



Innovation, Resource Constraints, and Mergers in Network Industries

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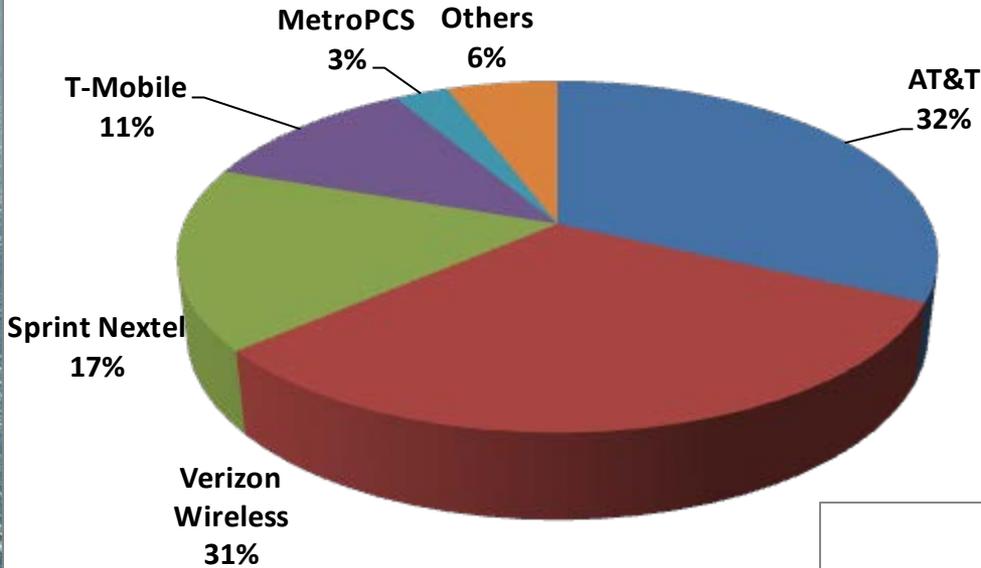
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Context

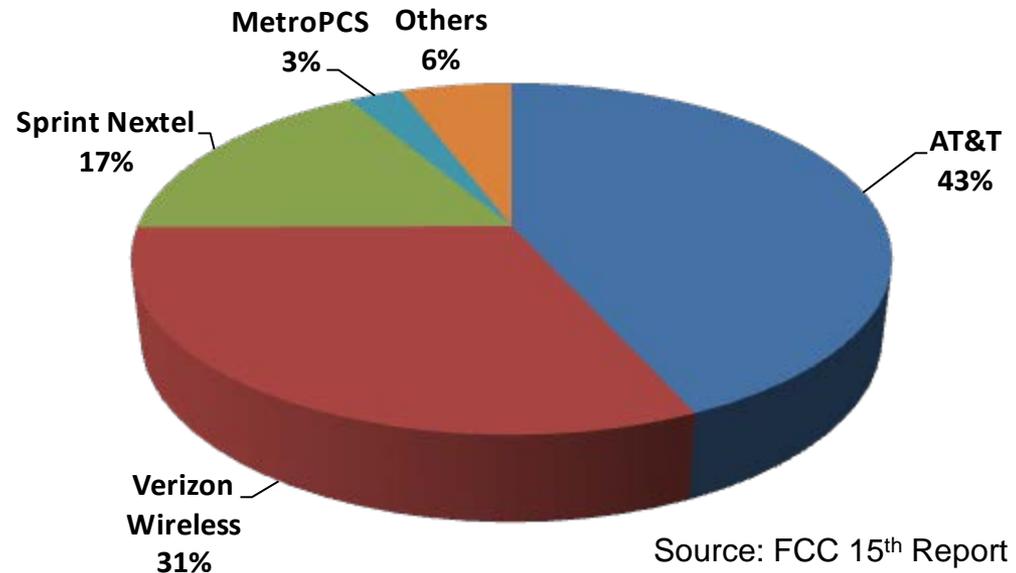
- **AT&T agreed purchase T-Mobile's U.S. assets (March 2011)**
 - **\$39 billion transaction**
- **Merge two of the four largest**
 - **AT&T 98.6 million connections**
 - **T-Mobile 33.6 million connections**
 - **Together pass 90% of U.S. homes**
- **DOJ petitions to stop (Sept. 2011)**

“Market” Shares

Pre-merger 2010

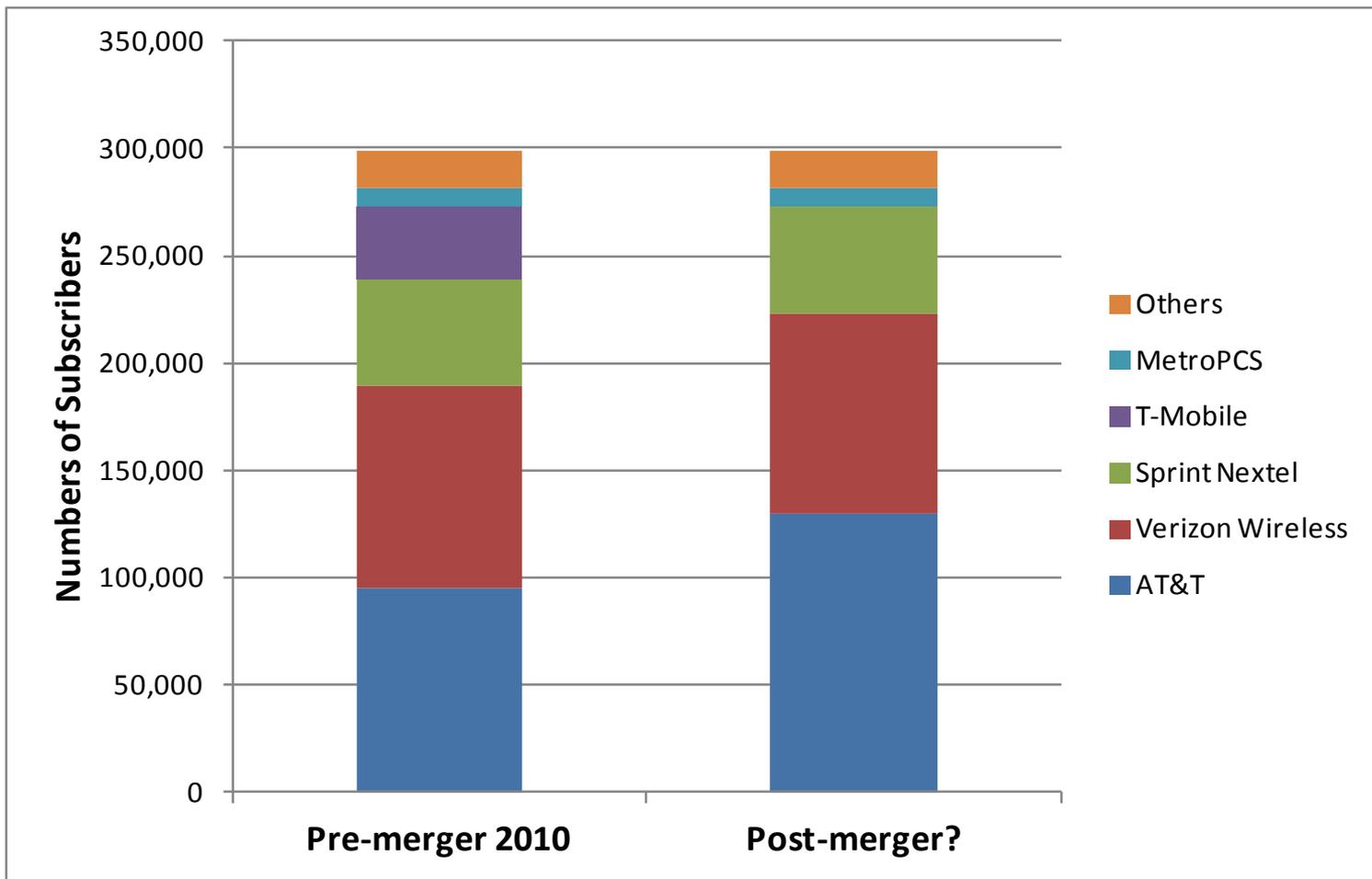


Post-merger? (2010 data)



Source: FCC 15th Report

“Market” Shares



DOJ petitions to stop (Sept. 2011)

DOJ Press Release

“...the proposed (AT&T purchase of T-Mobile in the U.S.) would substantially lessen competition for mobile wireless telecommunications services across the United States, resulting in higher prices, poorer quality services, fewer choices and fewer innovative products for the millions of American consumers who rely on mobile wireless services in their everyday lives.”

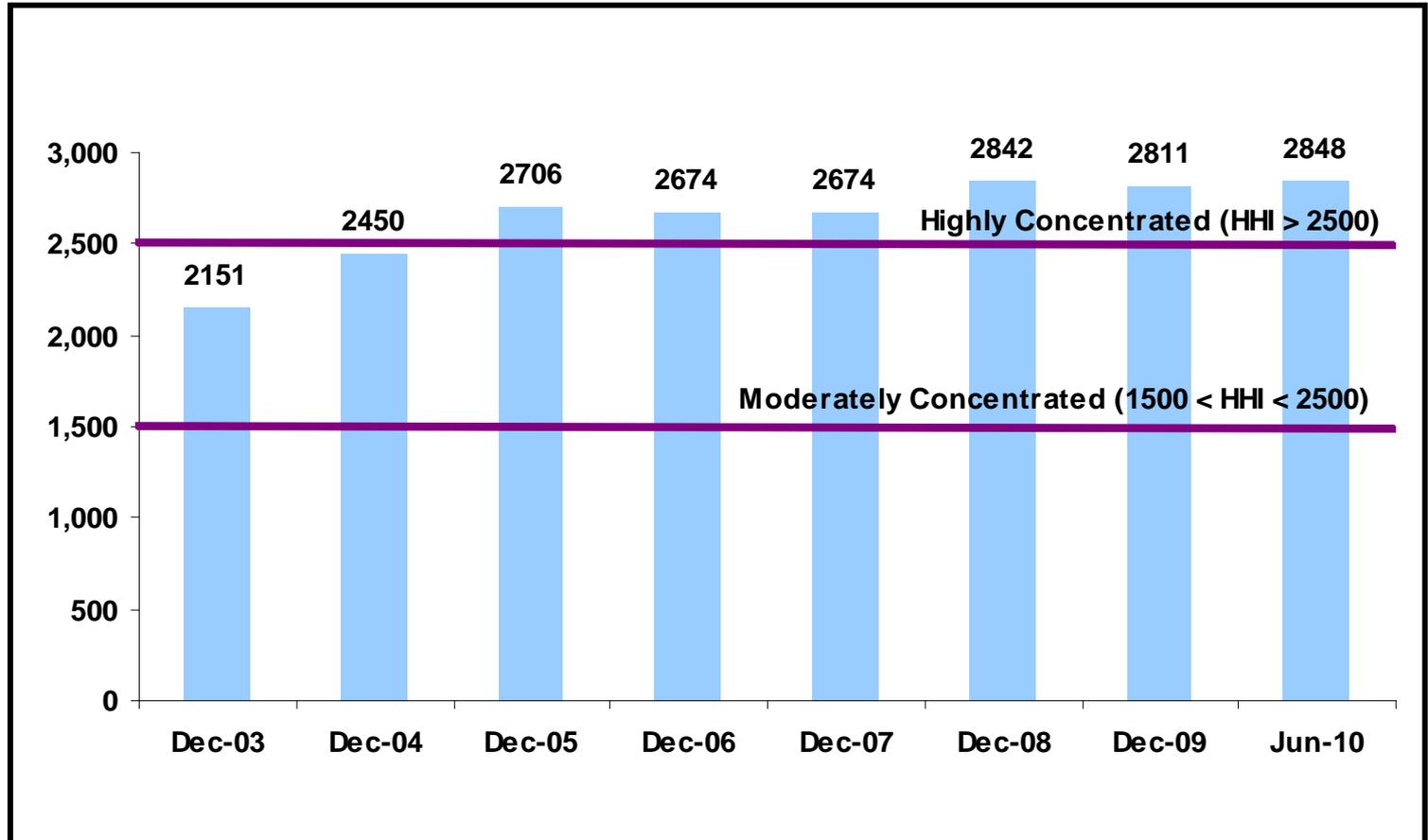
DOJ Petition

- **T-Mobile is innovative**
- **Only 4 nationwide carriers**
 - **Other carriers are different market**
- **The “Big Four” > 90% connections**
 - **Each positioned to “drive competition”**
- **T-Mobile disruptive and challenger**
- **T-Mobile positioned to be affordable to the average customer**

DOJ Petition (cont.)

- **Market analyses**
 - **Post-merger HHI > 2500 generally**
 - **Merger increases +200 points**
 - **Merged company market share generally 40% to 50%**
- **Nationwide**
 - **Post-merger HHI > 3100**
 - **Merger increases +700 points**

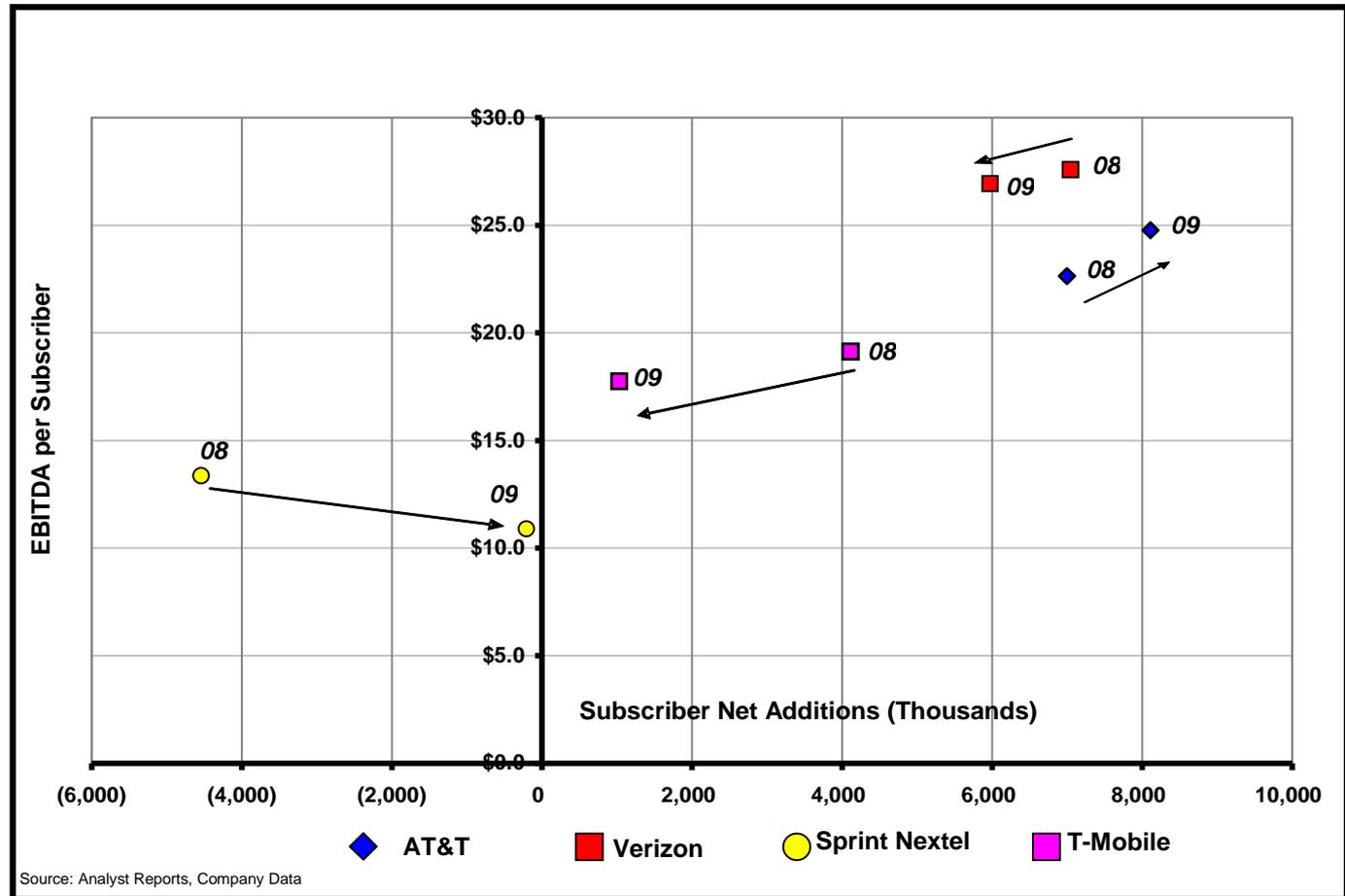
HHI



Thoughts on DOJ Petition

- If T-Mobile disrupter...
 - Might not be viable strategy
- If T-Mobile positioned as “affordable to average consumer” ...
 - Low price strategy. Rarely viable.

Subscriber Additions vs. EBITDA Per Subscriber: 2008-2009





More Thoughts on DOJ Petition

- If DOJ right, Sprint embraces merger
- Shares of what market?



AT&T/T-Mobile argument

- **Need radio spectrum for 4G**
 - **Have HSPA+. Want LTE.**
- **Is this true?**
- **Wouldn't greater concentration...**
 - **Decrease innovation incentive?**
 - **Diminish mechanism of innovation?**



Our Topic

- **Test AT&T's and T-Mobile's claim of need for spectrum**
- **Test DOJ's claims of less innovation and harm to consumers**

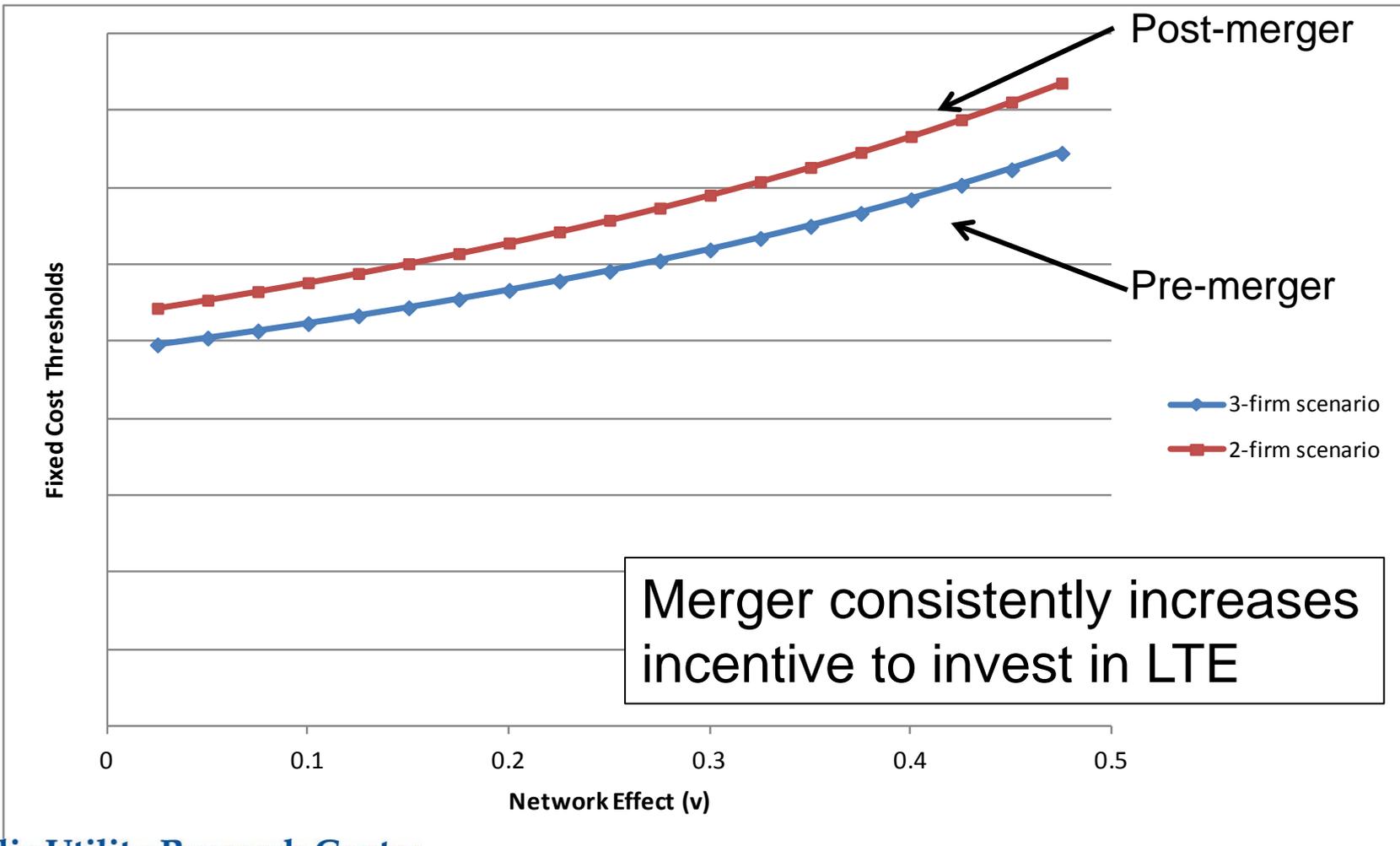
Our Approach

- **Assume 3 firms compete à la Cournot**
 - Exogenous merger of two firms
 - Overstates market concentration issue
- **Test merger's impacts on incentives**
 - To adopt more advanced technology
 - To invest in diversity and value of devices/apps
- **Test merger's impact on welfare**

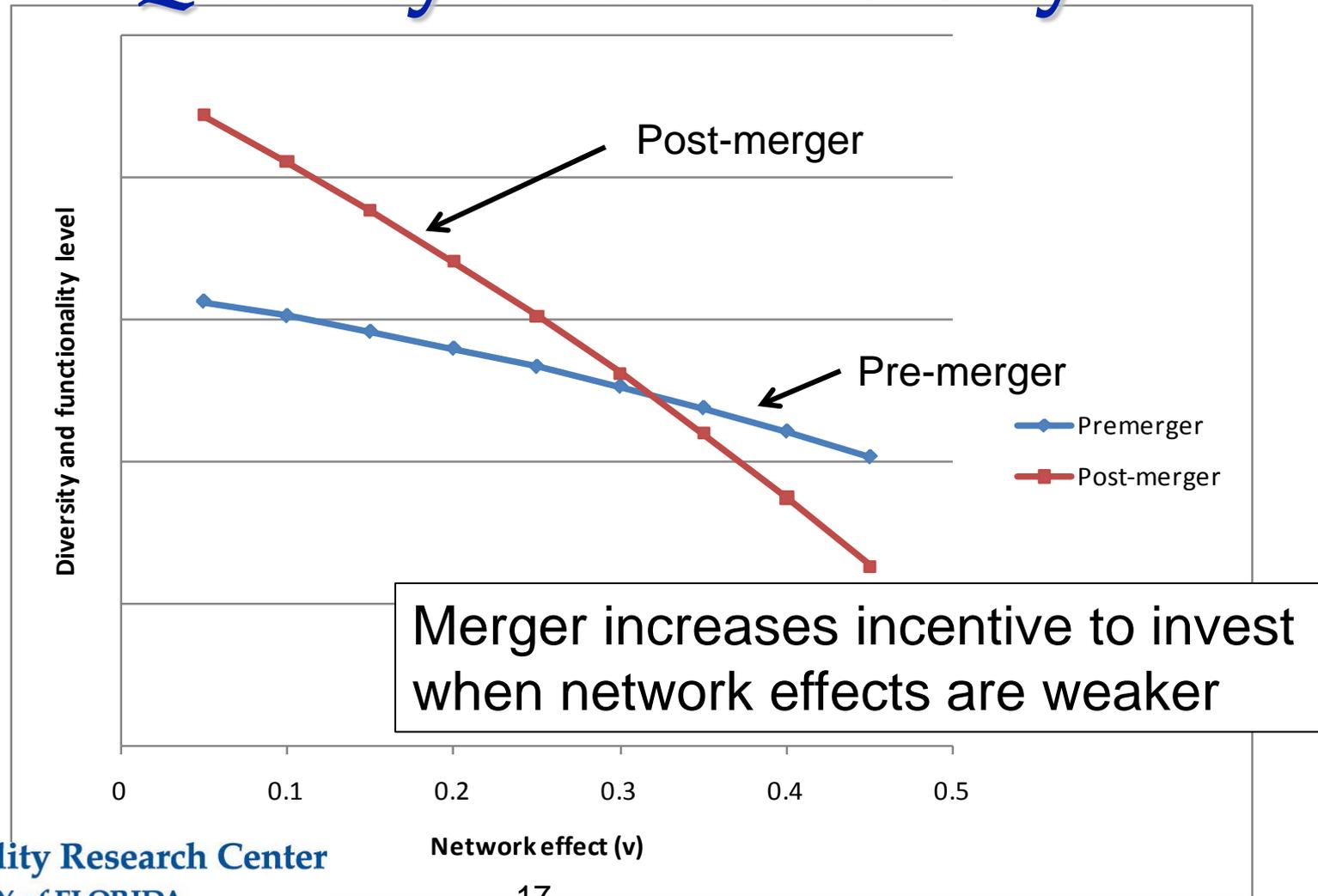
More specifically...

- How does merger impact operators' willingness to incur fixed innovation costs?
 - If merger decreases threshold, then innovation more likely to occur

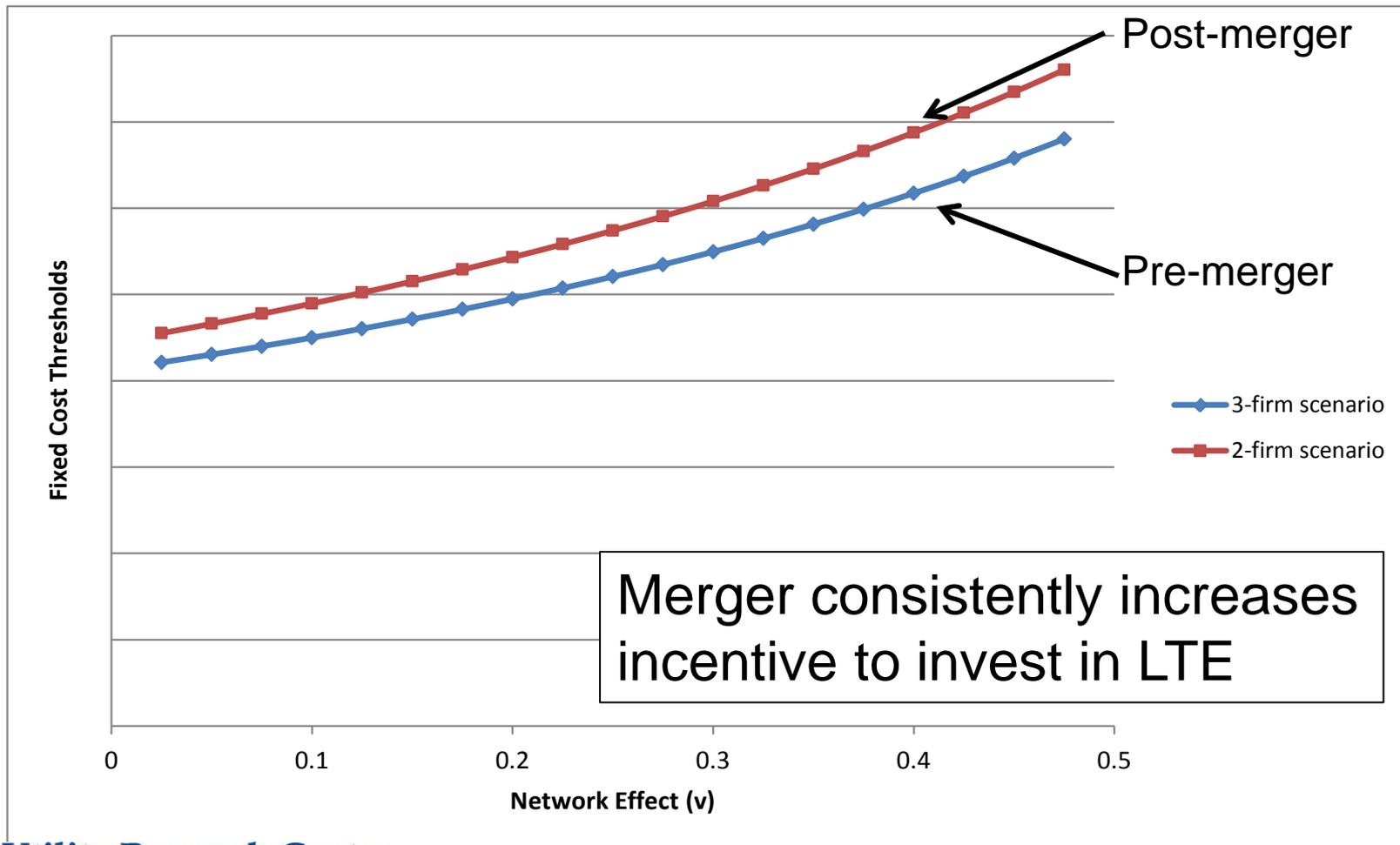
Adoption of LTE – One firm



Investment in Device and App Quality and Diversity



Adoption of LTE – 2nd firm



Conclusions

- **AT&T and T-Mobile appear to be correct that merger will spur 4G investment**
- **DOJ appears to be wrong that customers are harmed**
- **Mixed results on device and app investment**
 - **Not yet analyzed non-telco incentives**

The Body of Knowledge on Infrastructure Regulation

www.regulationbodyofknowledge.org





Thank you

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