

Wireless!

The forces and strategies that shaped a revolution



Lecture 22: The stock market: How share price
is determined and why the CEO cares

Lecture 22- Classwork

1. Please summarize in 3-4 sentences the Pre-Lecture reading for Lecture 22. What are some important takeaways from your reading?
2. What are some of the short-term factors that influence share price?
3. What might explain the predictable long-term growth of share prices?
4. Why is share price a concern for top management?
5. Why is slowing growth a problem for top management?
6. Why do you think companies might buy their own shares?

PE (Price/Earnings) ratio and expected return

- ❑ The PE (= P/E) for a stock is computed by dividing the price of a stock ("P") by the company's annual earnings per share ("E")
- ❑ The ratio is used for valuing companies
 - Companies that grow faster than average, such as technology companies, typically have higher PEs
 - Higher PE shows that investors are willing to pay a higher share price now due to growth expectations in the future
- ❑ $1/PE$ = "current" percent return
 - Average PE is ~ 17
 - Average return is $\sim 6-7\%$
- ❑ But average annual return on stocks is $\sim 10\%$
 - How can this be? Why isn't the PE ~ 10 ?

There is an expectation that earnings will increase

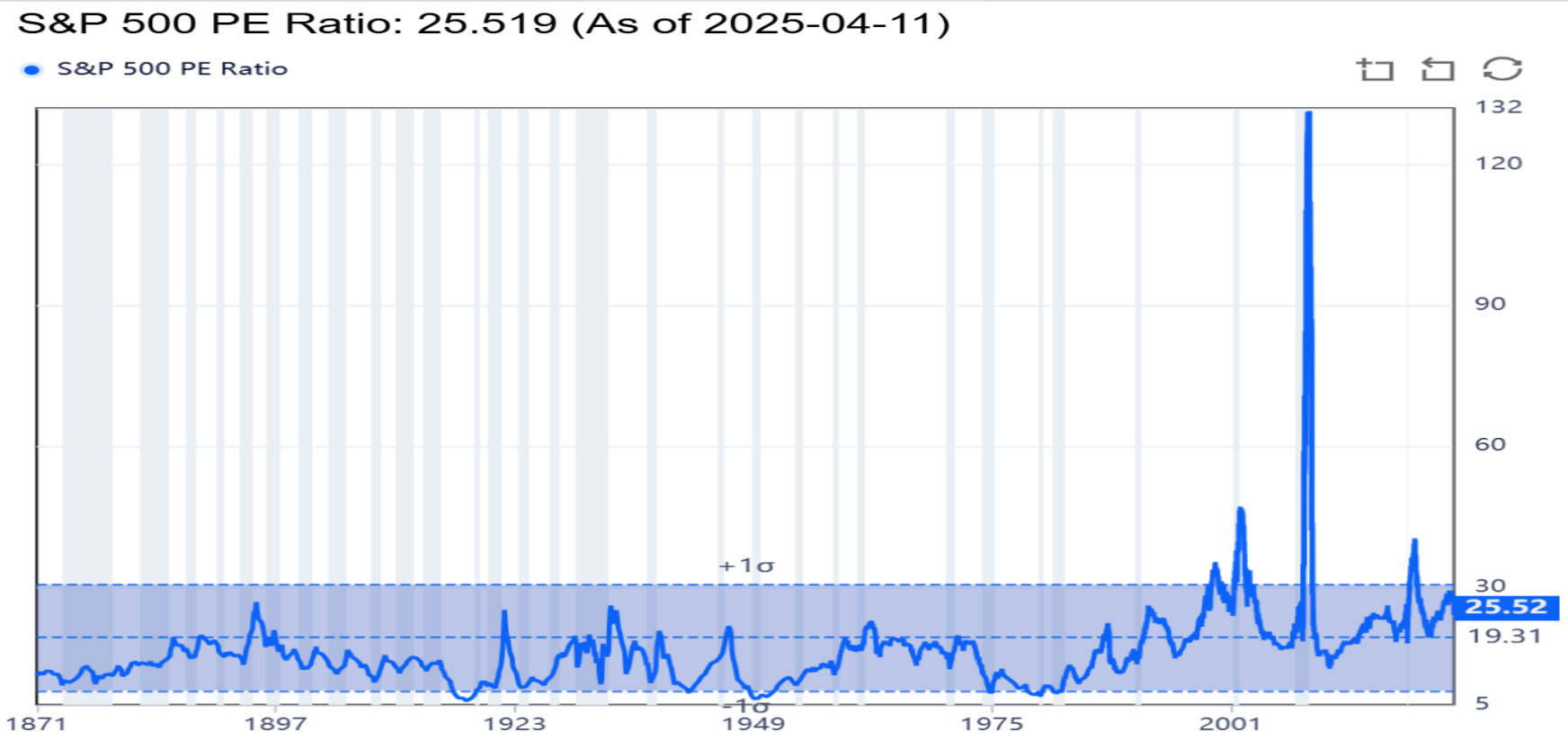
- We have seen that growth increases efficiency
 - Reduced SG&A per dollar of income
- Even without growth, good management can reduce costs
- The PE of shares is 17 (not 10) because there is an expectation of increased earnings

The 10% average return on stocks is a combination of growth and dividends

- About 7% comes from “growth” (the increasing value of share prices)
 - Earnings (profits) have reliably increased by about 7% per year (not every year, but on average for decades)
- Approximately, about 3% (on average) comes from dividends
- Dividends can be reinvested in new shares
 - For long-term investors who reinvest their dividends in additional shares (as we would in retirement saving), their total wealth increase by 10% per year (on average, for many companies)

PE of S&P 500

- ❑ The Standard and Poor's 500 (S&P 500) index tracks the stock performance of 500 of the largest companies listed on stock exchanges in the US
- ❑ It is one of the most commonly followed equity indices



Some PE ratios (as of 4/11/25)

- ❑ **Google (Alphabet):** P/E ratio of 30.3
- ❑ **Apple:** P/E ratio of 31.4
- ❑ **Meta Platforms:** P/E ratio of 22.76
- ❑ **Microsoft:** P/E ratio of 31.28
- ❑ **Amazon:** P/E ratio of 33.43
- ❑ **Netflix:** P/E ratio of 46.31
- ❑ **Tesla:** P/E ratio of 117.47

- ❑ **AT&T:** 17.98
- ❑ **Verizon:** 10.56
- ❑ **T-Mobile US:** 26.36

How stock prices are actually created

- ❑ Shares are “traded” on “stock exchanges”
 - Like the New York Stock Exchange and Nasdaq
 - An account with a “broker” like Fidelity is required
- ❑ The process is to match “bid prices” from buyers with “asked prices” from sellers
 - More (and eager) buyers drive prices up
 - More (and eager) sellers drive prices down
- ❑ Prices are influenced by many things
 - Not just earnings
 - Events can influence individual companies, “sectors” and the whole stock market
 - “Greed and Fear” cause Bubbles and Crashes

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Some recent examples of factors that have influenced “short term” share prices

- ❑ The dot-com euphoria
- ❑ 9/11
- ❑ The mortgage crash
- ❑ Low interest rates
- ❑ Lower corporate taxes
- ❑ The pandemic
- ❑ Ukraine
- ❑ Fear of recession (as is going on recently)
- ❑ Instability in global markets (e.g. tariff and trade wars)
- ❑ War induced oil supply disruptions

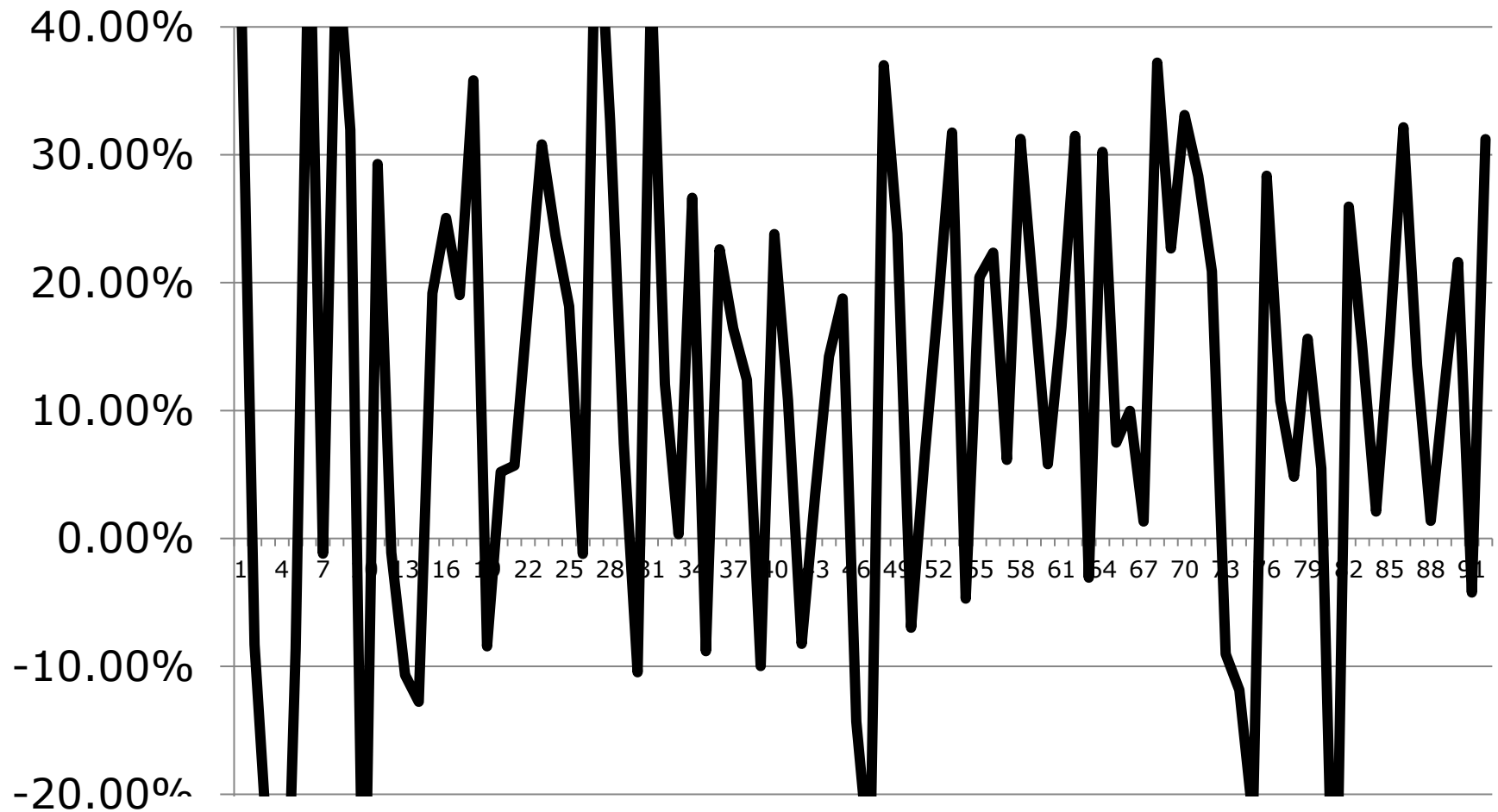
The “dot.com” “bubble” and crash

Notice the “overshoot” in the crash

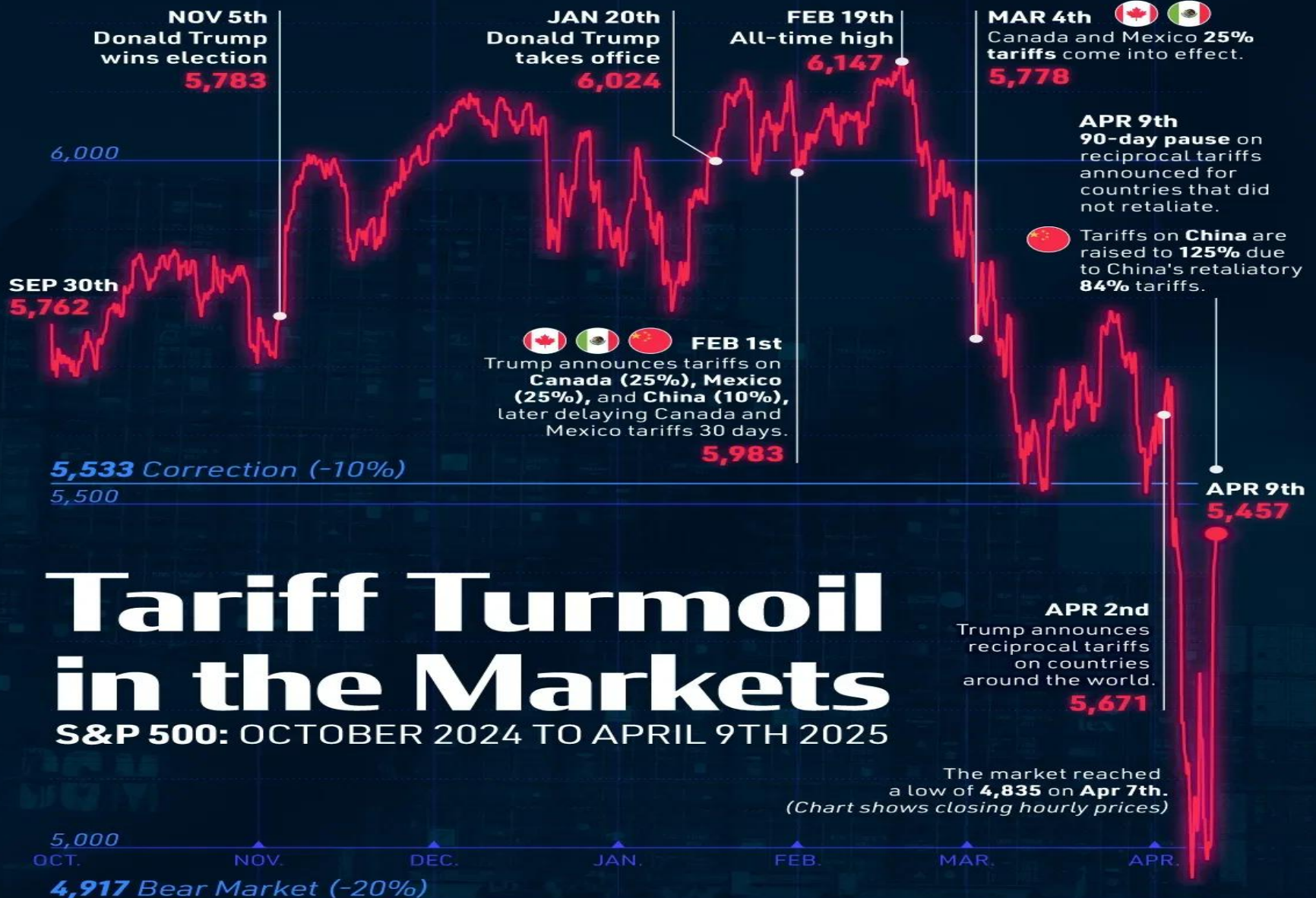


Investors were hurt if they bought late in the bubble and “rode the market down.” Investors with stable, long-term investments weren’t hurt.

The annual stock market return averages about 10% but is very variable



**The stock market is not a good place
to put next year's tuition**



Tariff Turmoil in the Markets

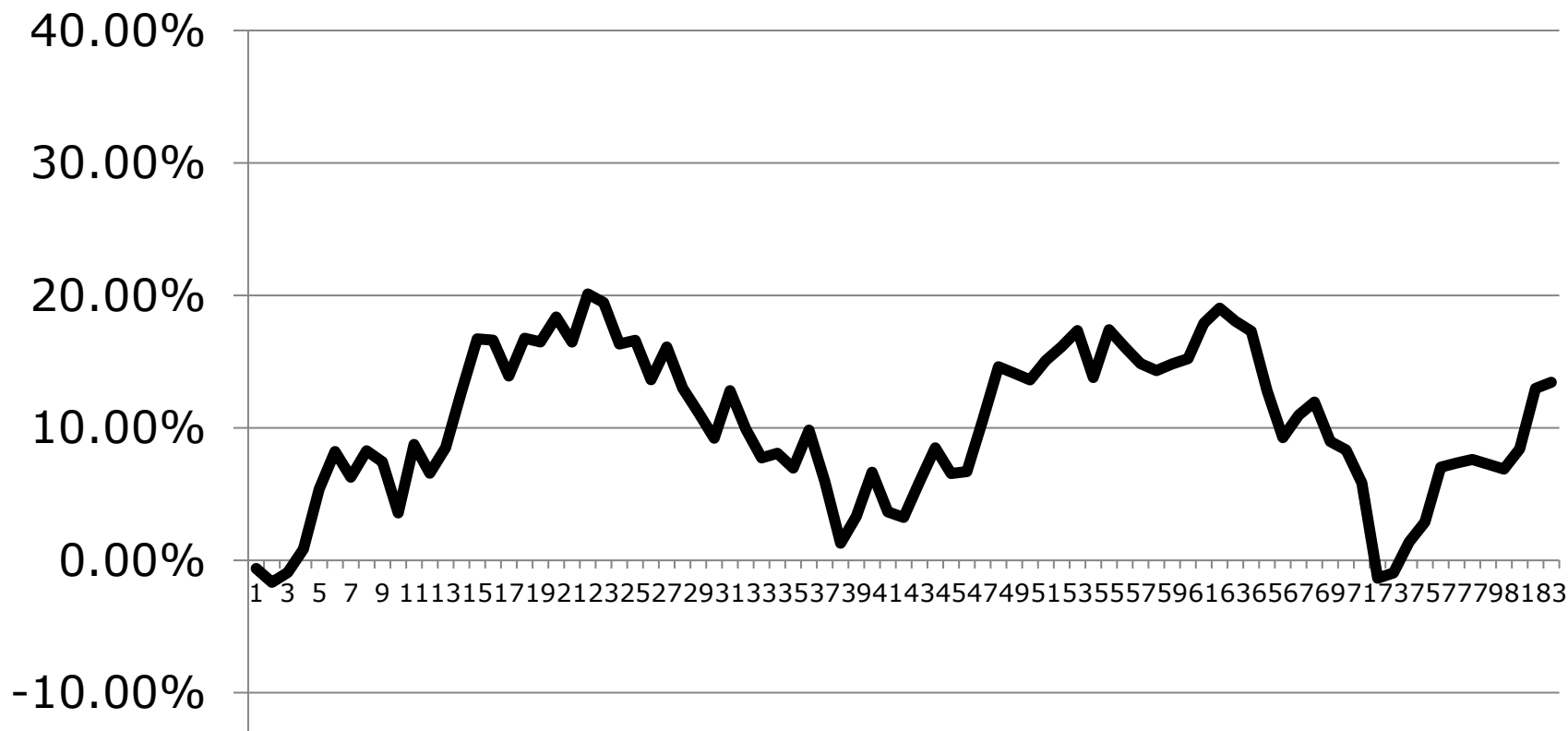
S&P 500: OCTOBER 2024 TO APRIL 9TH 2025

Data is of closing hourly prices.

Source: TradingView

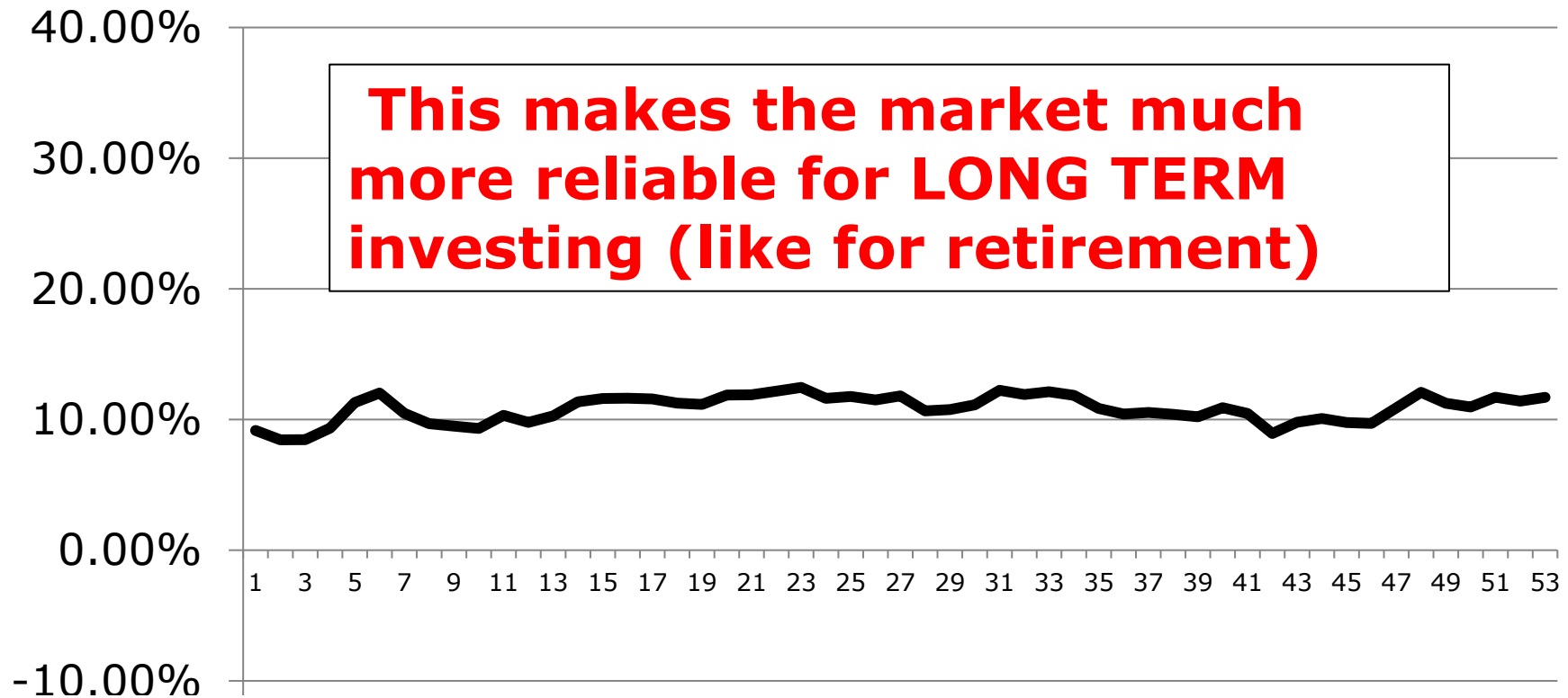


The 10-year “rolling” return on stock market investments is less variable



But it is still variable. You might have made 20% in the best 10-year periods or lost 1-2% in the worst 10-year periods.

The 40-year “rolling” return on stock market investments is much less variable



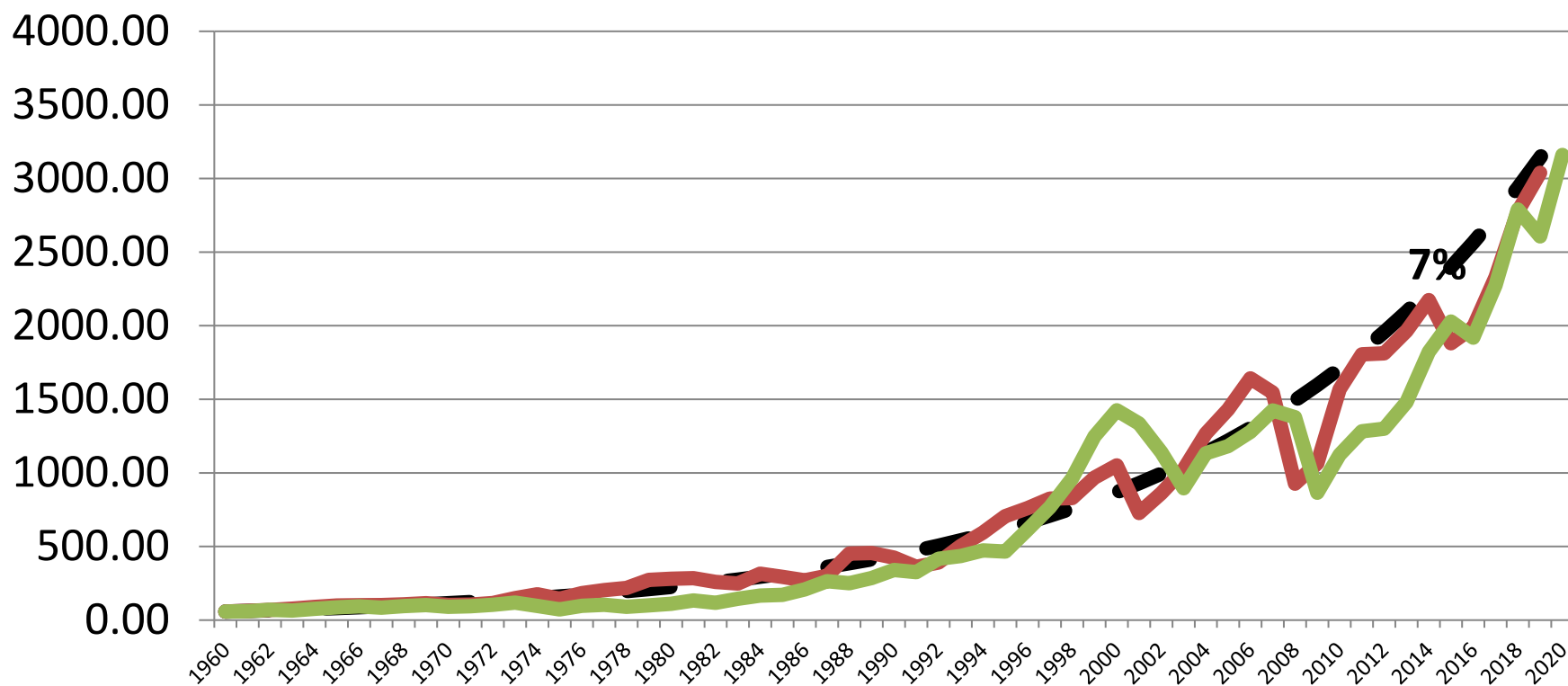
But it's not like a bank account with 10% interest. The annual return is scary in some years (see slide 5), and a 1% difference in the 40-year average produces a 50% difference in results

Earnings for S&P 500 1960-2019 compared to steady growth at 7%



**But why should long-term earnings growth
be 7% over many decades?**

And **stock Prices** follow **Earnings** in the long term
but with even bigger variations in the short term.



**7% annual growth over the long-term
(10% with reinvested dividends)
but some scary moments**

But why should we expect a consistent 7% growth in earnings?

- ❑ It is an average of all companies over many decades
- ❑ It probably represents a small but consistent “efficiency factor”
 - Since expenses are 90% of revenues, a small but predictable “efficiency reduction” in expenses yields a much larger increase in earnings
 - Some of this would be used for competition (reducing prices to keep customers happy)
 - Some would be used to achieve an “expected” increase in earnings (to keep shareholders happy)

Two kinds of company— “Growth” and “Dividend”

- ❑ Growth companies focus on reinvesting profits to drive rapid expansion and future earnings
- ❑ Dividend companies prioritize returning profits to shareholders through regular payouts
- ❑ Growth stocks may offer higher potential long-term gains, but dividend stocks provide a more consistent income stream
- ❑ Companies that are growing will find it easier to increase earnings
- ❑ Growth is more unpredictable in a competitive world
 - Growth stocks can be more volatile (risky?)

Examples of Stock Price History

AT&T



Verizon



Google



Apple



Examples of Recent Dividends

- ❑ AT&T: annual dividend of \$1.11 per share (known for its high dividend yield, currently around 5%)
- ❑ Verizon: annual dividend of \$2.66 per share (known for its high dividend yield, currently around 6.6%)
- ❑ Apple: annual dividend of \$1 per share (Apple has been increasing its dividend over the years)
- ❑ Google (Alphabet): recently (April 2024) announced its first-ever dividend of \$0.20 per share

Slowing Growth and Dividends

- ❑ Established companies that have stopped growing tend to pay higher dividends
 - Dividend stocks tend to grow more slowly but can be less risky
- ❑ Some investors favor growth
 - What happens when a company stops growing?

Management cares about earnings but they also care more about share price

- ❑ We might believe that profit is their main concern, and that they have a long-term view
- ❑ In reality, they live in that unpredictable “short term” where share price doesn’t follow any clear-cut rules
 - That unpredictable share price determines their big bonuses, and even their job security
 - They spend a lot of time worrying about share price
 - The end of growth is particularly difficult, since their stockholders generally favor growth
 - ❑ Cellular was once a profitable growth business
 - ❑ Dealing with the end of growth will be our subject next time