

## Q&A Summary

### May 24 Webinar

**Question: What is the Synthesis method for employment?**

Answer: Shengyi may be able to provide more details on this, but the basic idea is to create disaggregate data from aggregate data, by fractioning it using available marginal totals.

**Question: How are the multipliers calculated "technical coefficients"?**

Answer: That is the simplest part of the I/O model: divide the initial dollar values of purchases from each industry by the total output of the purchasing industry. Essentially, just scaling to an output of 1 dollar.

**Question: Are all cells normalized to a \$1.00 or to a larger monetary sum? There are a lot of cells....**

Answer: Right, normalized to \$1. Spatial IO adds a lot of dimensions: locations, and commodities.

**Question: Did you use a sample of INFOUSA records or full records data set for California?**

Answer: This was done by UC Davis - and we would need to get more details from them.

**Question: How do you estimate the 3 level nested logit?**

Answer: I believe this was done by Hunt and Abraham, but sequentially, and calibrated rather than jointly estimated using Full Information Maximum Likelihood.

**Question: Can you give us an estimate of how long it took or will still take to collect the data and develop the model for the California region?**

Answer: My understanding is that the process has been underway for about 2 years, and cost \$4 million so far. The combined California model system is expected to generate outputs in 2011.

**Question: Did you talk about how you delineate the LUZs?**

Answer: This is a trade-off between detail that may be desired for travel modeling or land use or economic analysis, against the quite substantial data development effort.

**Question: How do you estimate the transport cost?**

Answer: The PECAS software allows for multiple representations of transport disutility so one can also use multiple measures with an aim toward the most appropriate for each class of transportation flow. For instance, the mode choice logsum might be used for a commute trip while the off-peak travel time could be used for goods movement in a truck.

**Question: Does the model include online retail?**

Answer: I do not think so.

**Question: Does the model include an element representing the status of available financing, for housing and business like interest rates?**

Answer: These can be incorporated in the costs portion of the SD as they affect the ability of the developer to build profitable development. To date, mostly placeholders have been assumed.

**Question: Does the model allow say for elementary schools to automatically generate according to demand?**

Answer: If that is specified as a sector, then yes. But it would need to represent it as an economic flow.

**Question: new subdivision....automatically triggers new school?**

Answer: In the aggregate, if it is a sector.

**Question: It is both an economic flow and a land use change?**

Answer: That is the essential point of a spatial input output model: it drives everything from the economic flow, and then translates to land use change. Yes flows drive the relative desirability of locations within the study area, the resulting desire to locate by activities (relative to the existing supply of buildings) drives prices in each location, and the prices motivate developers to build changing land use.

**Question: Is there any verification procedure for synthesis employment data?**

Answer: Good question. I do not have details for this but am assuming that verification, or attempts to validate the data, are contributing significantly to the massive level of effort on the data.

**Question: But how do you distinguish between policy changes....a magnet high school....and an automatic change within the model?**

Answer: I don't think that is possible in this framework. It might be possible to insert a new facility as a user-specified (exogenous) input.

**Question: So what are the validation variables in the model?**

Answer: The calibration is covered briefly in the presentation. I am not aware of longitudinal validation having been done with the system.

**Question: Can PECAS help planners understand effects of aging labor force....changes in immigration?**

Answer: If you create different household sectors by age (?) and assume that immigration is driven by increase in output, in theory, yes.

**Question: Isn't 'Retail' a margins sector in Input-Output Analysis.**

Answer: It is but, for use in spatial I-O model, such sectors are de-margined so that cash flows are analogous to transportation flows.

**Question: I may be jumping the gun...but doesn't UrbanSim also require consultant assistance to calibrate and validate?**

Answer: While most UrbanSim work has been performed with consultant assistance, a number of models locations have been set up independently.

**Question: In your presentation example, retail purchases the goods it sells, so are you suggesting that the model is revised after purchasing from implan?**

Answer: Yes, retail is adjusted from its IMPLAN representation to mirror travel flows.

**Questions: Earlier there was a slide that showed a 3 level nested logit model, where is the nested logit framework used? Is is used in the SD framework?**

Answer: It is used in both AA and SF frameworks. It's usage in the AA is the theoretical core of PECAS.