Mergers and Innovation: Evidence from the Hard Disk Drive Market

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KEYWORDS: mergers, innovation, R&D, patents, evaluation

BACKGROUND
- Do mergers reduce or boost innovation?
- There is a large body of literature on the retrospective analysis of individual mergers but they tend to focus on price impact and there is very little on how they affect innovation.
- We look at two 2011/12 mergers in the hard disk drive (HDD) market: Seagate/Samsung, and Western Digital/Hitachi. The two mergers reduced the number of firms in the market from 5 to 3.

METHODOLOGY
- The paper estimates how innovation changed following these mergers. To measure innovation we looked at R&D spending, patent activity, the number of new products, and the unit user cost of new products.
- We construct a system of difference-in-differences models for these four dependent variables.
- As a novel approach to measuring patent activity, we look at a large number of different measures of patenting and then analyse the distribution of estimated effects.

KEY FINDINGS
- We find no evidence of falling innovation following these two mergers. On the contrary, we offer evidence that Seagate’s innovation activity increased across all our measures.
- We also offer evidence that higher R&D goes hand-in-hand with both an increased number of new products, and lower unit costs.
- We offer a number of methodological contributions as well; most notably that R&D intensity, but not patent activity, is a good predictor of the number of new products and unit costs.
- More generally, we demonstrate that the ex-post evaluation of the innovation impact of mergers is a challenging, although a feasible (conditional on data availability) and worthwhile task.

POLICY ISSUES
- Our interpretation of the main finding (no loss in innovation) is that the competitive pressure from a vertically differentiated technology - solid state drives (SSD) - is so strong that the HDD sector remains competitive, despite having only three firms.

SUGGESTED CITATION

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