Load Granularity Price Dispersion Study Discussion - Measuring the Implications of LAP aggregation

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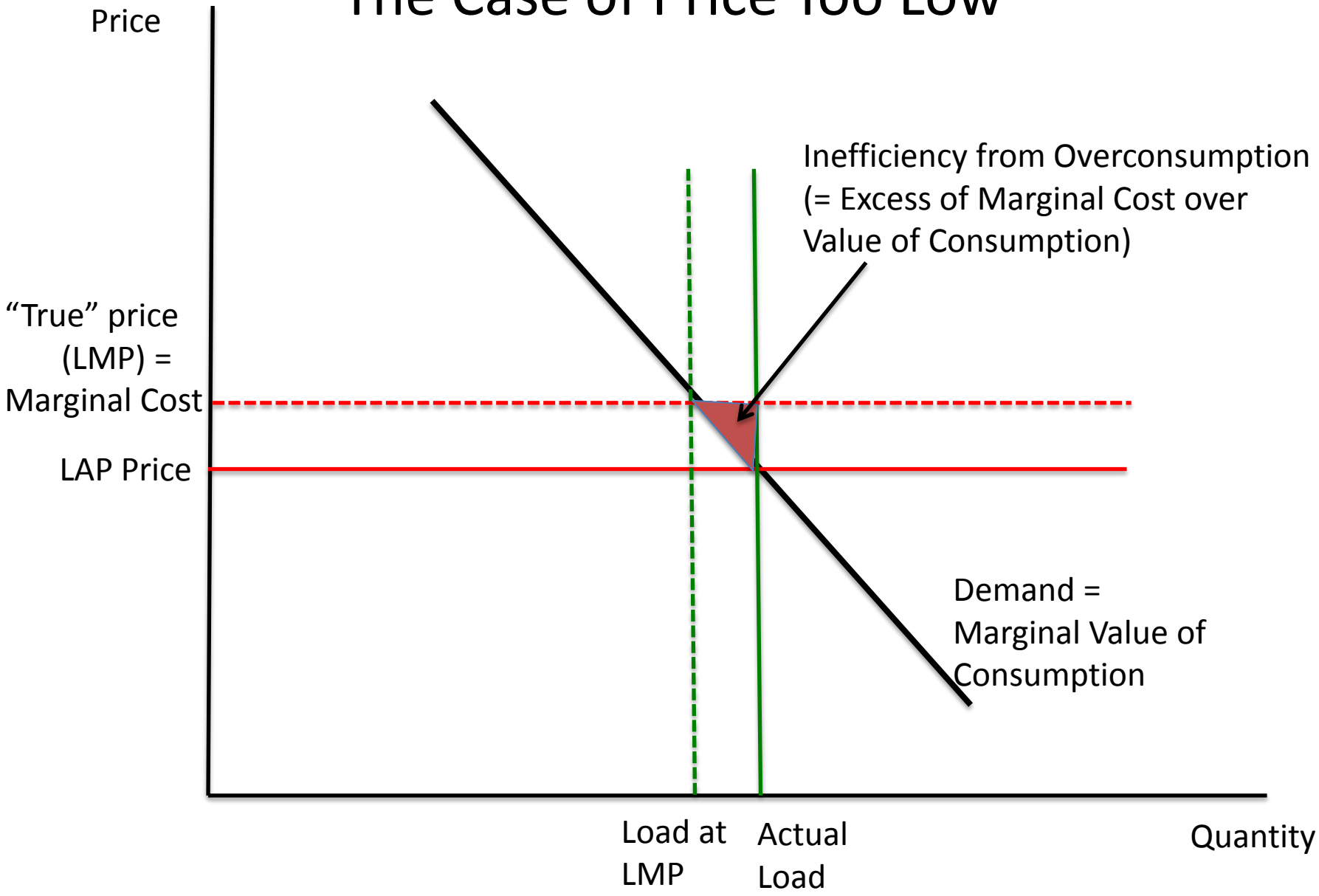
Potential Costs to Aggregated Pricing (Benefits to nodal pricing)

- Consumption inefficiencies
  - Loss from facing “wrong” prices
  - Comparison of LMP to LAP prices by location
- Potential price/dispatch inefficiencies
  - How might dispatch change if load were bid nodally instead of at LAP level?
  - Accuracy of load distribution factor predictions
    - How might this be different if we didn’t have LAPs?
- CRR allocation and revenue inadequacy?

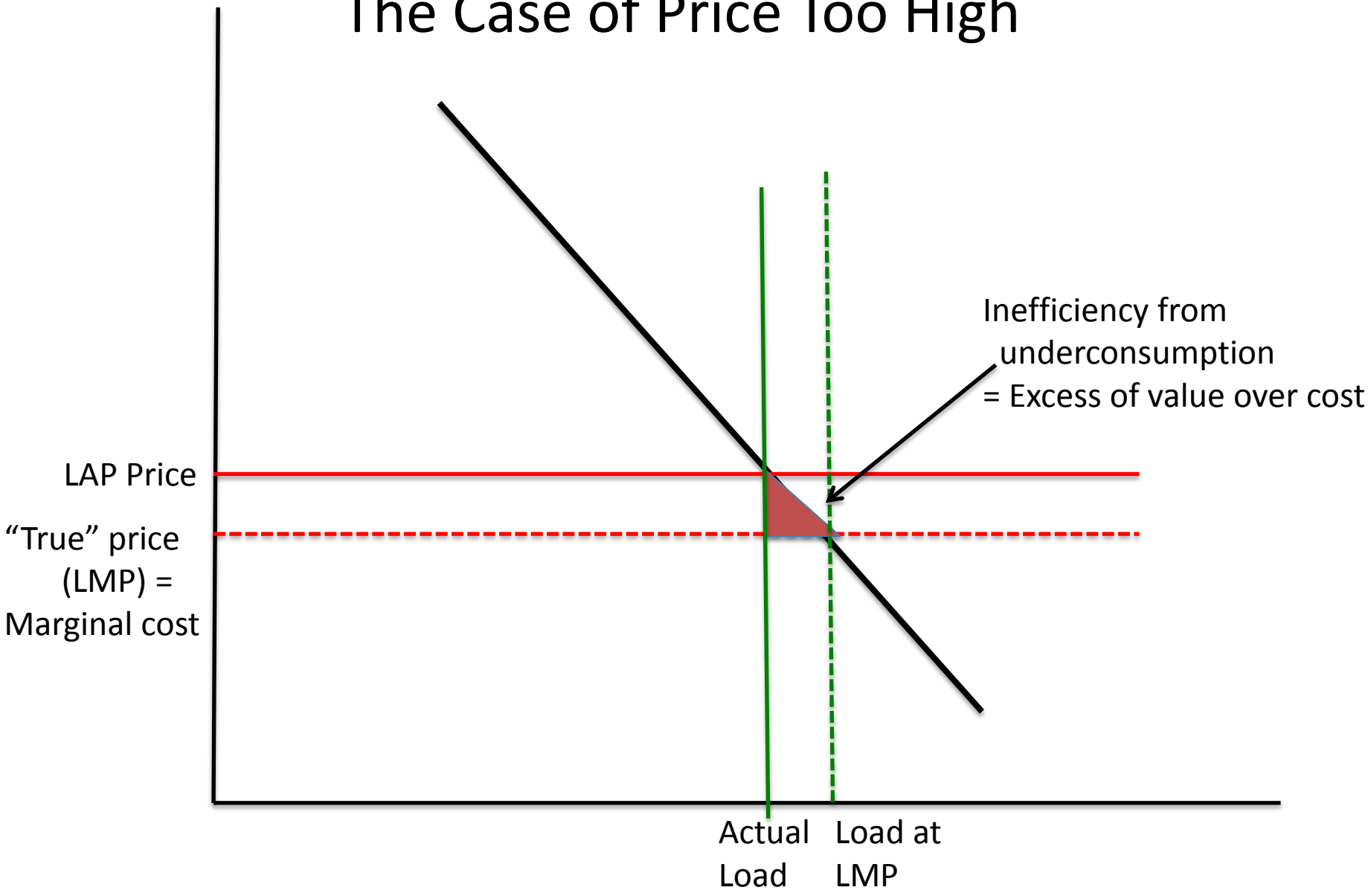
Quantifying Benefits: An Economist's Starting Point

- How different are LAP prices from nodal prices when weighted by load?
- Can estimate deadweight loss by
  - Tallying the hourly price difference x load by location
  - Assuming a demand elasticity
  - Assuming prices would adjust to LMP if not aggregated

Economic Cost of Distorted Prices: The Case of Price Too Low



Economic Cost of Distorted Prices: The Case of Price Too High



Complications and Qualifications

- What elasticity to use?
  - Assume annual adjustment to rates? Use a “medium-run” elasticity value applied to annual average difference in prices
  - Assume real time pricing? Use a “short-run” elasticity value applied to hourly differences in prices
- May be useful to contrast efficiency implications of spatial vs. temporal aggregation (LMP vs. RTP)
  - Errors from time averaging >> Errors from spatial averaging?
- Assumes retail rates will change with wholesale prices
- What if (marginal) rates are already well above LMP?
  - Reasonable assumption for residential; maybe not C&I
  - Adjusting prices further upward just pushes farther away from “right” price

Pricing inefficiencies

- Distinguishing mechanical pricing issues from aggregation from forecasting issues
- How well do load distribution factors used in IFM match the actual distribution of loads in settlement data?
  - Which nodes are most volatile/unpredictable?
- Could load do any better if given the opportunity?