

# Corporate Governance, Financial Crises, and TFP Growth in the US: 1840 – 2014

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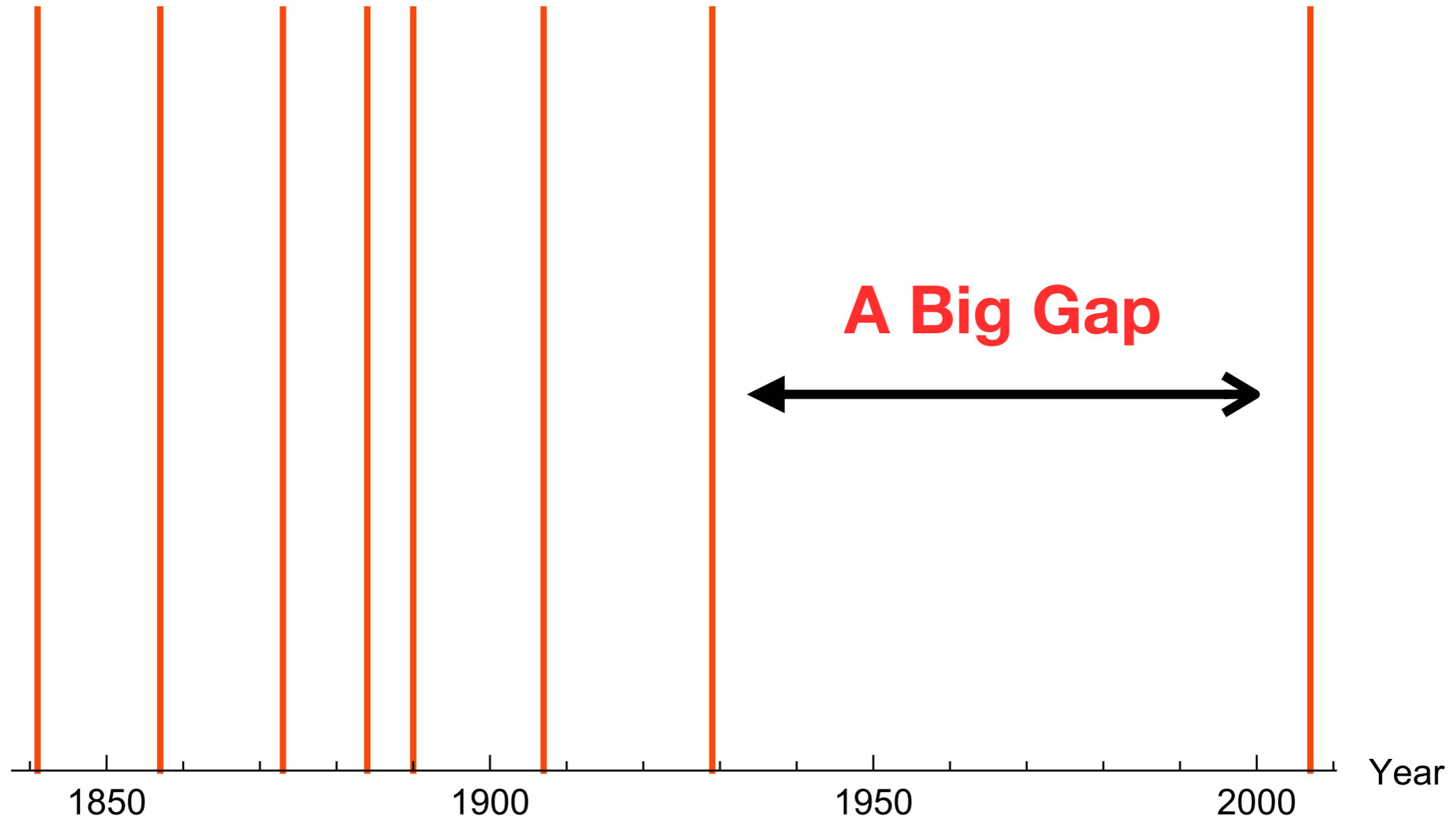
19 February, 2016

The views expressed in these presentation are our own, and do not necessarily represent those of any institution with which we are associated.

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Two puzzles in search of an explanation (and a solution)

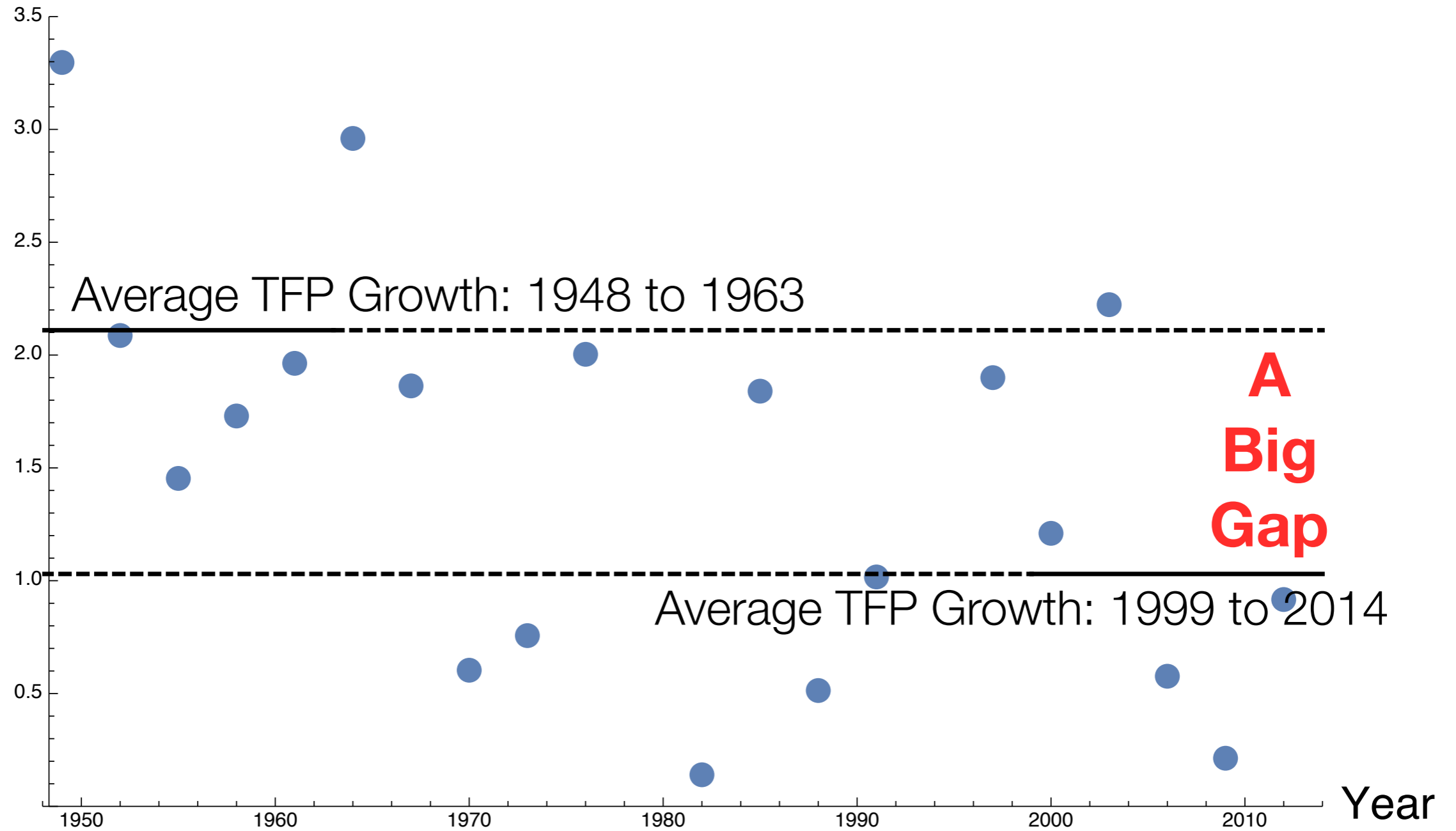
# US Financial Crises



Crisis Date Series: Reinhart and Rogoff (2010), Major Banking Crises dropping those related to wars (1861, 1864, 1914)

# US TFP Growth

TFP Growth



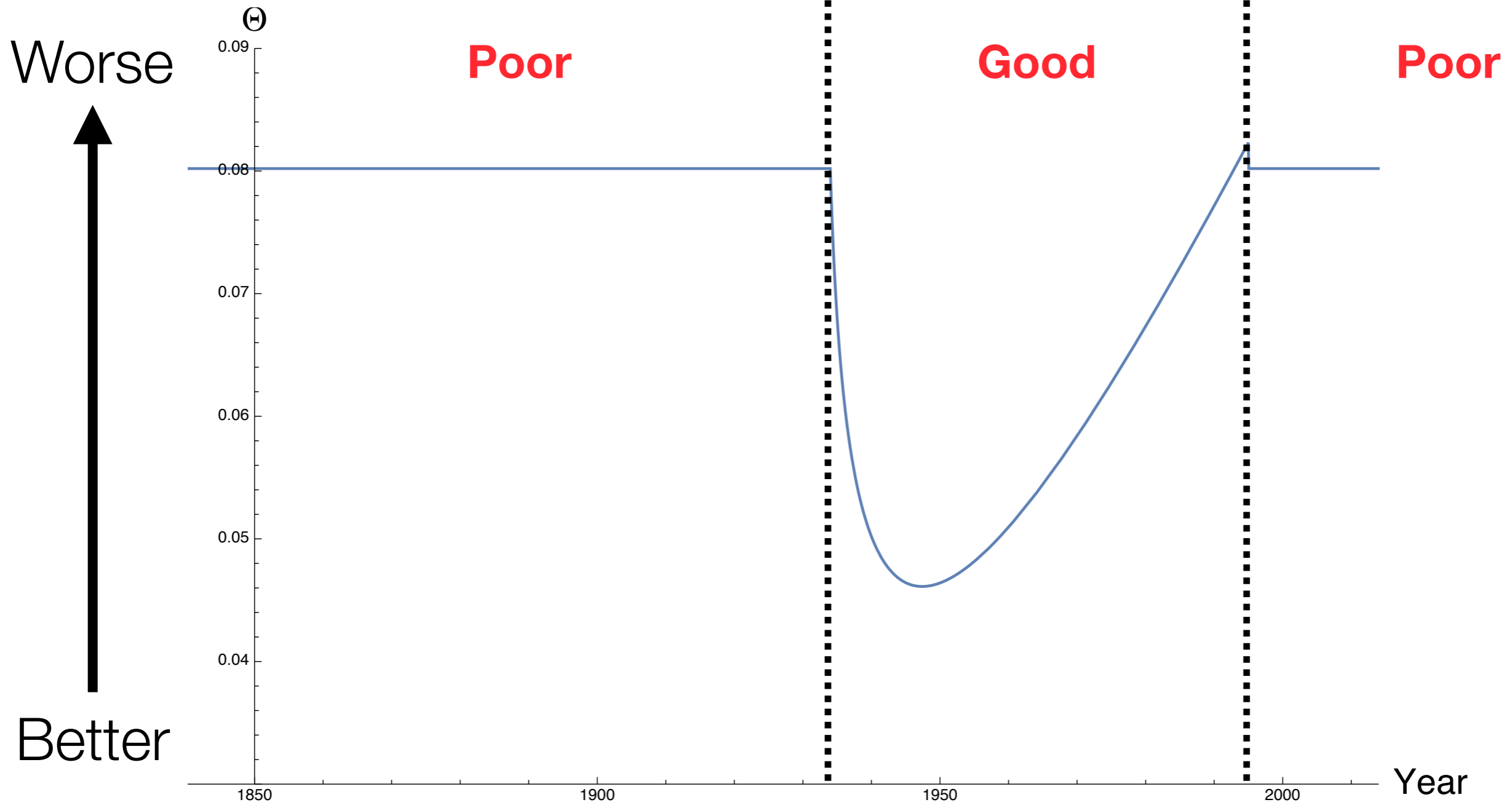
Source: Fernald (2012, updated), San Francisco Fed

# Our hypothesis

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- Firms operating under a poor corporate governance regime will put too much weight (from a social perspective) on short-run costs and benefits and too little weight on long-run benefits (that increase economic growth) and long-run risks (that increase the risk of a financial crisis);
- Changes in the quality of the corporate governance regime in the US can explain the evolution of crisis risk and TFP growth in the US economy;

# ⊕: The Quality of the Corporate Governance Regime



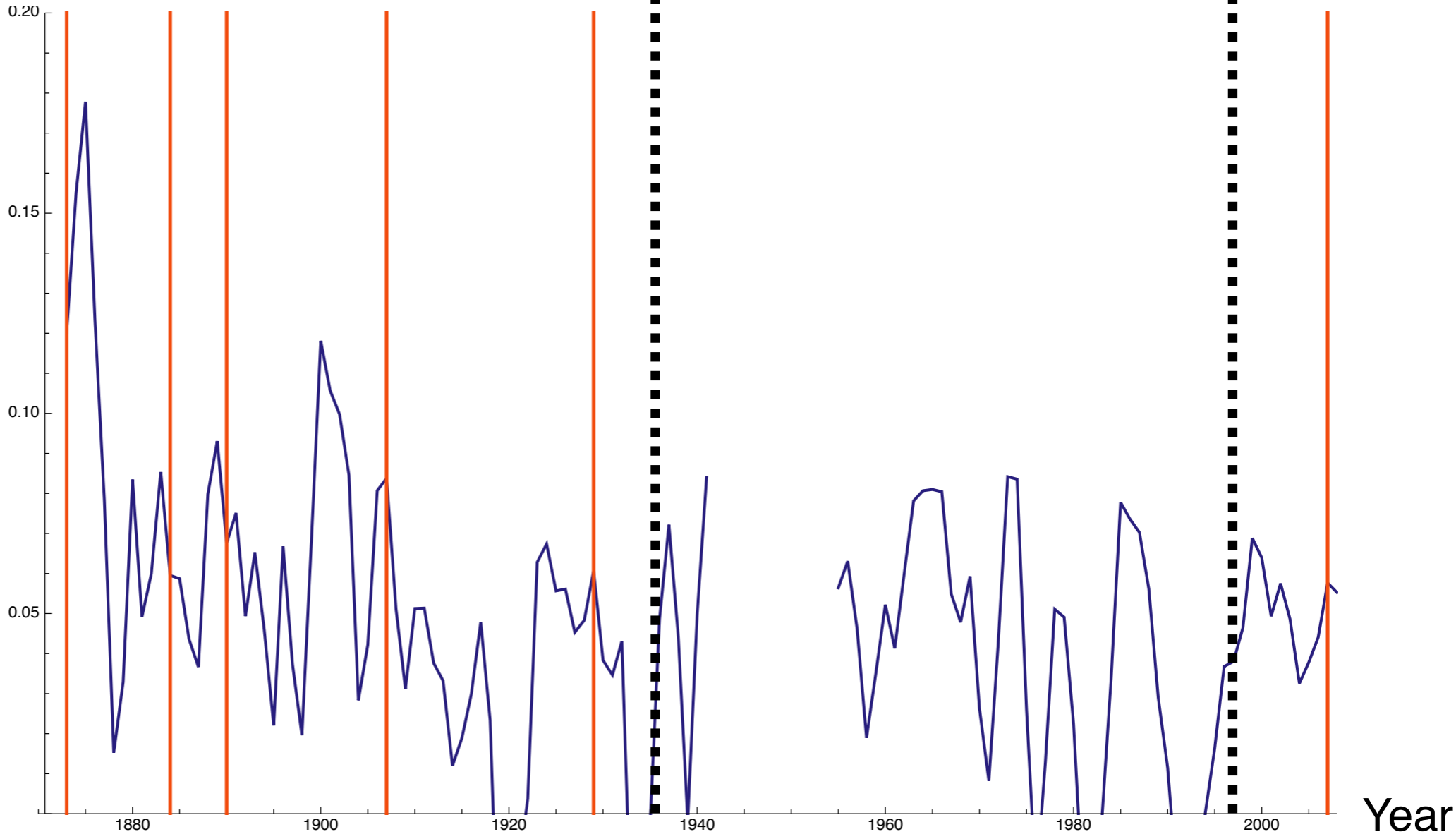
# Credit booms, corporate governance, and crises

Average  
Credit Growth

Poor

Good

Poor

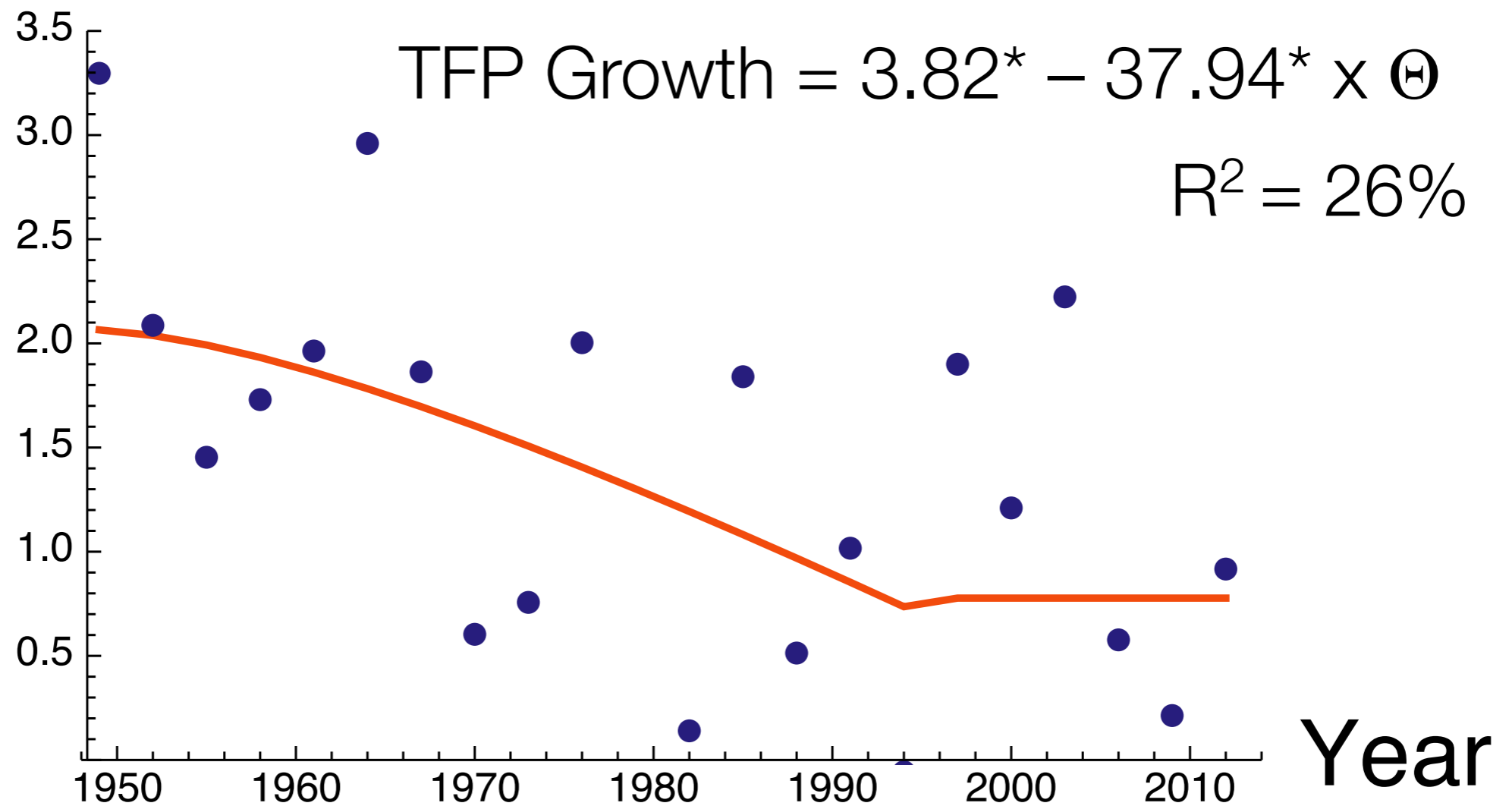


Credit Data: Schularick and Taylor (2012)



# TFP Growth as a function of $\Theta$

## TFP Growth



\* indicates significance at the 1% level (Robust SE)

# Strategy

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- Derive a measure of the quality of a corporate governance regime ( $\Theta$ );
- Estimate this measure;
- Explore the relationship between  $\Theta$  and crisis risk;
- Explore the relationship between  $\Theta$  and TFP growth;

A very brief intuitive explanation for our measure of the quality of a corporate governance regime

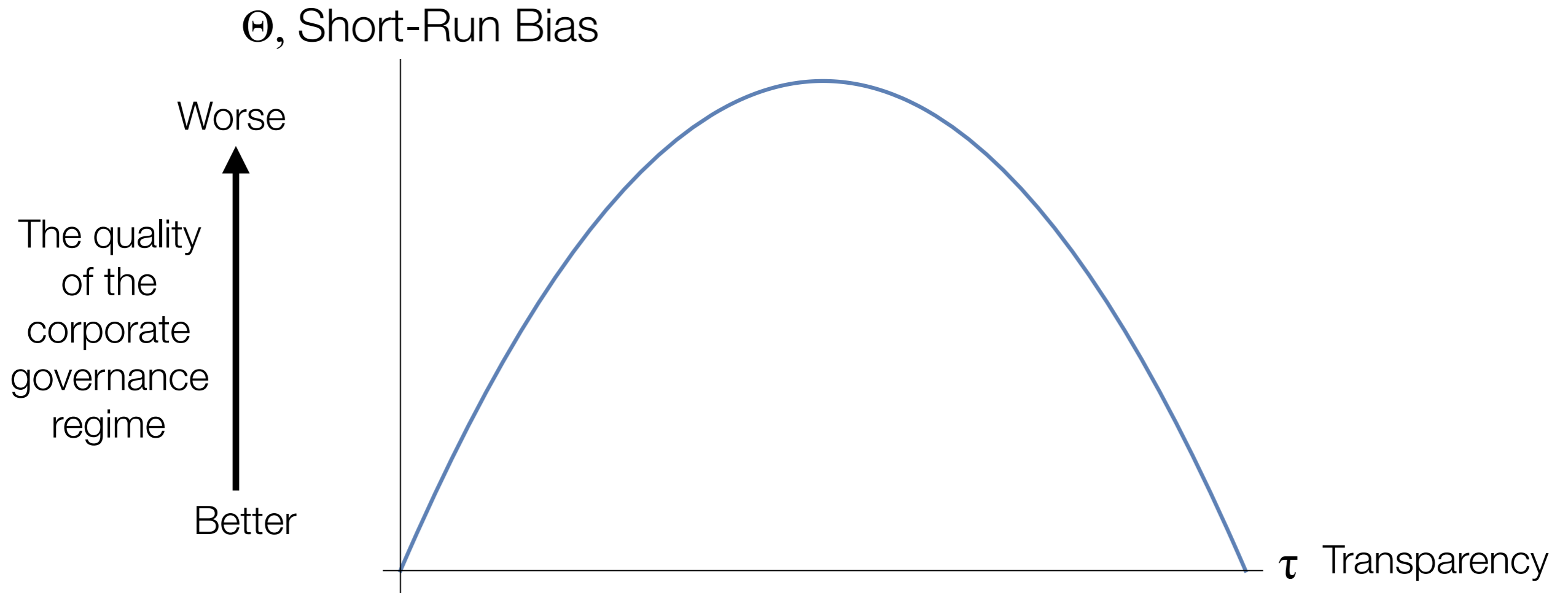
# The long-run/short-run trade-off

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- The manager can choose a short-run focus or a long-run focus;
  - A long-run focus produces a higher total social value (more growth and/or lower crisis risk);
  - A short-run focus produces more signals of product quality at an intermediate stage at the expense of long-run value, all else equal;
  - A manager's private benefit is a function of both the long run value of the project and the intermediate period estimate of its value (perhaps a high reputation helps to attract workers, or improves managerial job prospects...)
- The quality of a corporate governance regime is low if market conditions are such that managers choose a short-run focus;

# The short-run bias and the corporate governance regime

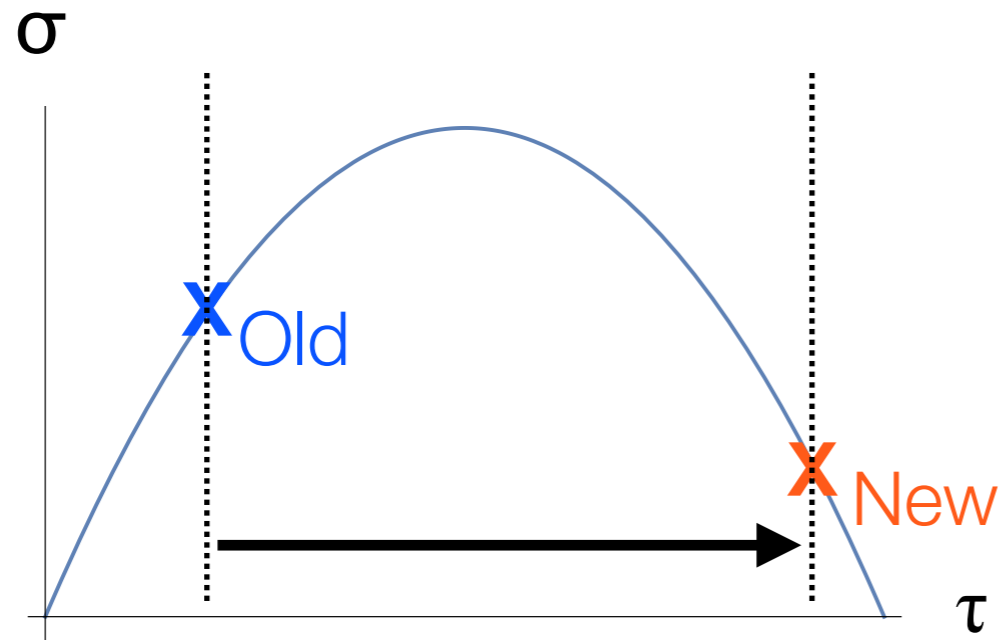
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When  $\tau$  is high or low, the additional signals a Short-Run focus create do not add any value;

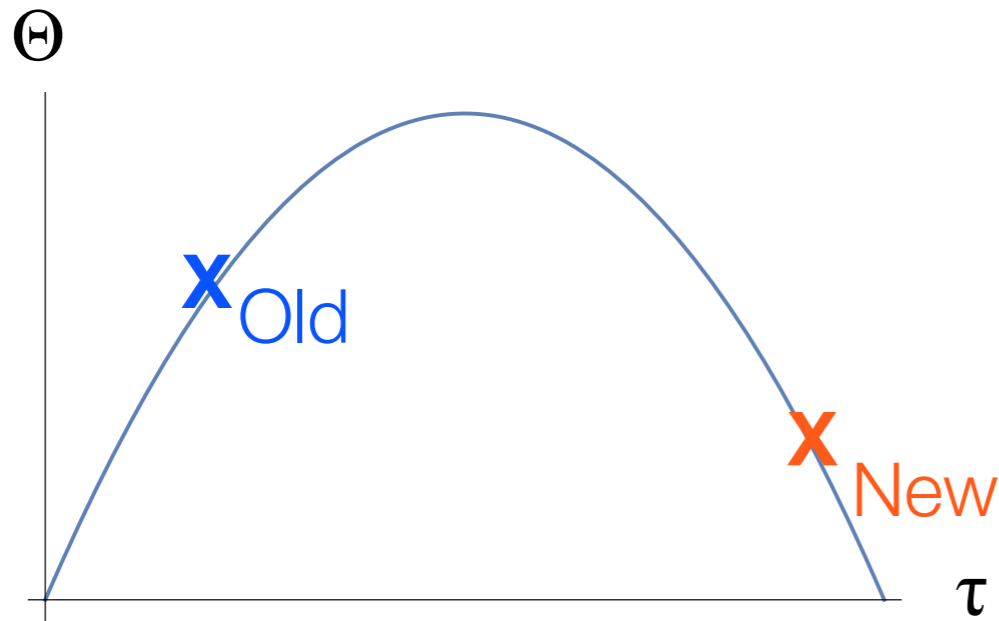
Intermediate values of  $\tau$  mean that signals are valuable, and so favor the Short-Run;

# Our empirical strategy



If a reform increases transparency from  $\tau_{\text{Old}}$  to  $\tau_{\text{New}}$  and leads to a decrease in  $\sigma$ , then:

- A) The quality of corporate governance at  $X_{\text{New}}$  is better than at  $X_{\text{Old}}$ ; and
- B) In the neighborhood of  $X_{\text{New}}$ , and increase (decrease) in  $\sigma$  implies that the quality of the corporate governance regime is falling (rising)



# Estimating the Quality of the Corporate Governance Regime ( $\Theta$ )

## ⊕: Our proposed measure

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⊕ = The standard deviation of idiosyncratic firm returns ( $\sigma$ ) net of transitory market effects



# The standard deviation of idiosyncratic firm returns

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- A firm's idiosyncratic return equals its return net of the median return of comparable firms to eliminate any impact from industry/market shocks;
  - Comparable firms: Same 3 digit SIC code, same size decile, some combination of size and industry;
  - We use monthly returns;

# Transitory market effects

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- Market wide volatility
  - Control: the St. Dev. of the market index return over the past year;
- Market upswings and downswings
  - Control: the median firm return
- Recessions
  - Control: NBER dates
- Time series effects
  - We use a Garch (1,1), AR 3 specification

# Possible factors affecting $\Theta$

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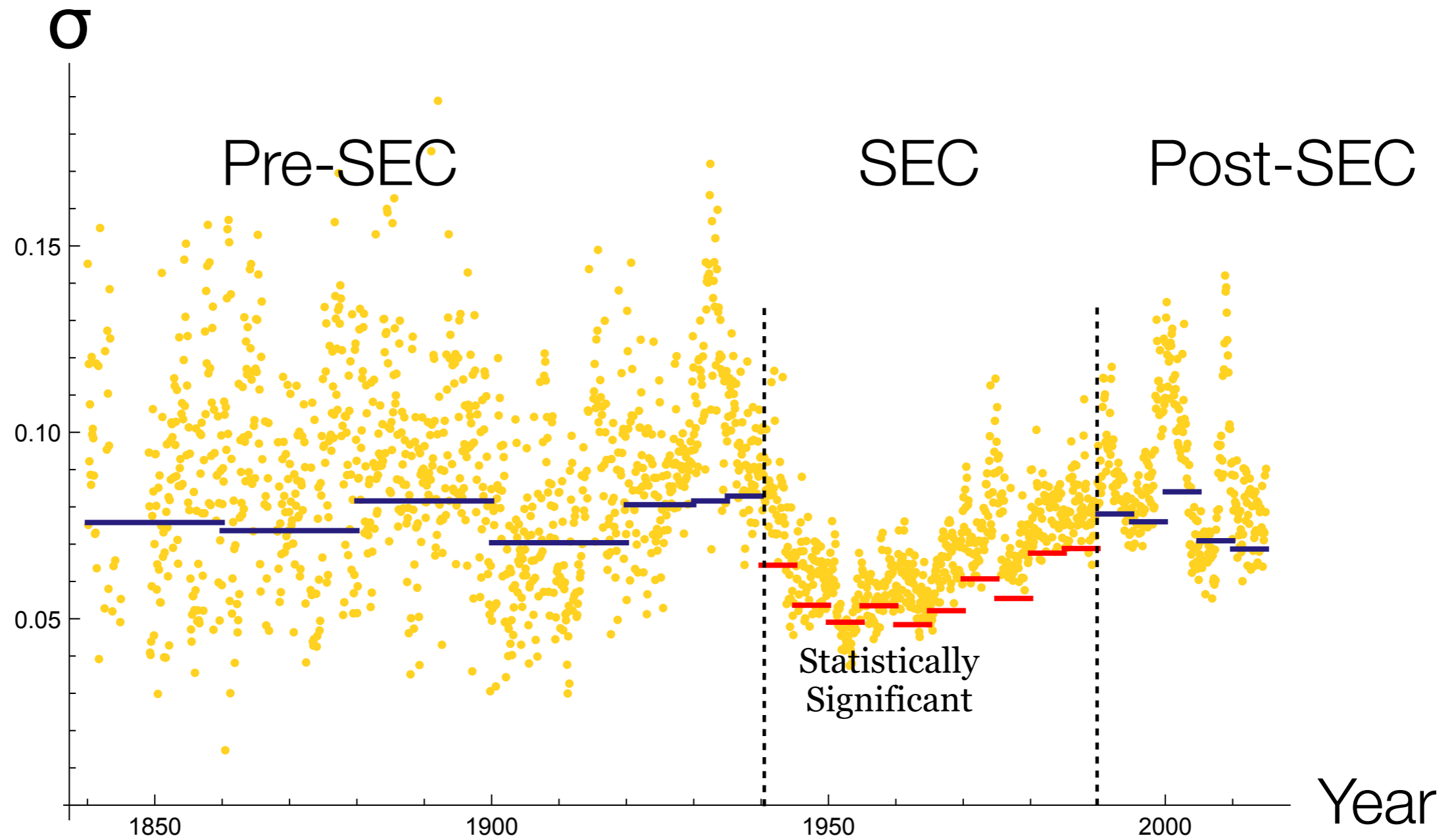
- The cost of information production
  - Nordhaus (2007 ), “Two Centuries of Productivity Growth in Computing”
  - Insignificant
- The size of the financial system
  - Philippon (2014), “Has the US Finance Industry Become Less Efficient?: On the Theory and Measurement of Financial Intermediation”
  - Insignificant
- Regulatory reform
  - The creation of the SEC in 1934

# Data

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- Sample: NYSE listed firms, monthly returns;
  - 1840 – 1925: Old New York Stock Exchange Project, Yale School of Management
  - 1926 – 2014: CRSP

# The evolution of $\sigma$ : Time dummies

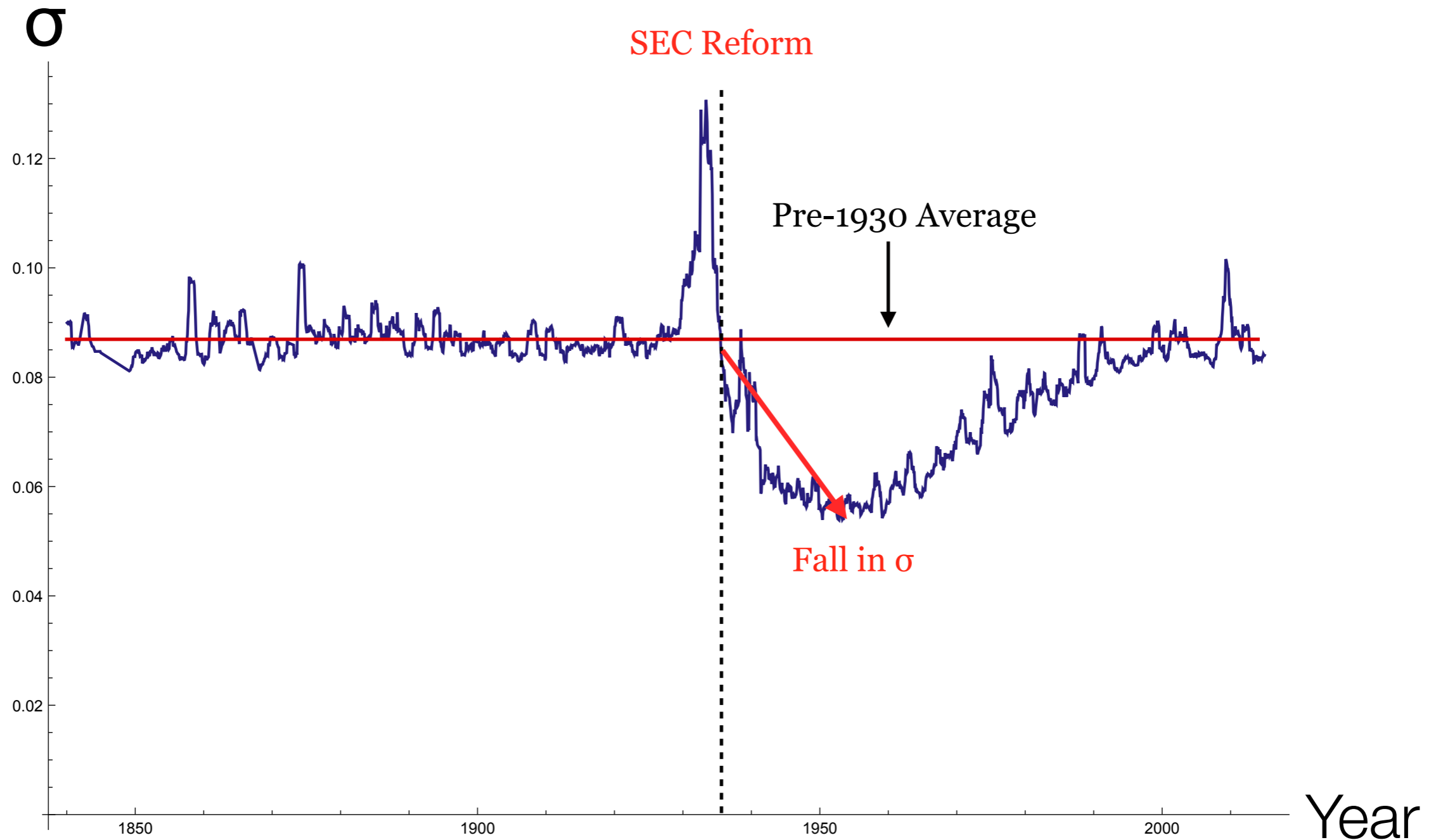


# The evolution of $\Theta$ and the SEC

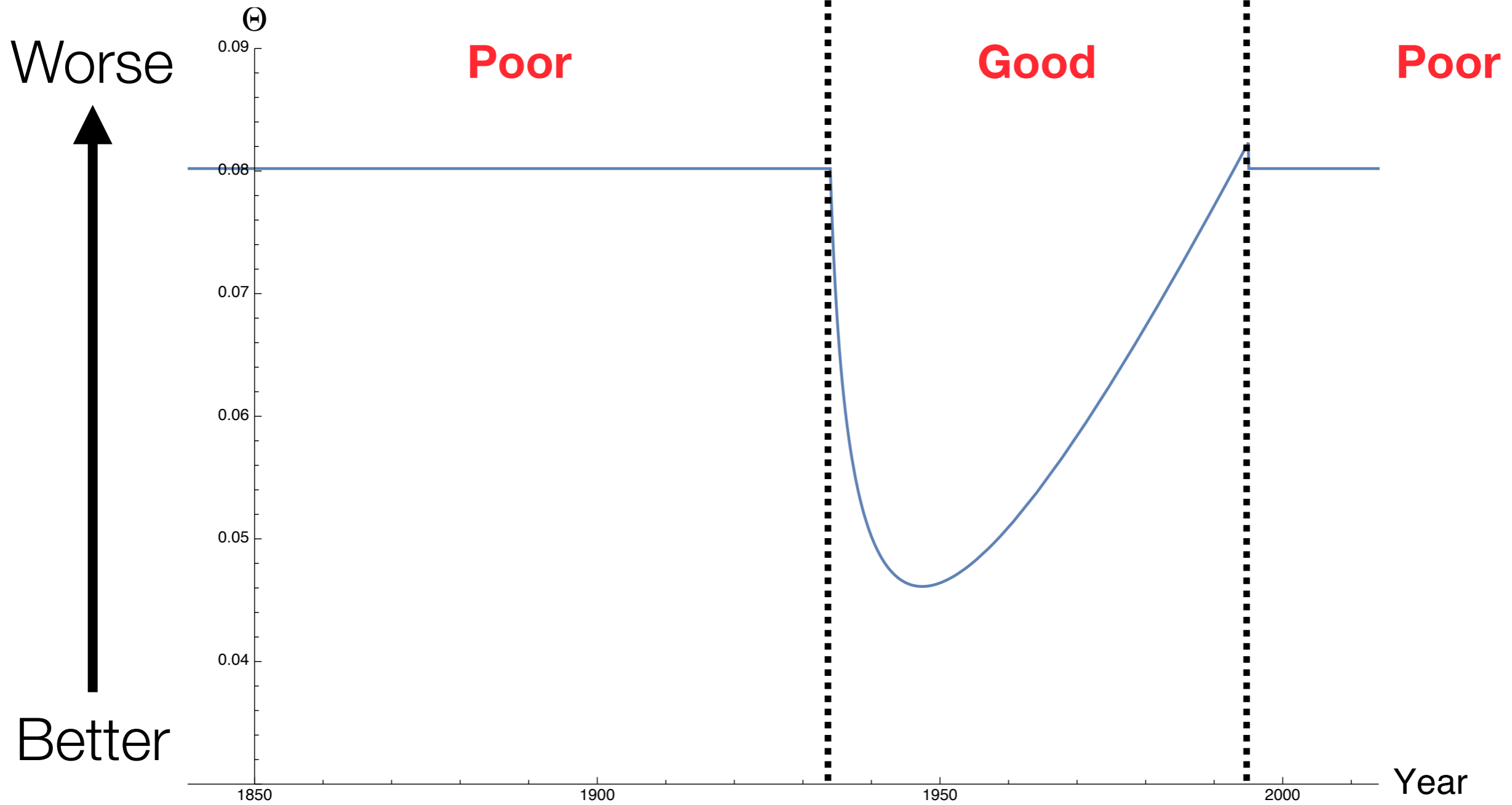
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- We can model the evolution of  $\sigma$  parsimoniously by replacing all the time dummies with an SEC effect:
  - $\text{LogSECTime} = \text{Log}[1 + \text{Years Since 1935}]$ ; and
  - SECTime: Years Since 1935
  - We cap the Years at 60 as the SEC regime has then reached its terminal state;

# The evolution of $\sigma$ : SEC model



# ⊕: The Quality of the Corporate Governance Regime





# Can we measure the quality of corporate governance with $\sigma$ ?

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- The SEC reforms did lead to an increase in transparency;
- This increase in transparency did lead to a reduction in  $\sigma$ ;

**Yes We Can!**

**Credit Booms Don't Cause Crises, People Cause Crises**

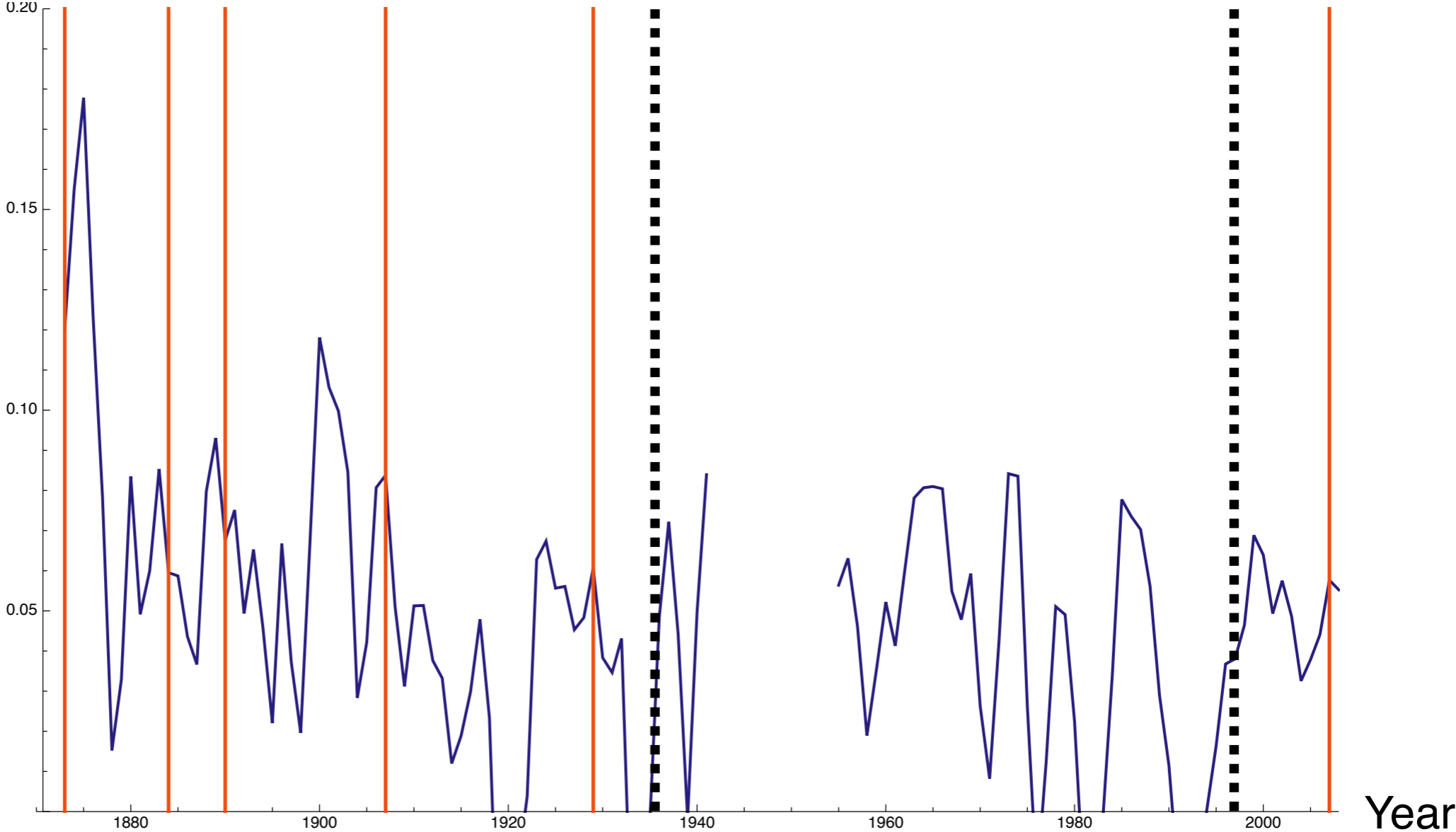
# Credit booms, corporate governance, and crises

Average  
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Credit Data: Schularick and Taylor (2012)

# Our hypothesis

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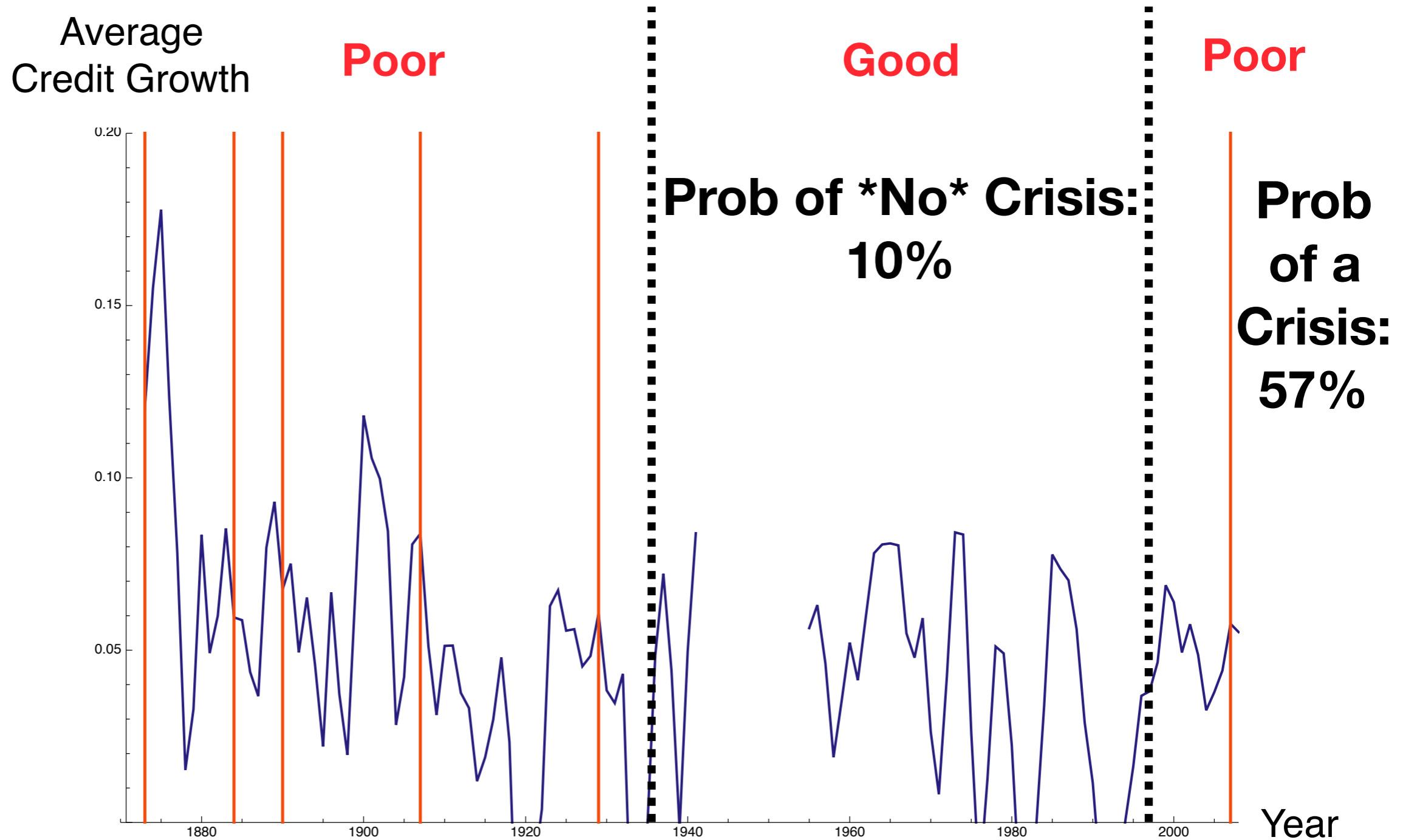
- Credit booms increase crisis risk only when the quality of the corporate governance regime is poor
- Test:
  - Estimate Prob of a Crisis as a function of Average Credit Growth using only data from the poor corporate governance regime years (pre-1935, post-1995);
  - Estimate the implied Prob of a crisis in the Good Corporate Governance Regime years (1955 to 1995,
    - missing data for 1948 to 1955)
  - Estimate Prob of a crisis since 1995;

# Predictions

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- The actual probability of a crisis is much lower in the Low  $\Theta$  years than the Prob of a Crisis/Average Credit Growth relationship would imply;
- The probability of a crisis in the post-1995 period equals the probability of a crisis in the Pre-SEC period, all else equal;

# Credit booms, corporate governance, and crises



Credit Data: Schularick and Taylor (2012)

# Crisis probabilities and the corporate governance regime

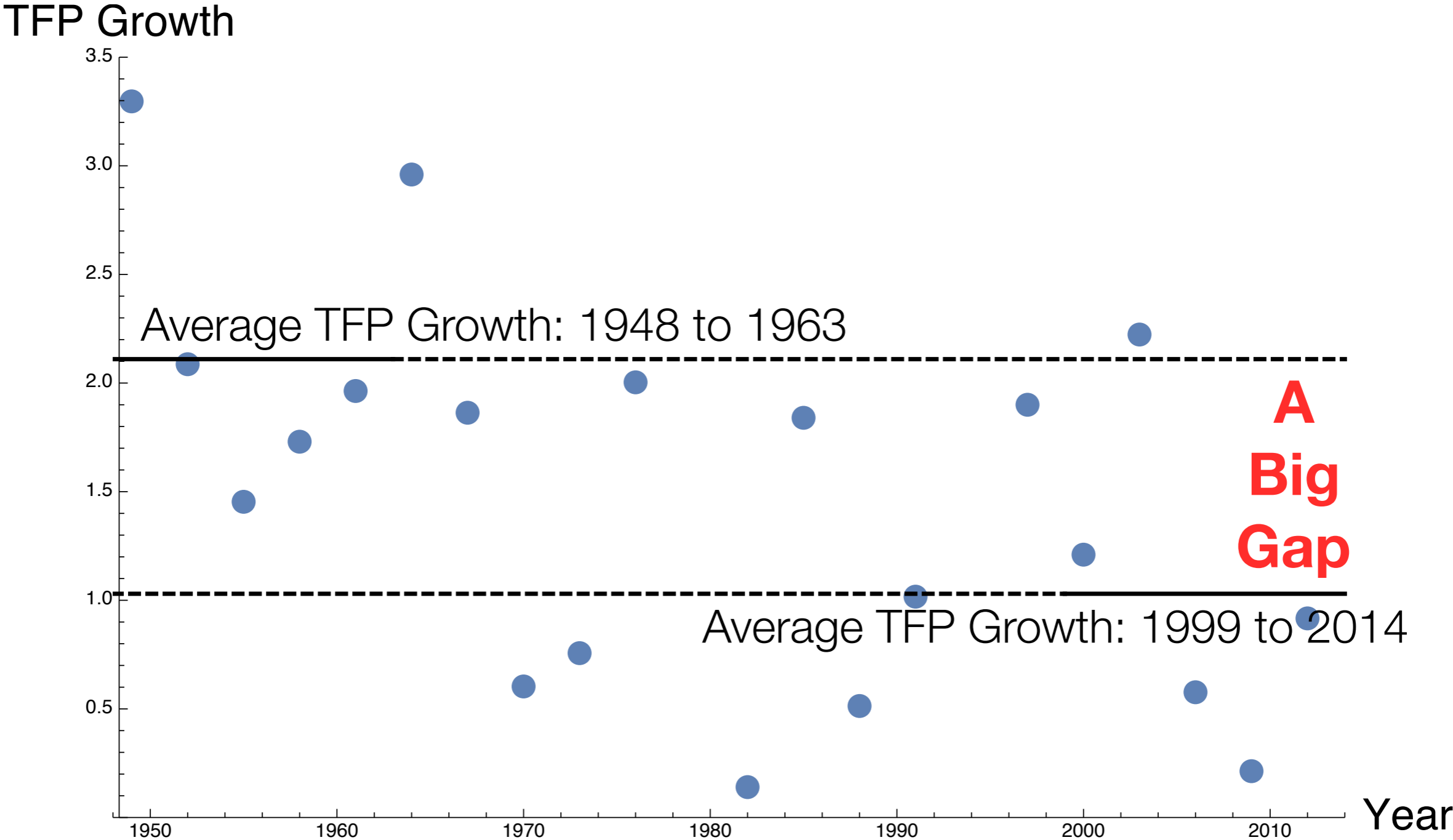
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- The probability of a crisis is lower in the good corporate governance regime years;
- The probability of a crisis in the post-1994 period appears to be roughly equal to the probability of a crisis in the pre-SEC period;

# The Decline in US TFP Growth: No Wave or Bad Surfing?



# US TFP Growth: 1948 – 2014



Source: Fernald (2012, updated), San Francisco Fed

# TFP Growth

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Corporations ride a wave of technological change to create improved products and processes



# Robert Gordon's Explanation for the Decline in TFP Growth

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# Gordon's Explanation: No Wave

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- In a series of influential papers, Robert Gordon argues that US economic growth is basically over;
  - TFP growth has been due to three never to be repeated industrial revolutions;
  - As the reverberations of those revolutions fade away, TFP growth will basically stop;
  - Evidence: TFP growth has been falling, and no-one has a better story
    - Gordon (2012 and 2014): Free from the NBER
    - Gordon (2016), *The Rise and Fall of American Growth*: on sale now

# Our Explanation for the Decline in TFP Growth

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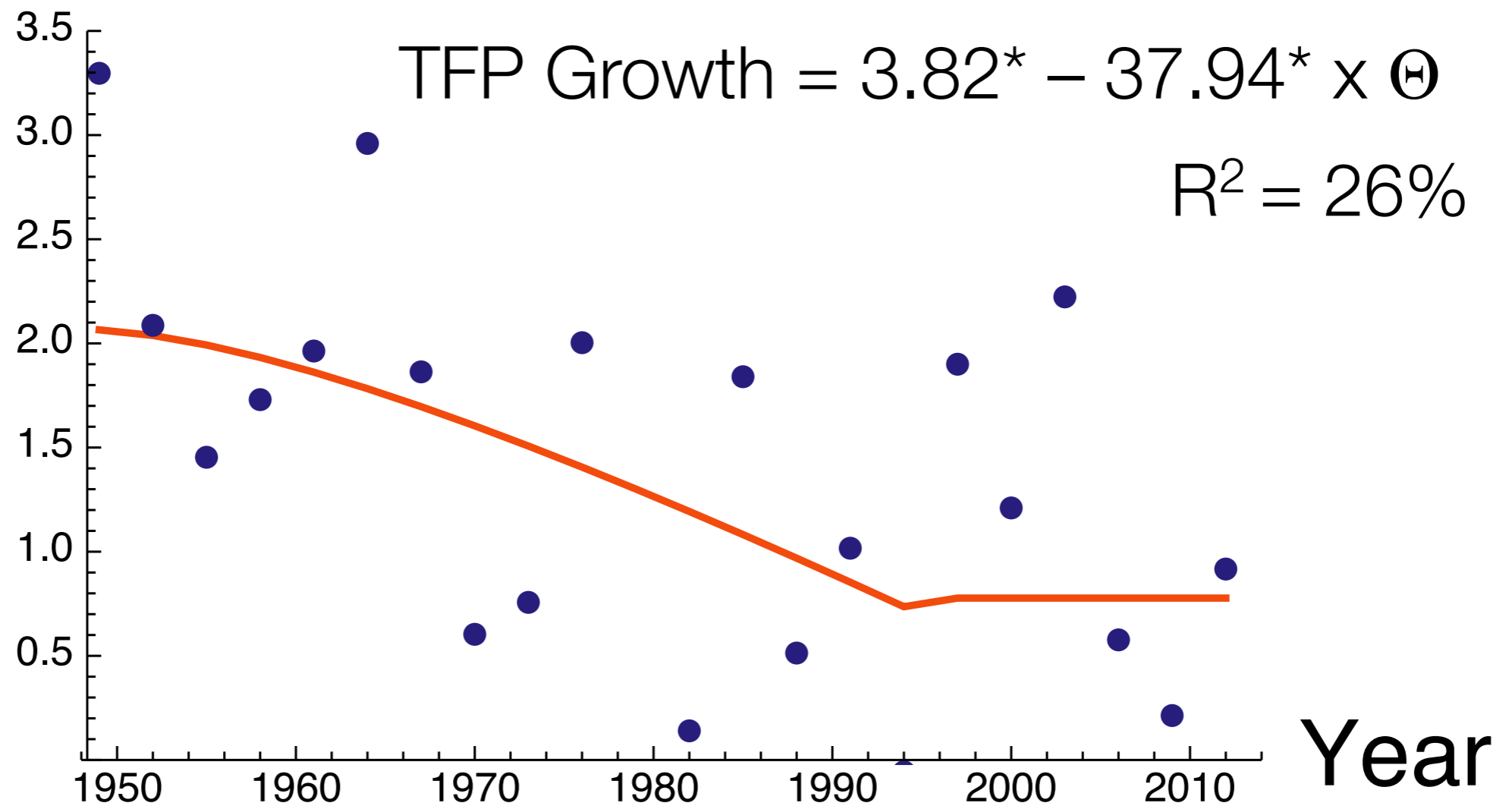
# Our Explanation: Bad Surfing

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- If manager's focus on actions that signal quality in the short-term, they will neglect longer-term projects without any immediate payoff
- In a high  $\Theta$  world, managers will devote less effort towards high reward (max long term firm value) projects, and growth will suffer;
- We can test this conjecture;

# TFP Growth as a function of $\Theta$

## TFP Growth



\* indicates significance at the 1% level (Robust SE)

# Notes on growth regressions

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- Observations: 3 year averages of TFP growth;
- The size of the financial system has a positive but statistically insignificant effect upon TFP growth;



# MacroConduct Policy

# Macro-Conduct Policy

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- The quality of corporate governance plays a central role in determining the overall level of economic performance (stability and growth);
- Financial markets that work well promote good corporate governance;
- Financial regulation can play a key role in bringing about financial markets that work well;
- **MacroConduct Policy:** Strategically regulating financial markets so as to get them to work well;
  - There is no (or, at least, *there does not need not to be*) a growth/stability trade-off;
  - Macro-conduct policy can reduce the immediate risk to financial stability (crisis risk) and also the long-run risk to financial stability produced by low growth;

# Next steps

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- Confirm the diagnosis
  - Our corporate governance analysis works well for the US;
  - We need to extend our analysis to more countries to see if it holds up;
- Find a cure
  - Assuming that our diagnosis of the problem is correct...
  - We need to find methods/policies that can replicate the beneficial impact of the SEC for markets as they are now;

We don't need a new Glass-Steagall, we  
need a new SEC

No pressure, but 1 or 2 more crises and...

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