something that was purchased from a wholesaler or retailer.
  - In other words, anytime the commodity is not purchased directly from the producer.
  - Think manufactured goods.

MARGINS ILLUSTRATED



Producer value = $100

Transportation costs = $30

Retail Mark-up = $20

Electricity
Water
Rubber
Cotton
Dye
Legal services

Gasoline
Motor oil
Vehicle repair service
Tires
Legal services

electricity
Rent
Cleaning supplies
Advertising
Legal services

TWO WAYS TO APPLY MARGINS, DEPENDING ON THE INFORMATION YOU HAVE:

- Suppose you are trying to model a $1MM purchase of gasoline
  - Since you know the specific commodity being purchased, you can set up the Event in the producing sector (petroleum refining)
  - If you don't then apply margins, the producer will receive the entire retail sale price
  - Applying margins will give a portion of the sales price to the producer, a portion to the transporters, a portion to the wholesaler, and a portion to the retailer.

TWO WAYS TO MARGIN DEPENDING ON THE INFORMATION YOU HAVE:

- Suppose you are trying to model $1MM of purchases from a gas station
  - Can you choose an IMPLAN producing industry?
  - Okay – so we have to use the retail sector.
    - What happens if we don't apply margins?
    - What happens when we do apply margins?

THANK YOU!

Questions? Comments?

S-W DIVERSITY INDEX

- A summary index based on the number of industries in a region (relative to maximum possible) and the spread of employment among those industries
- Could be calculated based on other factors (EC, Output)
- Ranges from 0 to 1
- Is a relative measure best used in comparison to other geographies or across time (we sell spreadsheets of these data if desired)