Sizing Up Today's Downturn

Jim Handy

OBJECTIVE ANALYSIS

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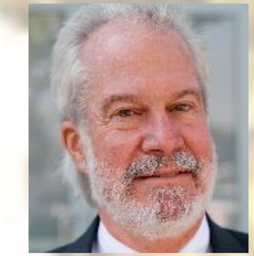
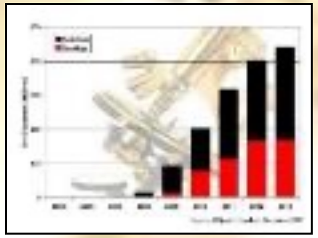
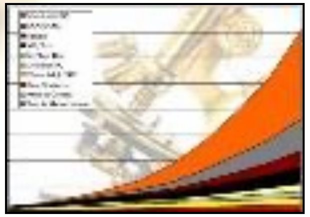


Profound Analysts





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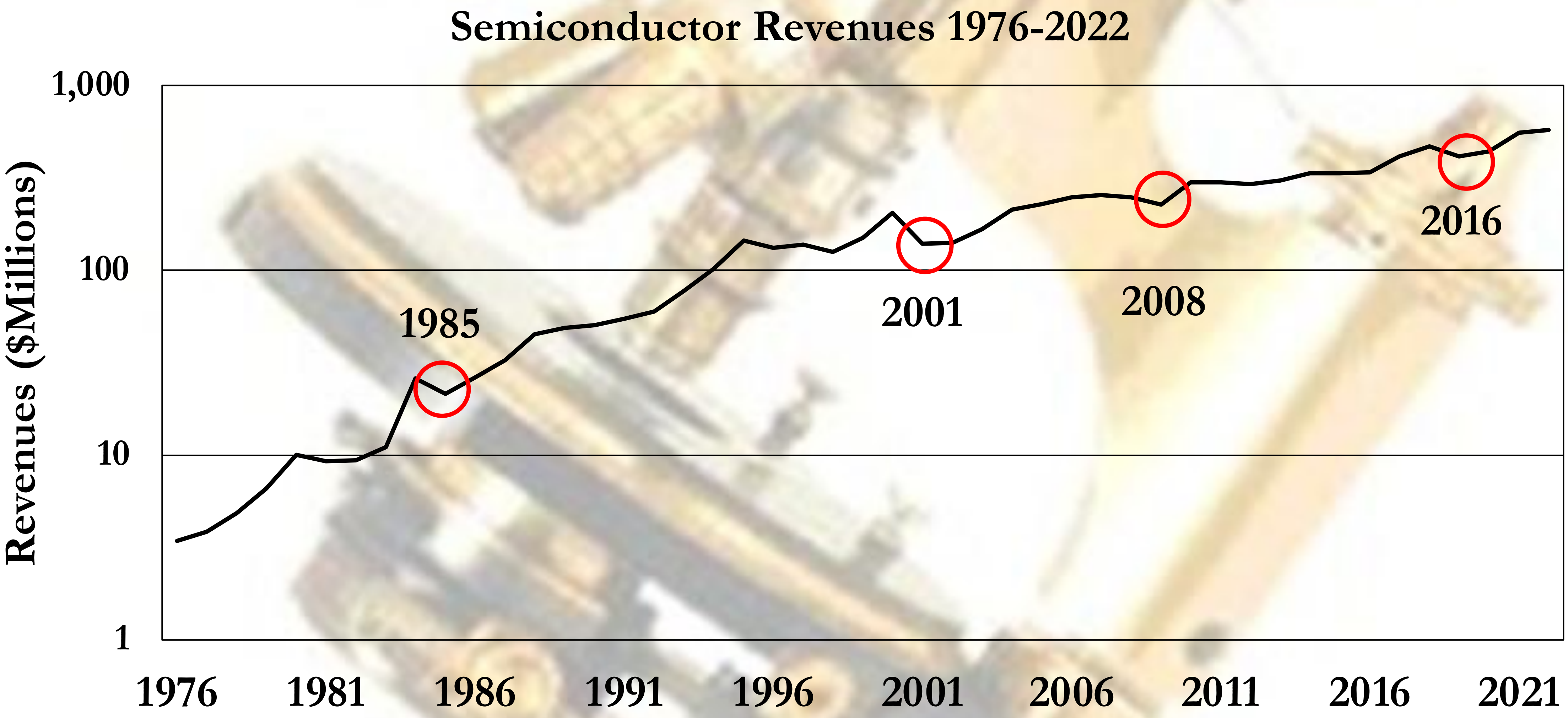
OBJECTIVE ANALYSIS

Semiconductor Forecast Accuracy

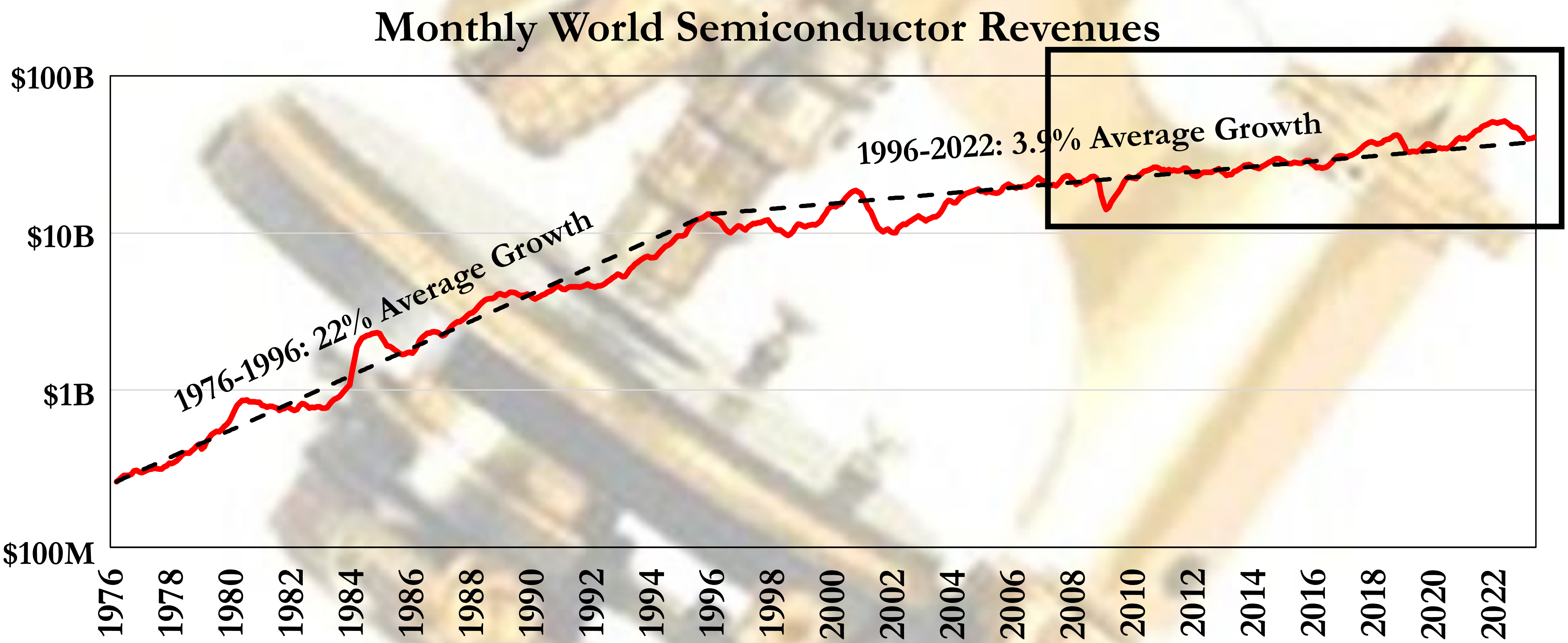
Year	Forecast	Actual
2008	Zero growth at best	-3%
2009	Growth in the mid teens	-9%
2010	Should approach 30%	32%
2011	Muted revenue growth: 5%	0%
2012	Revenues drop as much as -5%	-2.7%
2013	Revenues increase nearly 10%	4.9%
2014	Revenues up 20%+	9.9%
2015	Revenues up ~10%	-0.2%
2016	Revenues up ~10%	1.1%
2017	Revenues up ~20%	22%
2018	Strong start supports 10+% growth	14%
2019	Semiconductors down -5%	-12.5%
2020	Zero growth at best	6.8%
2021	Revenues grow 6% by remaining flat	26.2%
2022	Total semi still grows 6%	3.2%
2023	Semiconductors decline 19%	TBD

About That Downturn…

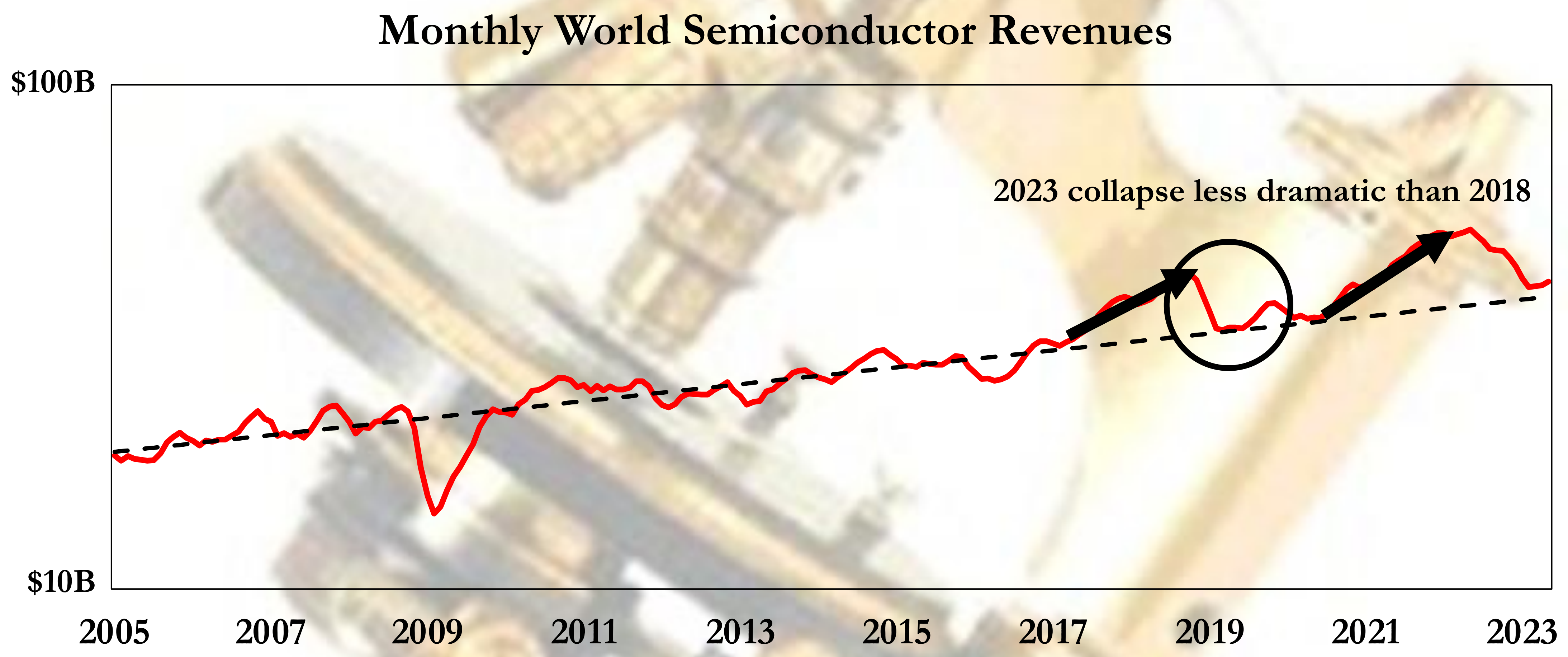
Demand Drops Are Rare



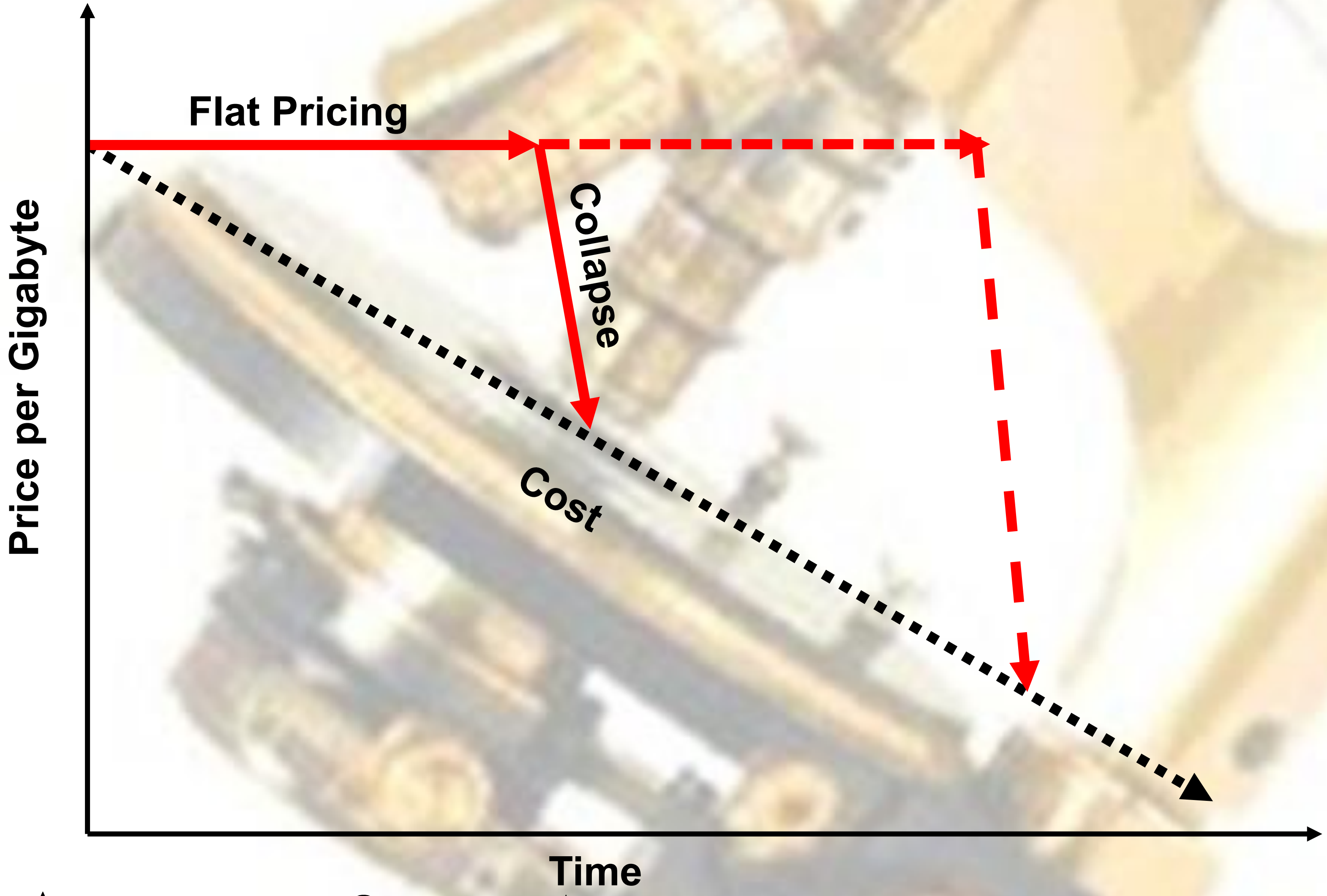
Semiconductor Revenues Follow Long-Term Trends



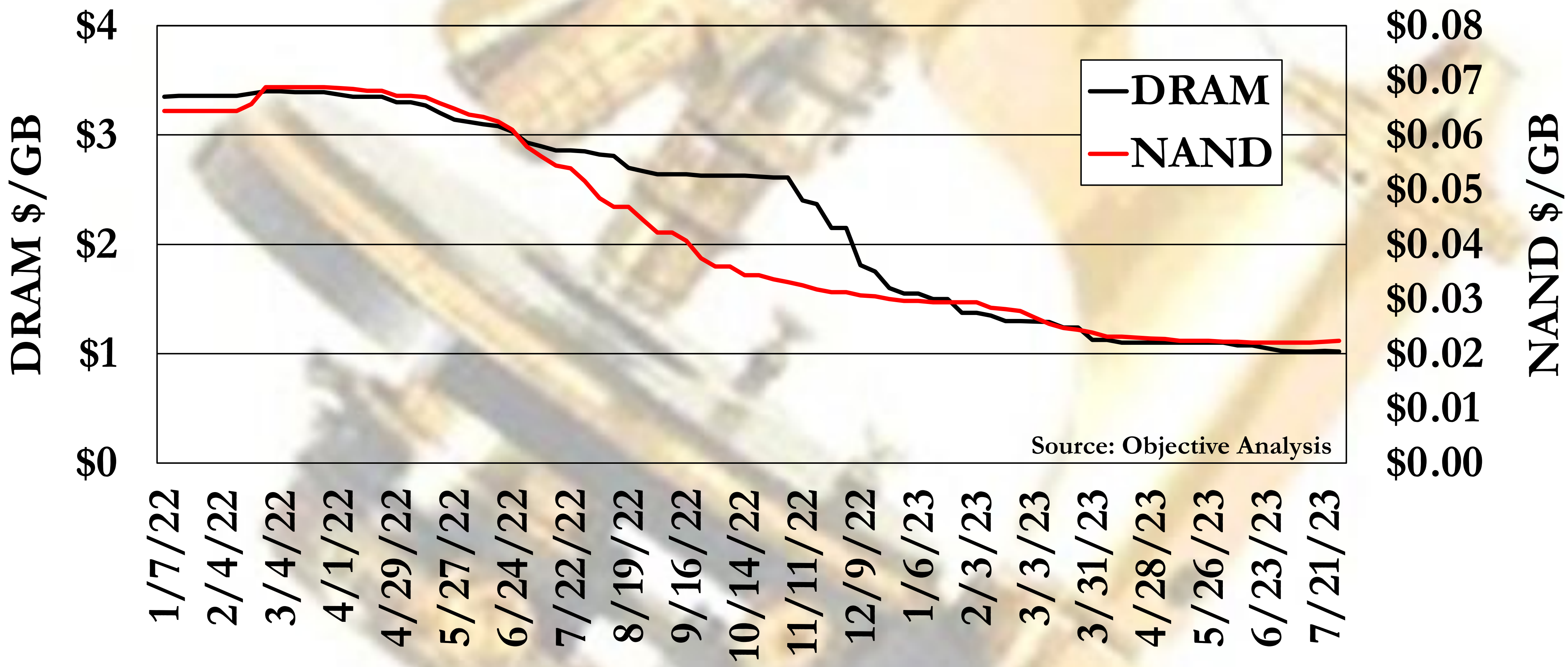
A Painful Return to “Normal”



Prices Always Collapse to Cost



Spot Prices Now Follow Cost



What to Do?

- Memory makers: Work through unprofitable times
- Memory users: Use current situation to build strong relationships at a bargain
- Tool makers: Focus on support business
- Investors: Look for buying opportunities soon, before prices rise

Outlook

- Prices follow cost until mid-2024
  - –Demand catches up with supply
- Prices flatten 2024-mid-2026
  - –Overcapacity causes mid-2026 collapse
- Still many questions
  - –Health of global economy
  - –US/China trade war

Where I Post Blogs About This

www.TheMemoryGuy.com

www.TheSSDguy.com

www.Smartkarma.com

Important Market Drivers

- CXL
- UCIe, HBM, Chiplets
- Political/Economic Issues
- AI
- Emerging Memories in Optane’s Wake

New Report: Emerging Memories Branch Out

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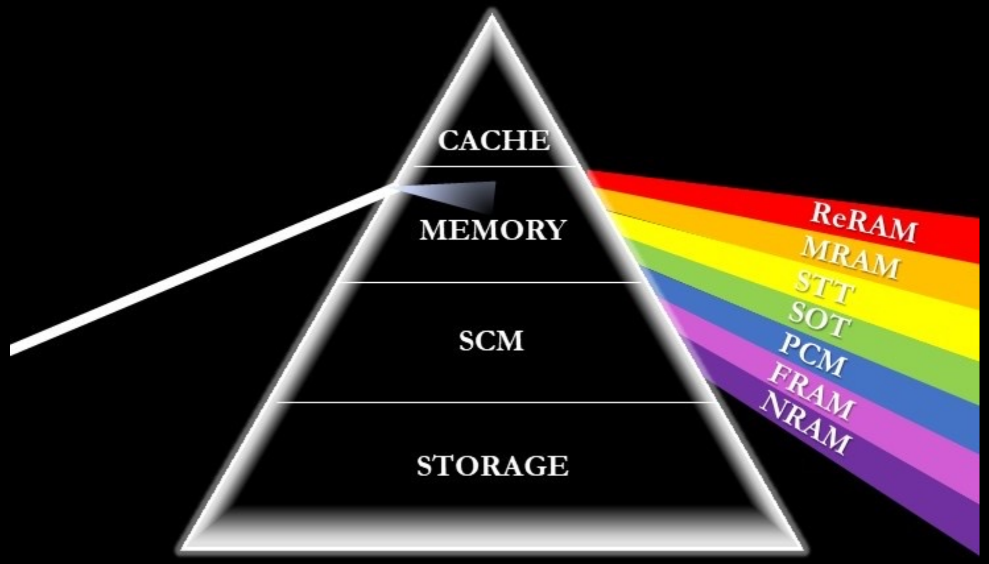
Semiconductor Market Research



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