

# Is there any evidence of “Royalty Stacking” in SEP-intensive IT products?

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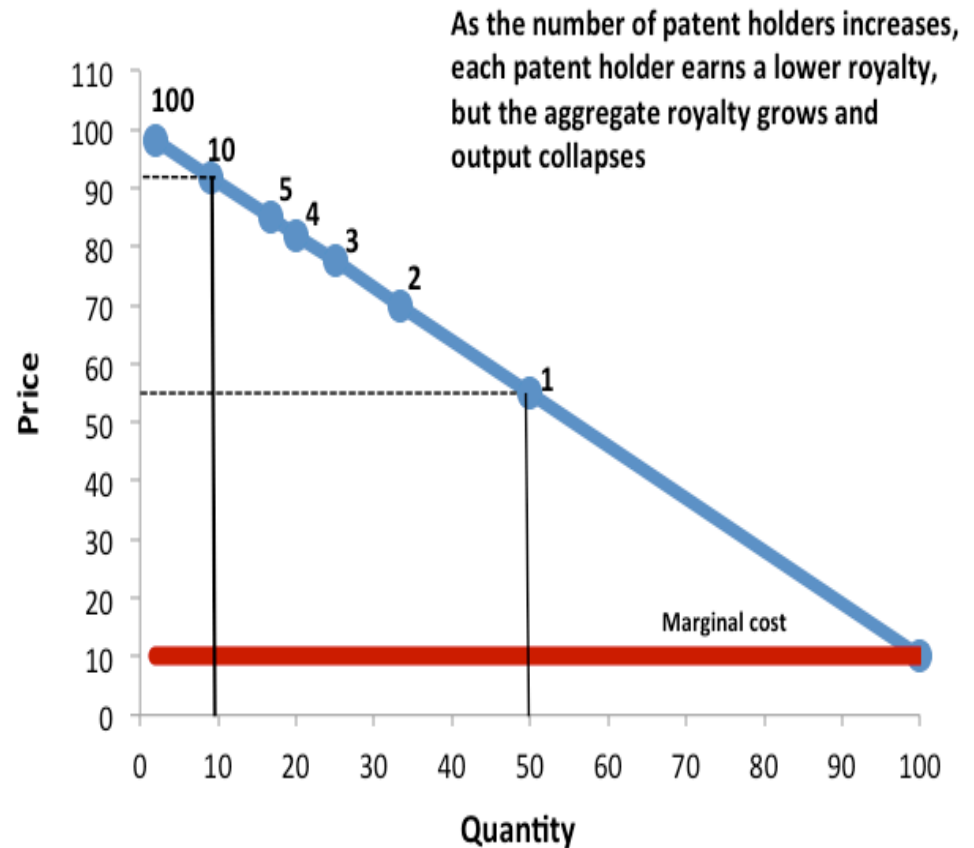
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(These slides are based on joint work with Alexander Galetovic on “The Fallacies of Patent Holdup Theory”)

# Could the exercise of market power by patent holders in SEP-intensive products threaten innovation via “royalty stacking?”

Royalty Stacking/generalized market power →

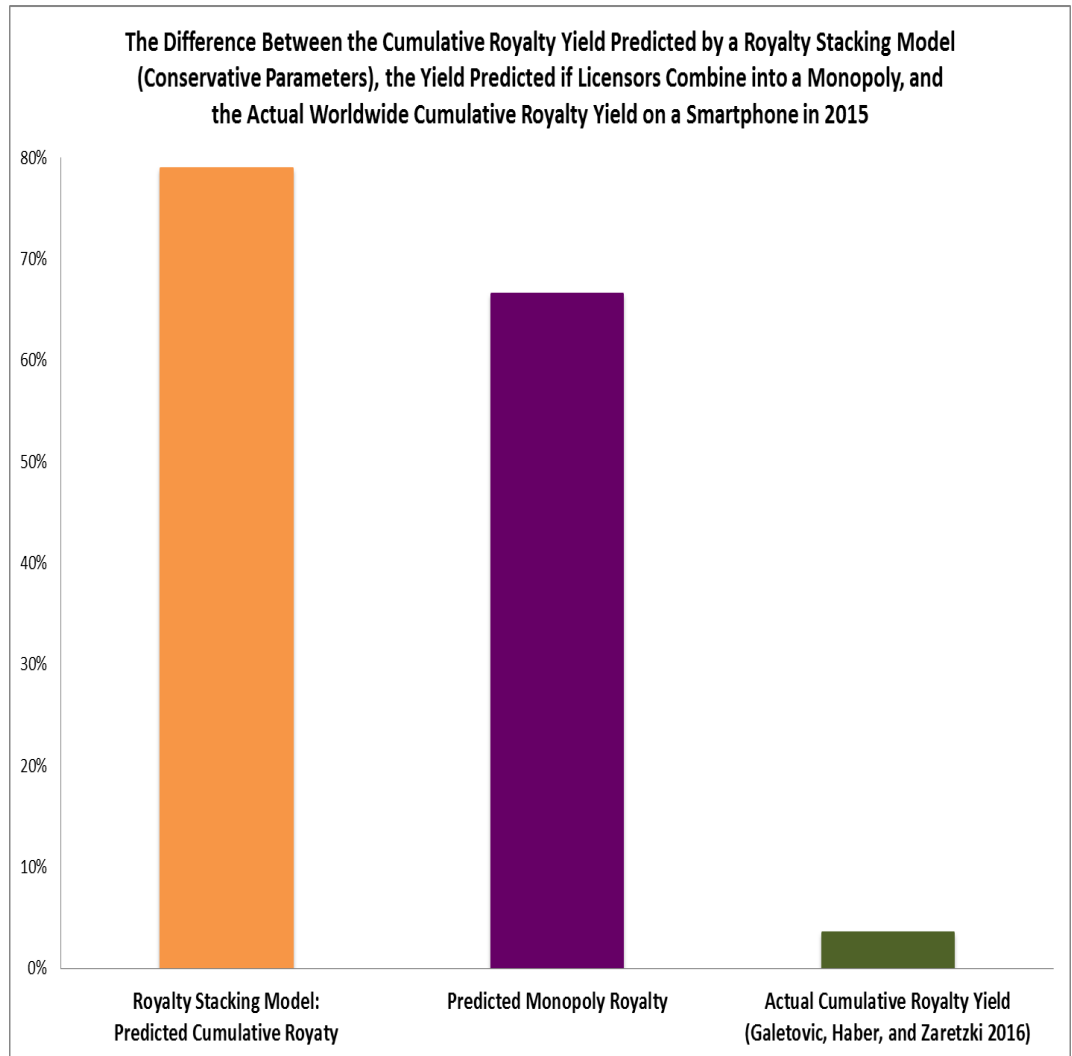
- In principle, the industry could survive, because the downstream firms anticipate the exercise of market power, and take that into account when they invested. Quasi-rents are not appropriated.
- But, the industry dies because demand is choked off by rising prices. In order to bear the royalties, downstream firms must increase prices. Output falls. The industry collapses.



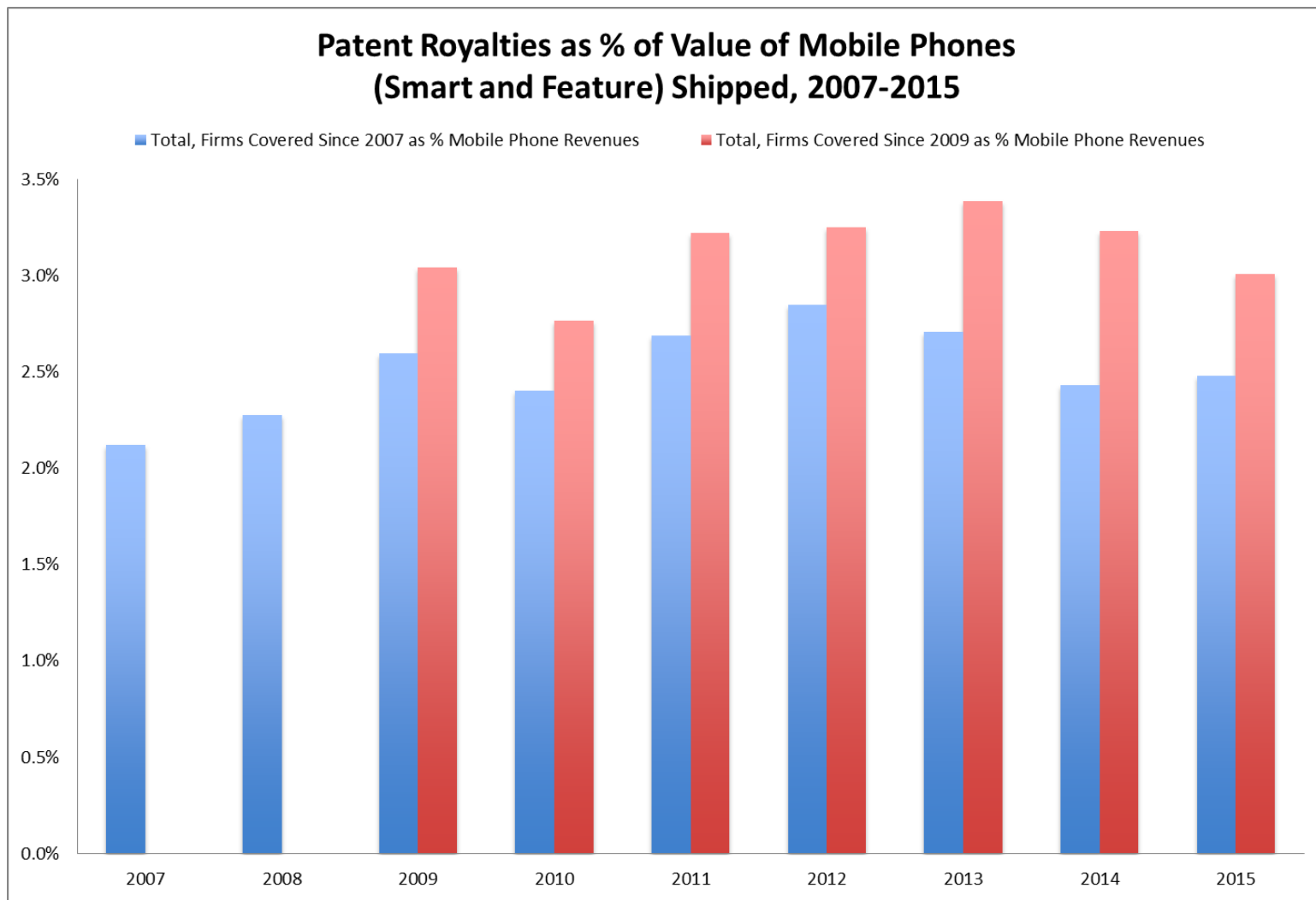
# Is there any evidence that the theoretical possibility of royalty stacking obtains in SEP-intensive, IT products?

The 23-fold difference between the predicted “Royalty Stack” from a royalty stacking model (conservative parameters) and the actual cumulative royalty yield on a smartphone with 20 SEP holders (actual data on royalty yield from Galetovic, Haber, and Zaretzki, 2016).

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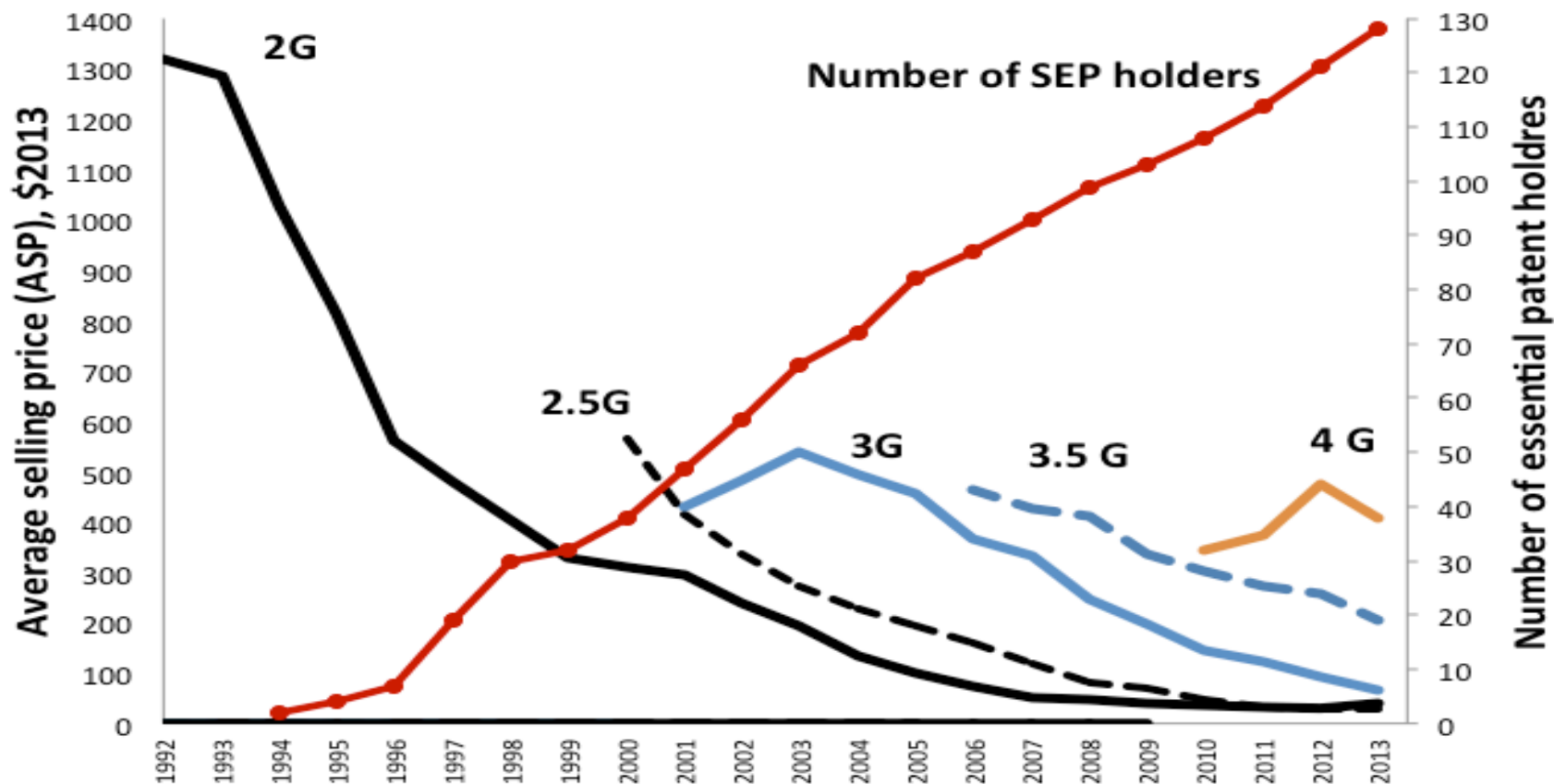


# The non-royalty stacking outcome in mobile phones has been stable as far back as cumulative royalties can be measured (see Galetovic, Haber, and Zaretzki, 2016)

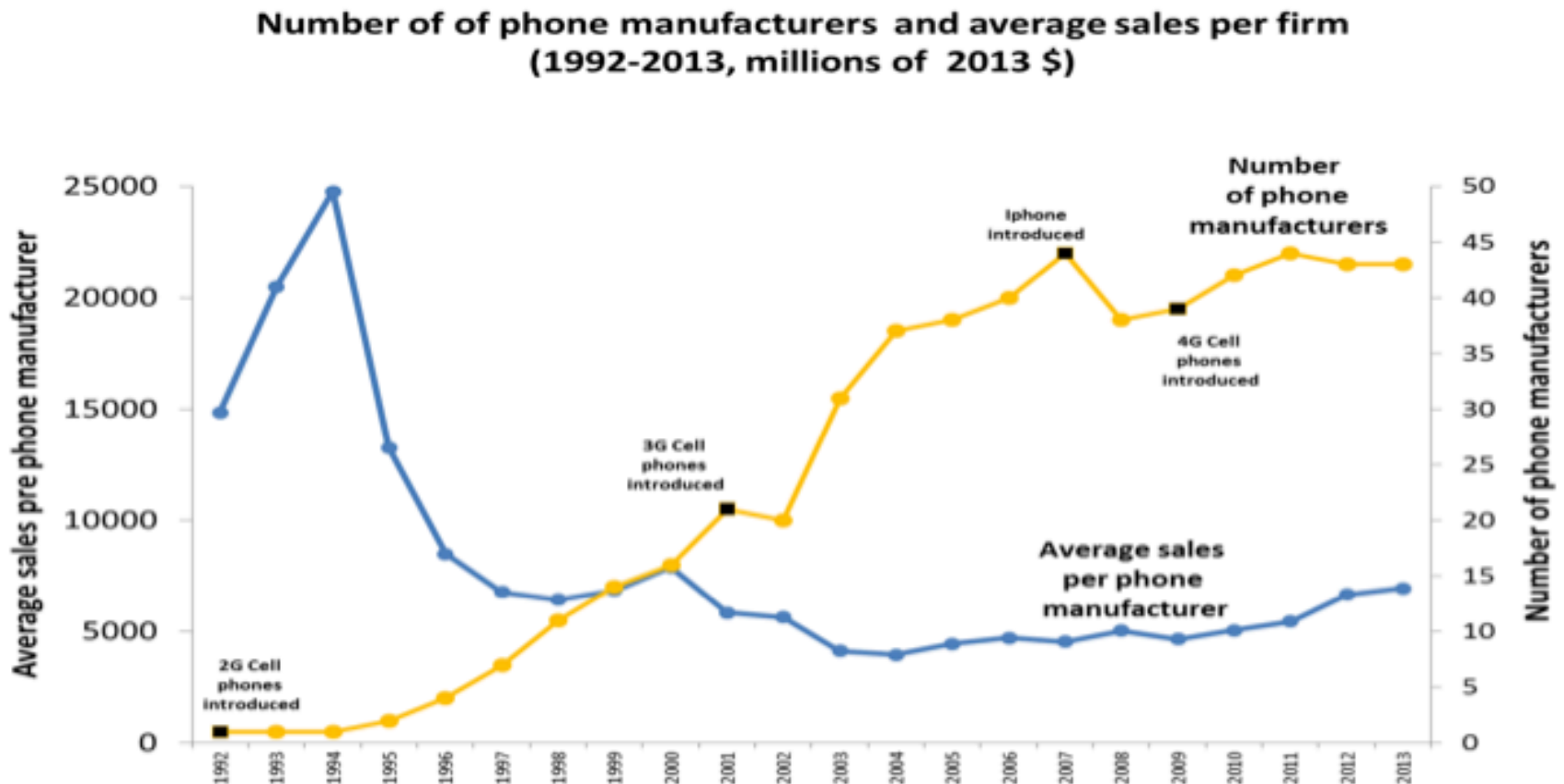


The lack of fit between theory and reality explains why Galetovic & Gupta (2016) find falling prices across and within generations of mobile phones

**Real Prices of Phones, by Generation, and Number of SEP Holders, 1992-2013**

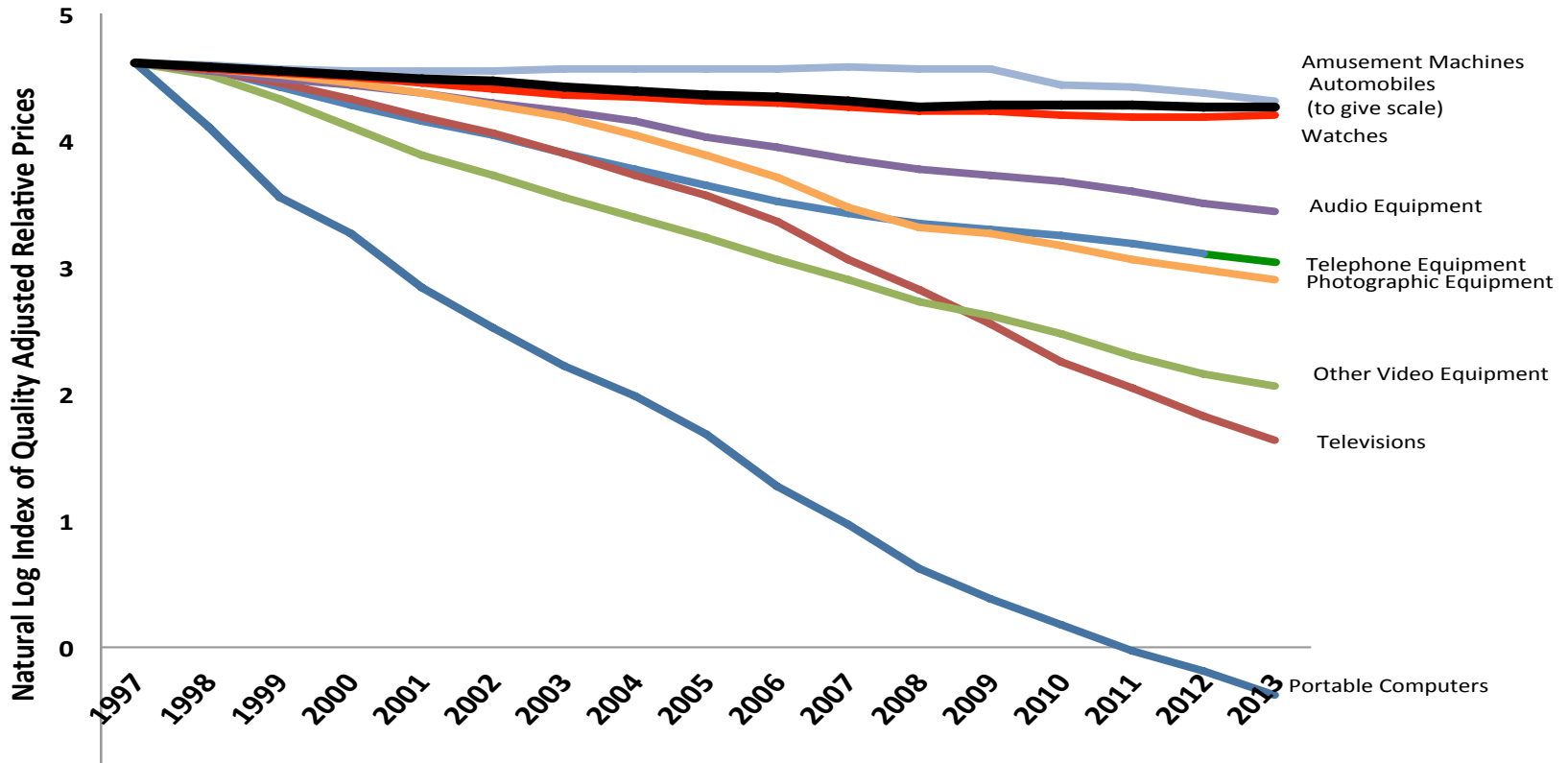


The lack of fit between theory and reality also explains the Galetovic-Gupta (2016) result on rapid rates of new firm entry in mobile handset production

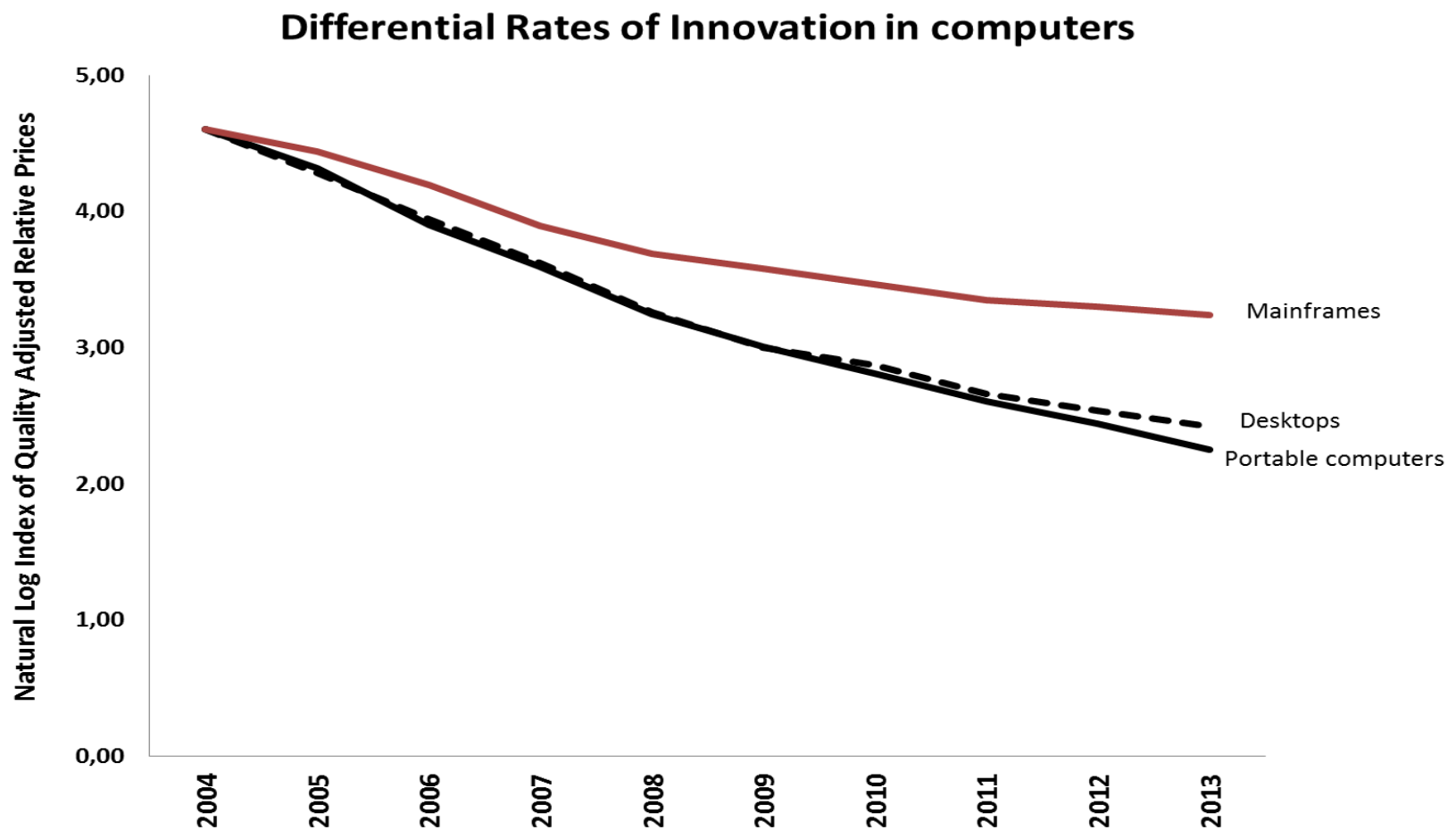


What is true about rates of innovation in mobile telephones is also true about other SEP-intensive IT products (data from Galetovic, Haber, and Levine, 2015)

**Differential Rates of Innovation in Selected Consumer Digital Products and Automobiles, 1997-2013**



This result holds even when Galetovic, Haber, Levine (2015) control for time-invariant differences across products and differences in underlying rates of innovation via a detrended difference in differences estimation





# Conclusion:

- Royalty stacking may be a problem in theory, but there is no evidence that it is a problem in reality
- When theory and reality are not in agreement most people take as a sign that there is something wrong with the theory.