

Discussion of: “The Consolidation of the Hard
Disk Drive Industry, 1996–2015”
by Mitsuru Igami and Kosuke Uetake

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FTC Micro Conference
November 12, 2015

Great Paper on Important Question

- **Methodological Innovation**
- Substantive Questions
- But overall, still much we don't understand about mergers, concentration and innovation incentives

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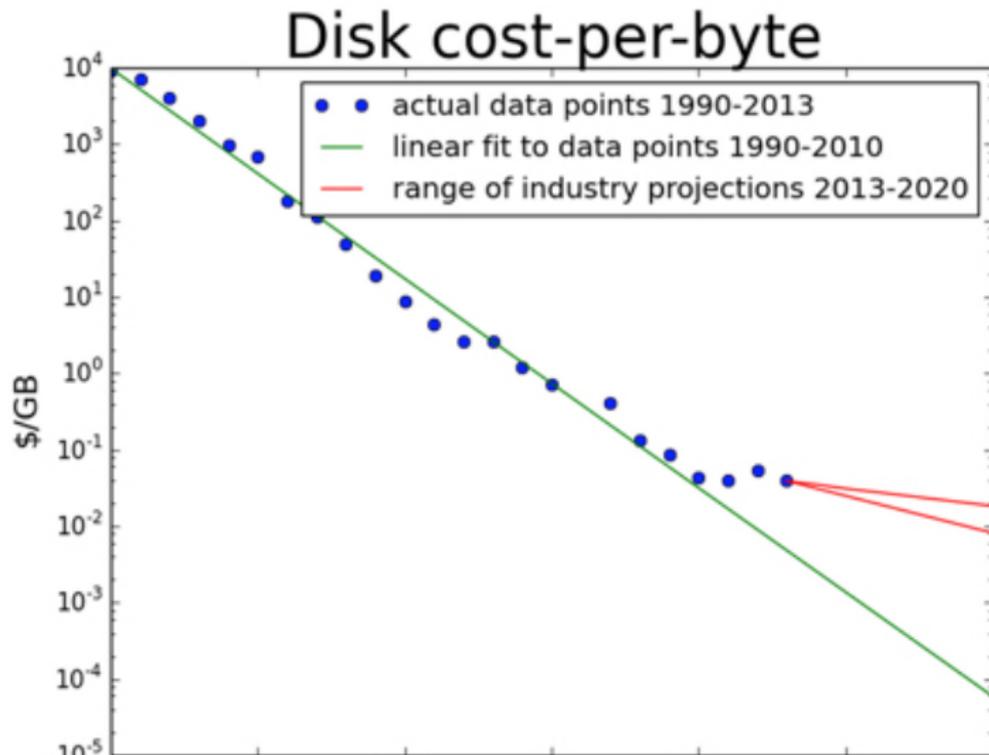
New York Times – Too Many Mergers

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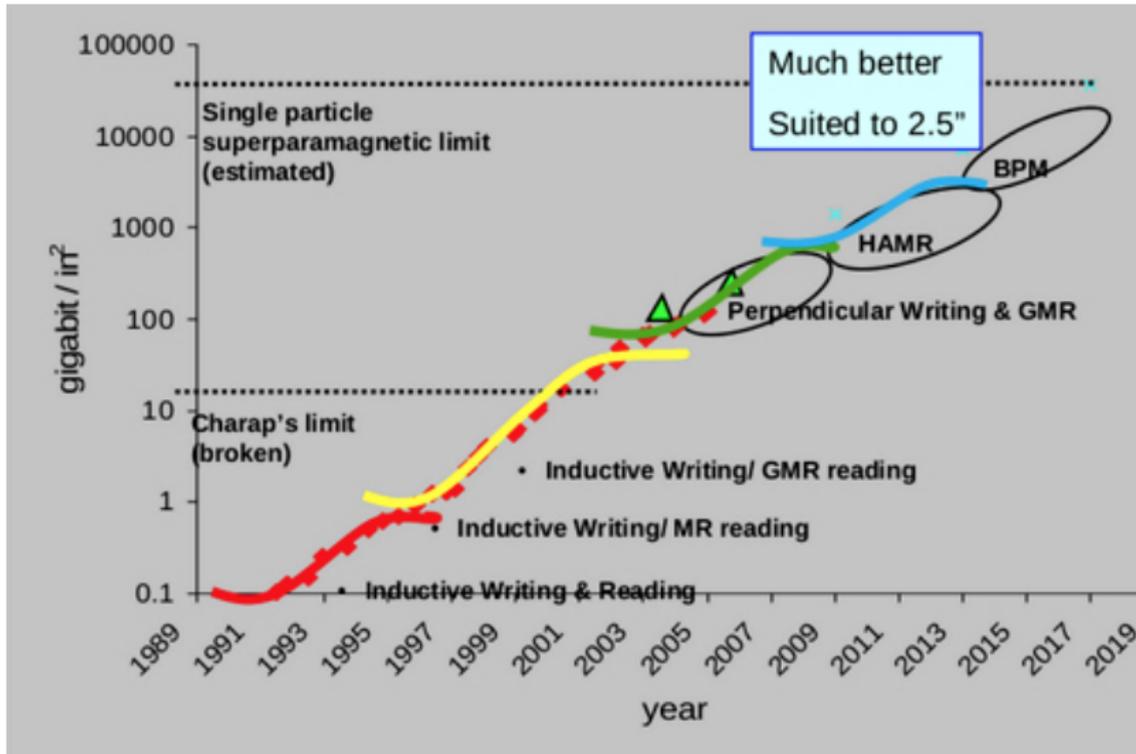
How Mergers Damage the Economy

By THE EDITORIAL BOARD OCT. 31, 2015

HDD price rise: market power or end of Kryder's Law?



Successive S curves: The end of Kryder's Law?



Does AMD spur Intel to innovate more?

TABLE 3
INDUSTRY OUTCOMES UNDER VARIOUS SCENARIOS

	AMD-INTEL DUOPOLY (1)	SYMMETRIC DUOPOLY (2)	MONOPOLY (3)	NO SPILLOVER DUOPOLY (4)	MYOPIC PRICING		SOCIAL PLANNER (7)
					AMD-Intel (5)	Monopoly (6)	
Industry profits (\$ billions)	408	400	567	382	318	322	-267
Consumer surplus (CS)	2,978	3,012	2,857	3,068	2,800	2,762	4,032
CS as share of monopoly CS	1.042	1.054	1.000	1.074	.980	.967	1.411
Social surplus (SS)	3,386	3,412	3,424	3,450	3,118	3,084	3,765
SS as share of planner SS	.929	.906	.940	.916	.828	.819	1
Margins, $(p - mc)/mc$	3.434	2.424	5.672	3.478	2.176	2.216	.000
Price	194.17	146.73	296.98	157.63	140.06	143.16	43.57
Frontier innovation rate	.599	.501	.624	.438	.447	.438	.869
Industry investment (\$ millions)	830	652	1,672	486	456	787	6672
Mean quality upgrade (%)	261	148	410	187	175	181	97
Intel or leader share	.164	.135	.143	.160	.203	.211	.346
AMD or laggard share	.024	.125		.091	.016		.014

NOTE.—Profits, surplus, and investments are expected discounted values (\$ billions). Social surplus is consumer surplus plus industry profits. In the symmetric duopoly and the no-spillover duopoly, both firms have Intel's ξ_i and $a_{0,i}$. With myopic pricing, firms ignore the effect of price on future demand. Margins and price are share-weighted averages.

Price competition with leap-frogging investments

- Monopolist adopts new innovations at the socially efficient rate
- Duopolists generally adopt faster than the socially optimal rate
- This leads to inefficiency: 1) duplicative investments, and 2) too many (not properly timed) investments
- Extreme result (Riordan and Salant): investment pre-emption and full rent dissipation
- Our calculations suggest inefficiencies are not huge: efficiency levels of 95% or higher

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