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Sustainable Investment Research Initiative
(SIRI)

Update on Review of Evidence

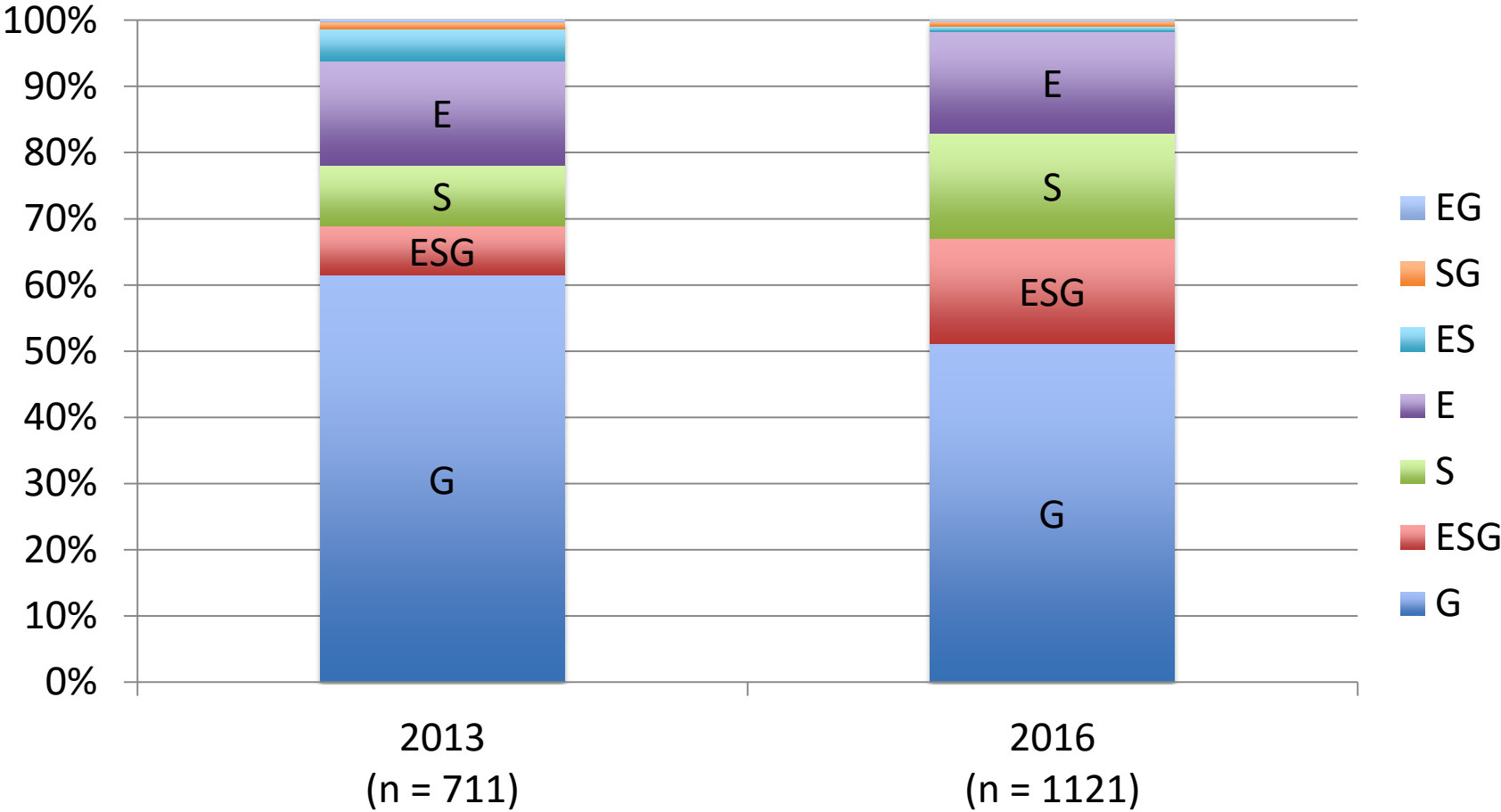
June 19, 2017

SIRI Background

- First Round
 - Bibliography (711 articles)
 - Symposium
 - Board Presentation
- Second Round
 - Bibliography Refresh (added 1,211 articles)
 - Board Presentation

Subject Areas

E – Environmental, S – Social, G - Governance



Investment Beliefs of Economists

Valuation:

The value of an investment is the present value of the future cash flow generated by the investment.

Risk and Return:

There is a positive relation between risk and return; thus, higher returns are expected to be associated with higher levels of risk.

Externalities:

Firm activities may impose costs on society (e.g., when a factory pollutes). Reducing these costs will benefit society, but it is less clear whether doing so is in the interests of the company's owners.

Competition:

Financial markets are competitive. As a result profit opportunities are rare and fleeting. Thus, observing a historical pattern in returns does not necessarily predict a pattern going forward.

Agency Issues:

Conflicts of interest between a principal and agent (e.g., managers and shareholders) affect the behavior of market participants. Resolving these conflicts of interest would produce value for the principal.

Summarizing the Environmental and Social Factors

Large institutions should tread carefully on adopting sweeping investment beliefs related to environmental and social factors.

- Economists agree that externalities created by firms are important.
- However, shareholder engagement on environmental or social issues could lower shareholder returns.
- The impact of sustainability factors on risk and return is ambiguous:
 - Some argue **sustainability factors may generate priced risk**.
 - EXAMPLE: Climate risk may differentially but systematically affect firms.
 - Some argue **sustainability factors are positively correlated with returns** because markets systematically **overlook information**.
 - EXAMPLE: Companies with high Employee satisfaction earn strong returns (Edmans, 2011)
 - Some argue **sustainability factors are negatively correlated with returns**, because **investor preferences** affect pricing.
 - EXAMPLE: Sin stocks (tobacco, gambling, and guns) earn strong returns (Hong and Kacperczyk, 2009)

Academic Literature on E, S, and G

Broad Overview

- G is on solid ground. There is:
 - A consensus theoretical framework.
 - manager-shareholder conflicts (i.e., agency issues)
 - A consensus regarding empirical evidence.
 - Shareholder activism improves firm valuation (Denes, Karpoff, and McWilliams (2016))
 - A few notable caveats.
 - Good governance is context dependent.
 - Example: Takeover defenses may redound to the benefit of newly listed companies because they preserve business relationships (Johnson, Karpoff, and Yi 2015)
- E&S remains a nascent literature with limited actionable findings. There is
 - No consensus theoretical framework.
 - No consensus regarding empirical evidence.
 - Moral motives affect how investors consider environmental and social issues when investing.

Climate Risks and Market Efficiency

Hong, Li, and Xu (2016)

- Increasing global temperature increases drought risk.
- Hong et al. argue drought risk is not fully reflected in market prices and leads to predictable returns.

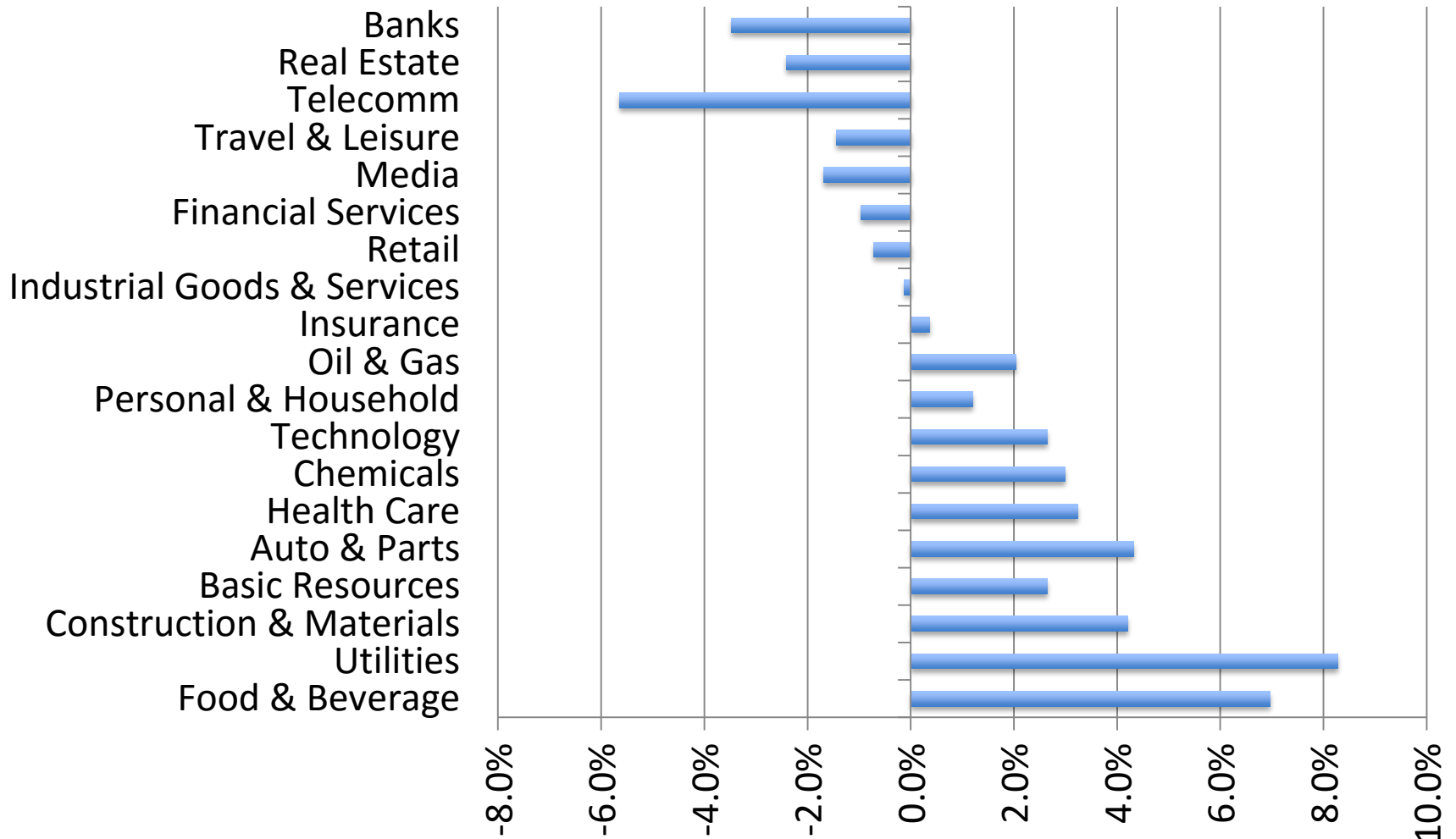
“...[P]rolonged drought in a country... forecasts both declines in profitability and stock returns of food companies in that country.”

“..[S]tock markets are inefficient with respect to information about prolonged drought...”

“...[O]ur findings confirm regulatory worries about markets underreacting to climate risks and support the need for disclosure of corporate exposures.”

Climate Risks and Market Efficiency

Hong, Li, and Xu (2016)



Climate Finance Call for Papers

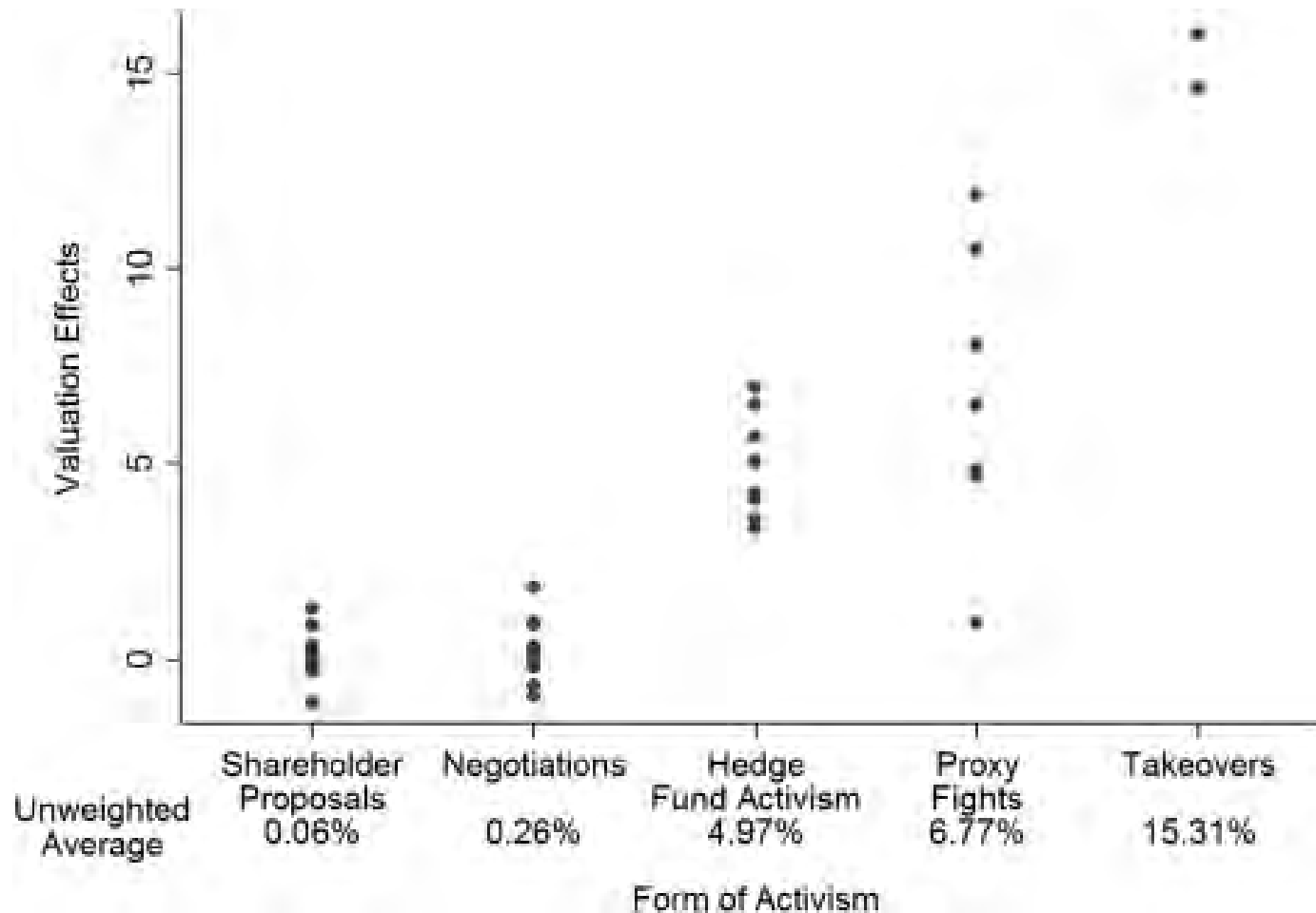
- *Review of Financial Studies*
- Harrison Hong and Jose Scheinkman, Columbia

“To promote research on issues that bear on the financial economics of climate change...”

“The organizers recognize that this proposed body of research is new and there are few quality working papers at this point. This process is designed to encourage researchers to engage in innovative research on this new emerging topic.”

Thirty years of shareholder activism

Denes, Karpoff, & McWilliams (2016)

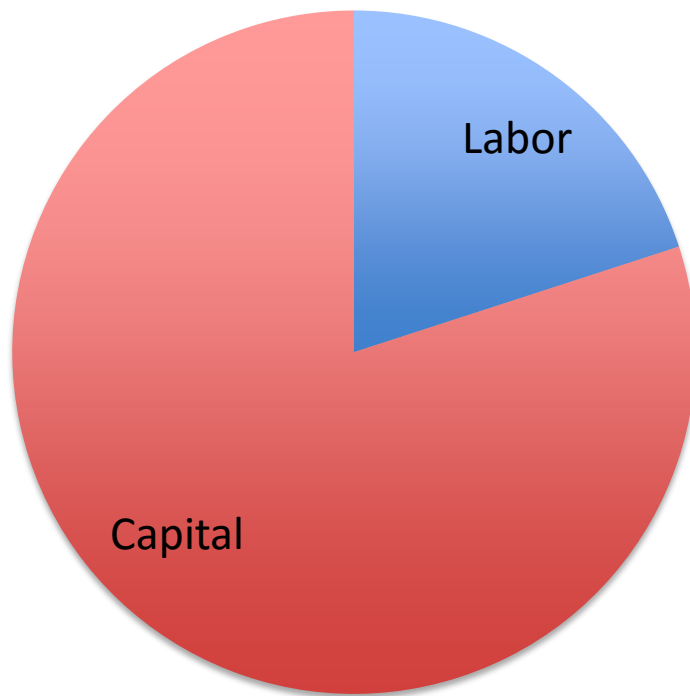


Origins of Stock Market Fluctuations

Greenwald, Lettau, and Ludvigson (2016)

- Analyzes the origins of stock market wealth over the short and long run
- Considers three components that vary over time
 - Risk: Investors willingness to bear risk
 - Productivity: Economic gains
 - Labor Share: Reallocation of gains between labor and capital owners

The Economic Pie

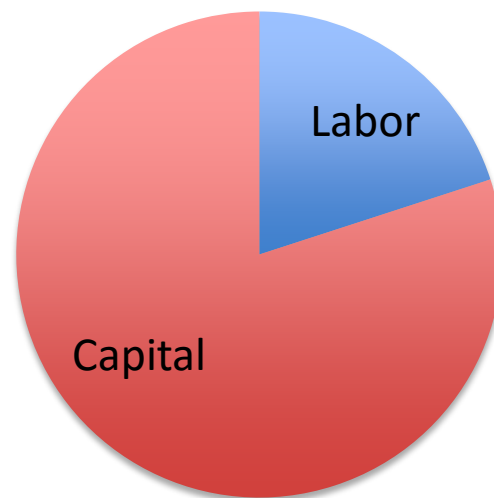
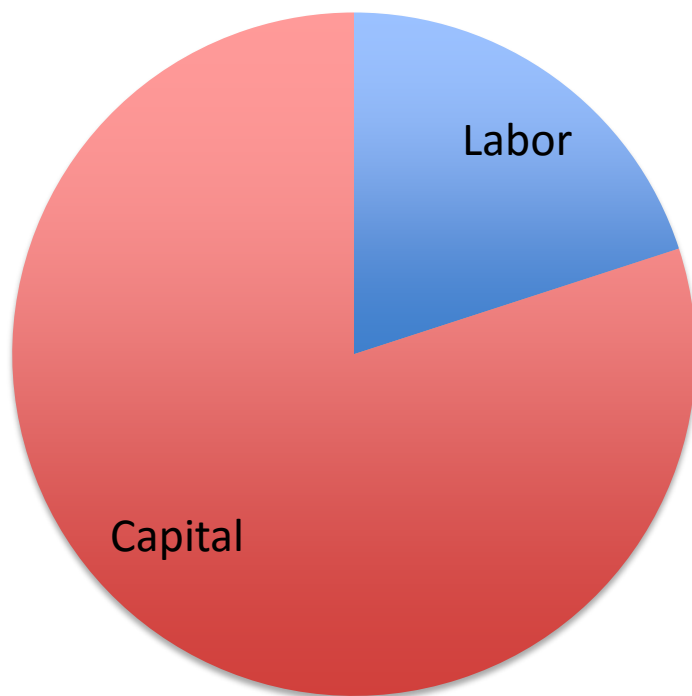


The three channels affect returns:

- The size of the pie (Productivity)
- The slices of the pie (Labor)
- The price of the pie (Risk)

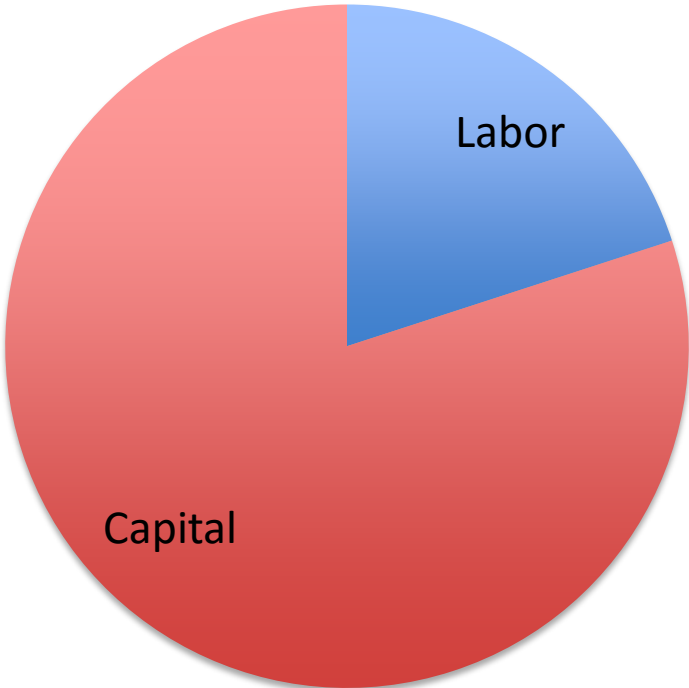
The Economic Pie

Productivity Shocks affect the size of the pie

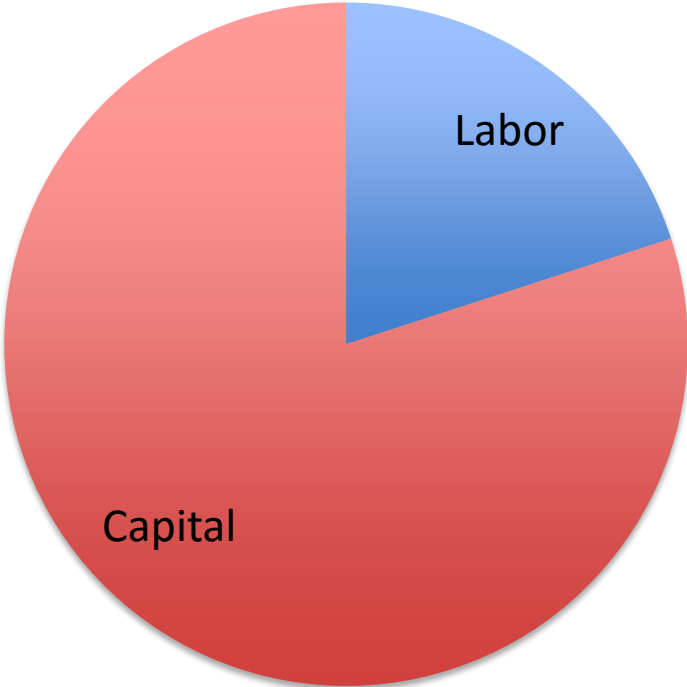


The Economic Pie

Risk Aversion Shocks
affect the price of the pie



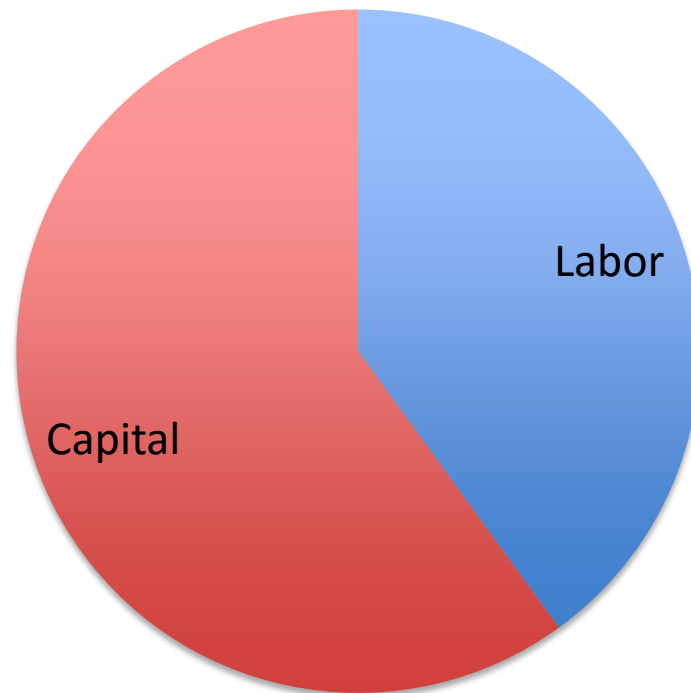
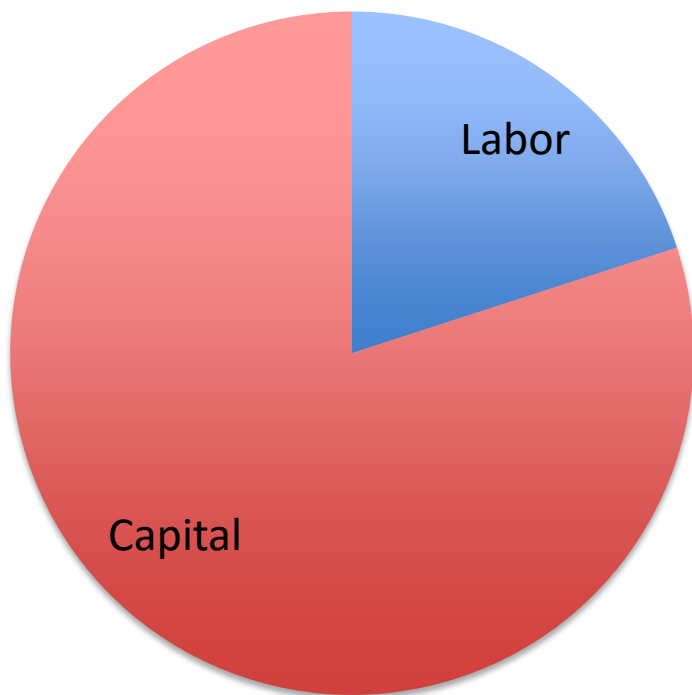
Low Risk
\$200, High Price
5%, Low Expected Return



High Risk
\$100, Low Price
10%, High Expected Return

The Economic Pie

Labor Share affects the allocation of the pie



Origins of Stock Market Fluctuations

Greenwald, Lettau, and Ludvigson (2016)

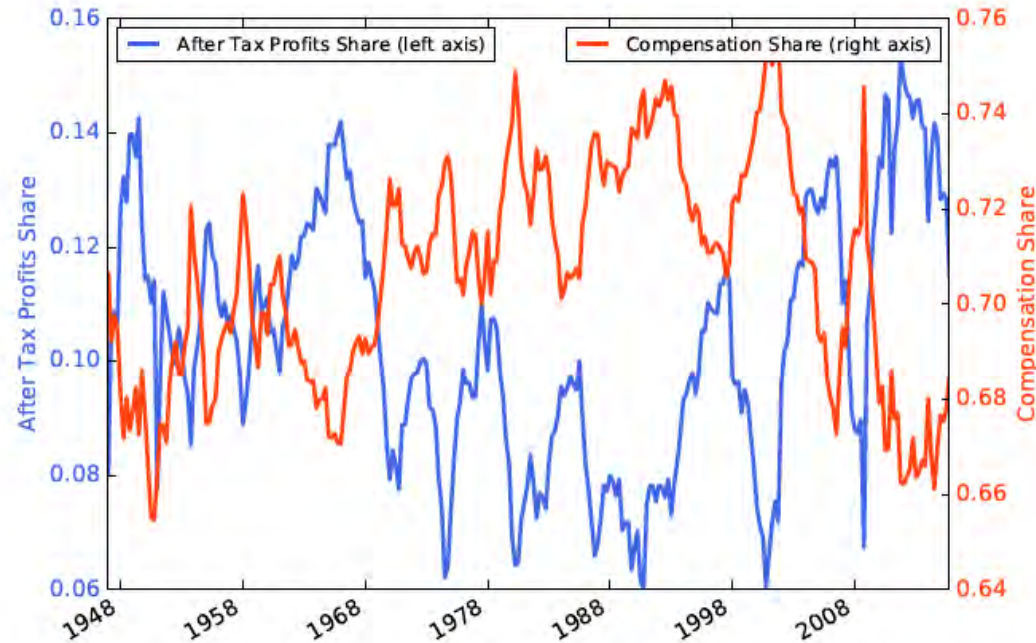


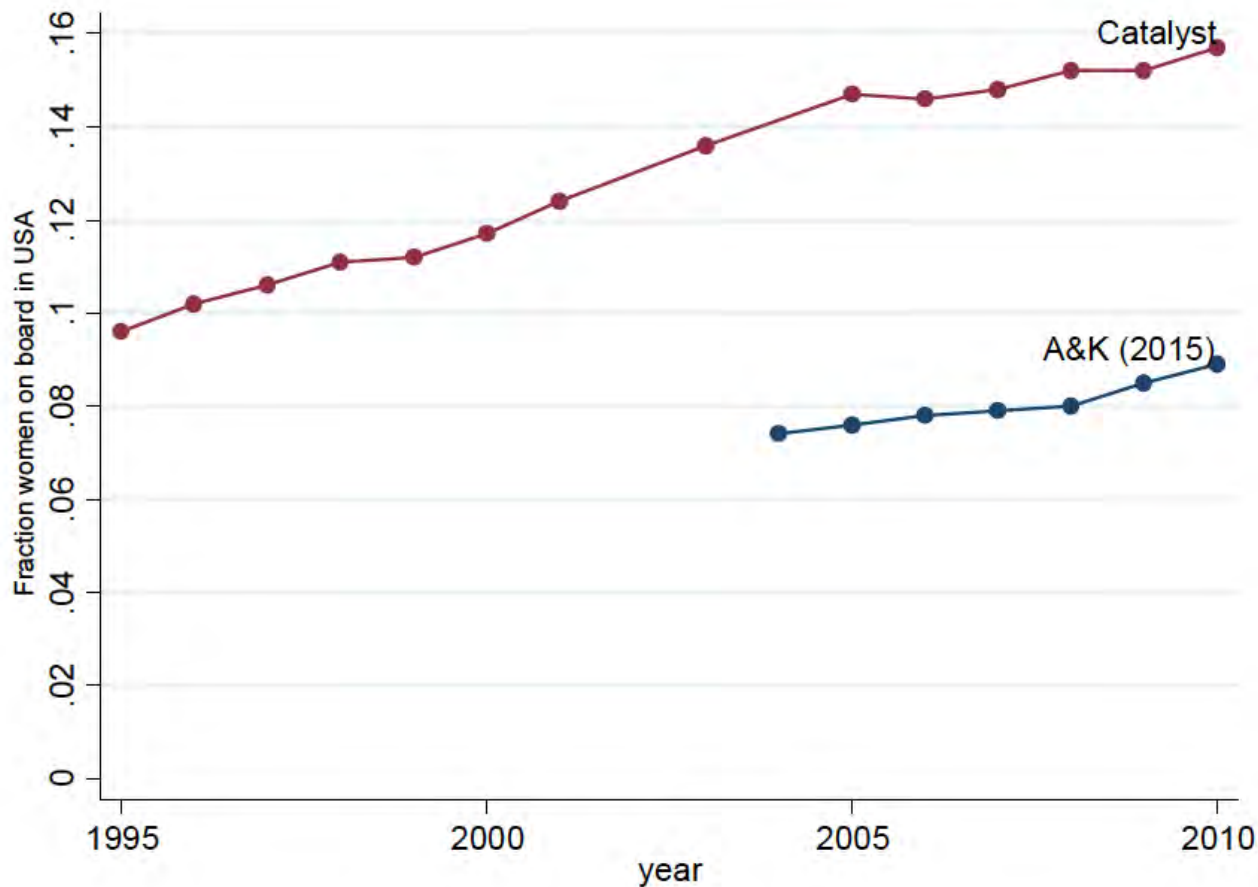
Figure 1: After-Tax Profit Share vs. Labor Compensation Share. The figure compares the shares of net value added in the nonfinancial corporate sector allocated to after-tax profits vs. labor compensation. See appendix for data definitions. The correlations between the series are -0.76 for quarterly differences, and -0.89 for five year differences. Source: NIPA. Sample: 1947:Q1 - 2015:Q4.

Origins of Stock Market Fluctuations

Greenwald, Lettau, and Ludvigson (2016)

- “In the long run, the market is profoundly affected by shocks that reallocate the rewards of a given level of production between workers and shareholders.”
 - Since 1980, rewards were persistently redistributed away from workers and toward shareholders. “Indeed, without these shocks today’s stock market would be **roughly 10% lower than it was in 1980.**”
- ➔ This analysis is closely related to the Piketty and Ganser (2014) “ $r > g$ ” observation.

Gender Diversity on US Boards Adams (2016)



Diversity and Performance

- Rhode and Packel (2014) and Adams (2016) provide excellent reviews of the literature on diversity and performance
- Adams (2016)
 - Research “...faces three main challenges: data limitations, selection, and causal inference.”
 - Correlation evidence is often-cited, but potentially misleading (e.g., Catalyst, 2007).
- Rhode and Packel (2014)
 - “In sum, the empirical research on the effect of board diversity on firm performance is inconclusive, and the results are highly dependent on methodology.”

CalPERS ESG Strategy

August 2016

Global Governance Strategy Review

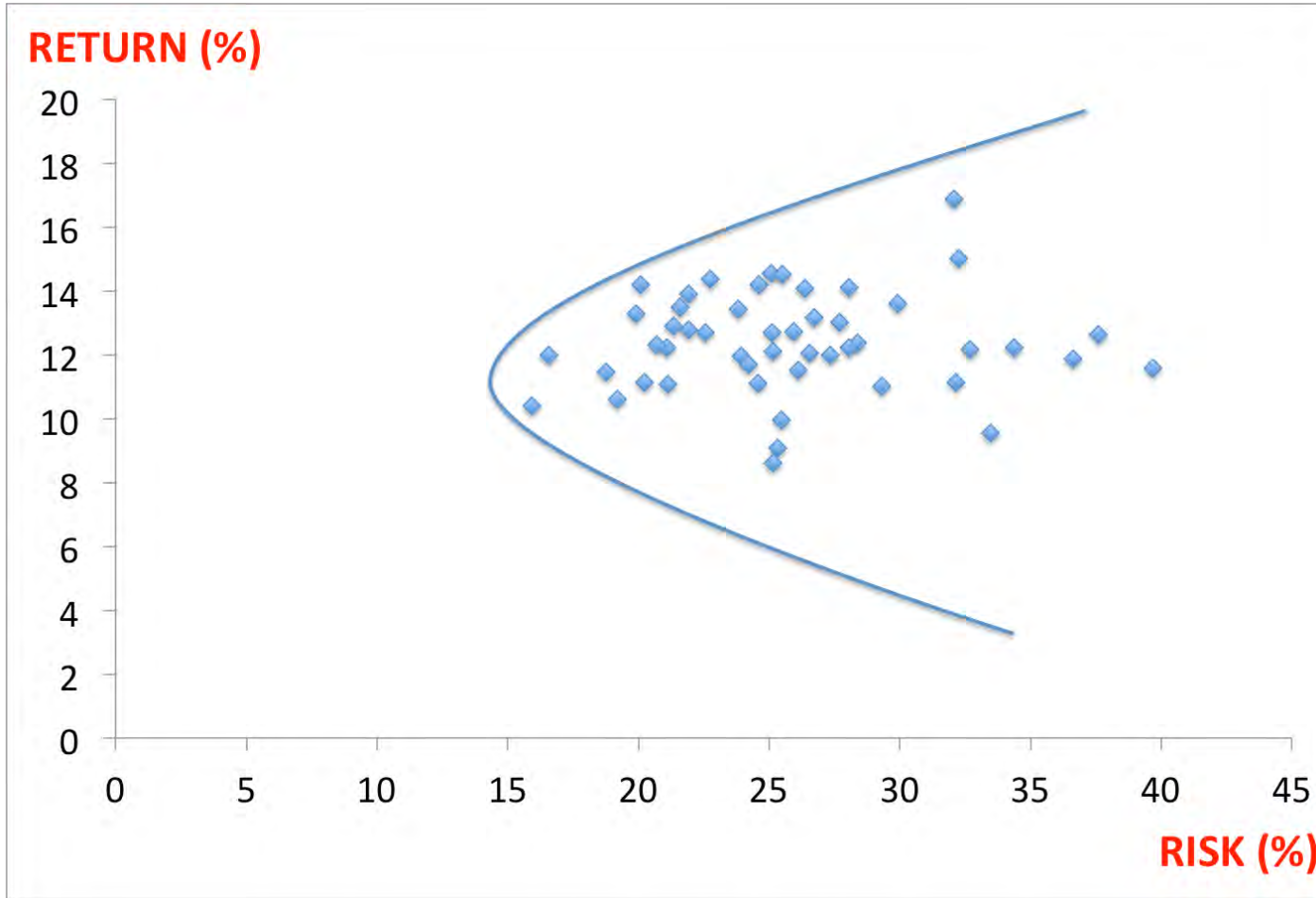
Strategy on ESG Integration

- Environmental
- Social
- Governance

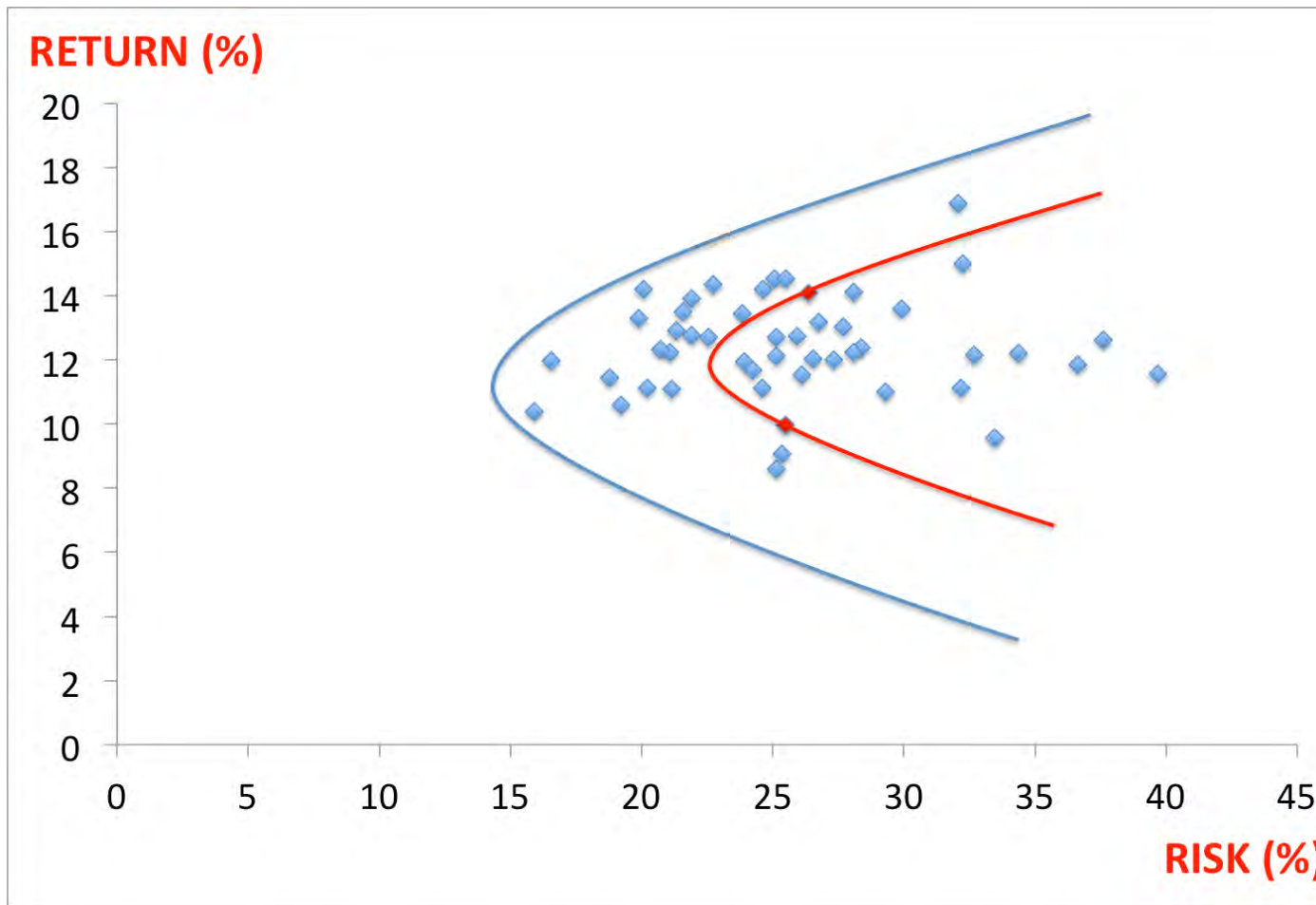
Our approach utilizes three channels supported by partnerships



Risk and Return Investment Opportunities



Divestment v. Engagement



Industry Total Returns

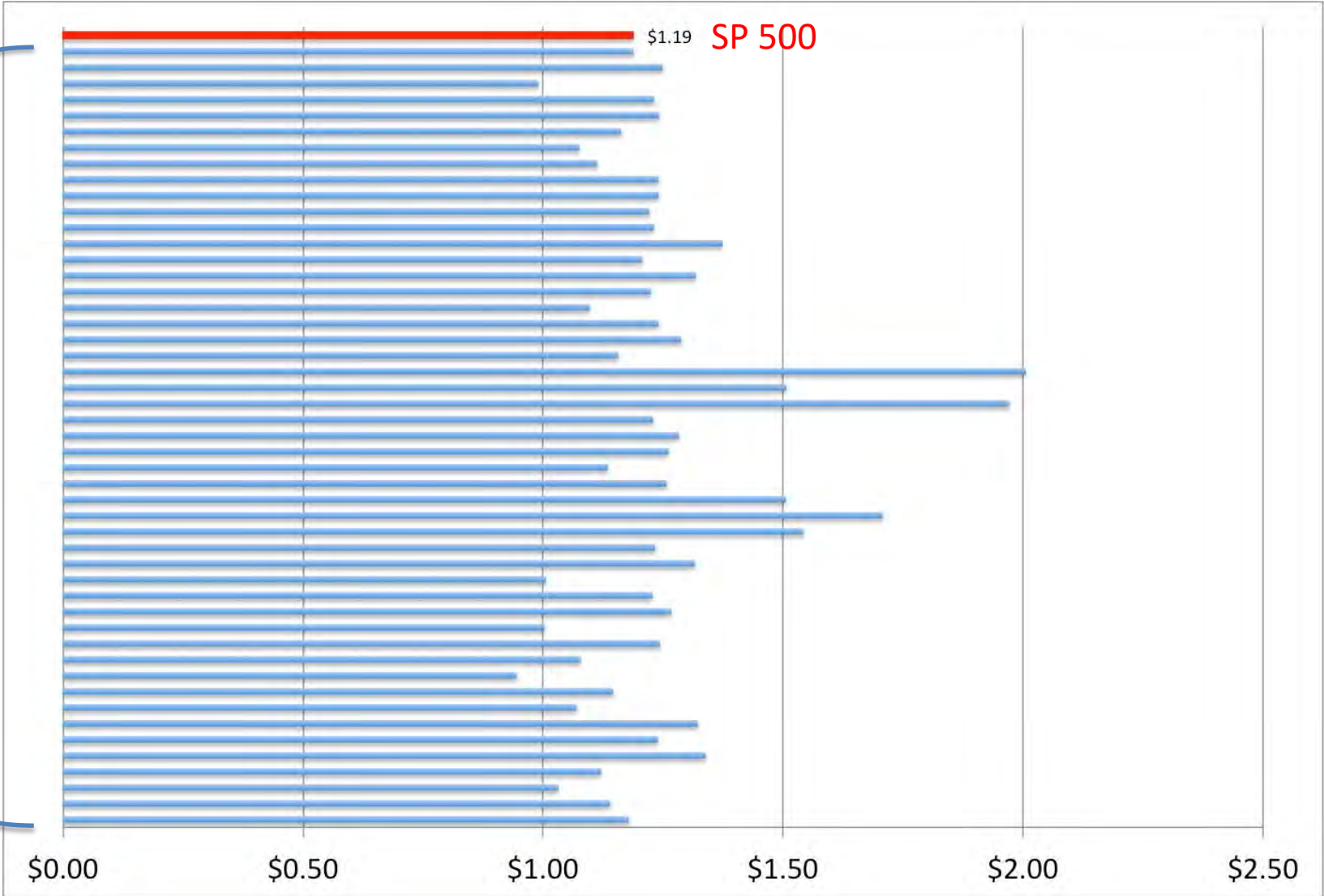
Jan 2001 – Mar 2017



Industry Total Returns

Jan 2016 – Mar 2017

Industry Returns



Process Recommendations

- Identify Question of Interest (Be specific)
 - Climate Finance
 - Board Composition
 - Wage Inequality
 - Shareholder Activism
- Identify Papers and Scholars
- Engage
 - Board Workshops
 - Seminars @ CalPERS
 - Conferences

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