



Oct. 2020

Stewardship Columbia University Conference Presentation delivered by Frédéric Samama

Executive Summary

- Climate change is a "Green Swan":
 - Very likely
 - Multiple forces that are non-linear and interacting with each other
 - Putting human life at risk
- In terms of risk management: a systemic risk
- The good news is that since the COP21:
 - Multiple forces are getting aligned and generating a tipping point
 - Massive responsible investment wave has been triggered
 - Market players are increasingly playing the usual objectives of Stewardship Codes: (i) control, (ii) wealth creation over the long-run, (iii) influence.
- However stewardship then goes beyond the usual objectives:
 - New objective: market resiliency
 - Call for financial innovation.



At the Cross Road Private Sector, Innovation and Public Good



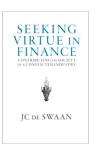


- Partnership with P. Bolton
- SWFs as having to internalize some externalities (i.e., climate change)



– Co-Launched the Portfolio Decarbonizaton Coalition:

- First investor coalition committed to decarbonize their portfolios (2014)
- Selected to represent the entire finance sector at the COP21 (2015)



- Initiated some financial innovation:

- Mainstream low-carbon indexes (2014)
- PPP Capital Markets (2018)



– Advised policy makers:

- One Planet Lab Member (2018)
- Testified before the US Senate (2020)

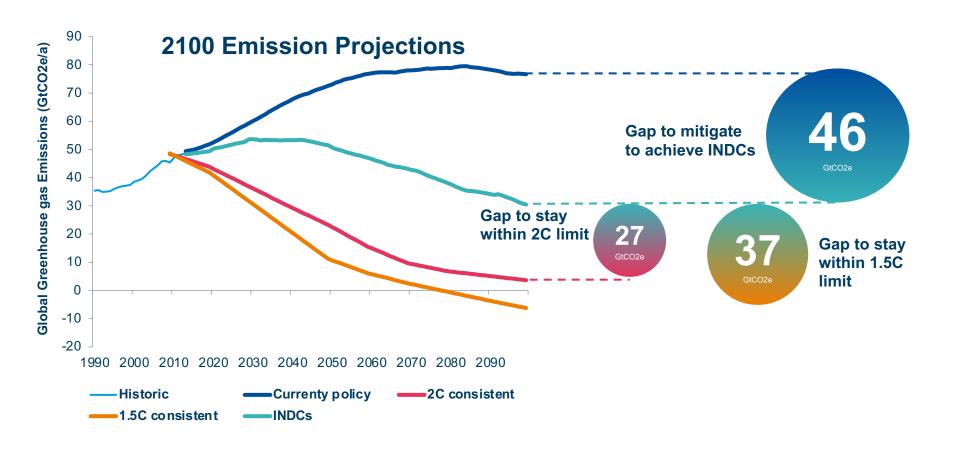


– Co-published papers:

- Hedging Climate Risk (2016), Navigating the ESG World (2020), The Green Swan (2020), etc.

ASSET MANAGEMENT

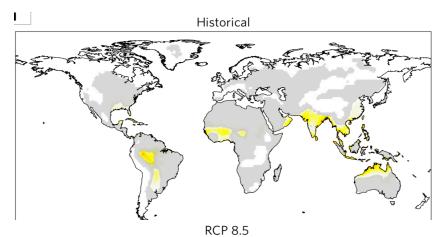
Climate Change: Unprecedented Challenge

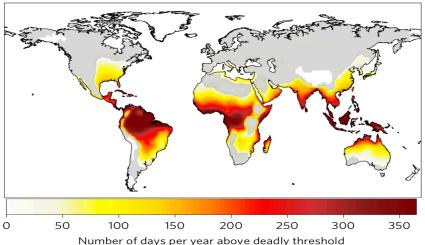


Source: Climate Action Tracker Database, Global emissions time series, updated November 2017. Time series data for INDCs, 2C consistent, 1.5C consistent time series are computed as medians of highest and lowest potential global emission level results.



Impacts of Temperatures on Where to Live



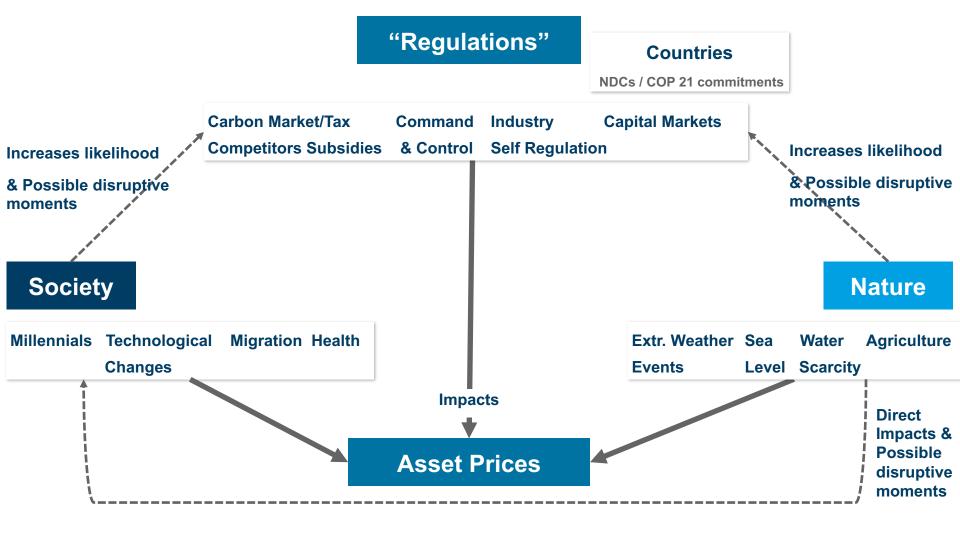


- Human beings must regulate their internal heat, and so they are exposed to the mix of :
 - External temperatures and
 - Humidity
- In 2000*, this was already a severe risk:
 - 13.2% of the planet's land area where 30.6% of the population resides...
 - was exposed to 20 or more days when temperatures and humidity surpassed the threshold beyond which such conditions become deadly.
- By the end of the century, in a BAU scenario, entire regions of the world would be inhabitable.



^{*} Source: Global Risk of Deadly Heat (Science 2017)

Climate Change: Multiple Forces Impacting Asset Prices



Source: Bolton et al. (2020)



Climate Change: A Green Swan



– Climate change is a "Green Swan"¹:

- Is certain
- Carries a variety of non-linear and interacting risks: physical, regulatory, and societal
- Could lead to extreme losses in the short term and even put human live at risk

.

Climate change is a systemic risk that:

- Can't be hedged
- Goes beyond a corporate/investors way of being solved
- Is now in the agenda of 65 Central Banks:
 - Network for Greening the Financial System

ASSET MANAGEMENT

As it threatens financial stability

¹ Bolton, P., Despres, M., Pereira da Silva L., Samama, F., Svartzman, R., "The Green Swan. Central Banking and Financial Stability in the Age of Climate Change" *Bank for International Settlements*, 2020

Tipping Point Igniting a Paradigm Shift

BEFORE 3 to 5 years ago

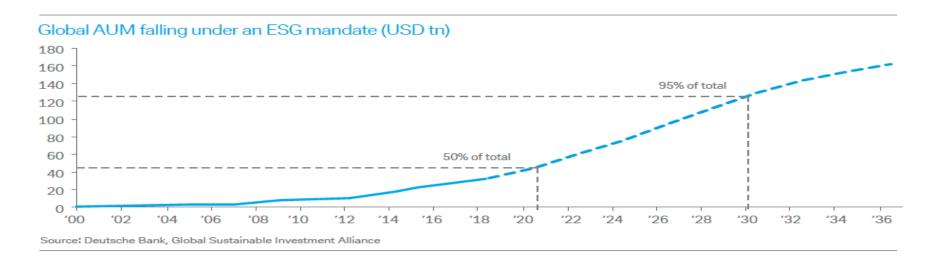
- 1 Deniers
- 2 One of many risks
- 3 Limited regulations
- 4 No global agreement
- 5 China blocking
- 6 Limited interest within populations
- 7 Economics only
- 8 Cost of renewables
- 9 Few European investors
- 10 Progressist agenda

TODAY

- 1 Acceptance of climate change
- 2 Biggest risk
- 3 Multiple regulations
- 4 COP 21
- ⁵ China leading
- ⁶ Millennials
- Observations in day to day lives
- 8 Competitive pricing
- 9 Major world investors
- 10 Central Bank's agenda



Responsible Investing: the New Normal



Responsible Investing: a tsunami

\$30tn now
(one third of total AUM)



- \$45tn (50% of total AUM) in 2021
- \$125tn (95% of total AUM) in 2030



Influence: Climate Action 100+



Joint statement between Total S.A. and Institutional Investors as participants in Climate Action 100+

Total takes major new steps to achieve its ambition to get to Net Zero by 2050

Three major steps to get Total to Net Zero:

- 1. Net Zero across Total's worldwide operations by 2050 or sooner (scope 1+2)
- 2. Net Zero across all its production and energy products used by its customers in Europe¹ by 2050 or sooner (scope 1+2+3)
- 3. 60% or more reduction in the average carbon intensity of energy products used worldwide by Total customers by 2050 (less than 27.5 gCO2/MJ) with intermediate steps of 15% by 2030 and 35% by 2040 ($scope\ 1+2+3$)

- Objective: engage with the 160 most polluting companies on climate change related risks
- Launched by CalPERS (Dec 2017)
- 500 investors representing \$47 trillion
- Members: ABP, Alecta, AP4, Allianz, CalPERS, CalSTRS, ERAFP, FRR, GPIF, NZ Superannuation Fund, PKA, USS,...

—Influence on Total:

- Joint press release (2020)
- Adjustment of Total climate policy



Market Resilience: Call for Financial Innovation & Prototypes





- Case study 1:
 - Need for a low-cost, plug and play, scalable solution to reduce climate related risk
 - Solution:
 - Low carbon equity index
 - Initiated by AP4 and FRR (2011 & 2015) 12
 - Now used by CalSTRS, GPIF, Fund, etc. (\$50bn market)⁵







– Case study 2:

- Need for green infrastructure financings in Emerging Markets
- Solution:
 - PPP Capital Market
 - Initiated and seeded by IFC (2018)³⁴
 - Replicated by EIB and AIIB (2019, 2020)
- 1 Anderson, M, Bolton, P., Samama, F., "Hedging Climate Risk" (2016)
- 2 Tepla, L., "MSCI Low Carbon Indices: A Free Option on Carbon" (2020)
- 3 Bolton, P., Musca, X., Samama, F. "Global Public-Private Investment Partnerships: A Financing Innovation with Positive Social Impact" (2020)
- 4 Buhr. B. "Converting Emerging Markets to Green Finance: Amundi and the IFC" (2020)
- 5 Eccles, B., Klimenko, S., "The Investor Revolution" (2019)



Conclusion

- The world has massively changed over the past 5 years:
 - Bad news: climate change is a systemic risk
 - Good news:
 - Global mobilization including a massive wave among the investors
 - Market players are helping achieve the usual objectives of stewardship codes: control, wealth creation over the long-run, influence.
- Stewardship codes are helping a shift from first movers towards adoption by all¹
- Beyond the search for the alignment of shareholders/corporates, emerging new trend with "market resilience" reinforcement :
 - Financial innovation and seed money to tackle some remaining issues
 - New utility function of public money: taking this leadership

