

Financial Markets Update Karsten Jeske, Ph.D., CFA

May 29, 2014

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Bank of New York Mellon

- Bank of New York founded in 1784 by Alexander Hamilton. Mellon Bank founded in 1869. Merger in 2007
- Headquartered in New York
- 51,400 employees (April 2014)
- Custodial services: \$27.9t under custody (March 2014)
- Asset Management
 - \$1.6t under management (March 2014)
 - Distributed over a dozen boutique asset management companies

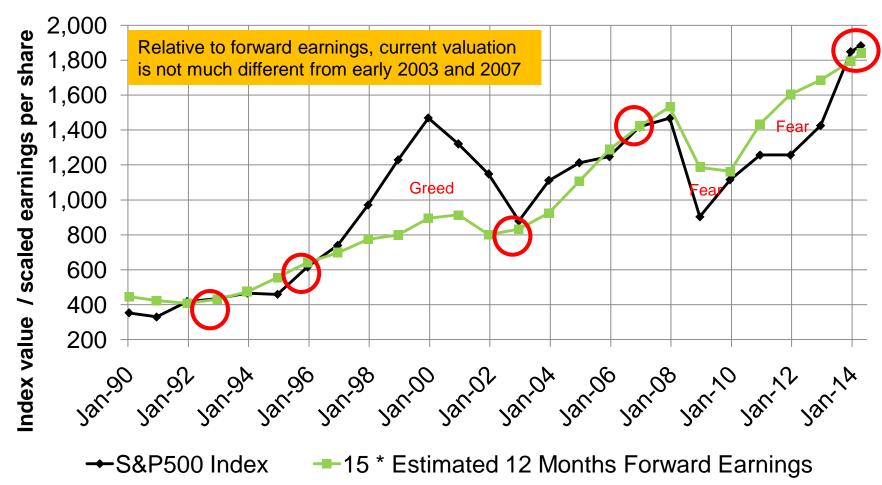
Mellon Capital

- Founded in 1983
- Headquartered in San Francisco
- Offices is Boston, Pittsburgh, Pune (India), Hong Kong
- \$363b under management (April 2014)
- 500 employees worldwide
- Mostly institutional clients
- Variety of active and passive strategies

Despite 2012/13 rally, equities in line with earnings: 2012/13 merely caught up with 2011/12 earnings growth!

S&P500® relative to Earnings Per Share

01/31/1990-04/30/2014

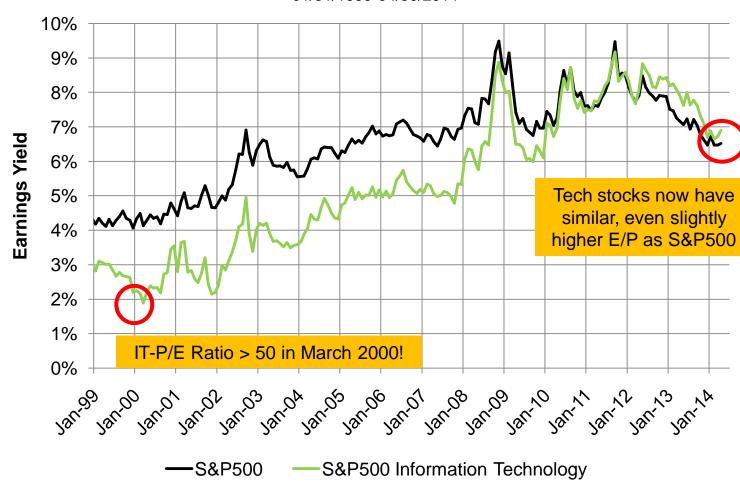


Source: Mellon Capital

Today's tech stocks look a lot more solid than IT in 1999/2000

- Earnings Yield in Info Tech now comparable to overall index
- Top 5 IT stocks account for more than 42% market cap among 65 IT stocks in S&P500, have earnings yield similar to S&P500 aggregate





Source: Mellon Capital

For higher earnings yields, have to look abroad

- Investors can find higher earnings yield in most countries, not just EM
- Hong Kong, Japan, Germany look attractive in DM
- China, South Korea look attractive in EM



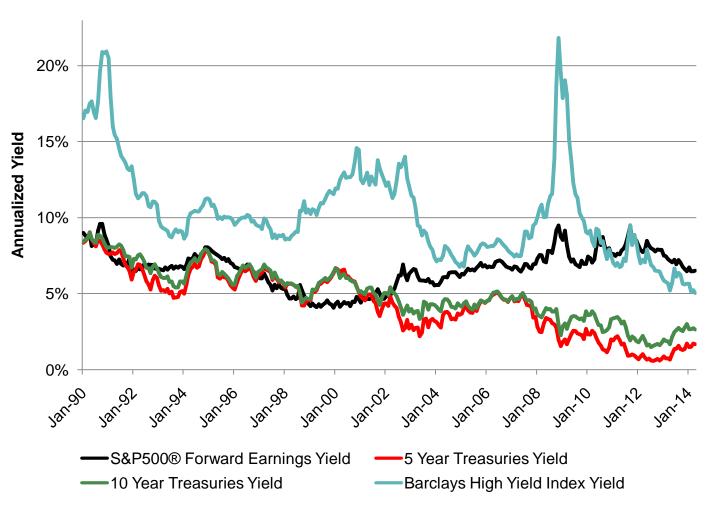
Equity Earnings Yields are at long term averages, well above bond yields

Equities still look inexpensive, especially when comparing earnings yields to bond yields

High yield Bonds: record low yield and record low spread, significantly below pre-crisis levels

Earnings Yields and Bond Yields

01/31/1990-04/30/2014



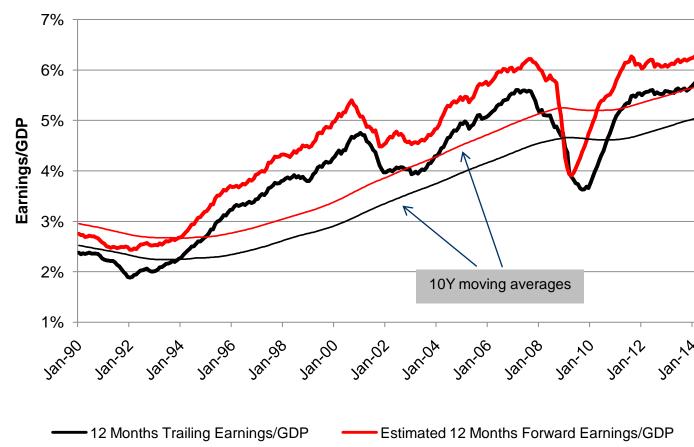
Sources: Barclays Capital, Federal Reserve, Mellon Capital

No obvious signs of overvaluation in P/E. But what about E/GDP? Earnings as % of Nominal GDP near all time high

S&P500® Earnings as % of U.S. Nominal GDP

01/31/1990-04/30/2014

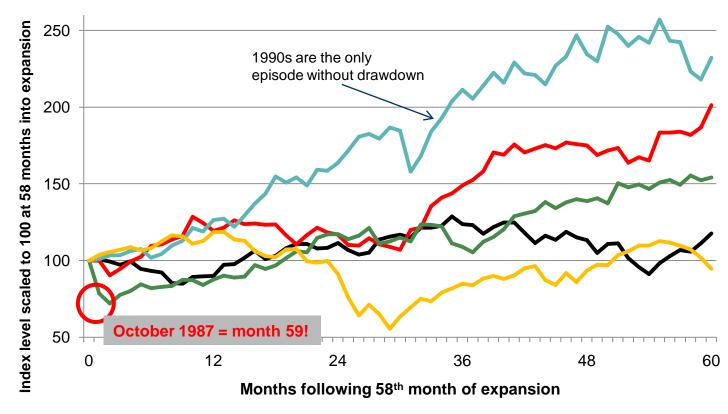
- Earnings as % of GDP at record level
- Could imply limited earnings growth potential due to low nominal GDP growth
- Compute long-term averages, i.e. Shillerstyle calculation / cyclically adjusted ratios:
 - Not very different from long-term averages
 - Only about 10% above long-term trend.



In the past, 58 months into uninterrupted expansion, investors faced downside risks

- Return Index: Price return plus reinvested dividends
- April 2014 is Month 58 of current expansion, May 2014 is Month 59
- Since WWII we saw 5 expansions of at least 58 months
- 4 out of 5 times we eventually saw drawdowns after such a long stretch of economic and earnings expansion
- 1 out of 5 times, S&P kept rising: Late 1990s
- October 1987 is month 59 after 1982 recession!





- Dec1965, recession follows in 48 months
 - Sep1987, recession follows in 34 months
 - Sep2006, recession follows in 15 months

Jan1980, recession follows in 0 months Jan1996, recession follows in 62 months

Source: National Bureau of Economic Research, Mellon Capital

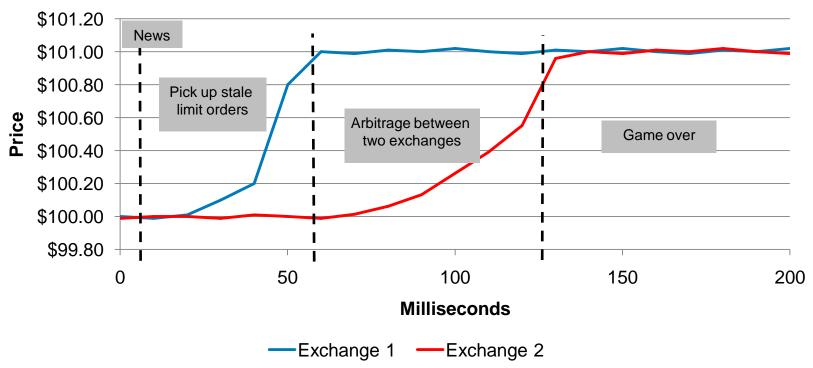
High Frequency Trading (HFT)

- Disclosure: Mellon Capital does not do HFT!
- HFT has gotten a lot of publicity recently
 - Michael Lewis' Book "Flash Boys"
 - ▶ Media Coverage of "Market is rigged" (Google search: 19,900,000 hits)
 - HFT firms face subpoenas and lawsuits
- HFT provides liquidity to other traders
 - Bid-ask spreads are at historic lows
 - Cost of executing large orders has declined
 - Apparent Win/Win situation: It appears that HFT has a net positive impact on trading costs for ordinary investors, while making profits for HFT as well
- Speed matters
 - ▶ Winner-take-all system, not unlike car racing or sports
 - Sizeable investment to gain edge over competition: faster computers, fiber-optic cables, co-location etc.
- Speed matters, but Connections matter even more
 - Cooperation between HFT firms, exchanges and brokerage firms can potentially allow HFT to front run other traders
 - Creates potential conflict of interest and ethical issues

Latency trading

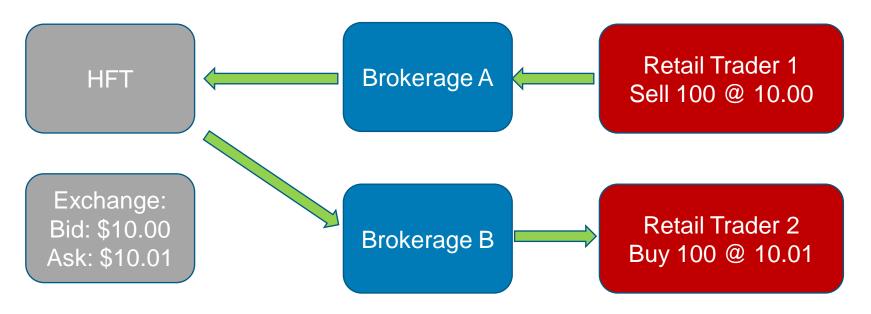
- HFTs have the ability to make profits by reacting to news quickly
 - Pick up "stale" limit orders
 - Arbitrage price differences of identical or similar assets at different exchanges

Hypothetical asset quotes in response to news



Connections matter to HFT Example: HFT pay for retail brokerage order flow

- Special arrangements with retail brokers give HFT an edge
- Brokerage firms route orders to HFT instead of exchange. Win/Win/Neutral situation
 - Win: Brokerages get paid for order flow from HFT
 - Win: HFT makes profit off the bid/ask spread
 - ▶ Neutral: Retail traders are indifferent, because the HFT matches the quotes from the exchange. Broker can claim best execution
- Who loses? The traders on the exchange whose orders were not executed.



Conclusion

- Despite strong performance in 2012/13, U.S. equity valuations seem in line with historical averages
- Caveat: In a downturn, equity valuations can potentially fall to well below average P/E ratios
- High Frequency Trading
 - ▶ HFT firms offer liquidity, but at a price
 - Speed wins over slower traders
 - A lot of hype, some of it actually justified if cooperation between HFT, exchanges and brokers

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