

Lease or Buy?

Quality differences and asymmetric information in California
solar panels

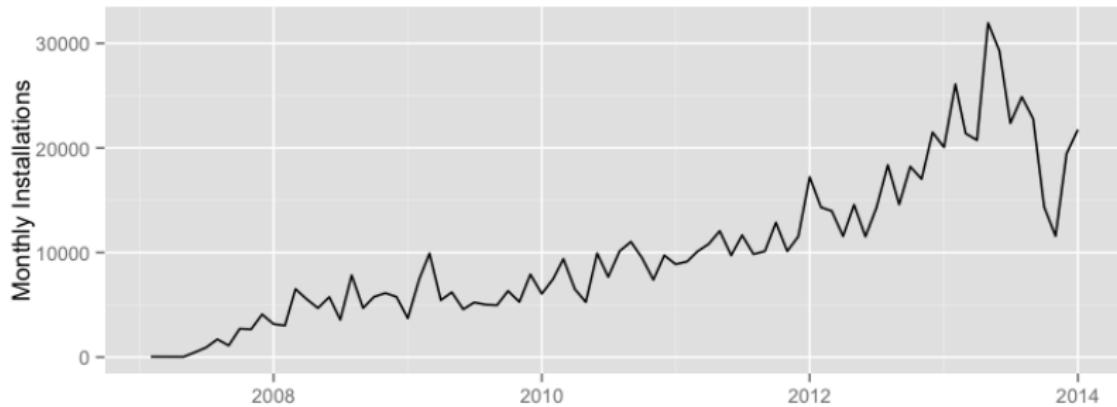
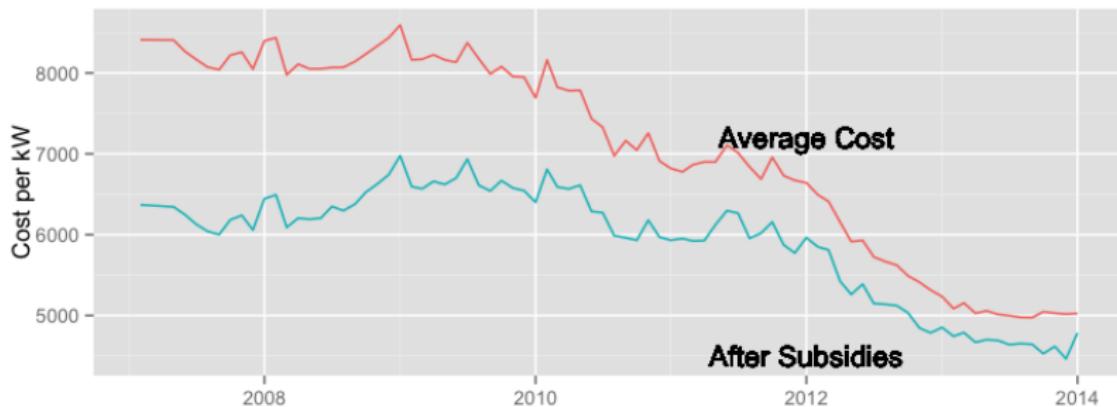
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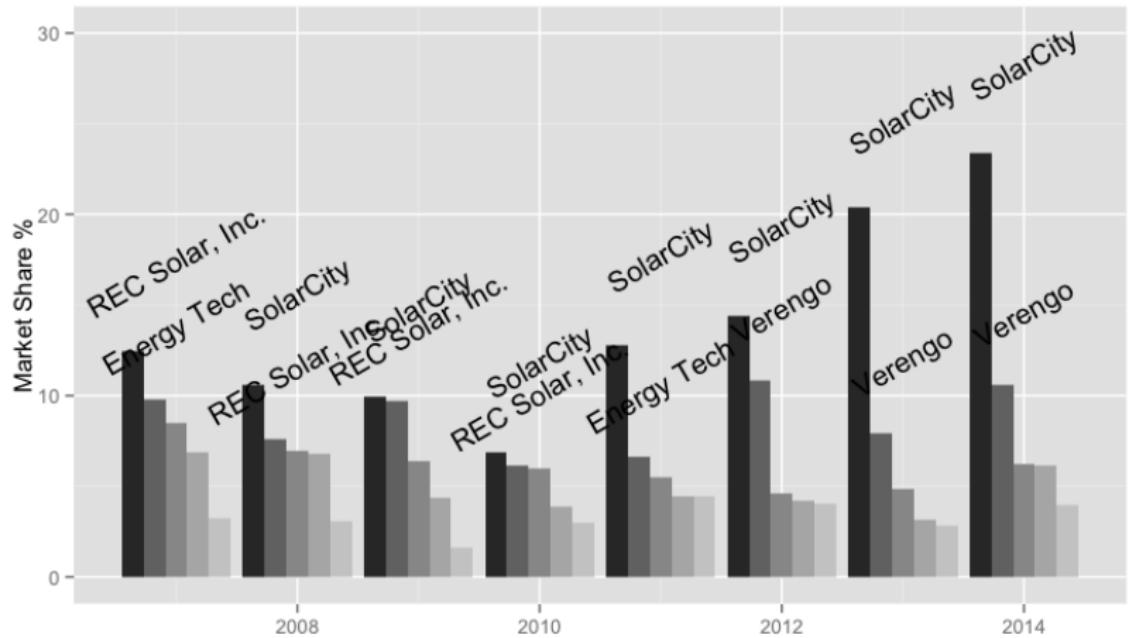
jmaurit@gmail.com

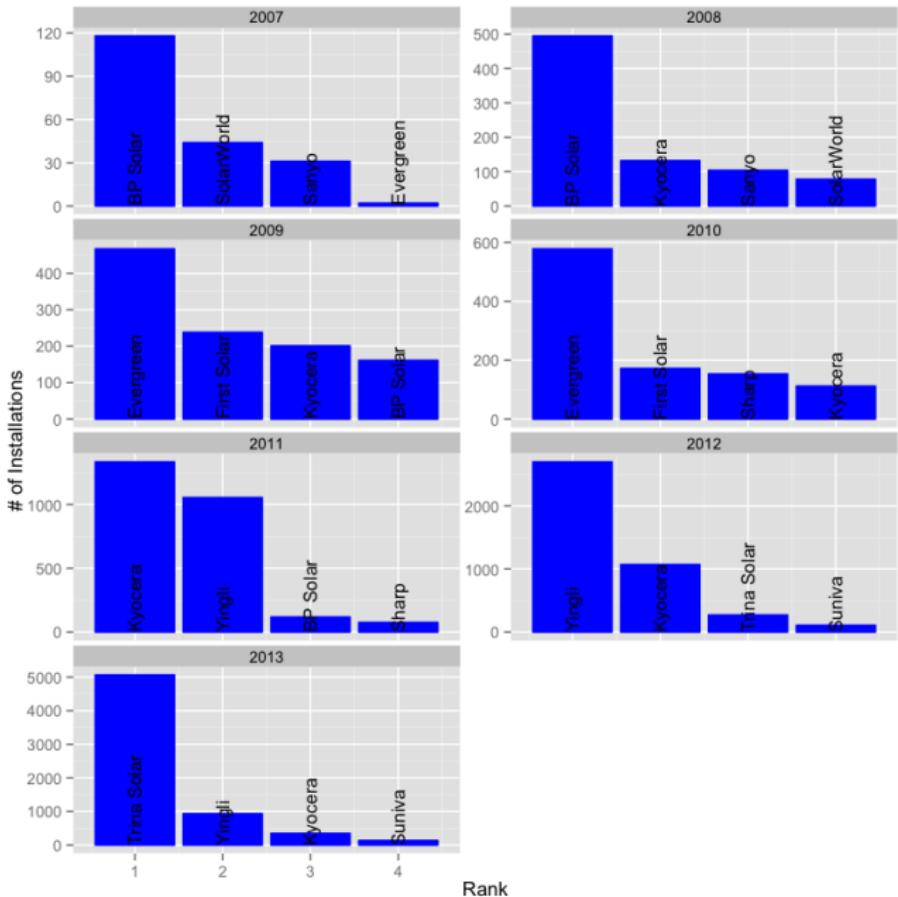
October 7, 2015

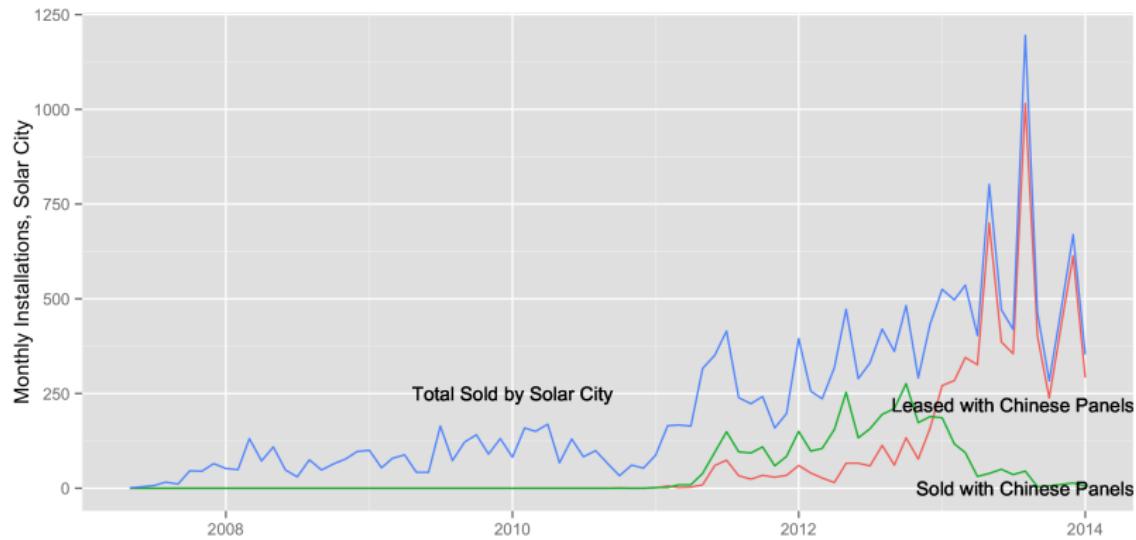
What's behind the surge in the California rooftop solar market? The role of Chinese panels, uncertainty and new business models.

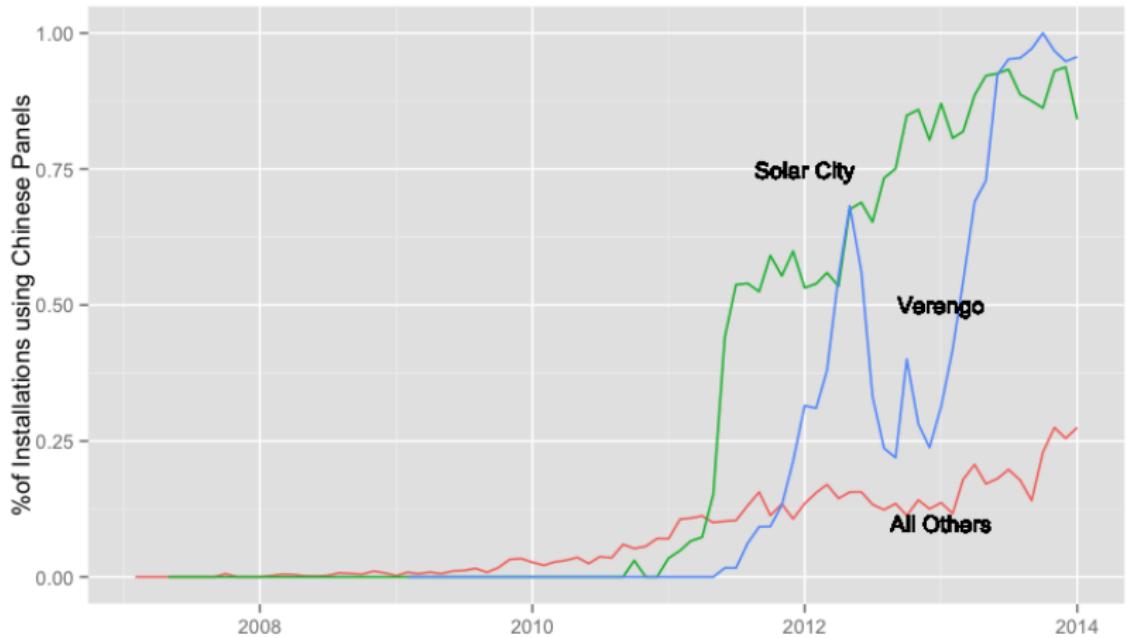
jmaurit.github.io#solar_lemons

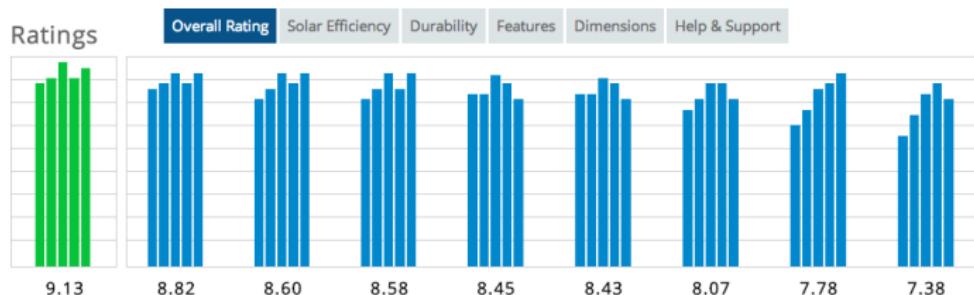












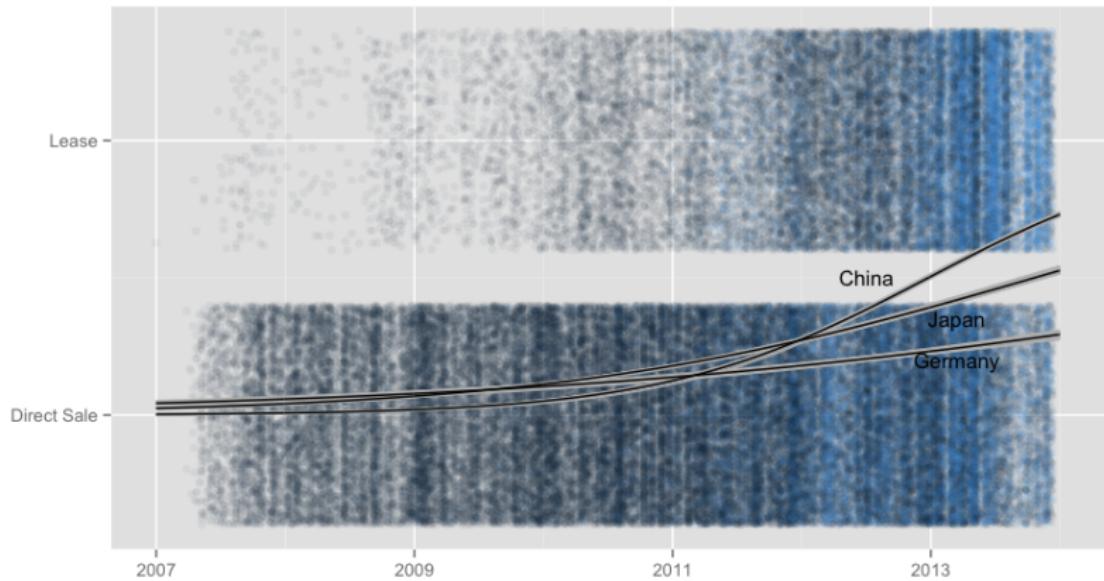
Solar Industry Anxious Over Defective Panels

By TODD WOODY MAY 28, 2013

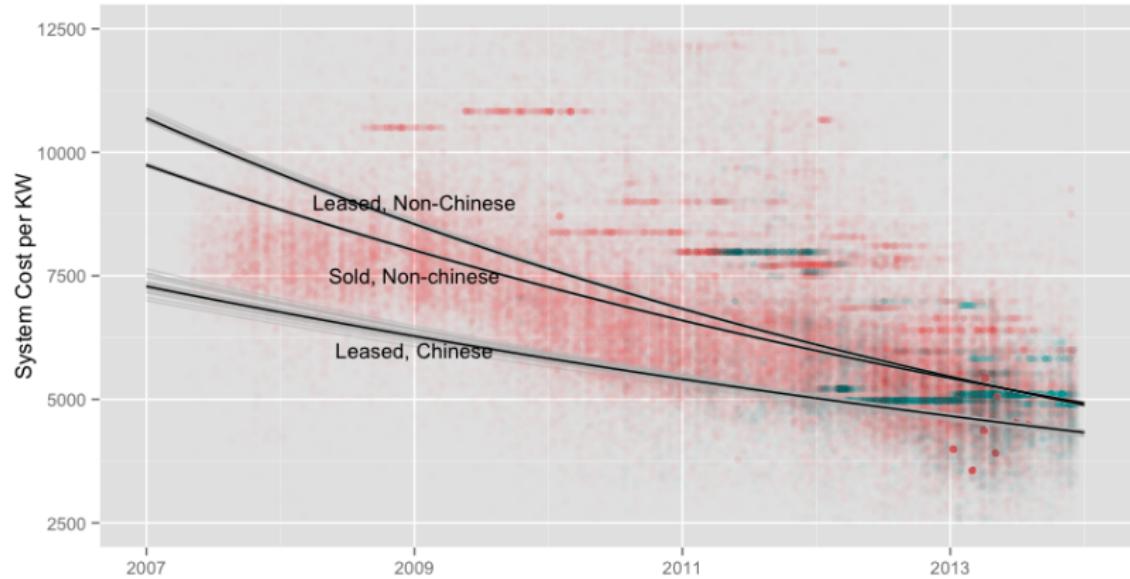


Jenya Meydbray, chief executive of PV Evolution Labs, a testing company in Berkeley, Calif., scrutinized solar panels.
Jim Wilson/The New York Times

$$lease_i = \text{invlogit}(\alpha + \beta \text{timeYears}_i + \text{nationality}_i + \sigma \text{timeYears}_i * \text{nationality}_i + \epsilon) \quad (1)$$

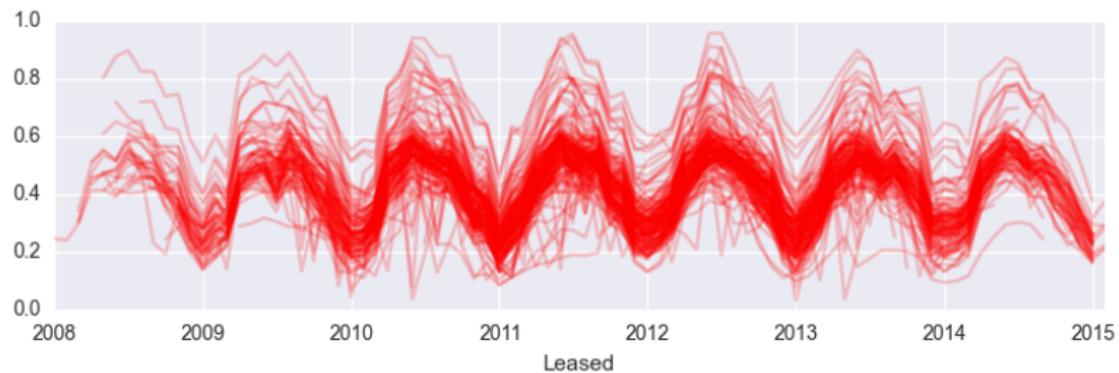
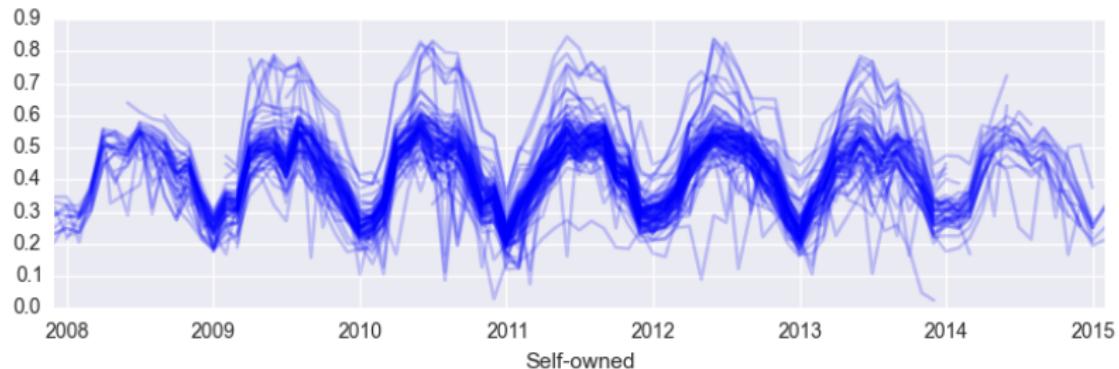


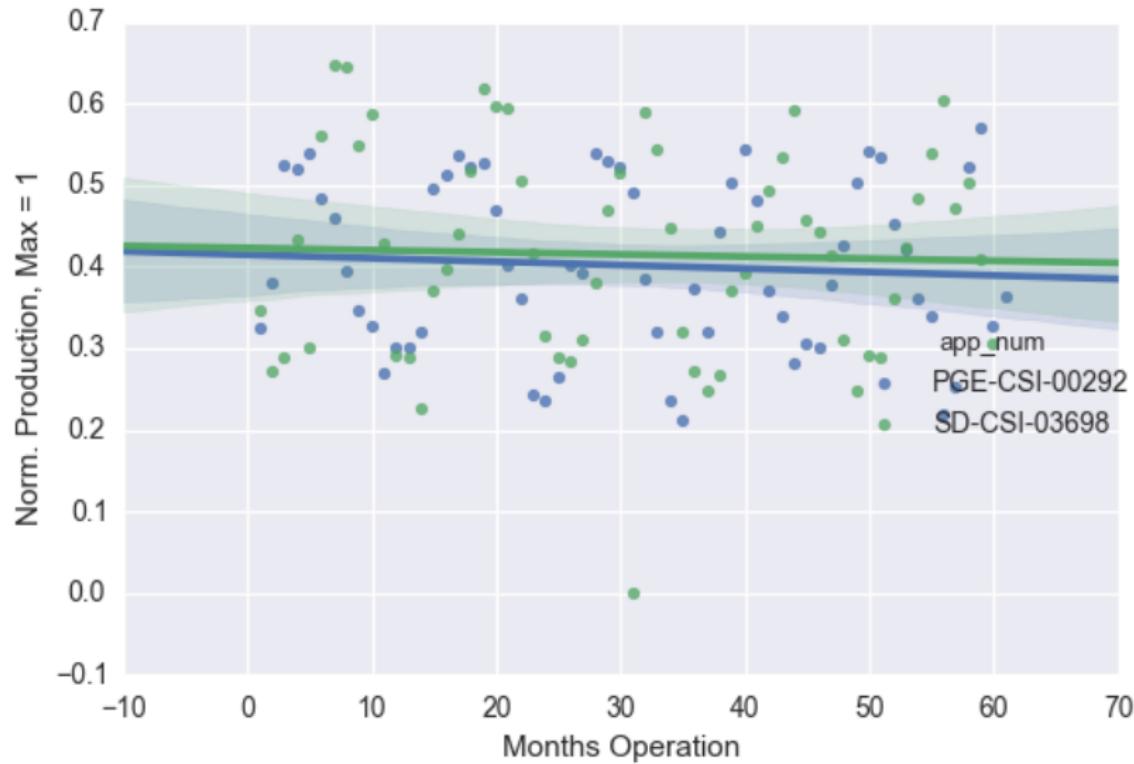
$$\log(costPerKw_i) = \alpha + \gamma china_i + \tau lease_i + \beta timeYears_i + \sigma inter_i + \epsilon \quad (2)$$



Quality and Asymmetric Info in Solar Panels

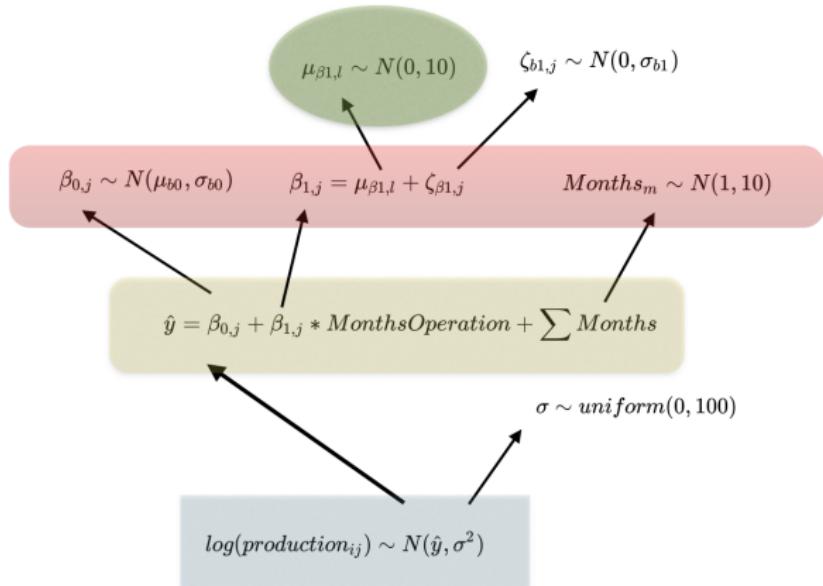
- ▶ “Experience goods”
- ▶ Hard to ascertain quality, even after the fact
- ▶ One shot vs. repeat buyers
- ▶ Warranties may not provide much assurance

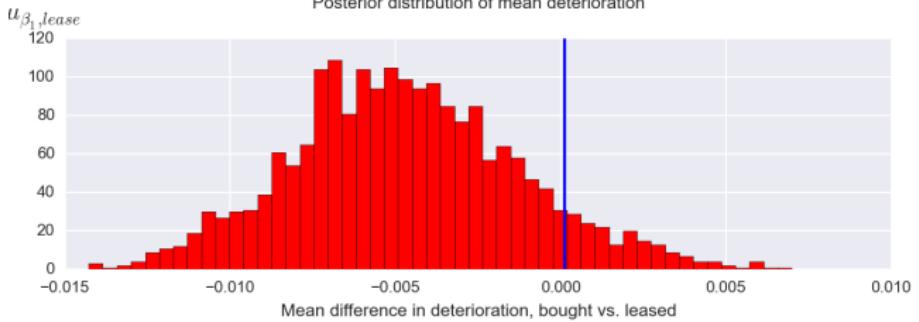
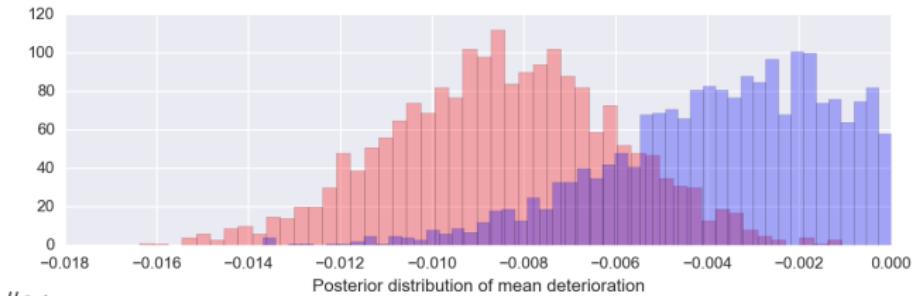


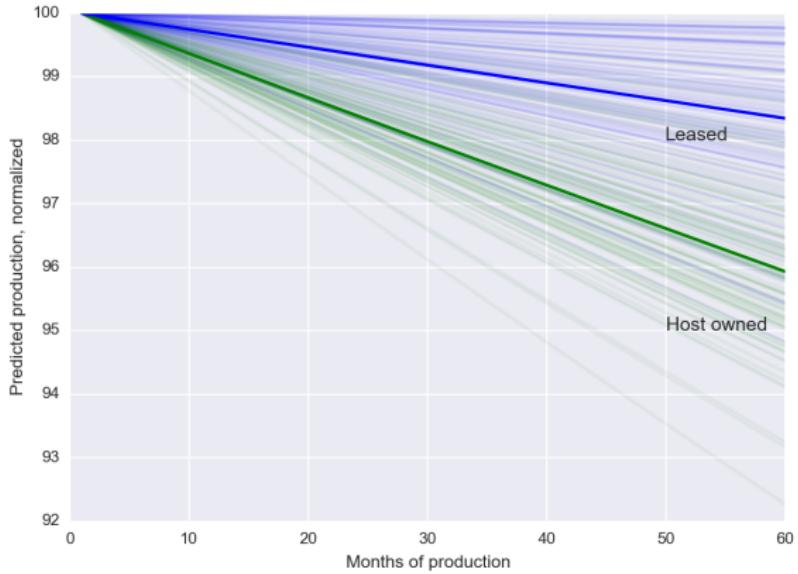


Hierarchical Bayesian Model

- ▶ Natural modeling of structure of data
- ▶ Natural interpretation of uncertainty
- ▶ Flexibility of simulation methods







Main Points:

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- ▶ Leasing could be an effective way of getting over issues of asymmetric information on quality.
- ▶ Leased systems tend to have lower degradation over time than those sold outright, consistent with the economic theory on the subject.

Main Lesson for Managers: Managers need to address uncertainty about quality when selling energy investment goods to consumers and small businesses with limited financial and engineering resources.

Policy Implications: Flexible support schemes are important for allowing business model innovations and increased investment in renewable energy.

North Carolina Bill Would Launch Opportunity for Third-Party-Owned Solar



Backers of the bill include Wal-Mart, Lowe's, Target and Volvo.

Julia Pyper
March 17, 2015

Indirect Policy Implication: Simultaneously subsidizing an investment and adding import duties appear to be contradictory.