



# Information Shocks and Stock Market Liquidity: A Comparison of the NYSE and Nasdaq

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# Purpose of Study



- Compare performance of the NYSE and Nasdaq when securities markets receive important new information
- Examine role of ECNs in performance of Nasdaq

# The Event Days



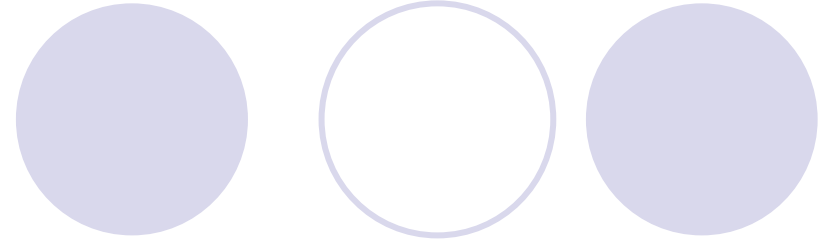
**January 3, 2001 - Unanticipated cut in the Fed Funds Rate of 50 basis points.**

**March 22, 2001 - Conference Board's index of leading economic indicators had a larger than expected decline and labor data was negative**

**January 2, 2003 - Release of the index of manufacturing business conditions by the Institute for Supply Management (ISM)**

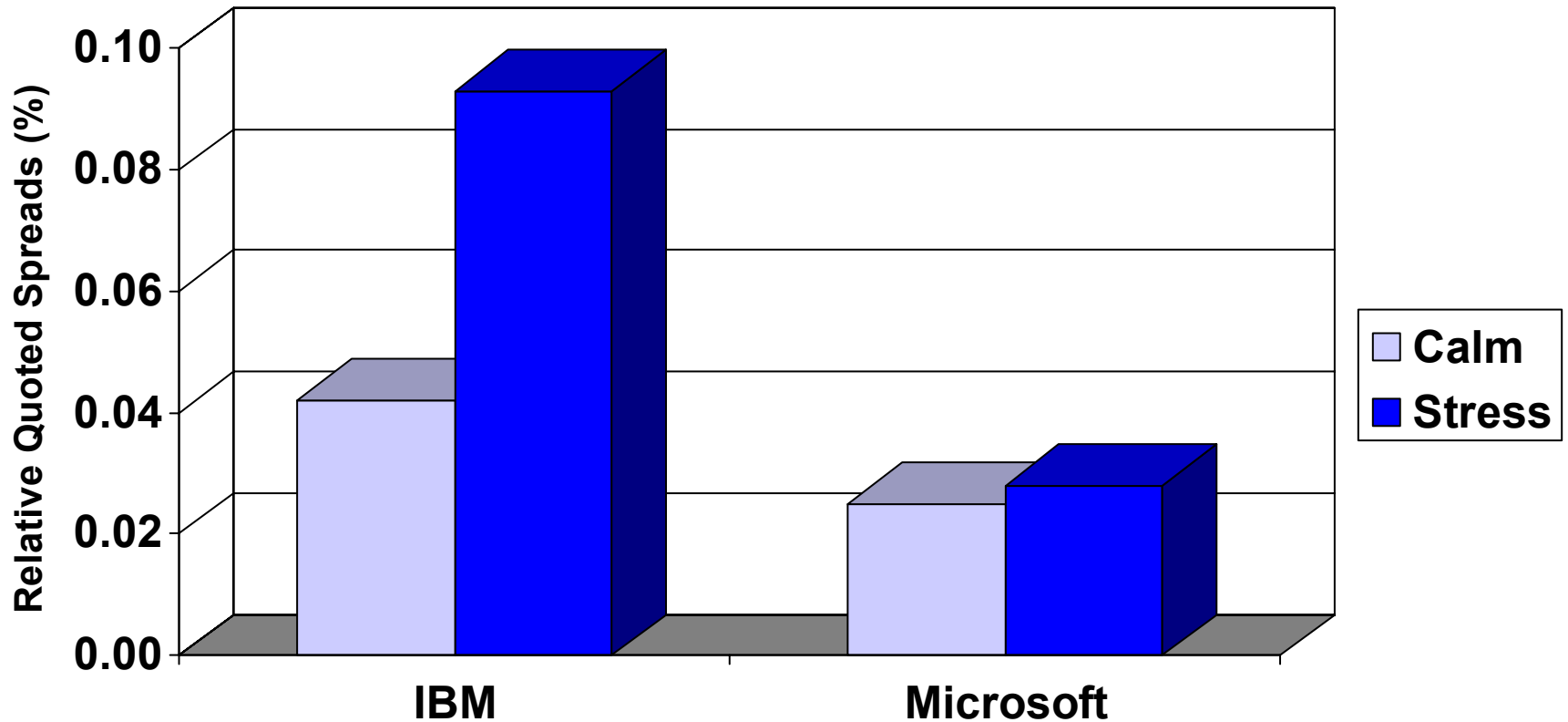
**May 1, 2003 - Release of the index of manufacturing business conditions by the Institute for Supply Management (ISM)**

# Stress versus Calm

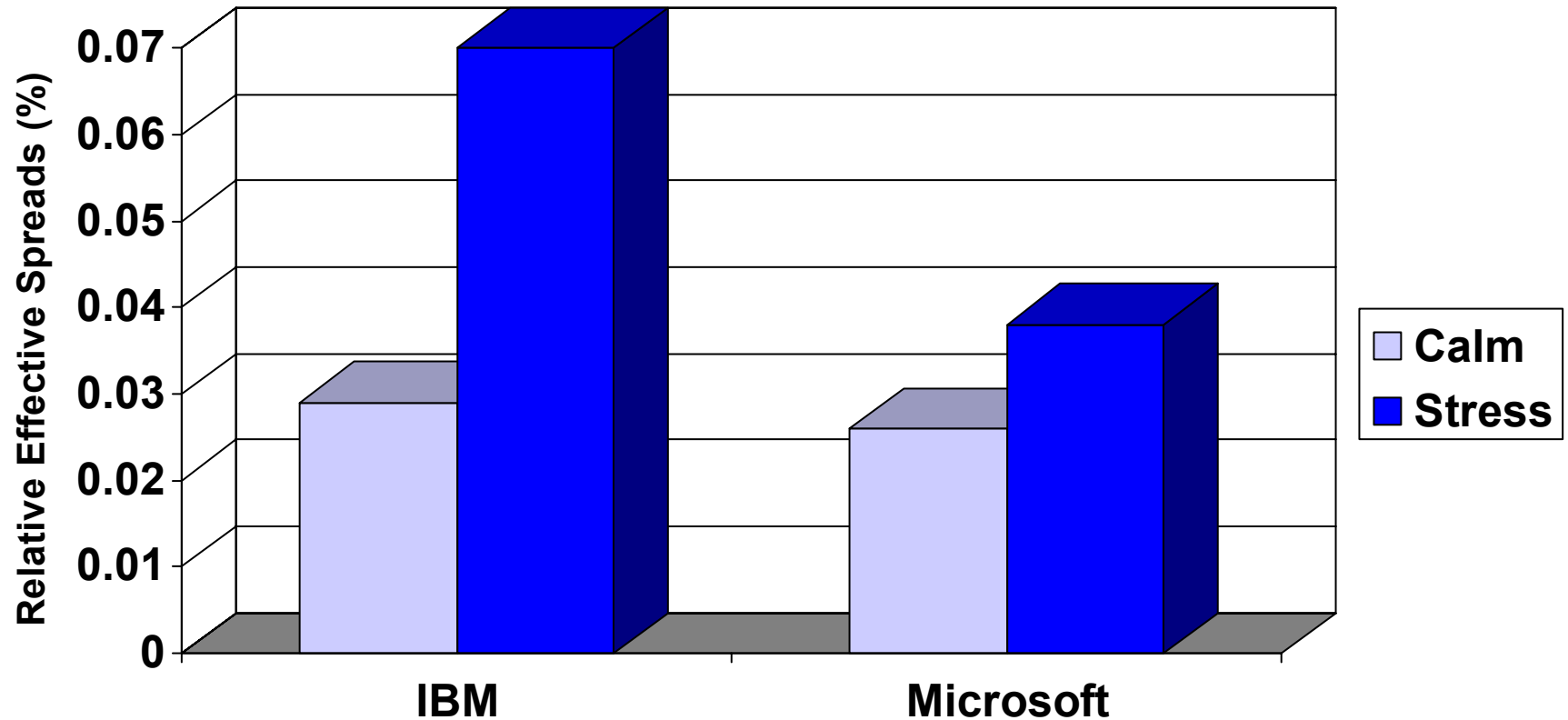


- Stress versus Calm periods
  - Stress period: 45 minute period surrounding announcement
  - Calm period: 45 minute period during the day with relatively small return movement

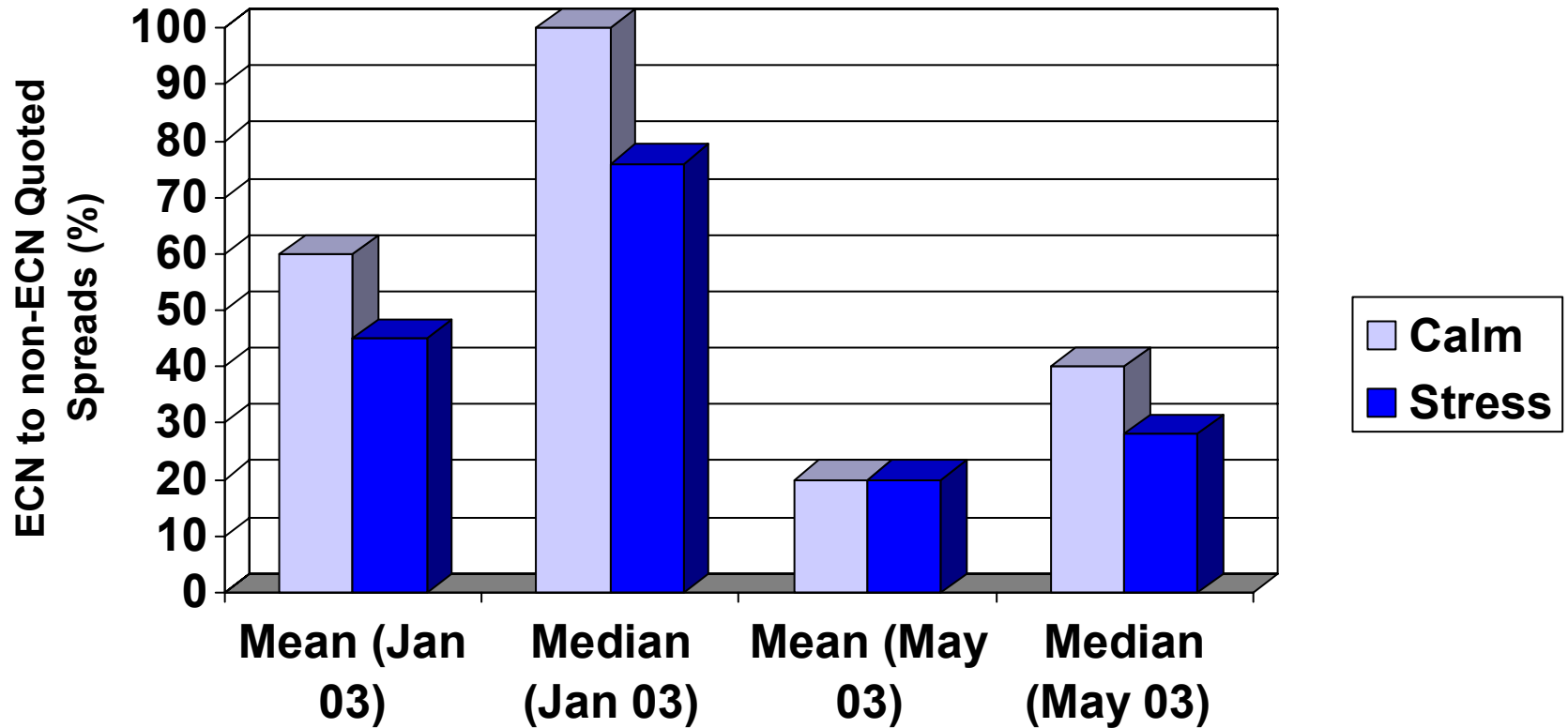
# IBM versus Microsoft on January 2, 2003



# IBM versus Microsoft on January 2, 2003



# Microsoft: ECN versus Non-ECN Quotes



# Sample



- 388 pairs of NYSE and Nasdaq-listed stocks
  - Matched on market capitalization, price per share and volatility
  - Market value of NYSE firm is more than \$100m
  - NYSE Trades and Quotes (TAQ) database
  - Nasdaq Trades and Quotes (Nasdaq) database
  - Center for Research in Security Prices (CRSP) database
  - No financials, utilities and American Depository Receipts (ADRs) are included

# Summary Statistics



- Summary statistics on firm characteristics
  - Median market cap of NYSE firms is greater than that of Nasdaq firms
  - NYSE firms have lower turnover
  - Nasdaq firms have higher volatility and price

# Summary of results



- Quoted and effective spreads are lower on NYSE versus Nasdaq in both calm and stress periods
- Changes in quoted and effective spreads in the stress periods (relative to calm periods) are smaller for Nasdaq versus NYSE
- ECN quoted spreads are approximately 30% lower than spreads quoted by traditional Nasdaq market makers
- On two of the four event days the ratio of ECN quoted spreads to spreads quoted by traditional market makers declines significantly during the stress period for large cap stocks

# Quoted Relative Spreads on the NYSE and Nasdaq

	NYSE		Nasdaq	
	Calm period	Stress period	Calm period	Stress period
	Full Sample			
January 3, 2001	0.771%	0.881%	0.713%	0.830%
March 22, 2001	0.601%	0.645%	0.716%	0.632%
January 2, 2003	0.284%	0.389%	0.461%	0.635%
May 1, 2003	0.294%	0.318%	0.484%	0.541%

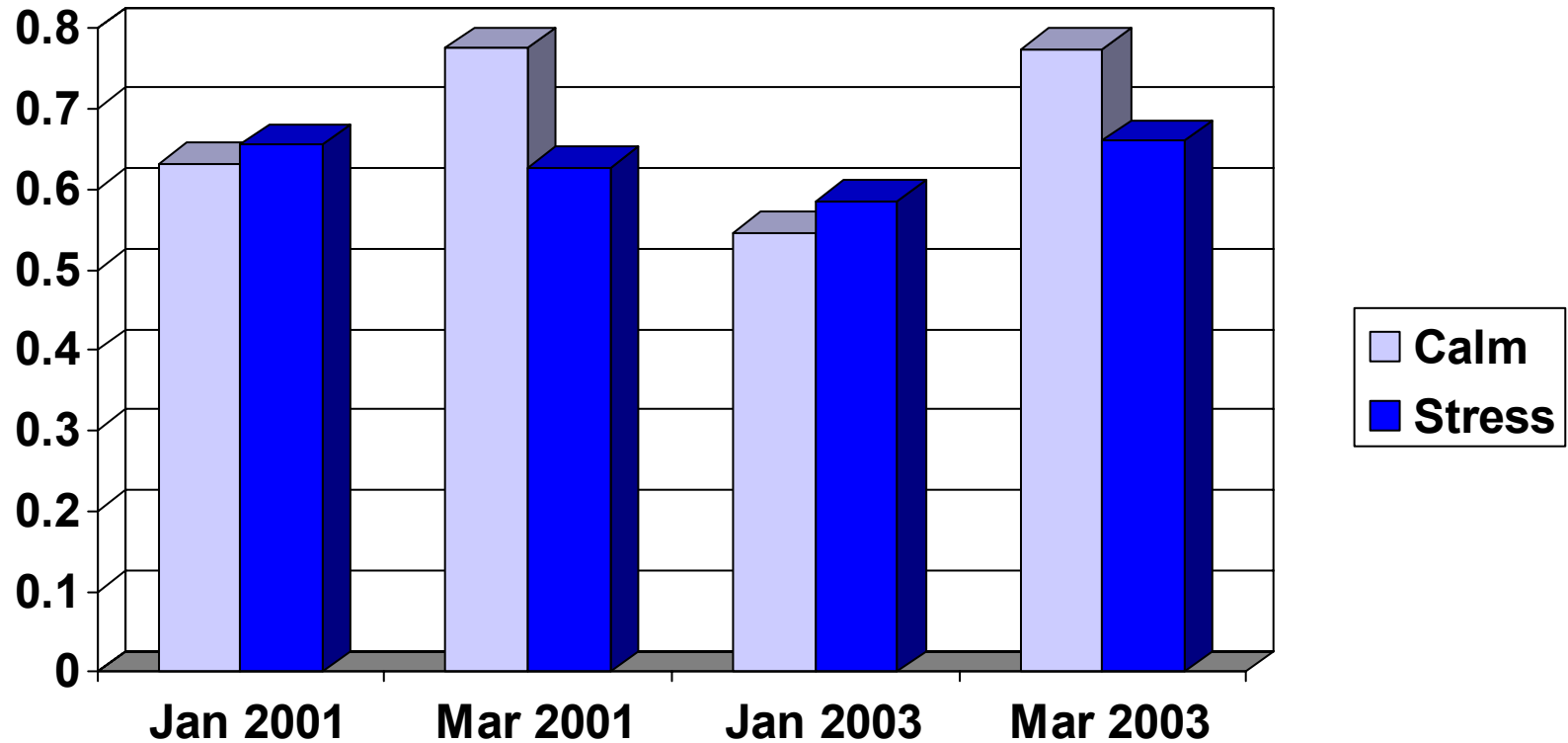
# Effective Relative Spreads on the NYSE and Nasdaq

	NYSE		Nasdaq	
	Calm period	Stress period	Calm period	Stress period
	Full Sample			
January 3, 2001	0.444%	0.544%	0.600%	0.887%
March 22, 2001	0.370%	0.403%	0.620%	0.577%
January 2, 2003	0.192%	0.271%	0.319%	0.427%
May 1, 2003	0.200%	0.220%	0.316%	0.350%

# Coefficient on Nasdaq Dummy Variable in Regression of Change in Spreads During Stress Periods

	Change in Quoted Spreads	Change in Effective Spreads
January 3, 2001	-0.125*	0.107**%
March 22, 2001	-0.233*	-0.008
January 2, 2003	-0.178*	-0.124*
May 1, 2003	-0.158*	-0.270**

# The ratio of ECN to non-ECN Quoted Spreads



# Market depth on the NYSE and Nasdaq during sample periods in 2001 and 2003

	NYSE		Nasdaq	
	Calm	Stress	Calm	Stress
<b>January 3, 2001</b>	8.8207	7.7210	12.7481	15.3964
<b>March 22, 2001</b>	8.0937	6.3413	6.5346	8.3114
<b>January 2, 2003</b>	3.1471	2.6750	2.9148	4.7970
<b>May 1, 2003</b>	2.9080	3.1636	2.5232	3.5241

# Coefficient on the Nasdaq Dummy Variable in a Regression of the Change in Market Depth Parameter from Calm to Stress Period

<b>January 3, 2001</b>	-0.476
<b>March 22, 2001</b>	-0.499
<b>January 2, 2003</b>	0.398
<b>May 1, 2003</b>	-0.073

# Conclusions



- **Spreads are significantly lower on the NYSE v. Nasdaq during both calm and stress periods.**
- **Spreads increase significantly during stress periods for both NYSE and Nasdaq securities, but more so for NYSE securities.**
- **Within Nasdaq, ECN quoted spreads are significantly lower than Non-ECN quoted spreads in both calm and stress periods.**
- **Changes in market depth from calm to stress periods are not significantly different**

# Future Research

How do marketplaces perform when important information arrives overnight?

- *does efficiency with which securities open vary across marketplaces?*

