Using Shadow Pricing to Mediate Between Models and Visions in Forecasting

Troy Hightower, Kern COG
Colby Brown, AICP PTP
Pedro Donoso
We model real estate markets for transportation forecasters.
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The “Vision Thing”

- It’s incredibly important for stakeholders to agree on goals and objectives.
- This may or may not align with a forecast, however.
- A vision represents the desired outcome whereas forecast is a likely outcome.
Land Use Forecasting Example

- California MPOs are required to set targets for greenhouse gas reductions and develop sustainable community strategies (SCS) that are demonstrated to achieve these targets
- Kern COG, like many, used a “scenario planning” tool (UPlan) to develop their SCS
- Also has an econometric forecasting model (Cube Land)
Comparing the Land Use “Vision” to an Economic Land Use “Forecast”
Building A Better Black Box
With Shadow Pricing

- Assumptions
- The Model
- Forecast
- Revise prices
- Compare
- Vision
Shadow Pricing Outputs

Supplier Cost Adjustments – Residential Market

Disclaimer: not an official KernCOG model result!
Applications Outside Land Use

• Managed Lanes
  – Pricing strategy & operational policy

• Transit Planning
  – Fare structure & mode share

• Parking Policy
  – Impacts on trip distribution

• Travel Demand Management
  – Gas taxes and VMT pricing
Have you ever been asked to evaluate a “vision” that differed markedly from your forecast? How did you respond? What did you do?