

## Stock Market Volatility – Should You be Worried?



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## From Presidential Debate, October 7, 2008



## So What Was Candidate Obama Talking About?

- September 2008 unemployment rate was only 6.2%
  - Up from 4.7% a year earlier, but much lower than many times in the prior 38 years
  - On its face, this does not seem like the basis for making analogies to the Great Depression . . .



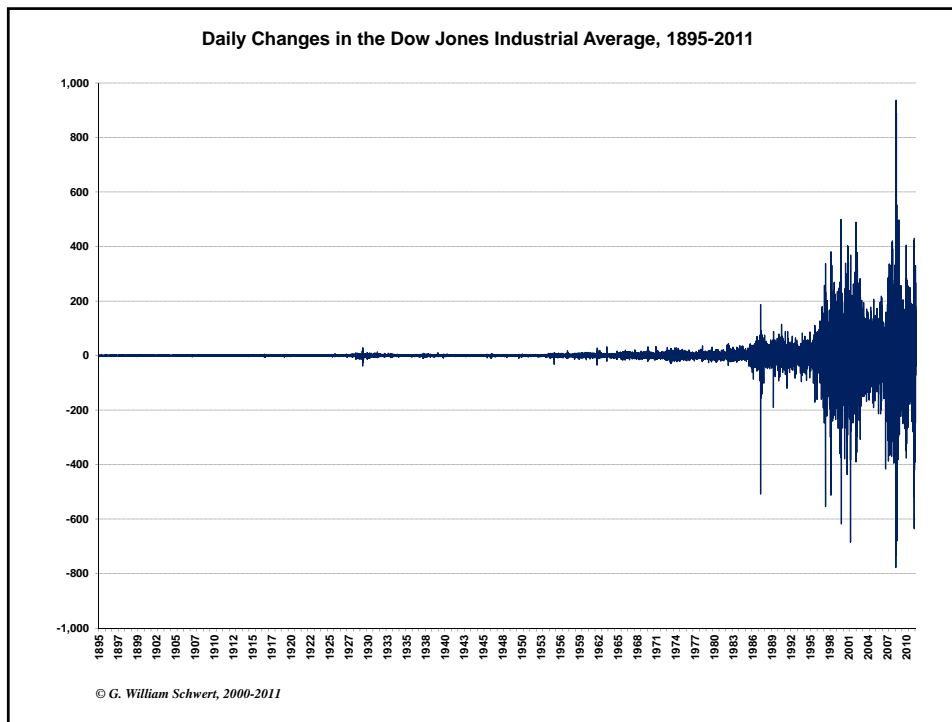
## Stock Volatility Was Very High from mid-September through October 7

Date	DJIA	Change	Pct Change	Rank
Sep-15	10917.51	-504.48	-4.42%	15
Sep-16	11059.02	141.51	1.30%	
Sep-17	10609.66	-449.36	-4.06%	17
Sep-18	11019.69	410.03	3.86%	15
Sep-19	11388.44	368.75	3.35%	25
Sep-22	11015.69	-372.75	-3.27%	33
Sep-23	10854.17	-161.52	-1.47%	
Sep-24	10825.17	-29.00	-0.27%	
Sep-25	11022.06	196.89	1.82%	
Sep-26	11143.13	121.07	1.10%	
Sep-29	10365.45	-777.68	-6.98%	1
Sep-30	10850.66	485.21	4.68%	8
Oct-01	10831.07	-19.59	-0.18%	
Oct-02	10482.85	-348.22	-3.22%	
Oct-03	10325.38	-157.47	-1.50%	
Oct-06	9955.50	-369.88	-3.58%	35
Oct-07	9447.11	-508.39	-5.11%	13

Red indicates among the 40 largest decreases of all time  
Green indicates among the 40 largest increases of all time


## What is market volatility?

- Big changes in prices
- But, it turns out that it makes more sense to look at PERCENT CHANGES



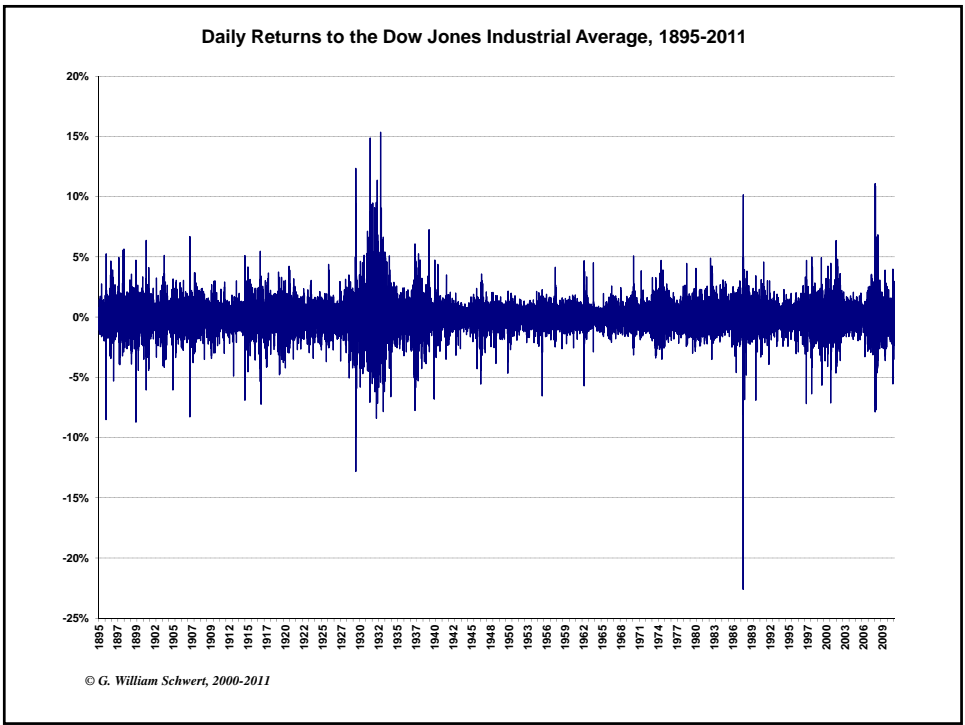
## How to Lie with Statistics – Plot the Changes in the Dow


- This plot looks like a seismograph with an earthquake at the end
- This is why newspapers often write that recent days have had some of the largest changes in the Dow Jones Index in all of history . . .



## Looking at the percent change of stock indexes is relevant . . .

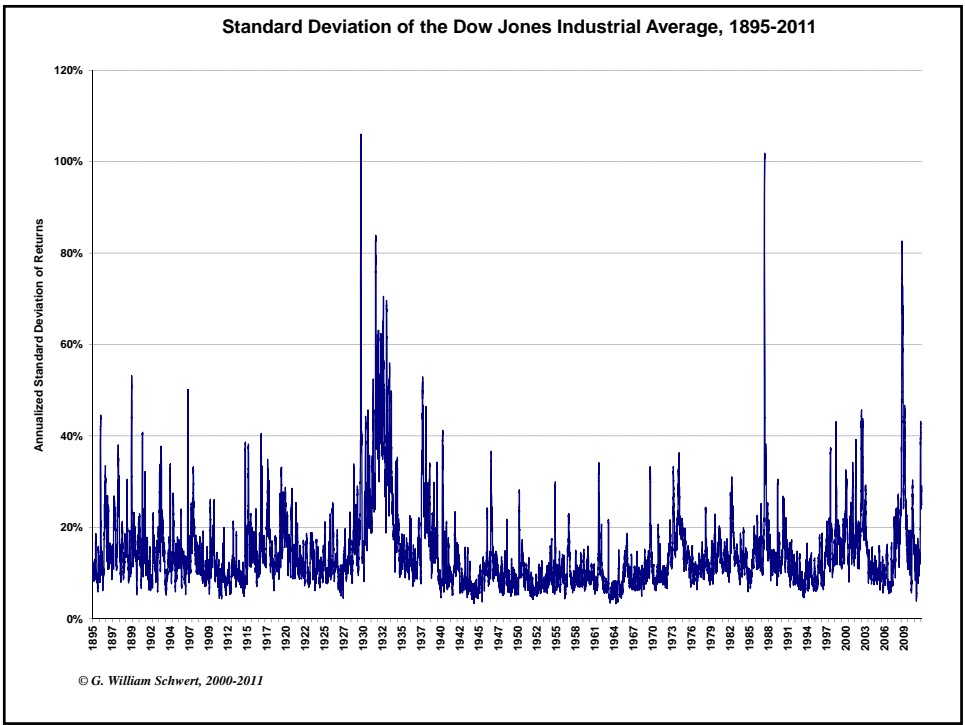
- This measures the rate of return on the investment
  - i.e., how many more dollars you would have at the end of the day if you invested \$100 at the beginning of the day
  - The following plot of daily percent changes in the Dow looks much more regular (and recent data do not look that unusual)





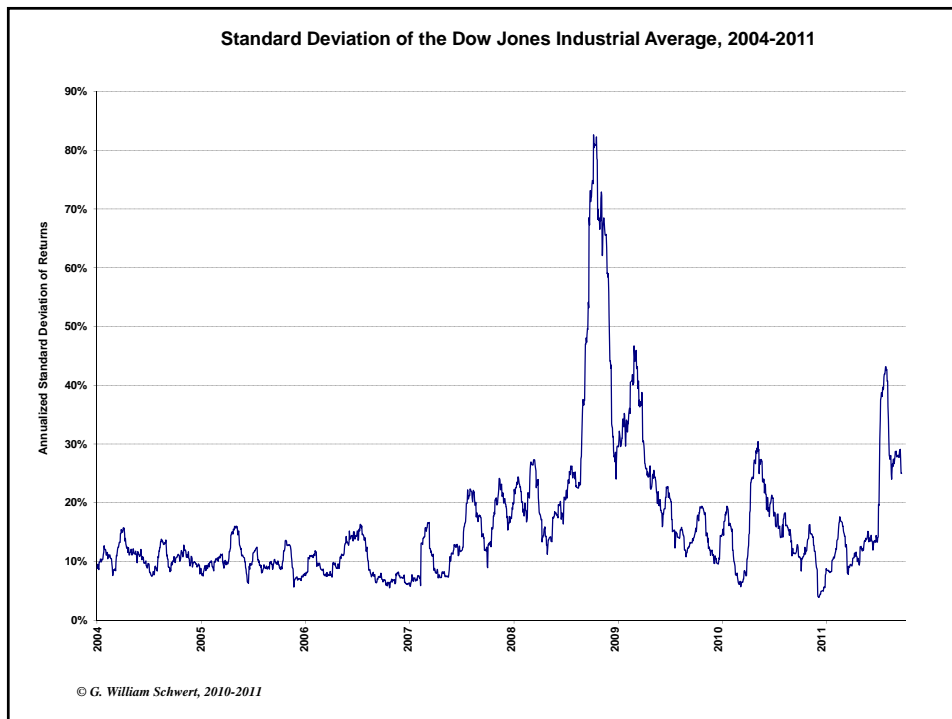
## Standard Deviations of Returns Measure Dispersion


- How likely is it that we will see a big percent move in the Dow?



## Another Way to Lie with Statistics -- Focus on Very Recent History

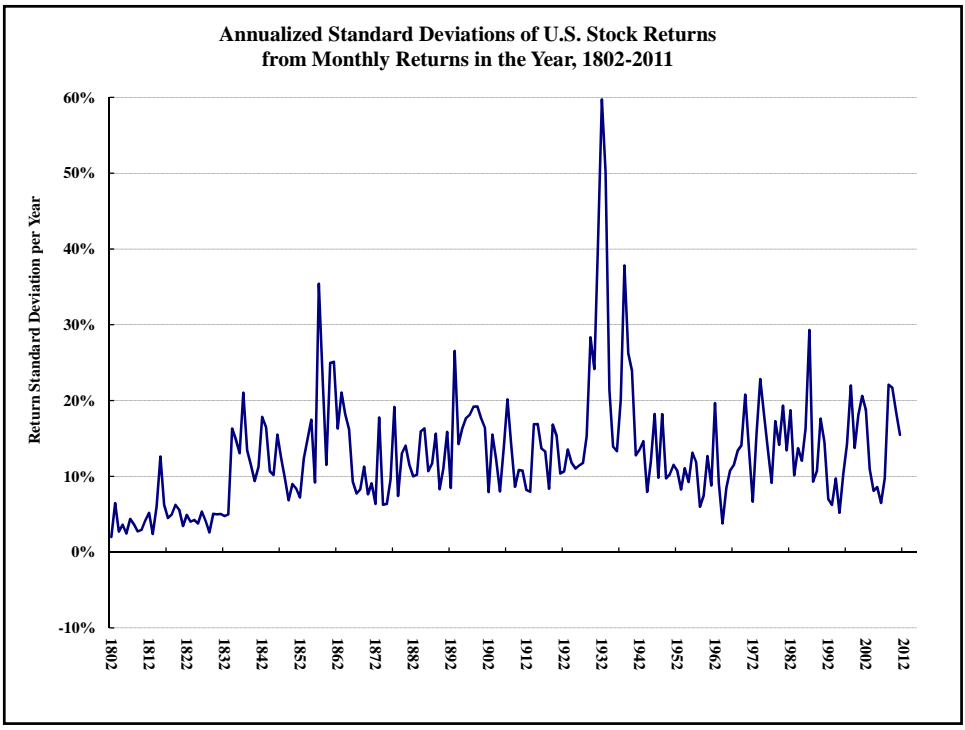
- Newspapers often focus on the last few years in discussing current conditions
  - On this basis, people would think stock volatility is unbelievably high in the past year or so . . .
  - This is misleading when viewed from the perspective on the longer history we have available to us
  - Compare the plots of rolling standard deviations from 2004-2011 versus the plot from 1895-2011 . . .
  - Good news is that things seem to have settled down a bit now (compared to 3 years ago)





## Stylized Facts/Questions: A very long-term view!

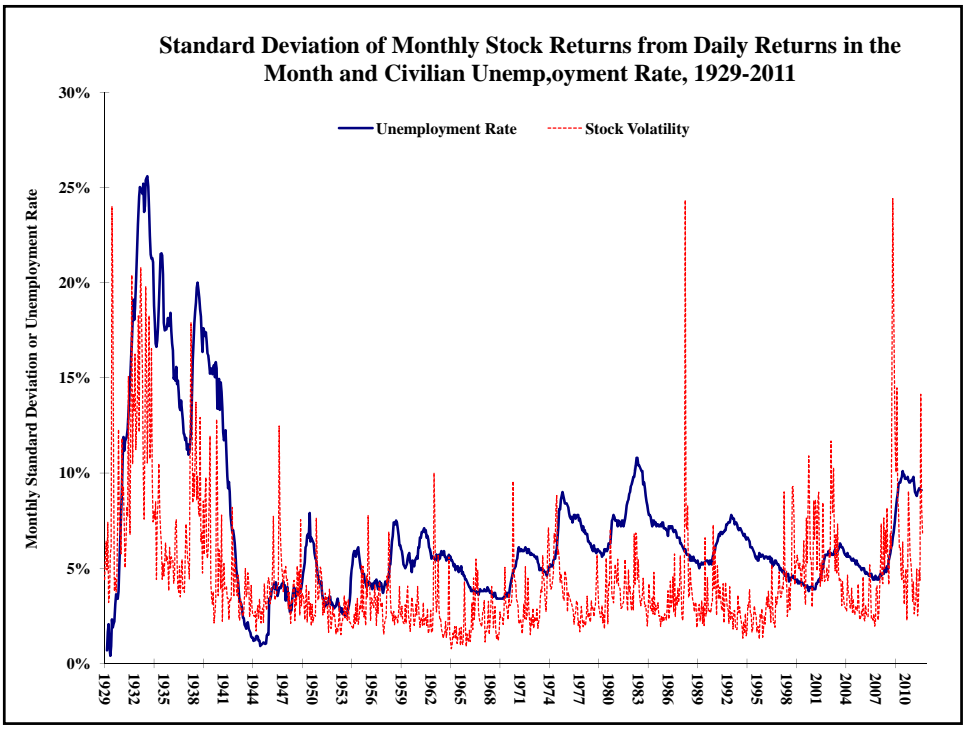
- Market-level volatility has been remarkably stable over time
  - Data back to 1802, covers many wars, financial crises, depressions/recessions
  - Also, major changes in the composition of the US economy
    - Mainly banks, insurance companies, canals in early 1800s
    - Railroads started being important after 1834
    - Great Depression is the most notable period of prolonged high volatility






## Links to Real Economic Activity: The Unemployment Rate


- During the Great Depression, the unemployment rate and stock volatility moved closely together
- Not true since that time
- While Candidate/President Obama's statement alluding to the Great Depression was accurate for stock volatility, it is far off for the unemployment rate
  - The unemployment rate since 2008 has **not** been greater than it was from Sept-82 through June-83





## Summary

- Market-level volatility often rises after prices fall
  - Recent poor performance of the market is consistent with the higher levels of volatility [counter-cyclical]
  - Inflation of index levels exaggerate perceptions of increased volatility



## Summary

- Because volatility is easy to see in real time, it has become a major focus of the news media and politicians
  - and, therefore, of main street America
- For most people, who should be buy-and-hold long-term investors, short-term burst of volatility should not be a cause of concern



## Summary

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- Structural problems in the economy often cause companies, employees, and politicians to blame “Wall Street”
- In an internationally competitive world, high-paying (unionized) manufacturing jobs for relatively low-skilled workers are going to continue to disappear in the US



## Summary

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- Similarly, perhaps well-intentioned efforts to extend home ownership to people who would not traditionally qualify for mortgage loans led to risk-taking in real estate markets that was either ignored or not well-understood



## Summary

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- Until market forces are allowed to set competitive wage rates in industries and market-clearing prices for housing, the stories about unemployment in states with expensive unionized labor and still over-priced houses will continue
  - Government programs to delay these adjustments just prolong the pain . . .