A CasP Model of the Stock Market

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CHART BOOK

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## Recent Publications and Interviews

1. Debailleul, Corentin, Shimshon Bichler, and Jonathan Nitzan. 2016. Theory and Praxis, Theory and Practice, Practical Theory. *Working Papers on Capital as Power* (2016/01, February): 1-13. http://bnarchives.yorku.ca/470/

2. Bichler, Shimshon, and Jonathan Nitzan. 2016. Capitalizing Obesity. *Research Note* (2016/02): 1-4. http://bnarchives.yorku.ca/474/

3. Bichler, Shimshon, and Jonathan Nitzan. 2015. The CasP Project: Past, Present, Future. *Working Papers on Capital as Power* (2015/04, December): 1-29. http://bnarchives.yorku.ca/470/

4. Bichler, Shimshon, and Jonathan Nitzan. 2015. Capital Accumulation: Fiction and Reality. *Real-World Economics Review* (72, September 30): 47-78. http://bnarchives.yorku.ca/456/

5. Bichler, Shimshon, and Jonathan Nitzan. 2015. *The Scientist and the Church*. World Economics Association Books: WEA. http://bnarchives.yorku.ca/440/

6. Bichler, Shimshon, and Jonathan Nitzan. 2015. Still About Oil? *Real-World Economics Review* (70, February): 49-79. http://bnarchives.yorku.ca/432/

7. Nitzan, Jonathan, and Shimshon Bichler. 2014. Can Capitalists Afford Recovery? Three Views on Economic Policy in Times of Crisis. *Review of Capital as Power* 1 (1, October): 110-155. http://bnarchives.yorku.ca/414/

8. Bichler, Shimshon, and Jonathan Nitzan. 2014. The Enlightened Capitalist. *Philosophers for Change*, May 6. http://bnarchives.yorku.ca/399/

9. Nitzan, Jonathan, and Shimshon Bichler. 2014. The Capitalist Algorithm. Reflections on Robert Harris' *The Fear Index*. *Real-World Economics Review* (67, May): 137-142. http://bnarchives.yorku.ca/401/

10. Bichler, Shimshon, and Jonathan Nitzan. 2014. No Way Out: Crime, Punishment and the Limits to Power. *Crime, Law and Social Change*. 61 (3, April): 251-271 (published in Online First in January 3, 2014). http://bnarchives.yorku.ca/391/

11. Bichler, Shimshon, Jonathan Nitzan, and Piotr Dutkiewicz. 2013. Capitalism as a Mode of Power: Piotr Dutkiewicz in Conversation with Shimshon Bichler and Jonathan Nitzan. In *22 Ideas to Fix the World: Conversations with the World's Foremost Thinkers*, edited by P. Dutkiewicz and R. Sakwa. New York: New York University Press and the Social Science and Research Council, pp. 326-354. http://bnarchives.yorku.ca/372/

12. Nitzan, Jonathan & Shimshon Bichler. 2012. *Le capital come pouvoir: une étude de l'ordre et du créordre*. Traduit de l'anglais par Vincent Guillin. Paris: Max Milo. http://bnarchives.yorku.ca/337/

13. Bichler, Shimshon, and Jonathan Nitzan. 2012. Capital as Power: Toward a New Cosmology of Capitalism. *Real-World Economics Review* (61, September): 65-84. http://bnarchives.yorku.ca/343/

14. Bichler, Shimshon, Jonathan Nitzan, and Tim Di Muzio. 2012. The 1%, Exploitation and Wealth: Tim Di Muzio interviews Shimshon Bichler and Jonathan Nitzan. *Review of Capital as Power* 1 (1): 1-22. http://bnarchives.yorku.ca/344/

15. Bichler, Shimshon, and Jonathan Nitzan. 2012. The Asymptotes of Power. *Real-World Economic Review* (60, June): 18-53. http://bnarchives.yorku.ca/336/

16. Soong, C.S. 2012. A Two-Part Radio Interview with Jonathan Nitzan on 'Capital as Power'. In *Against The Grain*. Berkeley: KPFA 94.1 FM, June 11 (52 minutes) and June 14. http://bnarchives.yorku.ca/335/

Abstract

Most explanations of stock market booms and busts are based on contrasting the underlying, 'fundamental' logic of the economy with the exogenous, non-economic factors that presumably distort it. Our paper offers a radically different model, examining the stock market not from the mechanical viewpoint of a distorted economy, but from the dialectical perspective of capitalized power. The model demonstrates that (1) the valuation of equities represents capitalized power; (2) capitalized power is dialectically intertwined with systemic fear; and (3) the connection between capitalized power and systemic fear is mediated by strategic sabotage. This triangular model, we posit, can offer a basis for examining the asymptotes, or limits, of capitalized power and the ways in which these asymptotes relate to the historical – and ongoing – transformation of the capitalist mode of power.
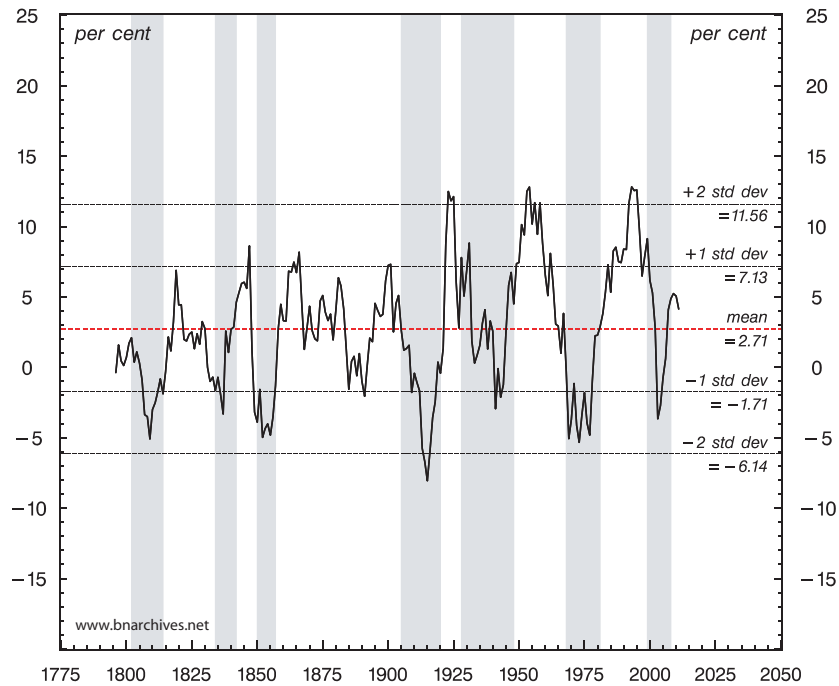
Figure 1
U.S. Stock Prices in Constant Dollars
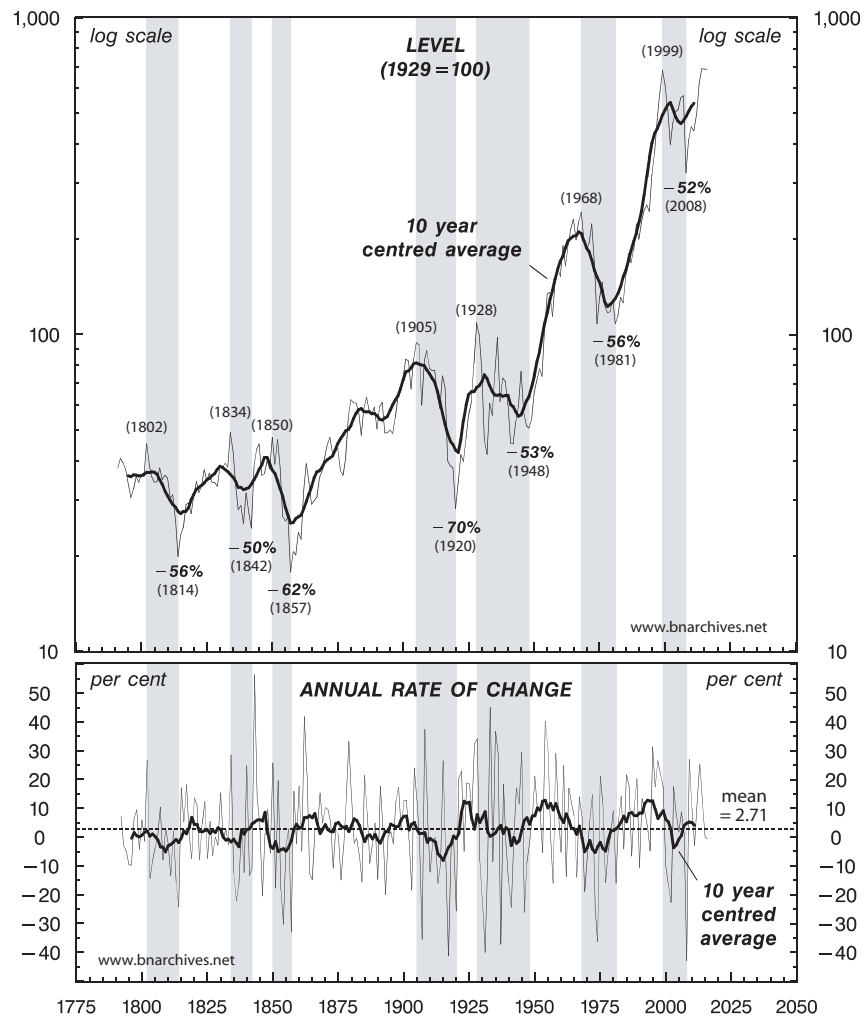
NOTE: Shaded areas indicate major bear markets (MBMs) as defined in the text and in Table 1. Negative numbers in the top panel indicate the decline of the CPI-adjusted market price from the MBM's peak to trough (trough year in brackets). The U.S. stock price index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The constant dollar series is computed by dividing the stock price index by the Consumer Price Index (CPI). Data are rebased with 1929=100.0. The last data point is 2016 for the underlying series and 2011 for the 10-year centred average.

SOURCE: Stock prices are from Global Financial Data (GFD) till 1900 (series codes: _SPXD) and from Standard and Poor's through Global Insight (GI) from 1901 onward (series codes: JS&PNS). The CPI is from GFD till 1947 (series code CPUSA) and from the IMF's International Financial Statistics through GI from 1948 onward (series code: L64@C111).

Figure 2
Annual Rate of Change of U.S. Stock Prices in Constant Dollars
(10-year centred average)

NOTE: Shaded areas indicate major bear markets (MBMs) as defined in the text and in Table 1. The U.S. stock price index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The constant dollar series is computed by dividing the stock price index by the Consumer Price Index (CPI). The last data point for the 10-year centred average is 2011.
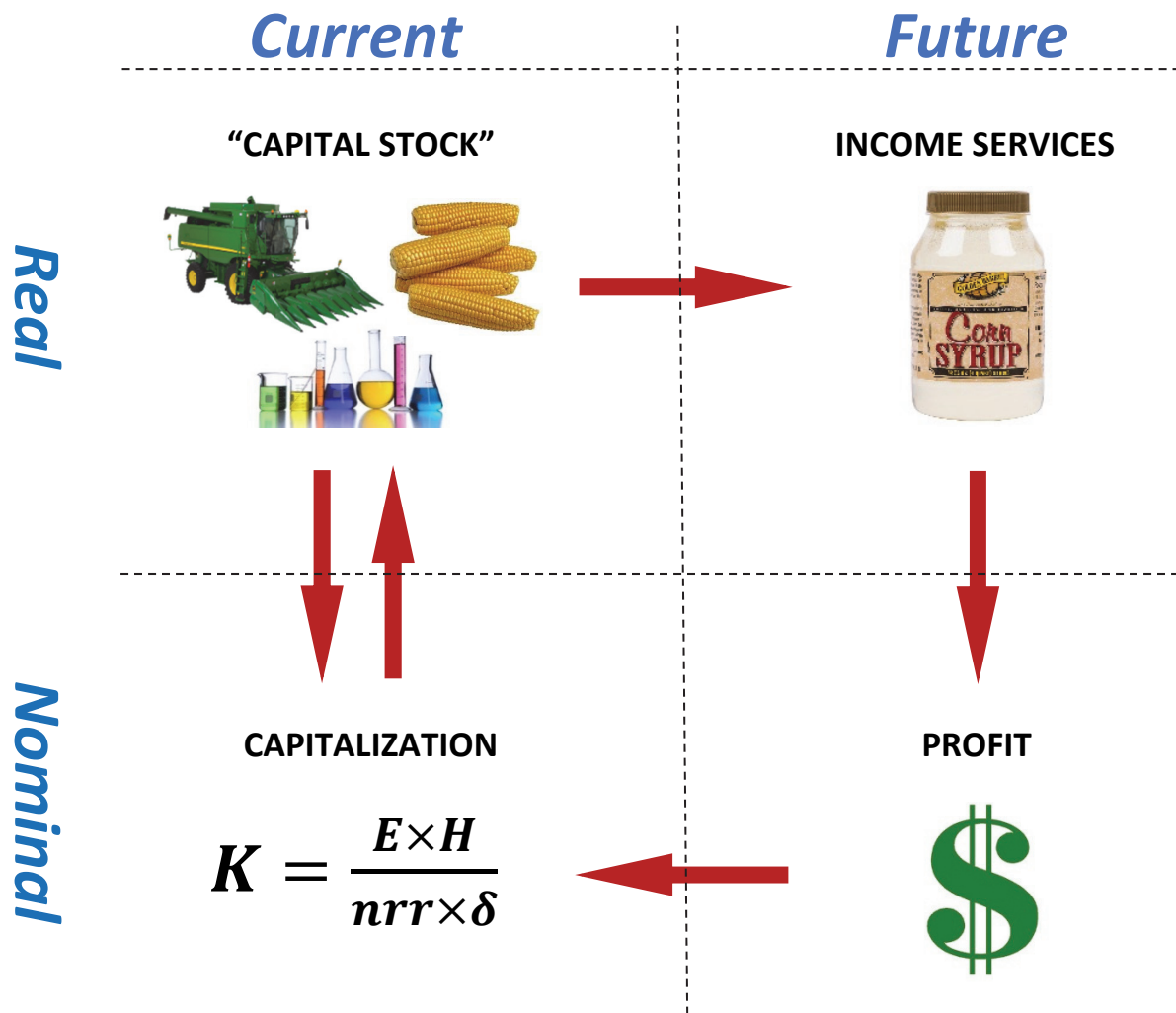
SOURCE: Stock prices are from Global Financial Data (GFD) till 1900 (series codes: _SPXD) and from Standard and Poor's through Global Insight (GI) from 1901 onward (series codes: JS&PNS). The CPI is from GFD till 1947 (series code CPUSA) and from the IMF's International Financial Statistics through GI from 1948 onward (series code: L64@C111).

Table 1
Major U.S. Bear Markets*
(constant-dollar calculations)

Period (Peak-Through)	Decline (%)
1802–1814	−56%
1834–1842	−50%
1850–1857	−62%
1905–1920	−70%
1928–1948	−53%
1968–1981	−56%
1999–2008	−52%

* A major bear market (MBM) is defined as a multiyear period during which: (1) the 10-year centred average of stock prices, expressed in constant dollars, trends downward; and (2) each successive sub-peak of the underlying price series, expressed in constant dollars, is lower than the previous one. Note that the peak/trough of an MBM can slightly precede/trail the inflection point of the 10-year centred average.

Fisher's House of Mirrors

Current   **Future**

Real

"CAPITAL STOCK"   **INCOME SERVICES**

Nominal

CAPITALIZATION   **PROFIT**

$$K = \frac{E \times H}{nrr \times \delta}$$

Capitalization

E	future profit ($)
GVA	gross value added ($)
H	hype (decimal)
K	market capitalization ($)
m	coefficient reflecting the future mean profit share E/GVA and future mean GVA growth (decimal)
nrr	normal rate of return (decimal)
δ	risk (decimal)

1. $$K = \frac{E \times H}{nrr \times \delta}$$

2. $$K = \frac{GVA \times m \times H}{nrr \times \delta}$$

3. $$K = GVA \times \frac{m \times H}{nrr \times \delta}$$

Figure 3
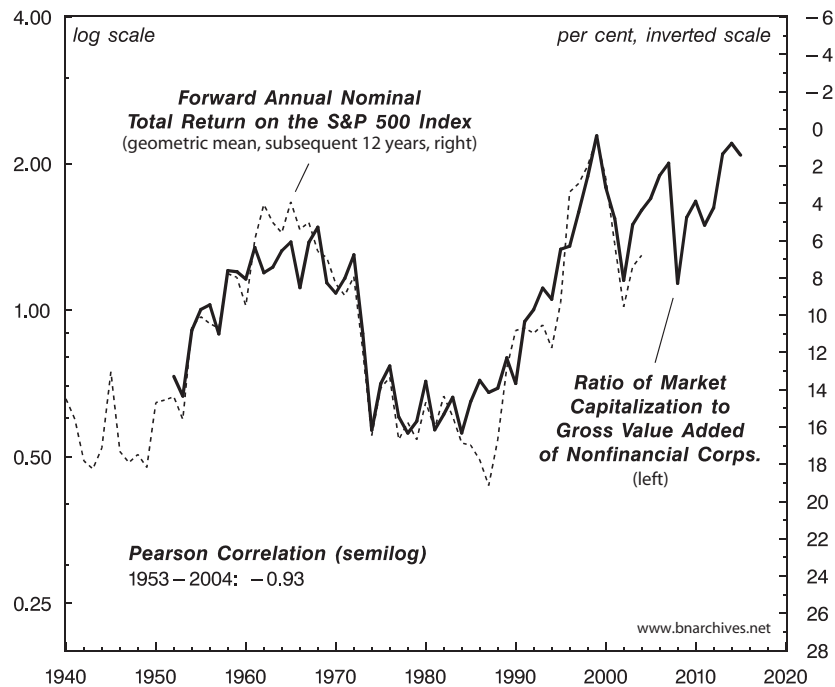**U.S.-Based Nonfinacial Corporations**
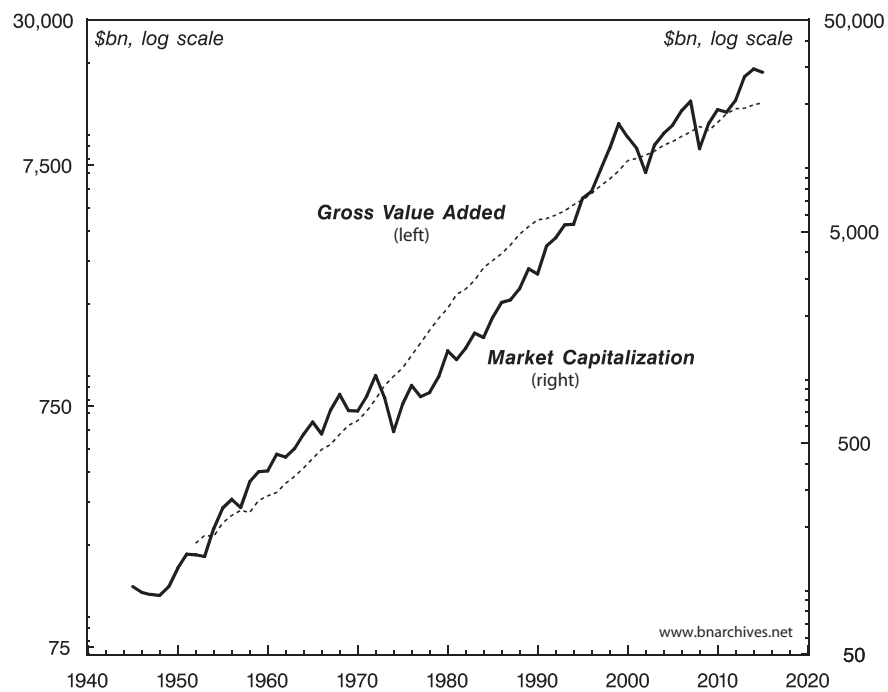
NOTE: Market value of nonfinancial corporations includes assets held domestically and in the rest of the world. Gross value added of nonfinancial corporations is domestic gross value added augmented by the imputed gross value added of foreign operations. It is computed by multiplying domestic gross value added of the nonfinancial corporate sector by (1 + U.S. profit from foreign operations/U.S. domestic after-tax profit), with both profit components smoothed as 5-year trailing averages. The last data points are for 2015.

SOURCE: Market value of nonfinancial corporations is from the Federal Reserve Board Flow of Funds through GI (series codes: LM103164103 for domestic assets and LM263164103 for assets held in the rest of the world). Domestic gross value added of nonfinancial corporations is from the Bureau of Economic Analysis (BEA) through GI (series code: GVANFC). U.S. after-tax profit is from the BEA through GI (series codes: ZAD for domestic after-tax profit, XFYADIV for foreign dividend income and XFYAREONUSDI for reinvested foreign earnings).

1. $HVI = \dfrac{market\ capitalization}{gross\ value\ added}$

2. $HVI = \dfrac{K}{GVA} = \dfrac{m \times H}{nrr \times \delta}$
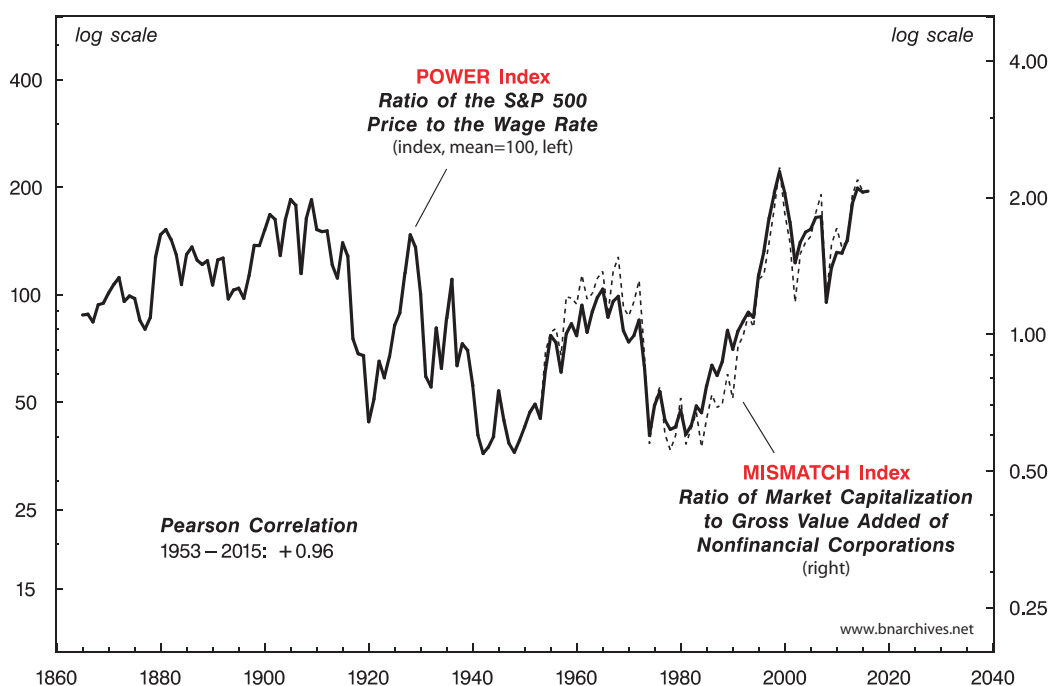
Figure 4
Hussman's U.S. Valuation Index and Forward Returns

NOTE: Market value of nonfinancial corporations includes assets held domestically and in the rest of the world. Gross value added of nonfinancial corporations is domestic gross value added augmented by the imputed gross value added of foreign operations. It is computed by multiplying domestic gross value added of the nonfinancial corporate sector by (1 + U.S. profit from foreign operations/U.S. domestic after-tax profit), with both profit components smoothed as 5-year trailing averages. Forward annual nominal total return on the S&P 500 is calculated by (1) computing the ratio between the total return index 12 years ahead and its current value, and (2) taking the twelfth root of that ratio, subtracting 1 and multiplying by 100. The semilog correlation is between the log of the valuation index and the forward return. The last data points are 2015 for the ratio of market value to gross value added and 2004 for forward annual nominal total returns.

SOURCE: Nominal total return for the S&P 500 is from Global Financial Data (GFD) till 1969 (series code: _SPXTRD) spliced with data from Global Insight (GI) for 1970 onward (series code: SP500TRI). Market value of nonfinancial corporations is from the Federal Reserve Board Flow of Funds through GI (series codes: LM103164103 for domestic assets and LM263164103 for assets held in the rest of the world). Domestic gross value added of nonfinancial corporations is from the Bureau of Economic Analysis (BEA) through GI (series code: GVANFC). U.S. after-tax profit is from the BEA through GI (series codes: ZAD for domestic after-tax profit, XFYADIV for foreign dividend income and XFYAREONUSDI for reinvested foreign earnings).

Figure 5
U.S. Equity Valuations: Mismatch or Power?

NOTE: Market value of nonfinancial corporations includes assets held domestically and in the rest of the world. Gross value added of nonfinancial corporations is domestic gross value added augmented by the imputed gross value added of foreign operations. It is computed by multiplying domestic gross value added of the nonfinancial corporate sector by (1 + U.S. profit from foreign operations/U.S. domestic after-tax profit), with both profit components smoothed as 5-year trailing averages. The S&P 500 price splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The wage rate splices the hourly wage rate for manufacturing production workers till 1946 with the hourly wage rate for nonfarm business-sector workers from 1947 onward. The last data points are 2015 for mismatch index and 2016 for the power index.

SOURCE: Market value of nonfinancial corporations is from the Federal Reserve Board Flow of Funds through GI (series codes: LM103164103 for domestic assets and LM263164103 for assets held in the rest of the world). Domestic gross value added of nonfinancial corporations is from the Bureau of Economic Analysis (BEA) through GI (series code: GVANFC). U.S. after-tax profit is from the BEA through GI (series codes: ZAD for domestic after-tax profit, XFYADIV for foreign dividend income and XFYAREONUSDI for reinvested foreign earnings). The S&P 500 price is from Global Financial Data (GFD) till 1900 (series code: _SPXD) and from Global Insight (GI) from 1901 onward (series code: JS&PNS). The hourly wage rate splices the following series: *Historical Statistics of the United States*, Millennial Edition Online: hourly wages in manufacturing, all trades, 1865-1889 (series code: Ba4290), hourly earnings in manufacturing, all industries, 1890-1913 (series code: Ba4299), weekly earnings of production workers in manufacturing, 1914-1918 (series code: Ba4362), hourly earnings of production workers in manufacturing, 1919-1938 (series code: Ba4361); Global Insight (GI): average hourly earnings of production workers in manufacturing, 1939-1946 (series code: AHPMFNS); Conference Board through GI: average hourly compensation of all employees in the nonfarm business sector (series code: JRWSSNFE).

The Power Ghost in the Mismatch Machine

GVA	gross value added (\$)
$GVAD$	gross value added deflator (\$)
K	market capitalization (\$)
N	number of shares outstanding (decimal)
$Noise$	$N/Q \times W/GVAD$ (decimal)
P	stock market price index (\$)
$P.Ratio$	$W/GVAD$ (decimal)
Q	real gross value added (decimal)
$Q.Ratio$	N/Q (decimal)
W	Wage rate (\$)

6. $MISMATCH\ Index = \dfrac{K}{GVA} = \dfrac{P \times N}{GVAD \times Q}$
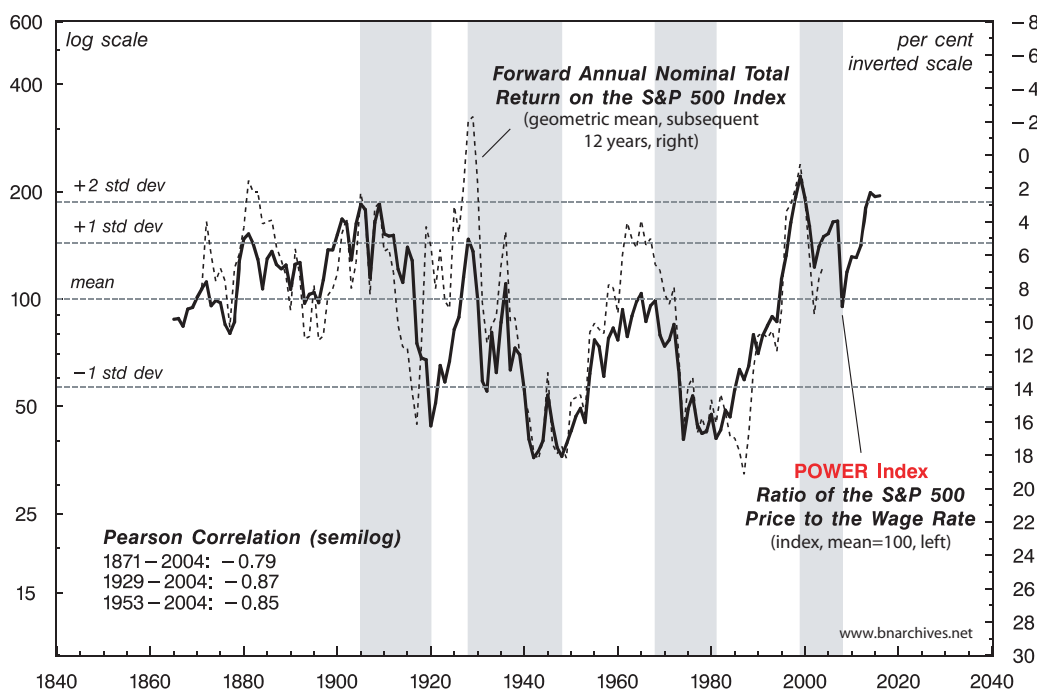
7. $MISMATCH\ Index = \dfrac{P \times N}{\frac{GVAD}{W} \times W \times Q} = \dfrac{P}{W} \times \dfrac{N}{Q} \times \dfrac{W}{GVAD}$

8. $MISMATCH\ Index = POWER\ Index \times \dfrac{N}{Q} \times \dfrac{W}{GVAD}$

9. $MISMATCH\ Index = POWER\ Index \times Q.Ratio \times P.Ratio$

10. $MISMATCH\ Index = POWER\ Index \times Noise$

Figure 6
The Power Index and Forward Returns

NOTE: Shaded years denote major bear markets (MBMs) as defined in Table 1. Series are normalized with their historical mean=100. The S&P 500 price splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The wage rate splices hourly data for manufacturing production workers till 1946 with hourly data for nonfarm business-sector workers from 1947 onward. Forward annual nominal total return on the S&P 500 is calculated by (1) computing the ratio between the total return index 12 years ahead and its current value, and (2) taking the twelfth root of that ratio, subtracting 1 and multiplying by 100. The semilog correlation is between the log of the power index and the forward return. The last data points are 2015 for the ratio of market capitalization to gross value added and 2004 for forward annual nominal total returns

SOURCE: The S&P 500 price is from Global Financial Data (GFD) till 1900 (series code: _SPXD) and from Global Insight (GI) from 1901 onward (series code: JS&PNS). The hourly wage rate splices the following series: *Historical Statistics of the United States*, Millennial Edition Online: hourly wages in manufacturing, all trades, 1865-1889 (series code: Ba4290), hourly earnings in manufacturing, all industries, 1890-1913 (series code: Ba4299), weekly earnings of production workers in manufacturing, 1914-1918 (series code: Ba4362), hourly earnings of production workers in manufacturing, 1919-1938 (series code: Ba4361); Global Insight (GI): average hourly earnings of production workers in manufacturing, 1939-1946, (series code: AHPMFNS); Conference Board through GI: average hourly compensation of all employees in the nonfarm business sector (series code: JRWSSNFE). Nominal total return for the S&P 500 is from GFD till 1969 (series code: _SPXTRD) spliced with data from Global Insight (GI) for 1970 onward (series code: SP500TRI).
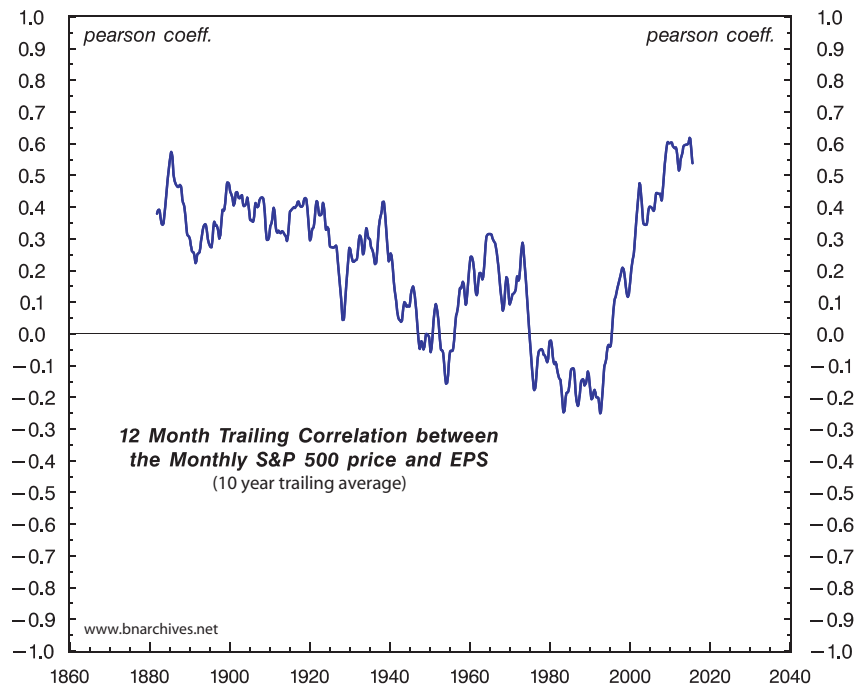
Figure 7
The S&P 500 Price and EPS: The Systemic Fear Index
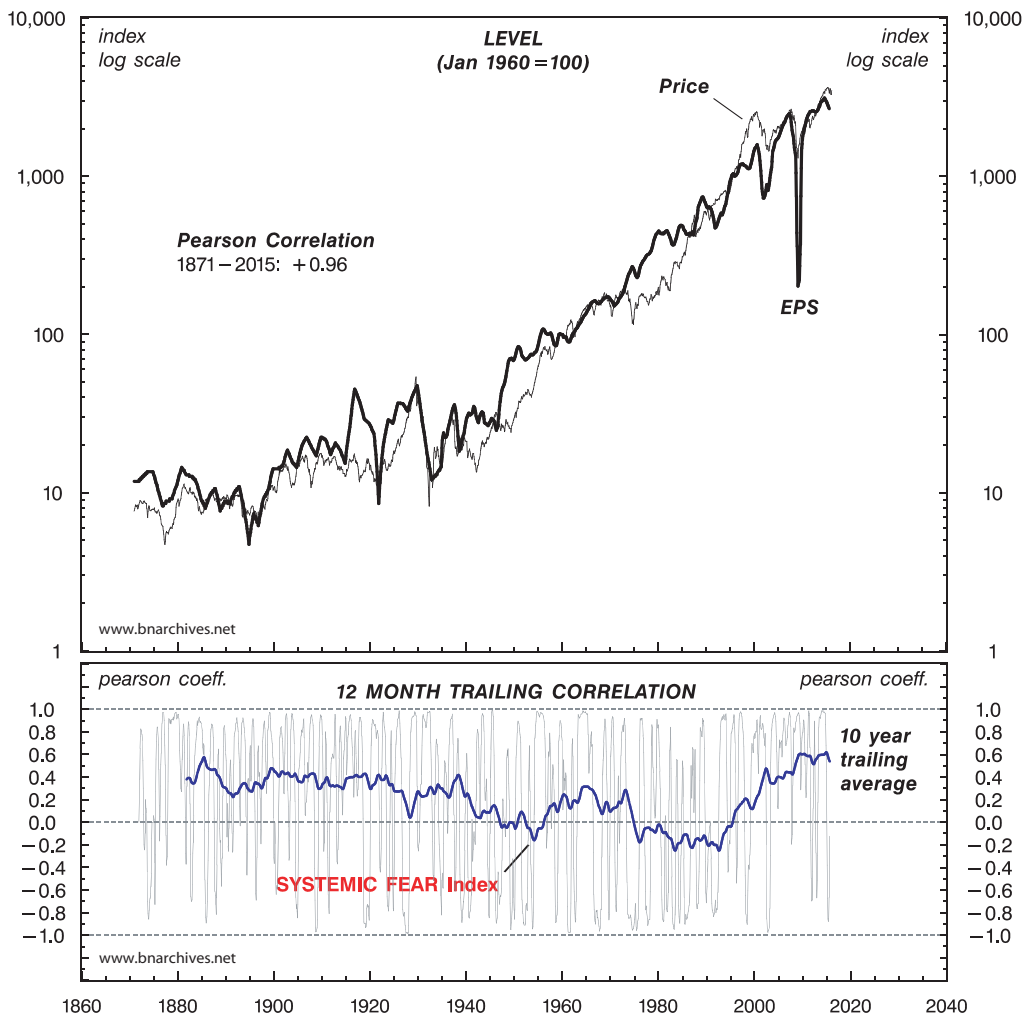
NOTE: The S&P 500 index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The 12-month trailing correlation in the bottom panel (thin series) measures the correlation between price and earnings per share (EPS). The 10-year trailing average (thick oscillating series) is the mean of this trailing correlation over the past 120 months. The last data points are September 2015 for EPS and April 2016 for price.

SOURCE: S&P 500 price and EPS are from Robert J. Shiller's online data archives (http://www.econ.yale.edu/~shiller/data/ie_data.xls, accessed on April 20, 2016).

Figure 8
The Systemic Fear Index

NOTE: The systemic fear index in calculated in two steps: (1) computing the 12-month trailing correlation between price and earnings per share (EPS) of the S&P 500 index; (2) calculating the 10-year trailing average of the 12-month moving correlation computed in the first step. The S&P 500 index splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The last data points are September 2015 for EPS and April 2016 for price.

SOURCE: S&P 500 price and EPS are from Robert J. Shiller's online data archives (http://www.econ.yale.edu/~shiller/data/ie_data.xls, accessed on April 20, 2016).
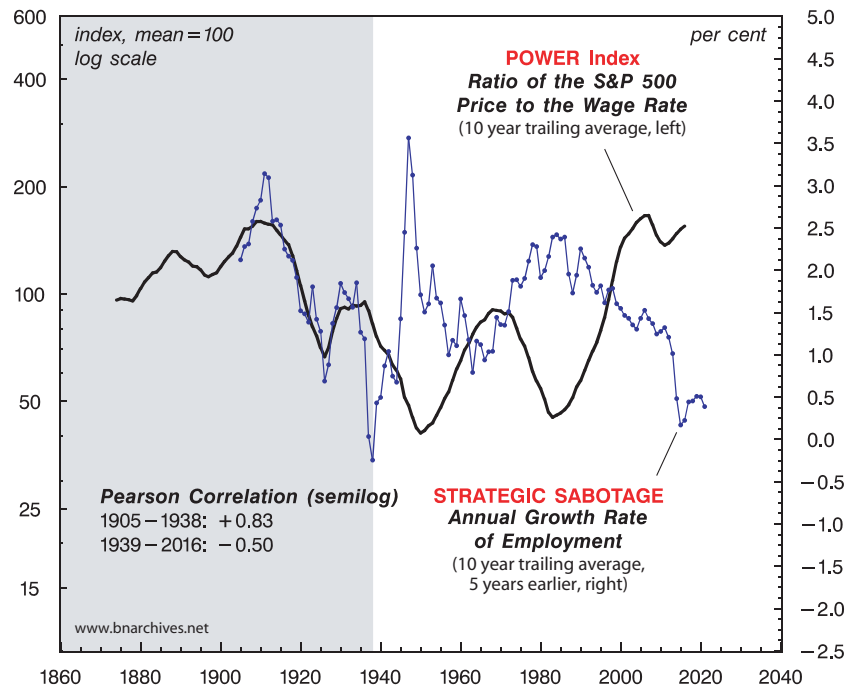
Figure 9
The Dialectic of Power and Fear
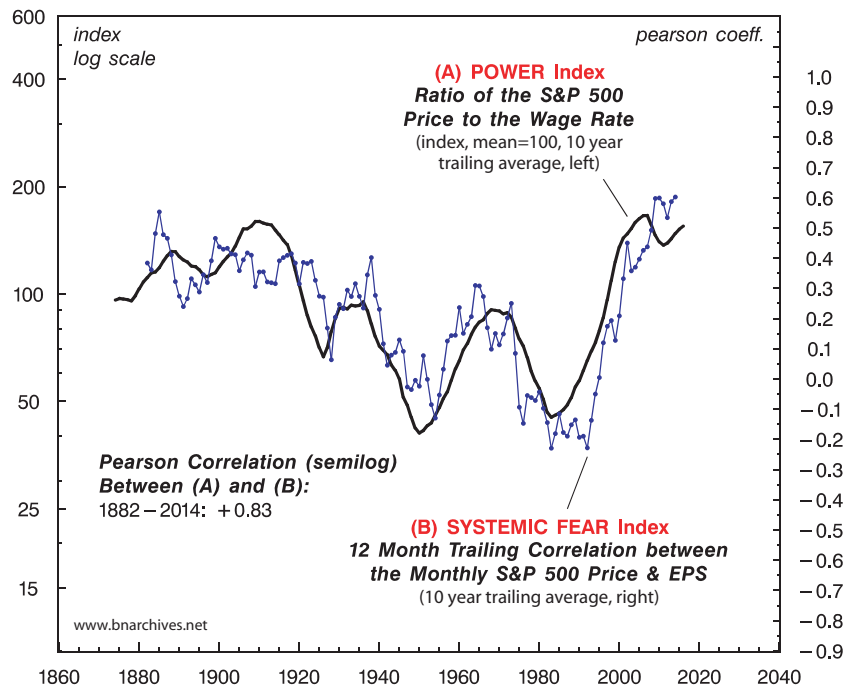
NOTE: The S&P 500 price splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The wage rate splices hourly data for manufacturing production workers till 1946 with hourly data for nonfarm business-sector workers from 1947 onward. The last data points are 2014 for the systemic fear index and 2016 for the power index.

SOURCE: Annual S&P 500 price is from Global Financial Data (GFD) till 1900 (series code: _SPXD) and from Global Insight (GI) from 1901 onward (series code: JS&PNS). The hourly wage rate splices the following series: *Historical Statistics of the United States*, Millennial Edition Online: hourly wages in manufacturing, all trades, 1865-1889 (series code: Ba4290), hourly earnings in manufacturing, all industries, 1890-1913 (series code: Ba4299), weekly earnings of production workers in manufacturing, 1914-1918 (series code: Ba4362), hourly earnings of production workers in manufacturing, 1919-1938 (series code: Ba4361); Global Insight (GI): average hourly earnings of production workers in manufacturing, 1939-1946 (series code: AHPMFNS); Conference Board through GI: average hourly compensation of all employees in the nonfarm business sector (series code: JRWSSNFE). Monthly S&P 500 price and EPS are from Robert J. Shiller's online data archives (http://www.econ.yale.edu/~shiller/data/ie_data.xls, accessed on April 20, 2016).
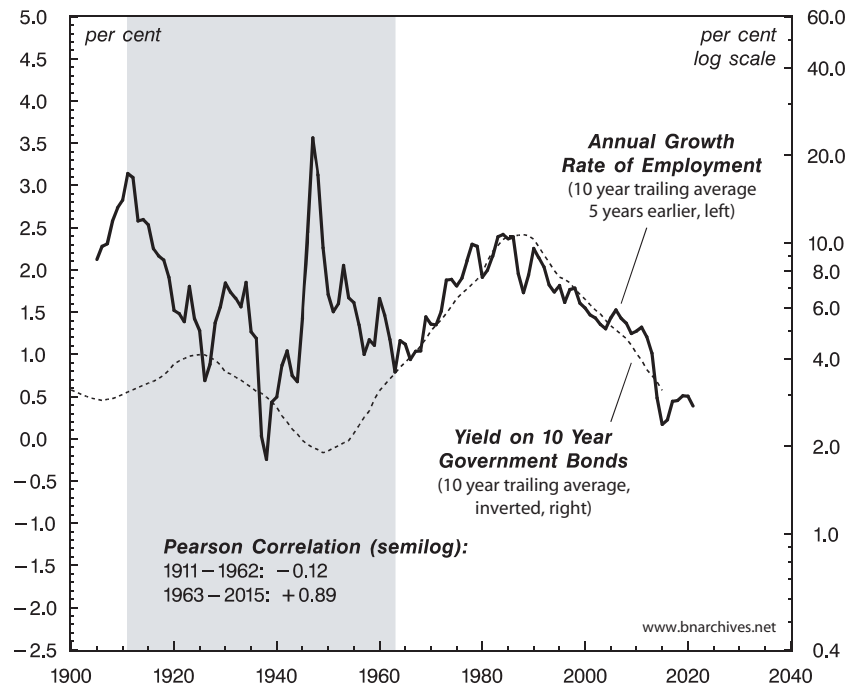
Figure 10
The Power Index and Strategic Sabotage

NOTE: The S&P 500 price splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The wage rate splices hourly data for manufacturing production workers till 1946 with hourly data for nonfarm business-sector workers from 1947 onward. Shaded area denote positive correlation. The last data points are 2016 for the power index and 2020 for strategic sabotage.
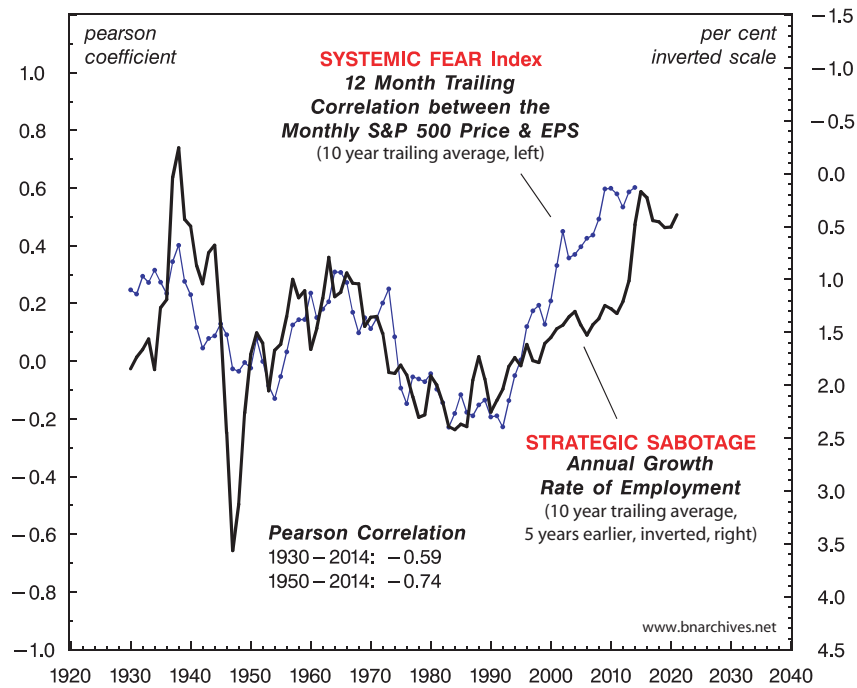
SOURCE: The S&P 500 price is from Global Financial Data (GFD) till 1900 (series code: _SPXD) and from Global Insight (GI) from 1901 onward (series code: JS&PNS). The hourly wage rate splices the following series: *Historical Statistics of the United States*, Millennial Edition Online: hourly wages in manufacturing, all trades, 1865-1889 (series code: Ba4290), hourly earnings in manufacturing, all industries, 1890-1913 (series code: Ba4299), weekly earnings of production workers in manufacturing, 1914-1918 (series code: Ba4362), hourly earnings of production workers in manufacturing, 1919-1938 (series code: Ba4361); Global Insight (GI): average hourly earnings of production workers in manufacturing, 1939-1946, (series code: AHPMFNS); Conference Board through GI: average hourly compensation of all employees in the nonfarm business sector (series code: JRWSSNFE). Employment till 1947 is from *Historical Statistics of the United States*, Millennial Edition Online (series code: CivilianLaborForce_Employed_Total_Ba471_Thousand) and from 1948 from U.S. Department of Labour through GI (annual average of monthly series, series code: ENS@US).

Figure 11
Employment Growth and the Rate of Interest

SOURCE: Employment till 1947 is from *Historical Statistics of the United States*, Millennial Edition Online (series code: CivilianLaborForce_Employed_Total_Ba471_Thousand) and from 1948 from U.S. Department of Labour through GI (annual average of monthly series, series code: ENS@US). The yield on 10-year government bonds splices data from Global Financial Data (GFD) till 1953 and from the U.S. Federal Reserve Board through Global Insight (GI) from 1954 onward (series code: RMGB10Y@US).

Figure 12
Strategic Sabotage and Systemic Fear

NOTE: The S&P 500 price splices the following four sub-series: a combination of bank, insurance and railroad stock series weighed by Global Financial Data (1820-1870); the Cowles/Standard and Poor's Composite (1871-1925); the 90-stock Composite (1926-1956); and the S&P 500 (1957-present). The last data points are 2014 for the fear index and 2016 for strategic sabotage.

SOURCE: Employment till 1947 is from *Historical Statistics of the United States*, Millennial Edition Online (series code: CivilianLaborForce_Employed_Total_Ba471_Thousand) and from 1948 from U.S. Department of Labour through GI (annual average of monthly series, series code: ENS@US). Monthly S&P 500 price and EPS are from Robert J. Shiller's online data archives (http://www.econ.yale.edu/~shiller/data/ie_data.xls, accessed on April 20, 2016).