

Stock market: Intro. and broad lessons about behavior

266: Financial Markets and Institutions

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► ...

- Trump (Sept. 26, 2016)

“We’re in a big, fat, ugly bubble” ; “going to come crashing down”

- Alan Greenspan (Jan. 31, 2018)

“There are two bubbles: We have a stock market bubble, and we have a bond market bubble.”

► Sources

- Trump

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<https://www.washingtonpost.com/news/the-fix/wp/2016/09/26/1dots>

[the-first-trump-clinton-presidential-debate-transcript-annotated/](#)

- Greenspan

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<https://www.marketwatch.com/story/alan-greenspan-says-there-are-two-bubbles-in-stocks-and-bonds-2018-01-31>

► Our first financial market: stock market

► Stock? Equity Shares? Huh?

- No matter what market you are studying, you need to know the particulars of the financial contract
- When we talk about ‘the stock market’ we are generally talking about the *secondary market* for *common stock*

also called equity shares

► **Common stock**

- A share of common stock is literally a legal claim to ownership of a portion of the corporation

If there are 23 total shares and you own one, you own $1/23^{rd}$ of the company

► **What does share ownership entitle you to?**

- Companies can, but need not, pay dividends to shareholders
- When the firm pays a dividend, the firm is returning cash to the owners.
- If you own $1/23^{rd}$ of the shares, you get $1/23^{rd}$ of the total dividend paid.

► **Aside:: How much? How often? Etc.**

- As a general rule, firms state an annual dividend per share (perhaps zero)
- They change that dividend very infrequently.
- The dividend is generally paid in quarterly installments.

► **What does share ownership entitle you to?**

- If the firm is dissolved, you get your share of whatever breakup value is left

shareholders are called 'residual claimants' on the value

- Common stock also (generally) gives you voting rights on various issues of firm management

Various laws and the corporation's charter detail the nature of shareholder control through voting

- Of course, as Adam Smith noted, most shareholders pay almost no attention to the running of the firm.

► **Aside:: Common stock vs. Preferred stock**

- Preferred stock is different from common stock
- In general, preferred stock has contractually fixed dividend and no voting rights

► **Aside::**

- The fixed dividend payment makes preferred stock a bit like is like debt in promising fixed payments under normal circumstances

Preferred stock is one of many hybrids of debt and equity we alluded to earlier.

- Unless otherwise noted, in this class when we talk about stock we mean common stock.

► **Primary vs. Secondary markets**

- Regarding any financial instrument, we can distinguish the primary and secondary markets.
- Primary market: where the company sells the financial instrument to the public.
- Secondary market: where members of the public trade the financial instrument among themselves.

► **Aside:: Primary markets**

- We'll get to primary markets later
- Investment banks play a central role in primary markets.

► **Broad facts about stock values in the secondary market**

► **Important concept: Stock index**

- A stock index is the basic way we summarize the collective value of a broad group of stocks.
- The index is a kind of weighted-average of the individual prices of the stocks included in the index.

► **Aside:: Definition: weighted average**

- The weighted average of a set of numbers, x_1, x_2, x_3 , is the sum of the numbers times their weights:

$$w_1 \times x_1 + w_2 \times x_2 + w_3 \times x_3$$

Where the weights, the w s, sum to 1.

► **Making a stock index: 3 basic choices**

1. What stocks will be included in the index?
2. How should the prices be weighted?

► **Two main stock index weightings**

- Equal-weighted portfolio: if there are N stocks, each gets a weight of $1/N$.

the Dow (Dow Jones Industrial Average) is equal weighted

- Value-weighted portfolio

a stock's weight is firm's market value as a share of the total market value of all firms in the index.

► **Aside:: Market cap.**

- The market capitalization of firm is the total value of all the shares.
- Thus, the S&P index is market cap. weighted.

► **Question 3 for stock index design**

- 3. Decide whether or not to include the value dividends in the level of the index
- Most common indices reported in the news do not reflect dividends
 - Thus, the change in the value of the index reflects capital gains you would earn holding the stock, but does not reflect the full return you earn
- Indices that include dividends along with capital gains are generally called ‘total return indices’
 - You can find total return versions of most common stock indices.

► **Details on indices**

- After the 3 broad choices just outlined, there are often many further details and adjustments in creating stock indices
 - you don’t need to memorize these
- The Dow is not a simple average of prices of included stocks:
 - e.g., it’s adjusted to remain smooth in the face of stock splits
- The S&P’s value weighting does not reflect the value of all shares
 - it only reflects ‘free float’—shares that are not closely held by some group of insiders.

► **Some actual indices**

- Dow
 - Dow Jones Industrial Average: equal-weighted index of 30 stocks (no longer strictly industrial)
- S&P 500
 - Value-weighted index of 500 major firms
- S&P is considered a benchmark against which many investment strategies are compared.

► **Some world indices**

- UK: FTSE (footsie)
- Germany: DAX
- France: CAC (CAC 40);
- Japan: Nikkei (Nikkei 225)

- Hong Kong: Hang Seng
- Shanghai: Shanghai Composite
- Brazil: Bovespa

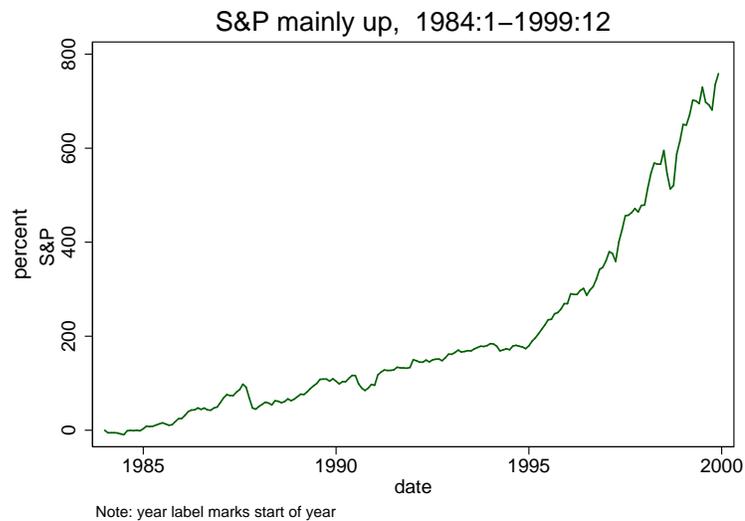
► **Some facts about broad stock market behavior**

► **Stock markets go up**

- Over long periods of time, stock markets generally go up, for 2 reasons
- There is generally inflation in the prices of goods and services, and the price of firms rises along with general price inflation.
- But broad stock indices generally rise faster than inflation reflecting *real* growth in the economy.

productivity and population grow, leading to real income growth

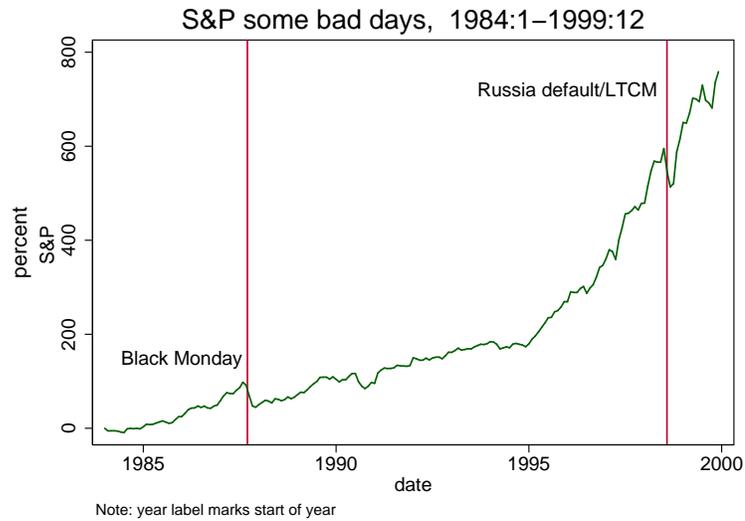
► **Stock markets usually go up: S&P**



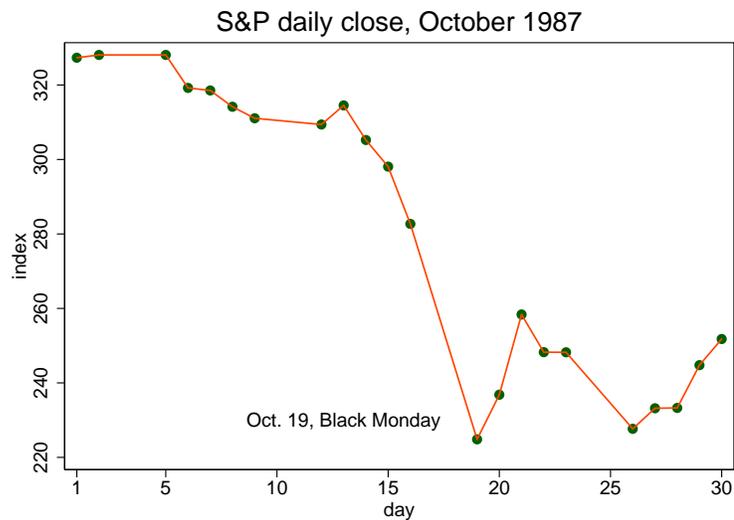
► **Stock markets can also fall**

- Sometimes a long way
- Sometimes very quickly
- Sometimes the fall is quite transitory (minutes)
- Other times, quite persistent (decades)

► **Stock markets sometimes fall a lot in a day**



► **Oct. 19, 1987: Black Monday**



► **Black monday**

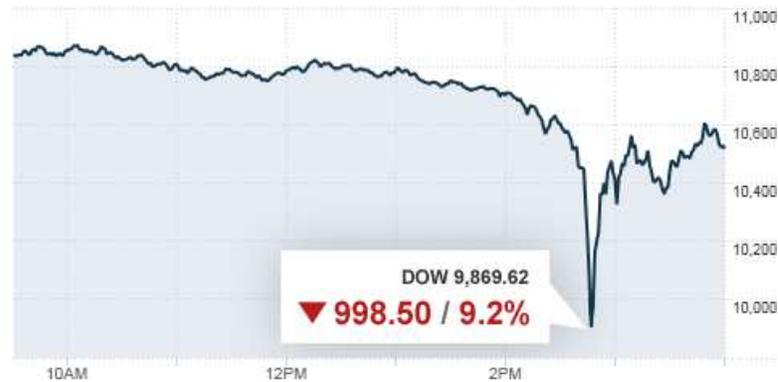
- Stock markets around the world fell, many by far more than the S&P

Markets around the world were down 20 to 50 percent on that day

- Some markets bounced back more quickly than others, but most remained much lower than before the drop for many months

► **Modern markets may fall alot in a flash**

► **Flash crash, May 6, 2010**



► Source

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<http://money.cnn.com/2010/05/06/markets/markets%5Fnewyork/index.htm>

► Flash crash, May 6, 2010

- Between 2:42pm and 2:47pm, Dow fell about 600 points
about 6 percent
- Mostly recovered by 3:10pm
- Attributed to unusually large transaction, high frequency (computerized) trading, and fragmented markets
- But this crash disappeared quickly.

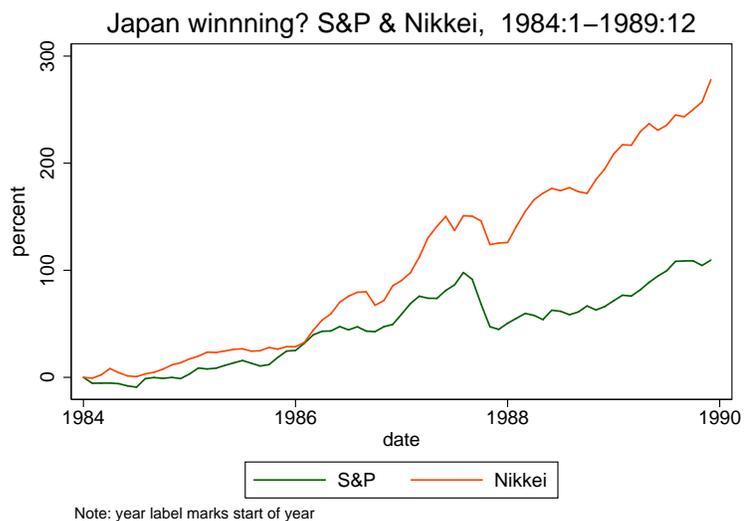
As we'll see, some of trades executed at crazy prices were subsequently cancelled. Oops.

► Stock price bubbles happen

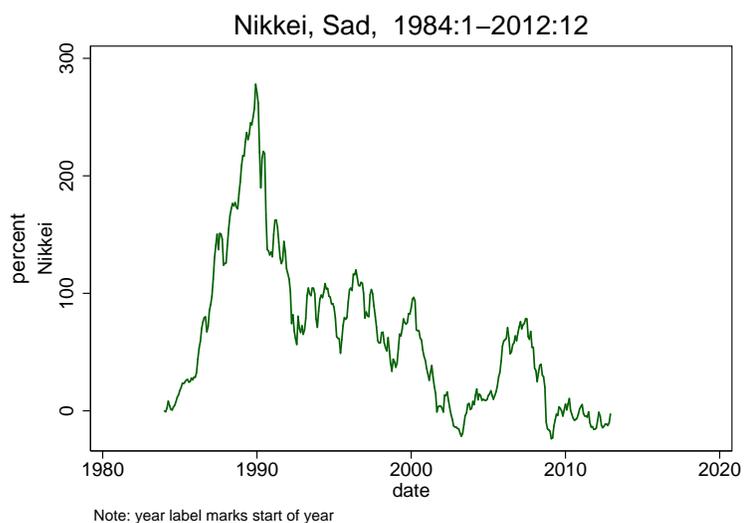
► Bubbles

- 'Bubble' is used in all sorts of ways in financial market commentary.
- It has no formal meaning.
More carefully: there is a definition of bubble used in some economic theory, but bubbles by that definition have probably never been observed in reality.
- In practice, the term bubble seems to be used to describe 'a sharp and difficult-to-explain rise in asset values that is subsequently rapidly reversed.'
- Sometimes, as we've noted, the popping of bubbles is associated with a prolonged period of weak economic performance.

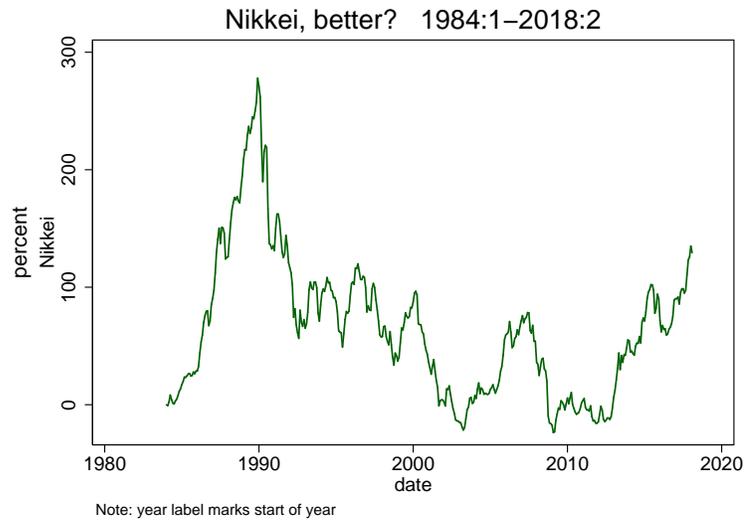
► For example, Nikkei vs. S&P in the 1980s



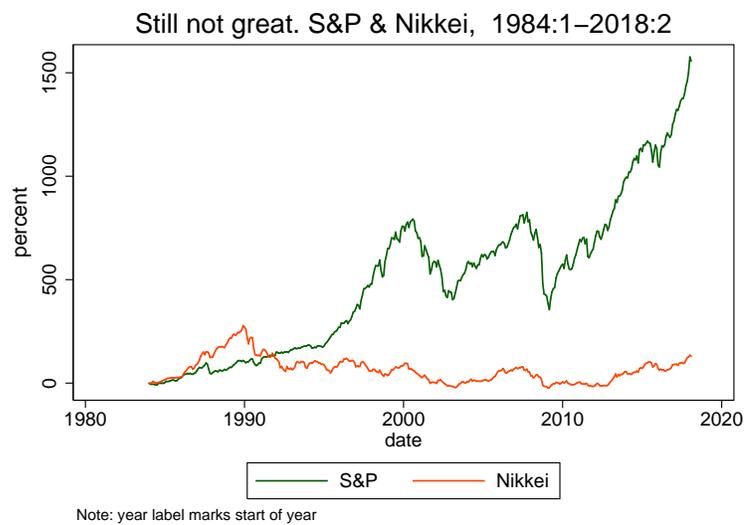
► And then...



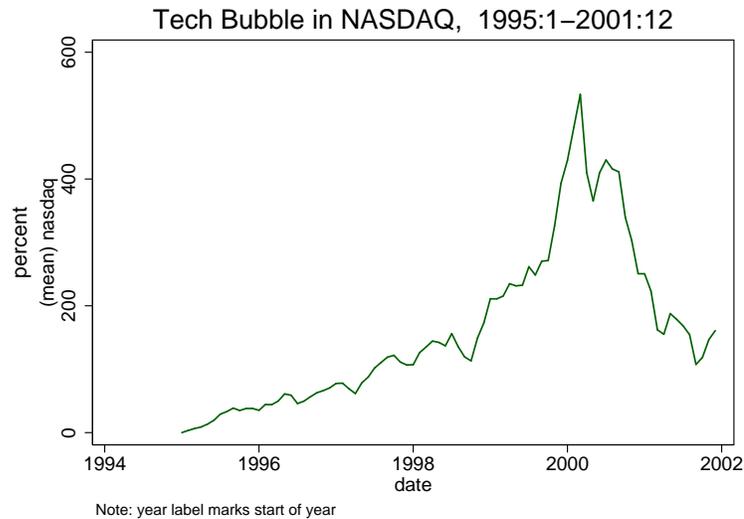
► More recently, recovery?



► More recently, recovery?



► Tech. bubble in the U.S.



► **A summary**

- Stock markets very generally go up.
 Betting that the stock market will go up over longish periods is basically betting that the economic growth period we've seen since 1850 will continue.
- But stock markets may lose a large share of their value quickly and that value may or may not return quickly.

► **End of very general lessons.**

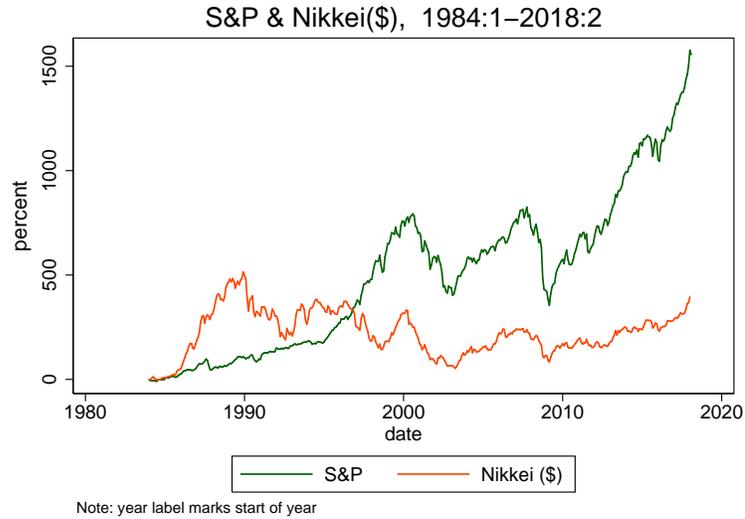
► **One detail: foreign exchange values**

- Stock indices reflect stock prices in the currency of the home country
 e.g., Dollars for the S&P, yen for the Nikkei
- Thus, when comparing performance of two stock indices we really should put the two on a comparable basis by stating all values in common currency.

► **Nikkei denominated in dollars**

- The Nikkei performance looks a little better relative to the S&P when both are stated in dollars.
- This is because the value of the yen was rising relative to dollar over much of the period since 1990.

► **Nikkei vs. S&P in dollars**

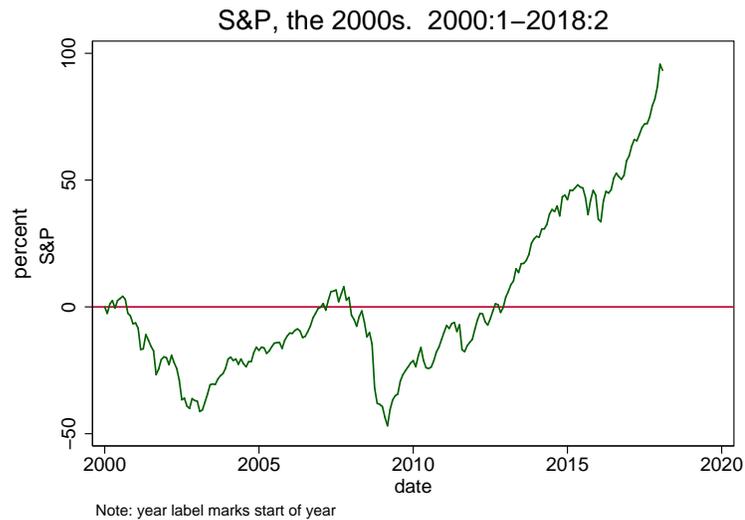


- Nikkei still looks pretty darn bad relative to other markets, even when measured in a common currency.

► **Foreign exchange**

- For the remainder of this discussion, all stock indices will be denominated in dollars.

► **Recent stock market performance**



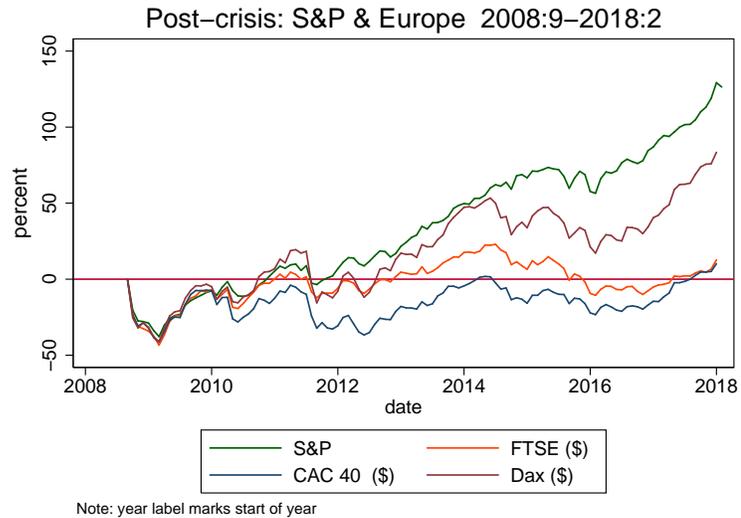
► **Since 2000**

- S&P has fluctuated between -50% and +100%.

hit approx. -50% twice

- In 2012, S&P was at same level as 2000

► U.S. and Europe since pre-crisis peak



- All these post-crisis markets look very similar through, say, 2010, when U.S. began steady rise
- Since then, the U.S. is up about 150% and Germany 100%
- France and the U.K. are barely above the pre-crisis level.

And some European markets have performed even worse: Greece, Italy...

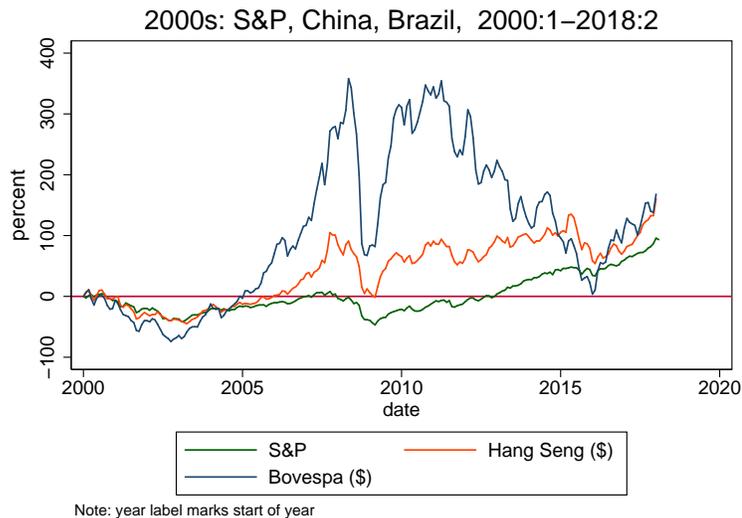
► U.S. China, new millenium



- Hang Seng has wider swings than S&P
- Very big drop in China around 2015, since recovered

I may have mentioned my view that institutions matter.

► **And the Bovespa, Brazil...**



► **One more general lesson**

- Every time some stock market takes off relative to others (Japan, 1980s; Brazil, China, 2000s) lots of folks pour money into those markets
- Folks tell stories of some brave new economic order; that everything has changed.
‘you better rush to get in on the ground floor.’
- Sometimes these stories are right; often they are wrong.

► **A few big events**

- Japan housing and equity bubble
 - Black Monday
 - LTCM/Russia default
 - Flash crash
- there are now a few of these
- U.S. Tech bubble
 - U.S. housing and equity bubble

► **Know**

- When? What happened? What happened in the aftermath?

► **Big questions**

- Is there a ‘right’ level for the stock market—or for individual stock prices?
- Are markets near the ‘right’ value most of the time? Seldom?
- Do the answers to these questions matter?