

20598 – Finance with Big Data

Hackathon: NGO Press Campaigns and Responsible Investment

Clément Mazet-Sonilhac

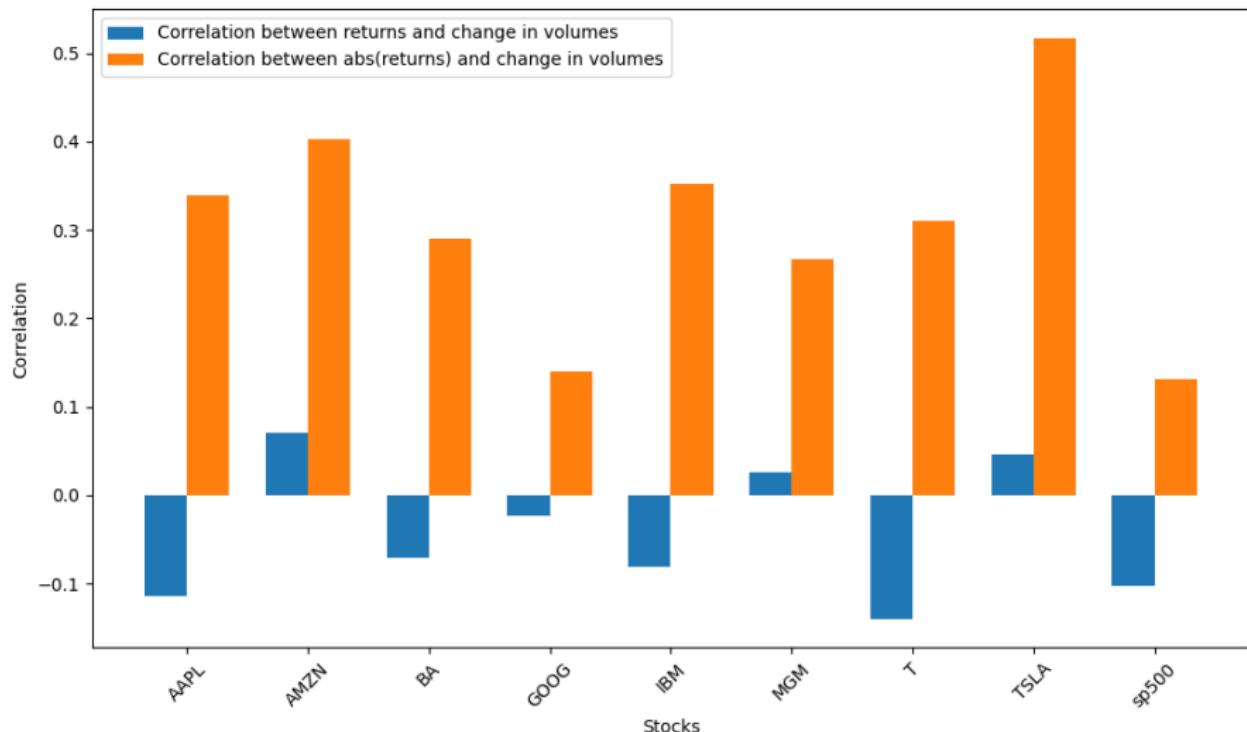
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Discussion about PC Lab #4

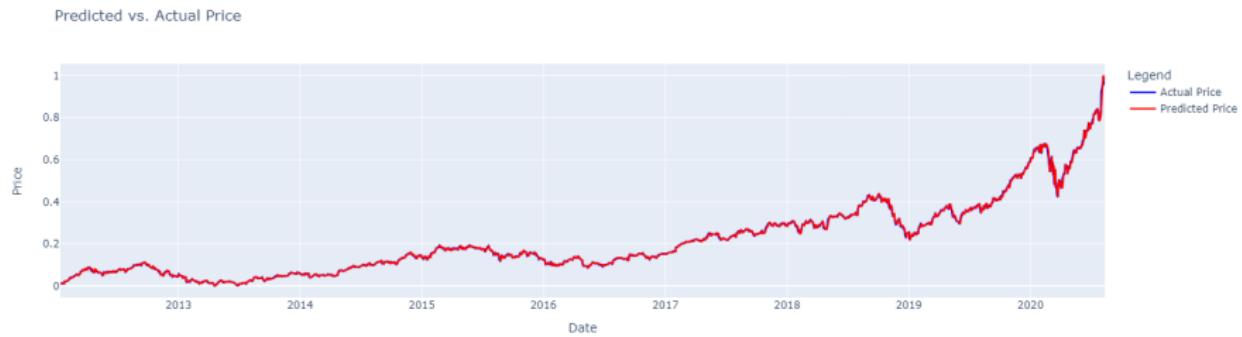
Discussion about PC Lab #4

Group 7



Discussion about PC Lab #4

Group 5 and 3



Discussion about PC Lab #4

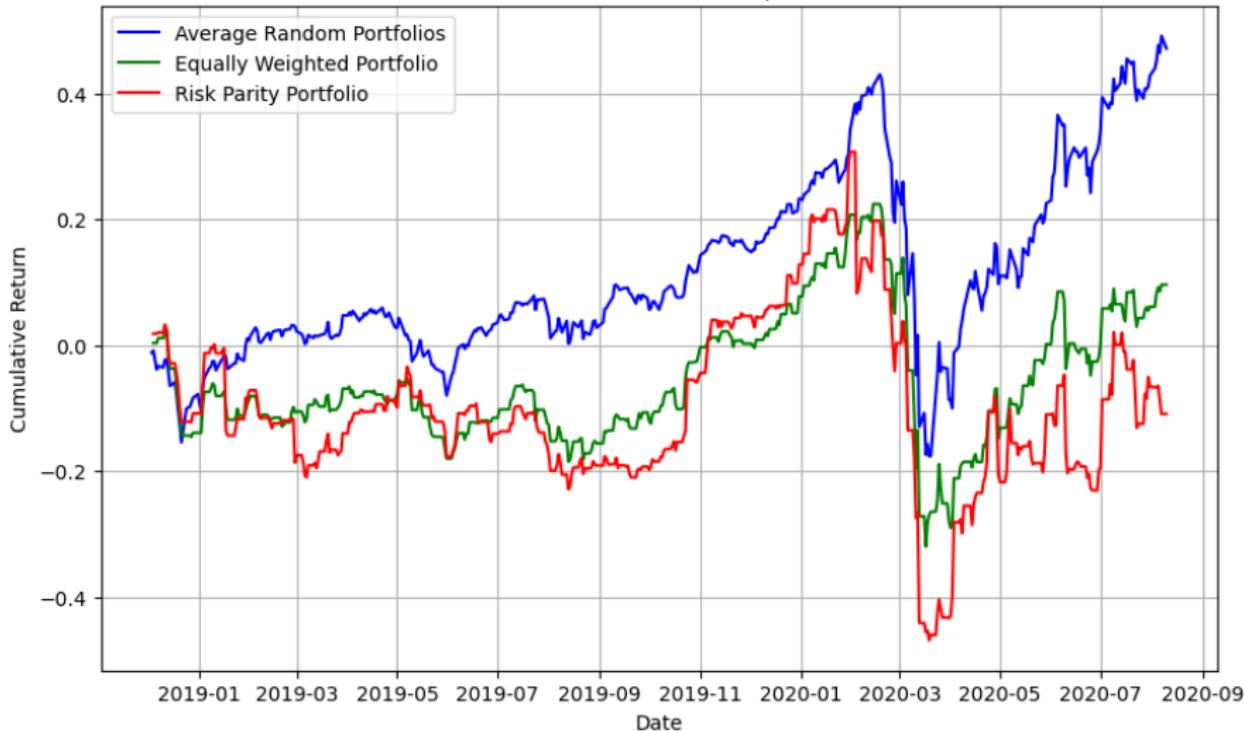
- What is the $ROOS$ of the 2 methods? Use the formula from Gu et al. (2020) (eq. 19, p. 2246)

$$R_{i,OOS} = 1 - \frac{\sum_{t \in T} (r_{i,t} - \hat{r}_{i,t})^2}{\sum_{t \in T} (r_{i,t})^2}$$

Discussion about PC Lab #4

Group 9

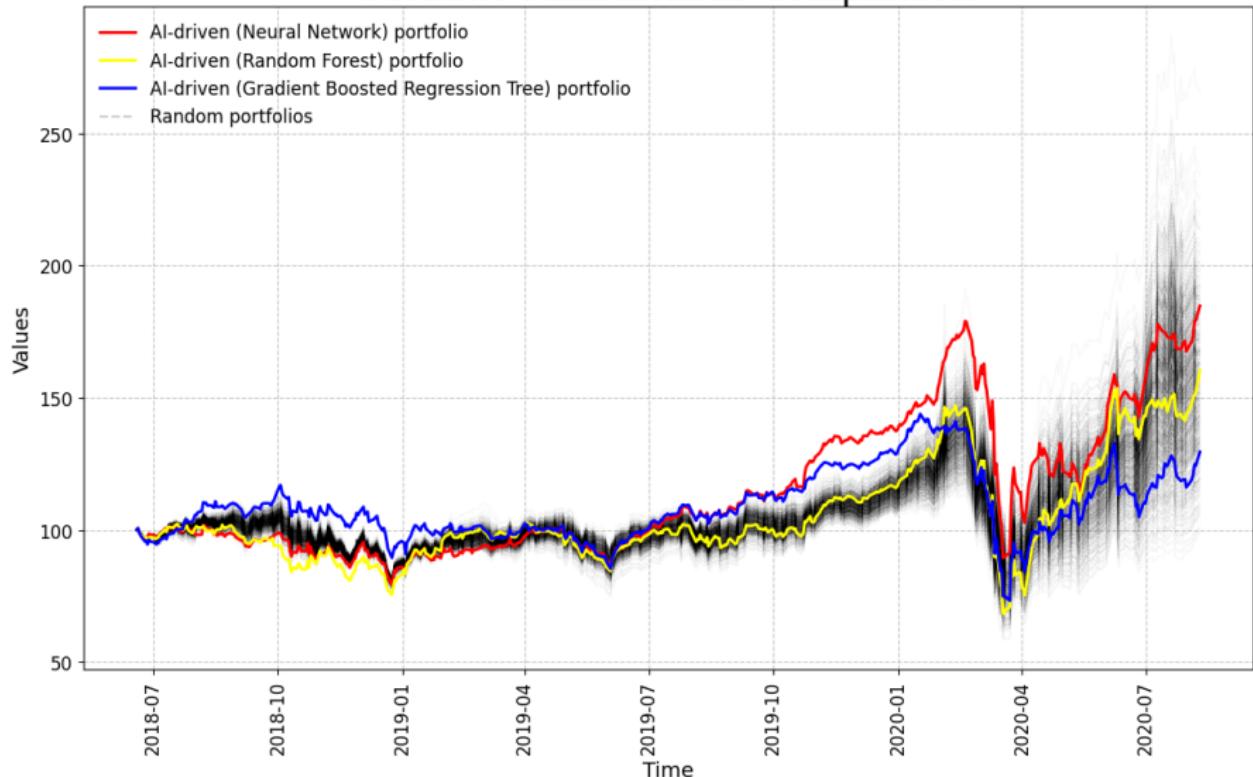
Cumulative Returns Comparison



Discussion about PC Lab #4

Group 11

Portfolio Performance Comparison



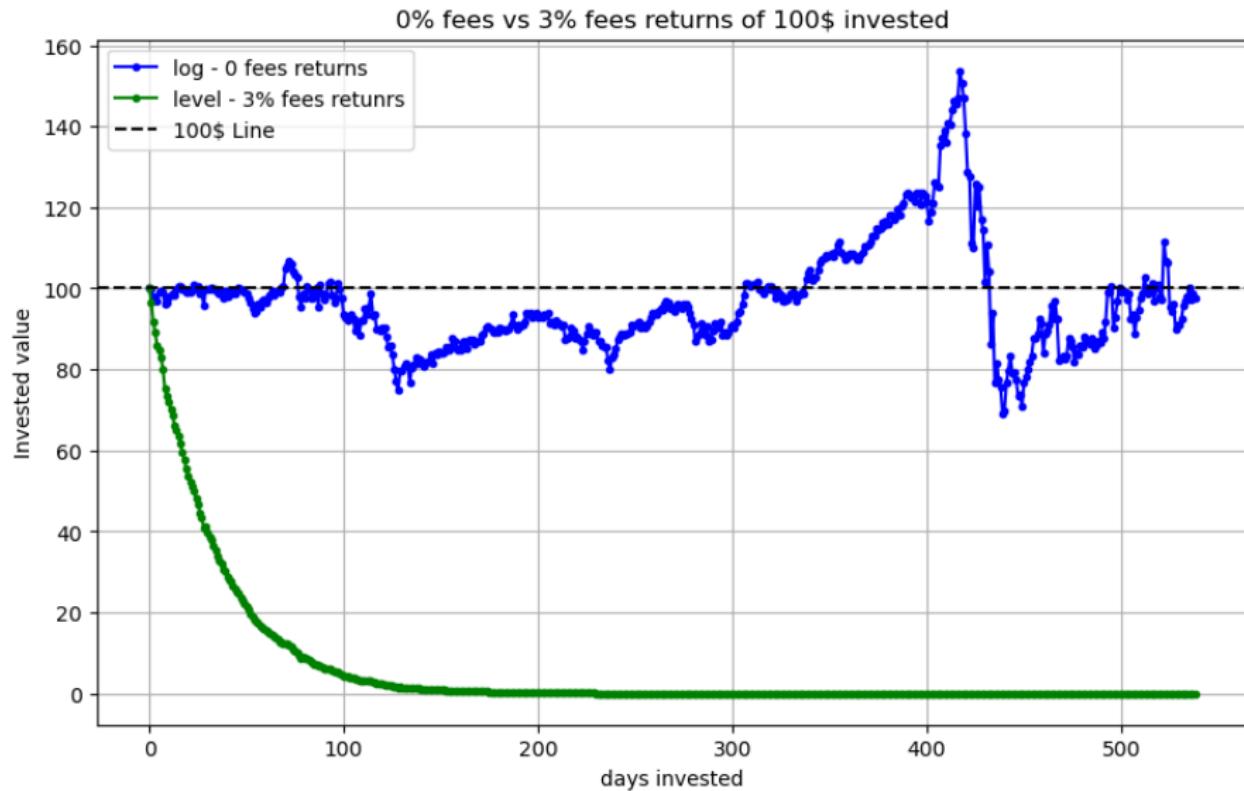
Discussion about PC Lab #4

Group 5 and 4



Discussion about PC Lab #4

Group 7



Disclaimer

This course was inspired in part by Thierry Roncalli's great material on sustainable finance. Check it [here!](#)

What is a Hackathon ?

What is a Hackathon ?

A menu of tasks, 2 weeks deadline, real research data

Counts as a mandatory PC Lab

Firm A



Return: 8%

Firm B



Return: 5%

(Same past variance)

Firm A



Return: 8%

Firm B



Return: 5%



(Same past variance)

Firm A



Return: 8%

Firm B



Return: 5%



(Same past variance)

Firm A



CO₂

Return: 8%

Firm B



Return: 5%

(Same past variance)

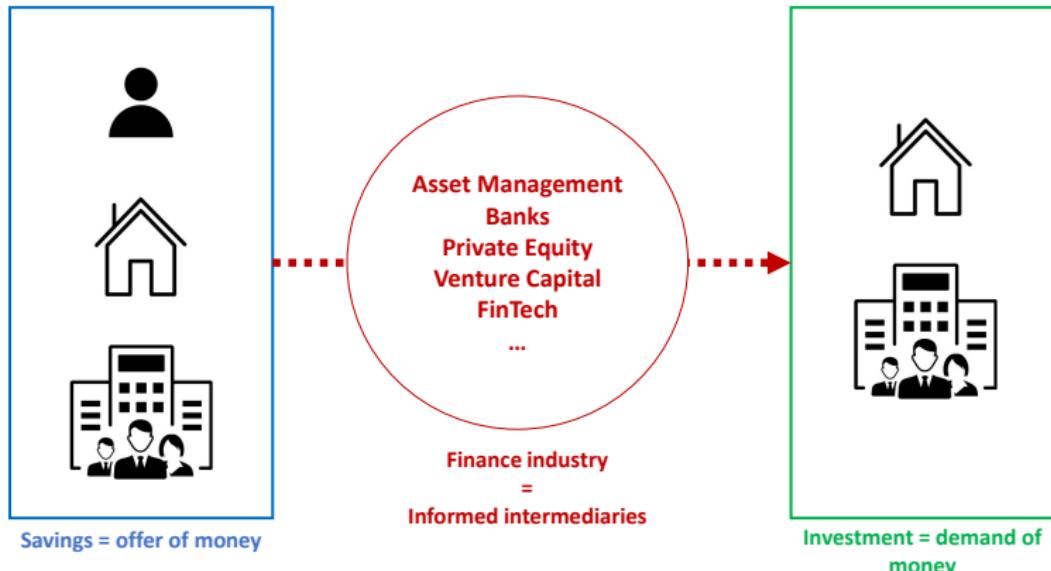


A dense pile of US \$100 bills, with many bills partially visible in the background.

Why?

Because Financial System \Rightarrow Growth

Goldsmith, 1966, 1969 ; Gurley & Shaw, 1955, 1960 ; Porter, 1966 ; King and Levine, 1993



FINANCE AND GROWTH: SCHUMPETER MIGHT BE RIGHT*

ROBERT G. KING AND ROSS LEVINE

We present cross-country evidence consistent with Schumpeter's view that the financial system can promote economic growth, using data on 80 countries over the 1960–1989 period. Various measures of the level of financial development are strongly associated with real per capita GDP growth, the rate of physical capital accumulation, and improvements in the efficiency with which economies employ physical capital. Further, the predetermined component of financial development is robustly correlated with future rates of economic growth, physical capital accumulation, and economic efficiency improvements.

In 1911 Joseph Schumpeter argued that the services provided by financial intermediaries—mobilizing savings, evaluating projects, managing risk, monitoring managers, and facilitating transactions—are essential for technological innovation and economic development. Empirical work by Goldsmith [1969] and McKinnon [1973] illustrates the close ties between financial and economic development for a few countries.¹ But numerous influential econo-

Because Finance Industry \Rightarrow Growth and Development

Goldsmith, 1966, 1969 ; Gurley & Shaw, 1955, 1960 ; Porter, 1966 ; King and Levine, 1993

Social benefits of financial markets :

- Spurs investment and innovation (*Too obvious for serious discussion*, Miller 1988)
- Reduce capital misallocation
- Allow optimal risk-sharing, liquidity, maturity transformation
- See this [recent survey](#)

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→ Improve welfare

Perfect timing!



Ill. Niklas Elmehed © Nobel Prize Outreach
Daron Acemoglu



Ill. Niklas Elmehed © Nobel Prize Outreach
Simon Johnson



Ill. Niklas Elmehed © Nobel Prize Outreach
James A. Robinson

Perfect timing! 2024 Nobel Prize in Economics



Ill. Niklas Elmehed © Nobel Prize Outreach
Daron Acemoglu



Ill. Niklas Elmehed © Nobel Prize Outreach
Simon Johnson



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James A. Robinson

- Relationship between institutions and prosperity!

Institutions and Welfare

- The richest 20% of the world's countries are now around 30 times richer than the poorest 20%

Institutions and Welfare

- The richest 20% of the world's countries are now around 30 times richer than the poorest 20% → This is not converging !
- Why?

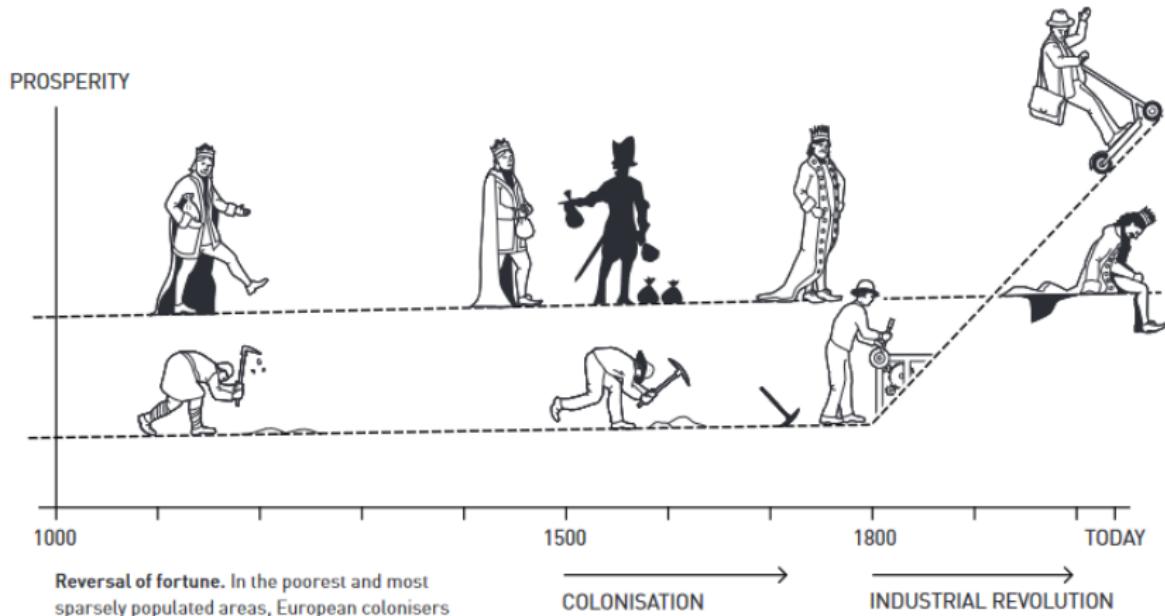
Institutions and Welfare

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- Why? Convincing evidence : differences in a society's institutions

Institutions and Welfare

- The richest 20% of the world's countries are now around 30 times richer than the poorest 20% → This is not converging !
- Why? Convincing evidence : differences in a society's institutions
- Idea: study Europeans' colonisation of large parts of the globe
 - Current differences in prosperity are the political and economic systems that the colonizers introduced, or chose to retain (Nogales, USA vs. Mexico)
 - Places that were, relatively speaking, the richest at their time of colonisation are now among the poorest
- Mechanism: rich (*poor*) places were hard (*simple*) to colonize – densely populated, strong resistance – so few (*lots of*) settlers came in, and they adopted local institutions that benefited local elites (*imported inclusive economic institutions*)

Institutions and Welfare



Reversal of fortune. In the poorest and most sparsely populated areas, European colonisers introduced societal institutions that contributed to long-run prosperity. After the industrial revolution, this meant that the former colonies that were once the poorest became the richest.

Because Finance Industry \Rightarrow Growth and Development

Goldsmith, 1966, 1969 ; Gurley & Shaw, 1955, 1960 ; Porter, 1966 ; King and Levine, 1993

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\rightarrow Improve welfare (?)

What about Hedge Funds ?

- Very short term investment (arbitrage)
- Agnostic about the firms social value (a stock is just a mathematical object)
- Not clear about the social benefits (only wealthy investors)
- Quite clear about the social costs (e.g., see last Lecture : LTCM, market volatility, capital income inequality)

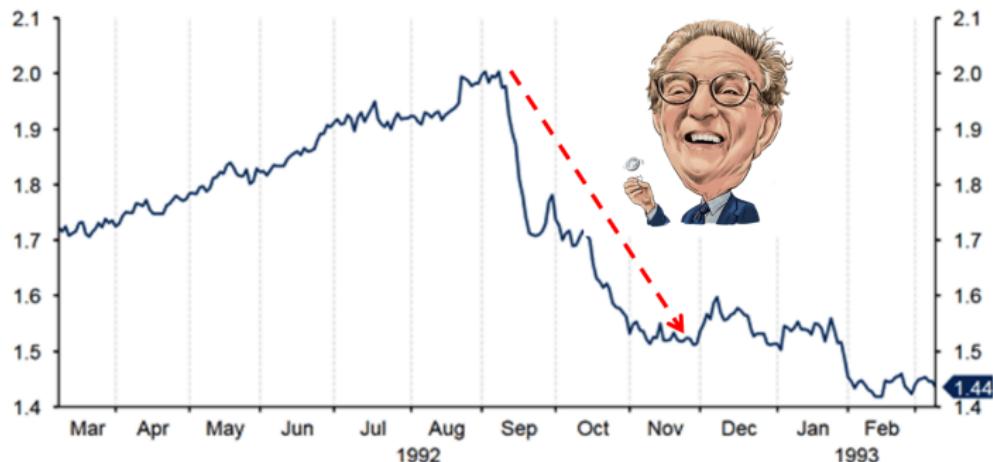
Hedge Fund Villains : A George Soros (Horror) Story



Hedge Fund Villains : A George Soros (Horror) Story

- George Soros shorted \$10 billion the downfall of the pound on Black Wednesday in 1992

Figure 3: Historical Evolution of GBP/USD (Mar '92 – Mar '93)



- A move that cost the Treasury – and hence the UK taxpayer – around 3.3 billion pounds
- He won the infamous title of *the man who broke the Bank of England*

How Hedge Funds Create Criminals

Lynn Stout Article [Here](#)

- Hedge fund traders may succeed at beating the market not through careful research and original analysis but by **breaking the law**
- Galleon Group CEO found **guilty in 2011 of engaging in insider trading**, that resulted in \$63.8 million in illicit profit. (11-year in prison)

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- Signal 1 : Authority Doesn't Care About Ethics
- Signal 2 : Other Traders Aren't Acting Ethically
- Signal 3 : Unethical Behavior Isn't Harmful



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- Signal 1 : Authority Doesn't Care About Ethics

Behavioral science has shown that people do what they are instructed to do

- Signal 2 : Other Traders Aren't Acting Ethically
- Signal 3 : Unethical Behavior Isn't Harmful



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– Signal 1 : Authority Doesn't Care About Ethics

– Signal 2 : Other Traders Aren't Acting Ethically

Behavioral experiments also find that people are most likely to “follow their conscience” when they think others are also acting prosocially

– Signal 3 : Unethical Behavior Isn't Harmful



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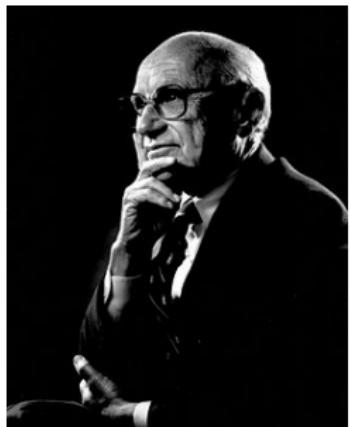
Experiments show that people act less selfishly when they understand how their selfishness harms others



Milton Friedman and Corporate Social Responsibility

- M. Friedman, wrote a famous [essay](#) in the New York Times in 1970 :

*"The sole social responsibility of
business is
to **increase its profits**"*



Is there any Ethics in finance?

Is there any Ethics in finance?

Of course, yes



Social
Responsible
Investment

Social Responsible Investing

- Religious roots : Judaism (Tzedek) and Islam (Shariah-compliant)
- More recently : Quakers, the Religious Society of Friends
 - John Wesley, *The Use of Money* : avoid practice that put workers at risk
 - 1758 : Quakers yearly meeting prohibited participating in slave trade
- Even more recently (1970's): Vietnam war, gender equality, civil rights, etc.

Social Responsible Investing

- Today: a problem with many more dimensions

“Identify the most severe risks on a global scale over the next 10 years”

Economic Environmental Geopolitical Societal Technological



Source: World Economic Forum Global Risks Perception Survey 2021-2022

One word, many concepts



One word, many concepts: definitions

- **Responsible investment** is an approach to investment that explicitly acknowledges the relevance to the investor of environmental, social and governance factors, and of the long-term health of the market as a whole
- **Sustainable investing** is an investment approach that considers environmental factors in portfolio selection
- **Socially Responsible Investment** is an investment strategy that is considered socially responsible, because it invests in companies that have ethical practices
- **Environmental, Social, and Corporate Governance** (ESG) refers to the factors that measure the sustainability of an investment



ENVIRONMENTAL

- climate change
- resource depletion
- waste
- pollution
- deforestation



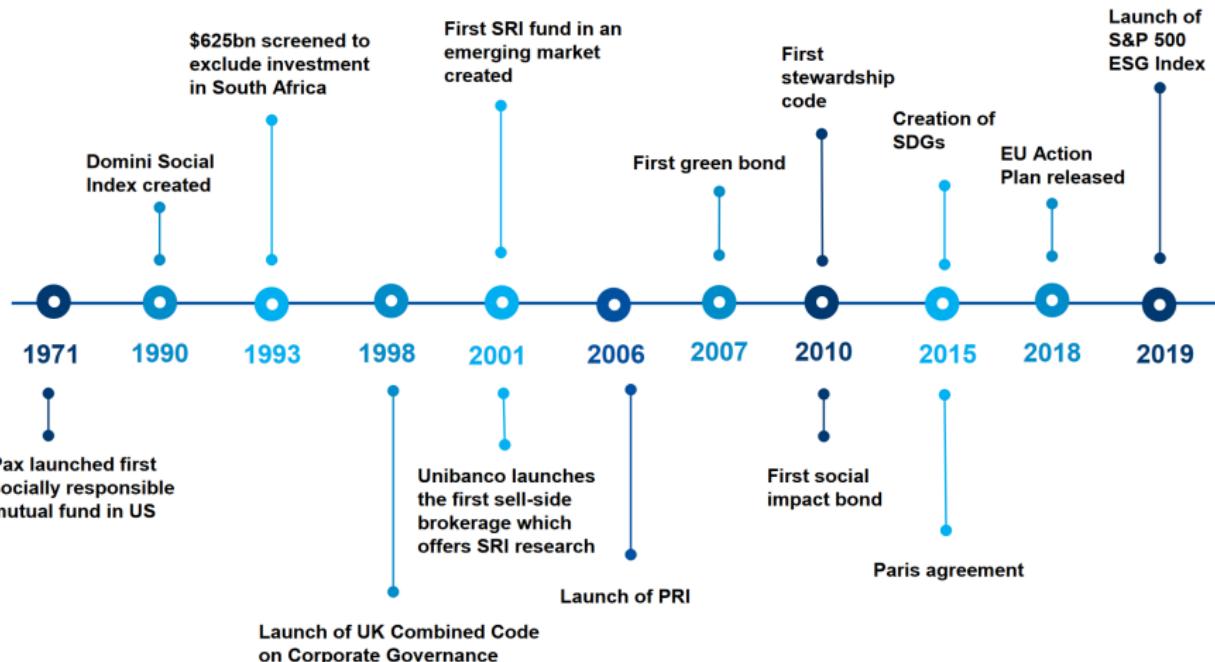
SOCIAL

- human rights
- modern slavery
- child labour
- working conditions
- employee relations

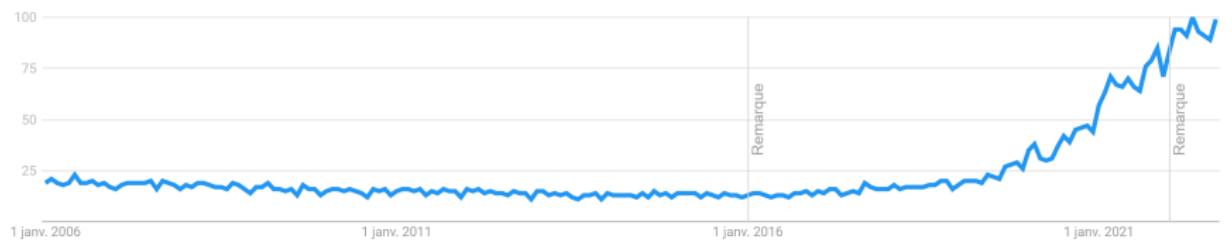


GOVERNANCE

- bribery and corruption
- executive pay
- board diversity and structure
- political lobbying and donations
- tax strategy

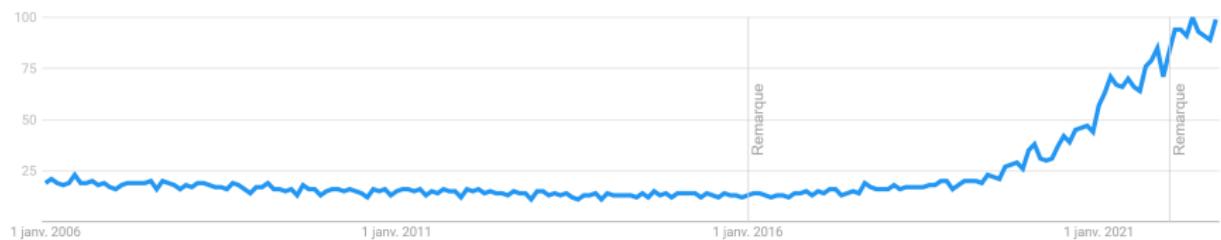


One word, many concepts and a lot of attention



- Responsible investment: 2000's
- Environmental, Social, and Corporate Governance (ESG): 2010's
- Sustainable Finance: 2020's

One word, many concepts and a lot of attention



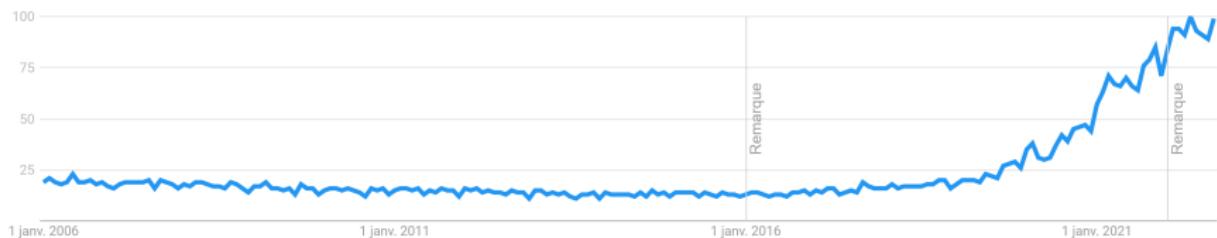
- Responsible investment: 2000's ⇒ mainly concerns **final investors and asset owners** (ethics)
- Environmental, Social, and Corporate Governance (ESG): 2010's
- Sustainable Finance: 2020's

One word, many concepts and a lot of attention



- Responsible investment: 2000's
- Environmental, Social, and Corporate Governance (ESG): 2010's ⇒ it gains momentum in **asset management**
- Sustainable Finance: 2020's

One word, many concepts and a lot of attention



- Responsible investment: 2000's
- Environmental, Social, and Corporate Governance (ESG): 2010's
- Sustainable Finance: 2020's ⇒ it spreads across all financial actors (e.g. issuers, banks, central banks, etc.)

One word, many concepts and a lot of attention



- Responsible investment: 2000's
- Environmental, Social, and Corporate Governance (ESG): 2010's
- Sustainable Finance: 2020's

Why ?

Why invest responsibly?

Manage risks, meet market demand and fulfil investor duty



Materiality

Increasing recognition within the financial community that ESG factors often play a material role in determining risk and return.



Market demand

Growing demands from beneficiaries and investors for greater transparency about how and where their money is being invested.



Regulation

Higher levels of regulatory guidance that incorporating ESG factors is part of an investor's fiduciary duty to their clients and beneficiaries.



Growing academic evidence supports that
ESG incorporation does not come at a cost

Materiality: ESG related negative shocks



"BP set to pay largest environmental fine in US history for Gulf oil spill"
the guardian

2010



"Tokyo Electric executives to be charged over Fukushima nuclear disaster"
REUTERS

2011



"Volkswagen Earnings Take Another Hit From Emissions-Cheating Scandal"
THE WALL STREET JOURNAL

2014



"The sharing of 50M Facebook users' personal data led to the biggest
ever one day drop in a company's market value"
FINANCIAL TIMES

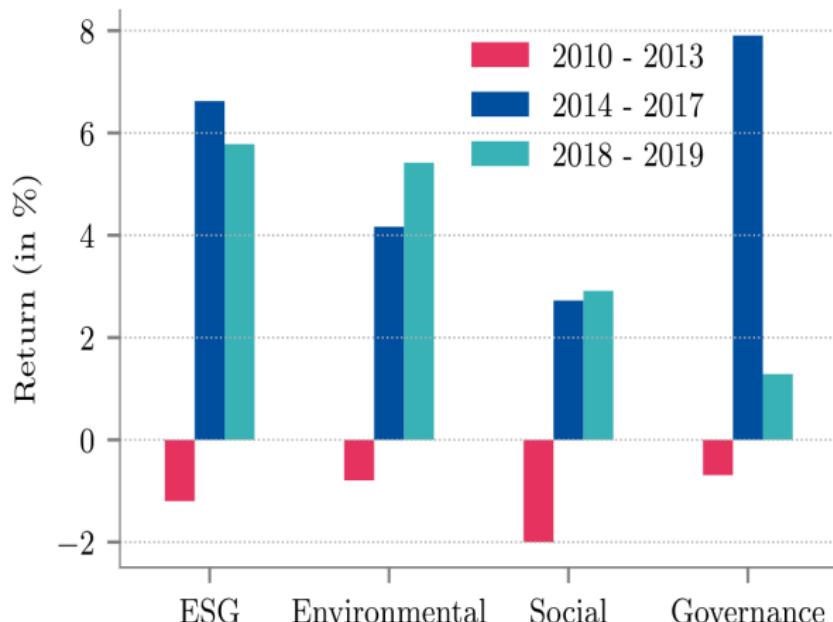
2018



"Share price falls 14% following a SEC suit accusing Musk of fraud"
Bloomberg

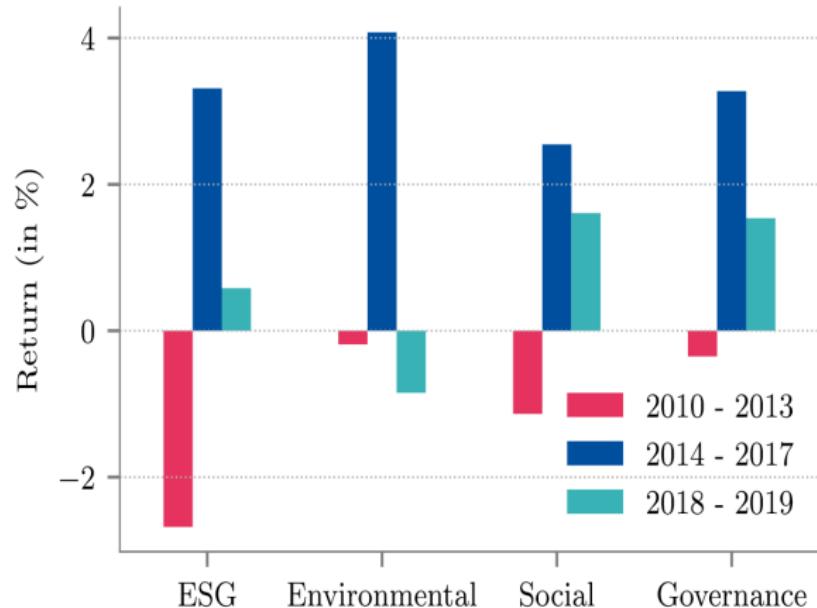
2018

Materiality: ESG perform better in Europe



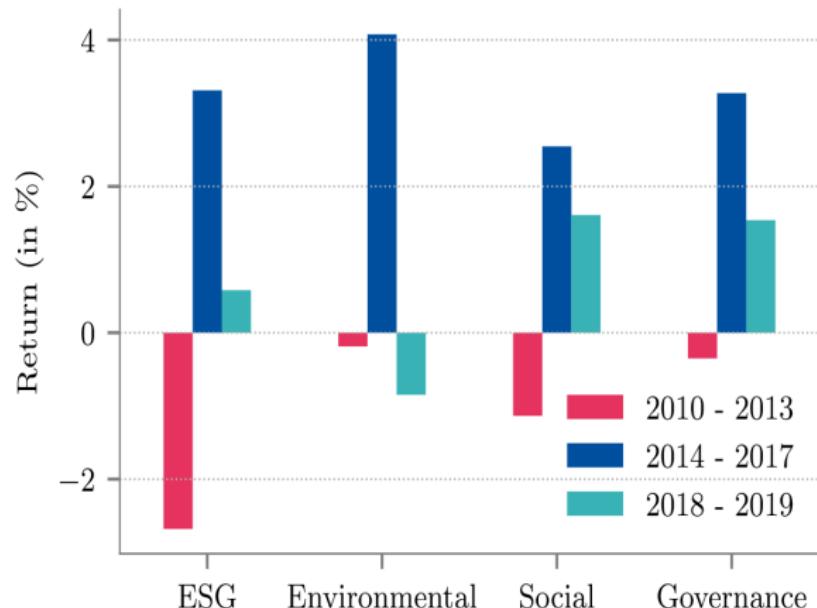
- Annualized return of long/short $Q_1 - Q_5$ sorted portfolios
- $Q_1 = \text{best in class}$. $Q_5 = \text{worst}$

Materiality: ESG perform better in the US ?



- Why ?

Materiality: ESG perform better in the US?

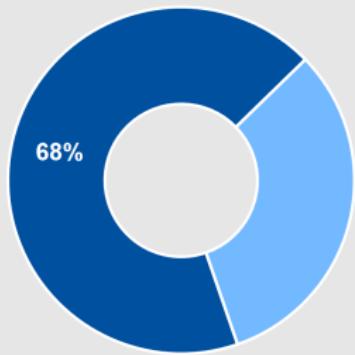


- Why? Trump effect + Regulatory environment

Market demand

Institutional demand

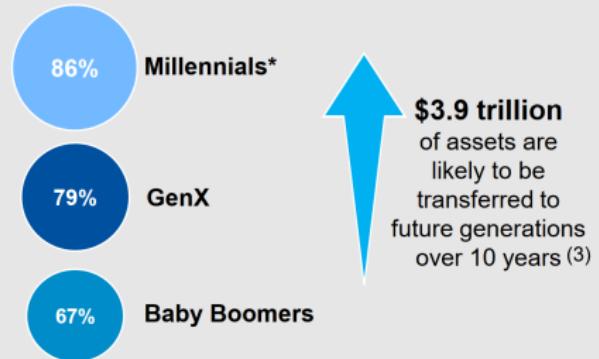
PRI asset owner signatories **actively include ESG criteria in their RfPs**



(1)

Retail demand

Percent who feel **sustainable investing is more important** now than five years ago (2)





SUSTAINABLE FINANCE

The transition towards a greener and more sustainable economy has become a priority for the European Union (EU). ESMA aims to ensure that **the financial markets support and promote this shift by integrating environmental, social and governance (ESG) factors across its core activities.**

- Regulatory framework on transparency obligations via the Disclosures Regulation

LATEST PUBLICATIONS

[ESMA DOCUMENTS](#) [EXTERNAL DOCUMENTS](#)

- FINAL REPORT ON SFDR AMENDMENTS FOR NUCLEAR AND GAS ACTIVITIES
(Final Report JC 2022 42)

- SUSTAINABLE FINANCE - IMPLEMENTATION TIMELINE

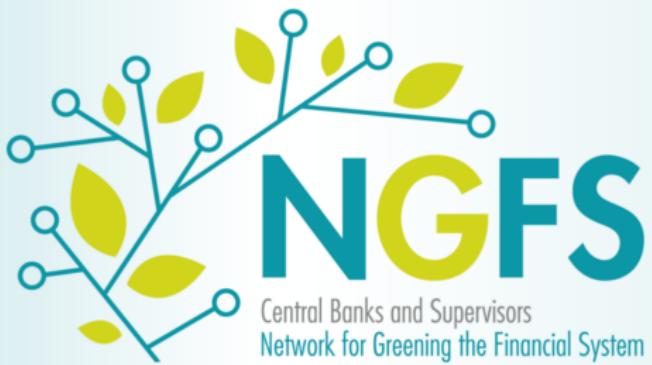
Regulation

ABOUT US PUBLICATIONS PRESS & EVENTS VIDEO GALLERY 

Origin and Purpose

The Network of Central Banks and Supervisors for Greening the Financial System (NGFS), launched at the Paris One Planet Summit on 12 December 2017, is a group of Central Banks and Supervisors willing, on a voluntary basis, to share best practices and contribute to the development of environment and climate risk management in the financial sector and to mobilize mainstream finance to support the transition toward a sustainable economy.

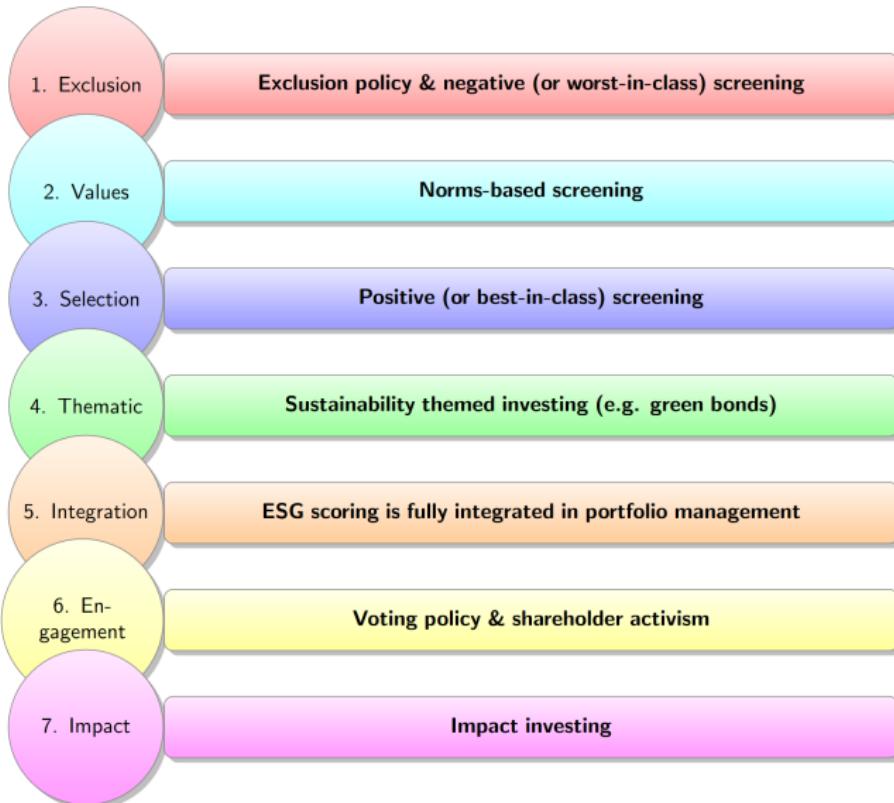
[GO TO SITE !\[\]\(c306a97f2b1bda03752a7a3f55013029_img.jpg\)](#)



More regulation

CAT: Cap-And-Trade, CBI: Climate Bonds Initiative, **CDP: Carbon Disclosure Project**, CDR: Carbon Dioxide Removal, CDSB: Climate Disclosure Standards Board, CI: Carbon Intensity, **COP: Conference of the Parties**, **CTB: Climate Transition Benchmark**, DAC: Direct Air Capture, DICE: Dynamic Integrated Climate-Economy Model, ETS: Emissions Trading Scheme, Eurosif: European Sustainable Investment Forum, ESG: Environmental, Social and Governance, GB: Green Bond, **GBP: Green Bonds Principles**, : Greenhouse gas Emissions per unit of Value Added, **GHG: Greenhouse Gas**, **GIIN: Global Impact Investing Network**, GLP: Green Loans Principles, GQE: Green Quantitative Easing, GRI: Global Reporting Initiative, **GSIA: Global Sustainable Investment Alliance**, HLEG: High Level Expert Group on Sustainable Finance, IAM: Integrated Assessment Model (economic model of climate risk), IIRC: International Integrated Reporting Council, **IPCC: Intergovernmental Panel on Climate Change**, **NDC: Nationally Determined Contribution**, NFRD: Non-financial Reporting Directive, NGFS: Network for Greening the Financial System, OPS: One Planet Summit, **PAB: Paris Aligned Benchmark**, PBOC: People's Bank of China (China green bonds), **PRI: Principles for Responsible Investment**, **RCP: Representative Concentration Pathway (climate scenario)**, SASB: Sustainability Accounting Standards Board, SB: Social Bond, SBP: Social Bonds Principles, SBT: Science-Based Target, SCC: Social Cost of Carbon (= optimal carbon tax), SDA: Sectoral Decarbonisation Approach **SDG: Sustainable Development Goals**, **SFDR: Sustainable Finance Disclosure Reporting**, SIB: Social Impact Bond, SRI: Socially Responsible Investing, SSB: Sustainability Standards Board (IFRS), SSP: Shared Socioeconomic Pathway, **TCFD: Task Force on Climate-Related Financial Disclosures**, TEG: Technical Expert Group on Sustainable Finance, UNPRI: Principles for Responsible Investment (PRI)

ESG in practice



ESG in practice

- **Exclusion/Negative Screening:** The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria (worst-in-class)
- Examples:
 - Systematic exclusion of issuers rated CCC
 - Exclusion of issuers rated BB, B and CCC
 - Sector exclusion (e.g., Energy)
 - Sub-industry exclusion (e.g. Coal & Consumable Fuels)
 - Exclusion list of individual issuers

ESG in practice

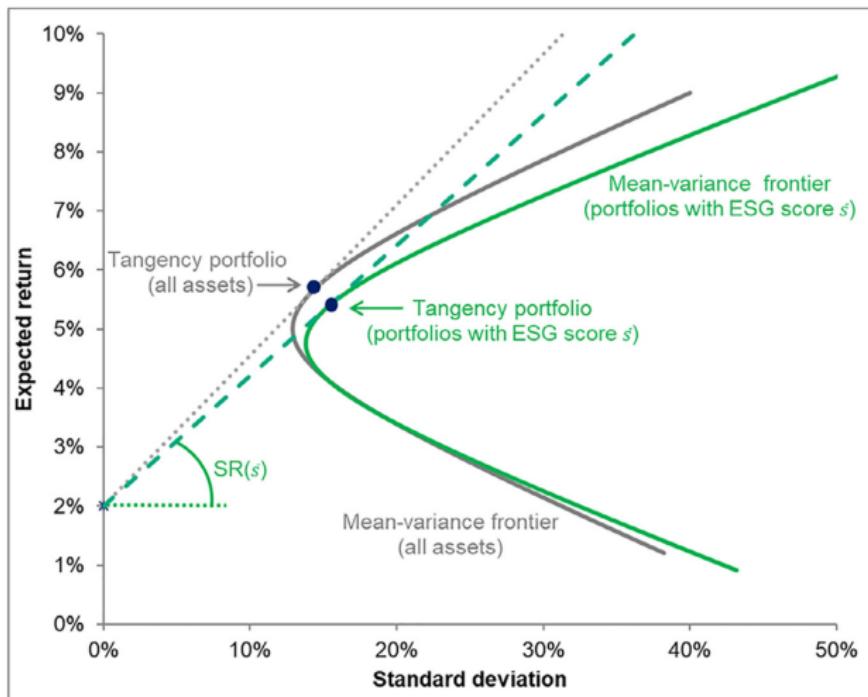
- **Values/Norms-based Screening (and Red Flags):** screening of investments against minimum standards of business practice based on international norms, such as those issued by the OECD, ILO, UN (Global Compact) and UNICEF
- Examples of top exclusion criteria (in Europe):
 - controversial weapons (Ottawa and Oslo treaties)
 - tobacco, gambling, alcohol, GMO
 - pornography
 - nuclear energy
 - animal testing (Eurosif, 2019)

ESG in practice

- **Corporate Engagement/Shareholder Action:** use of shareholder power to influence corporate behavior, including through direct corporate engagement (i.e., communicating with senior management and/or boards of companies) and voting that is guided by ESG guidelines.
- **Impact Investing:** Targeted investments aimed at solving social or environmental problems, and including community investing, where capital is specifically directed to traditionally under-served individuals or communities, as well as financing that is provided to businesses with a clear social or environmental purpose

ESG in practice

Pedersen et al., 2021



Firm A



CO₂

Return: 8%

Firm B



Return: 5%

Information is key: ESG rating agency

Major players

- ISS ESG (Deutsche Börse)
- MSCI ESG
- Sustainalytics (Morningstar)
- Thomson Reuters (Refinitiv)
- Vigeo-Eiris (Moody's)

Other players

- Beyond Ratings (LSE)
- Bloomberg ESG
- FTSE Russell
- RobecoSAM (S&P)
- TrueValue Labs (Factset)

Specialized climate data providers

- CDP
- Iceberg Data Lab
- Trucost (S&P)

Specialized data providers

- EthiFinance
- Factiva
- RepRisk
- Verisk Maplecroft

Information is key: ESG rating agency

Company name	Median Worker Pay (in \$)	CEO Pay Ratio
Abercrombie & Fitch Co.	1 954	4,293
McDonald's Corporation	9 291	1,939
The Coca-Cola Company	11 285	1,657
The Gap, Inc.	6 177	1,558
Alphabet Inc.	258 708	1,085
Walmart Inc.	22 484	983
The Estee Lauder Companies, Inc.	30 733	697
Ralph Lauren Corporation	21 358	570
NIKE, Inc.	25 386	550
Citigroup Inc.	52 988	482
PepsiCo, Inc.	45 896	368
Microsoft Corporation	172 512	249
Apple Inc.	57 596	201

Source: <https://aflcio.org> (June 2021)

Information is key: ESG rating agency

Company name	Median Worker Pay (in \$)	CEO Pay Ratio
Netflix, Inc.	202 931	190
BlackRock, Inc.	133 644	182
Pfizer Inc.	98 972	181
The Goldman Sachs Group, Inc.	138 854	178
MSCI Inc.	55 857	165
Verisk Analytics, Inc.	77 055	117
Facebook, Inc.	247 883	94
Invesco Ltd.	125 282	92
The Boeing Company	158 869	90
Citrix Systems, Inc.	181 769	80
Harley-Davidson, Inc.	187 157	59
Amazon.com, Inc.	28 848	58
Berkshire Hathaway Inc.	65 740	6

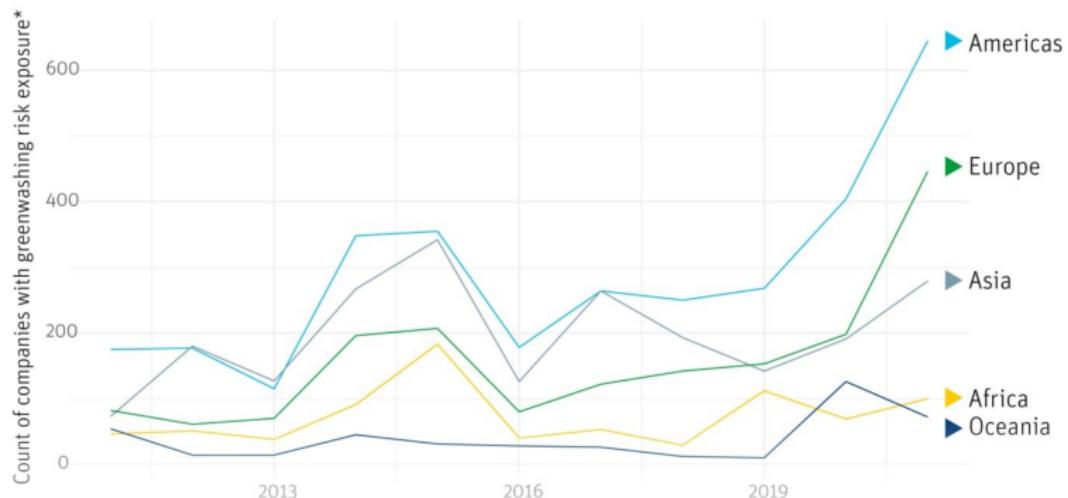
Source: <https://aflcio.org> (June 2021)

Sophisticated ratings + a lot of players

Do you see a risk ?

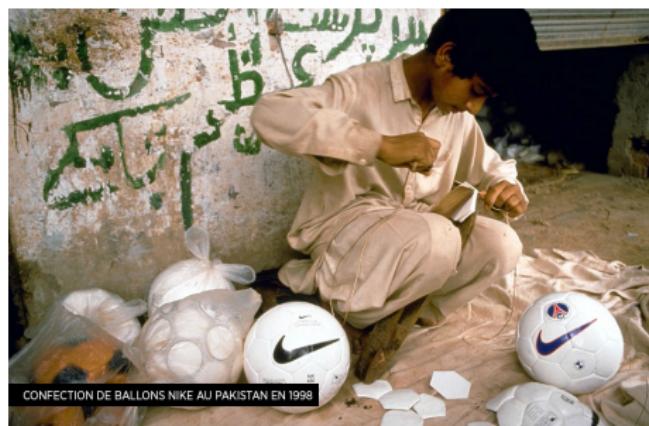
Should we believe ESG ratings ?

Greenwashing risk escalating for companies headquartered in Europe and the Americas



Other players: Media, NGOs, whistleblowers

Under pressure: campaigns that persuaded companies to change the world



- Life Magazine, 1996 : *6 cents an hour*

The background image depicts a dark, industrial scene, possibly a steel mill or refinery, with several tall smokestacks emitting large, billowing plumes of white smoke and steam. The sky above is filled with heavy, dark clouds, with some lighter, textured clouds visible through them, creating a somber and dramatic atmosphere.

Do investors react to ESG news?

Corporate Goodness and Shareholder Wealth

Link to the paper: Krueger, 2015, JFE

- **Research question:** How corporate social responsibility (CSR) matters for shareholder value ?

Corporate Goodness and Shareholder Wealth

Link to the paper: Krueger, 2015, JFE

- **Research question:** How corporate social responsibility (CSR) matters for shareholder value ?
- Study how stock markets react to positive and negative events concerned with a firm's corporate social responsibility (CSR)

Corporate Goodness and Shareholder Wealth

Link to the paper: Krueger, 2015, JFE

- **Research question:** How corporate social responsibility (CSR) matters for shareholder value ?
- Study how stock markets react to positive and negative events concerned with a firm's corporate social responsibility (CSR)
 - **Findings #1:** Investors respond strongly negatively to negative events and weakly negatively to positive events
 - **Findings #2:** CSR news with stronger legal and economic information content generates a more pronounced investor reaction

Data

- Data from KLD (now MSCI), an information intermediary gathering news stories about firm's CSR to create ESG ratings → 2,116 corporate events

Full Company Profile Test

Gordon T Long - T... dictio.org - Urheber... Guest Post Innovat... INNOVATION What... LaTeX/Collaborati... Weitere Leser... Apple, Inc. (AAPL)

Electronic Technology > Computer Processing Hardware

Corporate Statistics Business Description Profile Test Address Information

Community Corporate Governance Diversity Employee Relations Environment Human Rights Product

[Back to Ratings Page](#)

Community

Charitable Giving Strength Commentary

In August 2002, Apple told KLD that the company does not disclose corporate charitable giving figures. As of February 2008, this was the most current information available.

[Back to Top](#)

Other Concerns Commentary

Between 2004 and 2007, Apple was involved in a series of lawsuits against unknown employees, bloggers, and online news sites that rights groups charged threatened free speech.

[Back to Top](#)

Corporate Governance

Compensation Strength Strength

In FY 2005, Apple compensated its CEO at what KLD considers a prudent rate. The company's CEO, Steven P. Jobs, received a compensation package totaling \$1.

Diversity

Employment of the Disabled Strength Strength

A 2007 survey by Careers & the disabled magazine ranked Apple 12th among 50 companies with the best reputation for employing and accommodating the disabled. The survey of the magazine's readership (primarily disabled college students and professionals) asked which places of employment they believed would provide the most positive work environment for persons with disabilities. The company has been on the list in the past, but was not included on the 2008 list.

KLD Research & Analytics, Inc. Social Investment Solutions

Research Benchmarks Compliance Consulting Resources About KLD

@kld October 24 - November 6, 2003

SOCRATES CLIENT LOGIN

KLD Analysts entered the following changes into the SOCRAVES Database. Log into SOCRAVES to review the updated Company Profiles.

Additions: Recent KLD Ratings added to Company Profiles

General Electric Company (GE)
Diversity > Family Benefits (New Rating)
In 2003 for the first time, Working Mother magazine included General Electric on its list of the 100 best workplaces for working mothers. General Electric offers the federally mandated 12 weeks of maternity leave, some with full pay. In addition, the company has two on- or near-sites child care centers. (10/11/2003)

General Mills Incorporated (GIS)
Corporate Governance > Other Concern (New Rating)
In October 2003, General Mills announced that the U.S. Securities and Exchange Commission (SEC) had opened a formal investigation into the company's sales practices and related accounting. General Mills stated it was cooperating fully. The company reported that the reason for the investigation was confidential. (10/11/2003)

Marsh & McLennan Companies, Inc. (MMC)
Product > Marketing/Contracting (New Rating)
In October 2003, the Wall Street Journal reported that the Massachusetts Securities Division announced that it planned to file a civil fraud complaint against the company's Putman Investments subsidiary for allegedly engaging in market timing trading, or "market timing," which is against company policy, allegedly took place when Putman equity funds were contributing to the 401(k) retirement plans of some of its customers, increasing their profits at the expense of other customers. The company denied any wrongdoing and stated that it took measures to prevent market timing trading when it learned of the practice. (10/22/2003)

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KLD Rating Criteria

- Matched w. daily stock prices + returns of firms from the Center for Research in Security Prices (CRSP)

Event-study analysis

- How to assess the impact of shocks on stock prices ?
- Compute cumulative abnormal returns (CAR) over a time windows around the event

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- First step: estimate CAPM parameters for stock i at time t_s :

$$r_{i,t} = \alpha_i + \beta_i \times (r_{m,t} - r_{f,t}) + \epsilon_{i,t} \quad (1)$$

- for $t \in T$, a 250-days period starting 50 days before the event t_s
→ You now have $\hat{\alpha}_i$ and $\hat{\beta}_i$

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- Second step: estimate abnormal return at time t :

$$AR_{i,t_s} = \hat{r}_{i,t_s} - \hat{\alpha}_i + \hat{\beta}_i \times (r_{m,t_s} - r_{f,t_s}) \quad (2)$$

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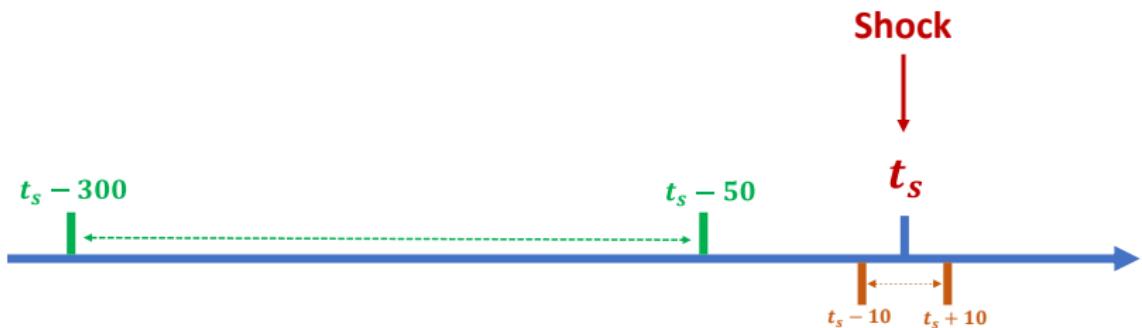
- Third step : compute cumulative abnormal returns:

$$CAR_{i,t_s} = \sum_{t \in [t_s - 10, t_s + 10]} AR_{i,t} \quad (3)$$

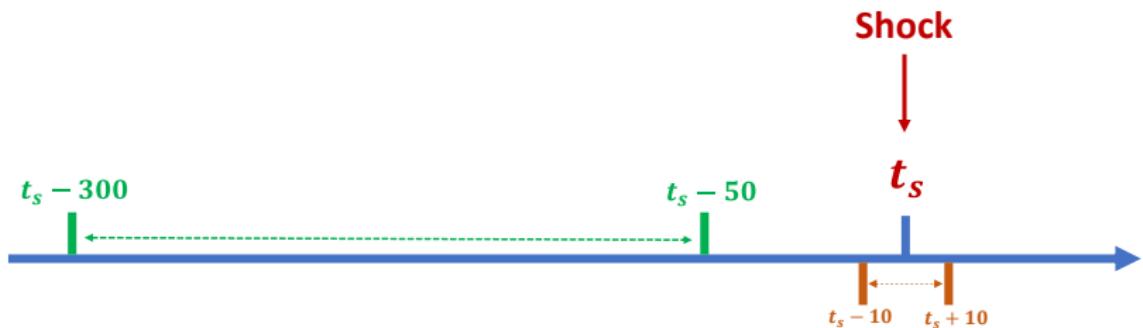




$$r_{\{i,t\}} = \alpha_i + \beta_i \times (r_{\{m,t\}} - r_{\{f,t\}}) + \epsilon_{i,t}$$



$$\hat{r}_{\{i,t\}} = \hat{\alpha}_i + \hat{\beta}_i \times (r_{\{m,t\}} - r_{\{f,t\}})$$
$$\widehat{AR}_{\{i,t\}} = r_{\{i,t\}} - \hat{r}_{\{i,t\}}$$



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$$\widehat{CAR}_{\{i,t_s\}} = \sum_{\{t \in [t_s-10, t_s+10]\}} \widehat{AR}_{\{i,t\}}$$

Results: cost of CSR event $\approx \$76M = -0.0111 \times \$6.86B$

Table 3

Cumulative abnormal returns (negative events).

This table reports cumulative abnormal returns for negative events. I consider event windows of 11 [-5,5] and 21 [-10,10] days. The test portfolio in Panel A contains all negative events, whereas the test portfolios in Panels B-G contain only negative events belonging to the respective issue areas. For representative negative events belonging to each issue area, see the Internet appendix. The columns MEAN, MIN, MED, and MAX display the mean, minimum, median, and maximum CAR, respectively. The column Perc. pos. represents the fraction of positive event CARs. The *t*-statistics account for event-induced changes in volatility and are calculated according to [Boehmer, Musumeci, and Poulsen \(1991\)](#). The generalized sign test (see [Cowan, 1992](#), displayed in column Sign test, is a test of the median cumulative abnormal return being equal to zero. (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.)

Window	Mean (%)	t-Stat	MIN (%)	MED (%)	MAX (%)	Perc. pos. (%)	Sign test	N
<i>Panel A: All negative events</i>								
[-5,5]	-0.88***	-4.95	-73.49	-0.42	55.39	43.57	-4.00	1,542
[-10,10]	-1.31***	-6.57	-65.38	-1.11	60.58	42.08	-5.20	1,542
<i>Panel B: Community</i>								
[-5,5]	-2.14***	-2.80	-27.64	-1.22	13.12	35.71	-2.53	83
[-10,10]	-3.33***	-3.17	-29.68	-2.30	34.35	30.95	-3.41	83
<i>Panel C: Diversity</i>								
[-5,5]	-0.45	-1.08	-27.61	-0.27	19.28	45.45	-0.71	179
[-10,10]	-0.84*	-1.93	-36.99	-0.46	23.50	44.39	-1.00	179
<i>Panel D: Employee relations</i>								
[-5,5]	-0.88*	-1.76	-73.49	-0.18	55.39	44.62	-1.11	361
[-10,10]	-0.94**	-2.33	-64.88	-1.10	54.98	42.82	-1.82	361
<i>Panel E: Environment</i>								
[-5,5]	-1.54*	-1.77	-43.90	-0.35	22.40	41.73	-1.60	121
[-10,10]	-3.03**	-2.43	-56.45	-1.11	26.54	40.16	-1.95	121
<i>Panel F: Human rights</i>								
[-5,5]	1.07	1.34	-6.86	0.89	20.56	57.14	1.35	61
[-10,10]	0.17	-0.09	-34.52	0.01	17.56	49.21	0.09	61
<i>Panel G: Product</i>								
[-5,5]	-0.89***	-3.98	-51.49	-0.53	39.06	42.61	-3.57	737
[-10,10]	-1.22***	-4.71	-65.38	-1.15	60.58	42.08	-3.86	737



**Clean up
your mess,
Shell!**

GREENPEACE



GREENPEACE

Do markets react to NGO press campaigns?



This hackathon: NGO press campaigns and stock prices

- We use data from Sigwatch, a firm focusing on enhancing ESG screening. Gathers campaign materials from thousands of NGOs : reliable, accurate, and up to date.

The screenshot shows the SIGWATCH homepage with a dark blue header bar. On the left is the 'SIGWATCH' logo with the tagline 'NGO CAMPAIGNING INSIGHTS & ANALYSIS'. On the right is a 'SIGN IN' button. Below the header are six circular icons representing different services: Enhanced due diligence (two people in hard hats), ESG screening (wind turbines), Forecasting emerging issues and material risks (forest fire), Helping companies lead (hand holding a compass), Engaging with stakeholders (people at a protest), and a large red 'Free Trial' button. Below each icon is a brief description. At the bottom, there's a light blue footer section with columns for 'Latest thoughts', 'SIGWATCH in the media', 'FeedInfo', and 'Upcoming news & events'.

Latest thoughts	SIGWATCH in the media	FeedInfo	Upcoming news & events
Fifty Shades of Greenwashing 5.5.2022 SIGWATCH's head of research, Charlotte Moore, explains how companies are likely...	Financier Worldwide: ESG in the age of activism Nov 2021 "The pandemic has exposed the issue of global inequality, so one of the key...	Activist pressure on animal agriculture sector investors gaining momentum Sep 2021 It's no secret that the financial sector and other types...	Aug 8: SIGWATCH website accessible for visually impaired Our website, including all subscriber-only databases and analytics, is now...

- Matched with stock market data from Datastream
- Focus on banks around the world (US, UK, EU)
- Apply Krueger (2015) approach + investigate COP21 and Trump effects

Day 1: Let's explore NGO campaigns data

- The data is in a .zip file named `ngo_data_bocconi.zip` on BBoard
- Import the data and `append all years in a single dataset`
- Select only `banks-related campaigns` for `US`, `UK` and `EU` banks
- Describe the data :
 - How many campaigns (positive, negative)
 - How many NGOs ? Firms targeted ?
 - What are the `prominence`, `ngo_power` and `sentiment` variables ?
 - Any interesting pattern or fact ?

Menu of tasks: pick one (or many)

- Task #1 : Media coverage of press campaigns (++)
 - Use names of targeted firms and NGO + date of the campaign to see if major news outlet wrote about the scandal
 - Requires a list of local and global newspapers + translation
- Task #2 : Social media coverage of press campaigns (++)
 - Use names of targeted firms and NGO + date of the campaign to see if social media talked about the story
 - Requires translation + sentiment analysis
- Task #3 : Sentiment analysis of press campaigns (++)
 - Use the link (if working) to perform a better (?) sentiment analysis of the campaign

Day 2: Explore stock price data

- Import Datastream data :
 - Stock prices : `bank_ri.xlsx` (and `bank_pi.xlsx`)
 - Market excess return and risk-free rate from E. Fama website : `famafrenchfactors_US.xlsx` and `famafrenchfactors_EU.xlsx`
 - Other stock info : ISIN number, country, etc. : `banks_info.xlsx`
 - Other risk-free rate data : `risk_free_rate_US.xlsx`
- Append this data to have a single panel with : bank prices + returns, market returns, and risk-free rate (+ Fama-French factors). You may use the risk-free rate from FF data or from the other risk-free info

Menu of tasks continued: pick one (or many)

- Task #4 : estimate parameters of the CAPM (+)
 - Use returns data and risk-free rates to estimate the CAPM parameters over a rolling window
 - Be careful : the risk free-rate differs for different markets (e.g., US vs. EU)
- Task #5 : compute CARs and merge Sigwatch + Datastream data (++)
 - Merge with the Sigwatch data to define the event dates (a event is a positive/negative campaign)
 - Compute the CARs around the event date (-10, +10 is the baseline, but you may want to try other time periods)
- Task #6 : Do NGOs campaigns matter ? (+++)
 - Run the statistical tests to check whether campaigns have an impact : you can split by period (e.g., before/after COP21), type of event, prominence/sentiment of the NGO/campaign, etc. Task #4 ad #5 are prerequisite.

Menu of tasks continued: the dessert

- Task #7 : Role of political preferences (+)
 - Gather green voting data for EU and classify countries by political opinions about climate change

Hackathon's output

Deadline : Friday 21/10, 12pm

- Similar to PC Labs : an .ipynb notebook with your code. Same format, same guidelines. Comments and interpretation is key !
- A (max) **four slides summary** of your work : what task(s) did you choose, what did you do (cleaning, methods, etc.), what are your findings, what would you have done if you had more time ? One plot may summarize your work !

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You're working for yourself, not for a grade: please don't spend too much time and **do what you like**

Discussion