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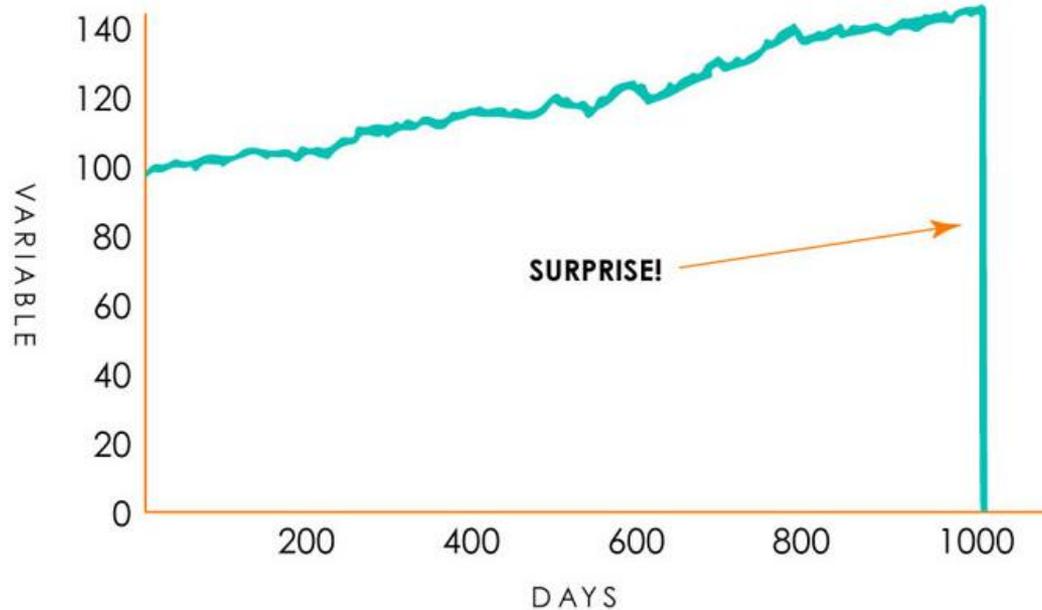
JUNE 10TH-11TH, 2021

BLACK SWAN EVENTS



THE WELLBEING OF A TURKEY

FIGURE 1: ONE THOUSAND AND ONE DAYS OF HISTORY





INTRODUCTION

PART I



WHAT IS A BLACK SWAN EVENT?

All Swans are White

- “Sooner see a Black Swan than....”
- 1697 the Dutch explorer Willem de Vlamingh.

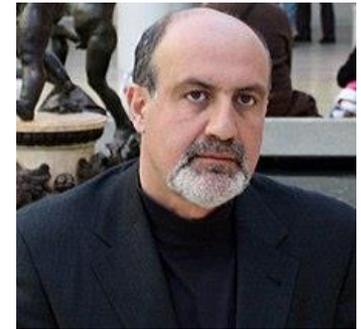
Components of a Black Swan Event

1. Hard to Predict.
2. Severe and Widespread Consequences.
3. Hindsight Bias, rationalization of the event as having been predictable.



ORIGINATION OF THE CONCEPT, NASSIM NICHOLAS TALEB

- Nassim Nicholas Taleb is a Lebanese-American essayist, mathematical statistician, and former option trader and risk analyst, whose work concerns problems of randomness, probability, and uncertainty.
- Taleb received his bachelor and master of science degrees from the University of Paris. He holds an MBA from the Wharton School at the University of Pennsylvania (1983), and a PhD in Management Science from the University of Paris (Dauphine) (1998). His dissertation focused on the mathematics of derivatives pricing.



Major works [\[edit \]](#)

Books [\[edit \]](#)

Incerto [\[edit \]](#)

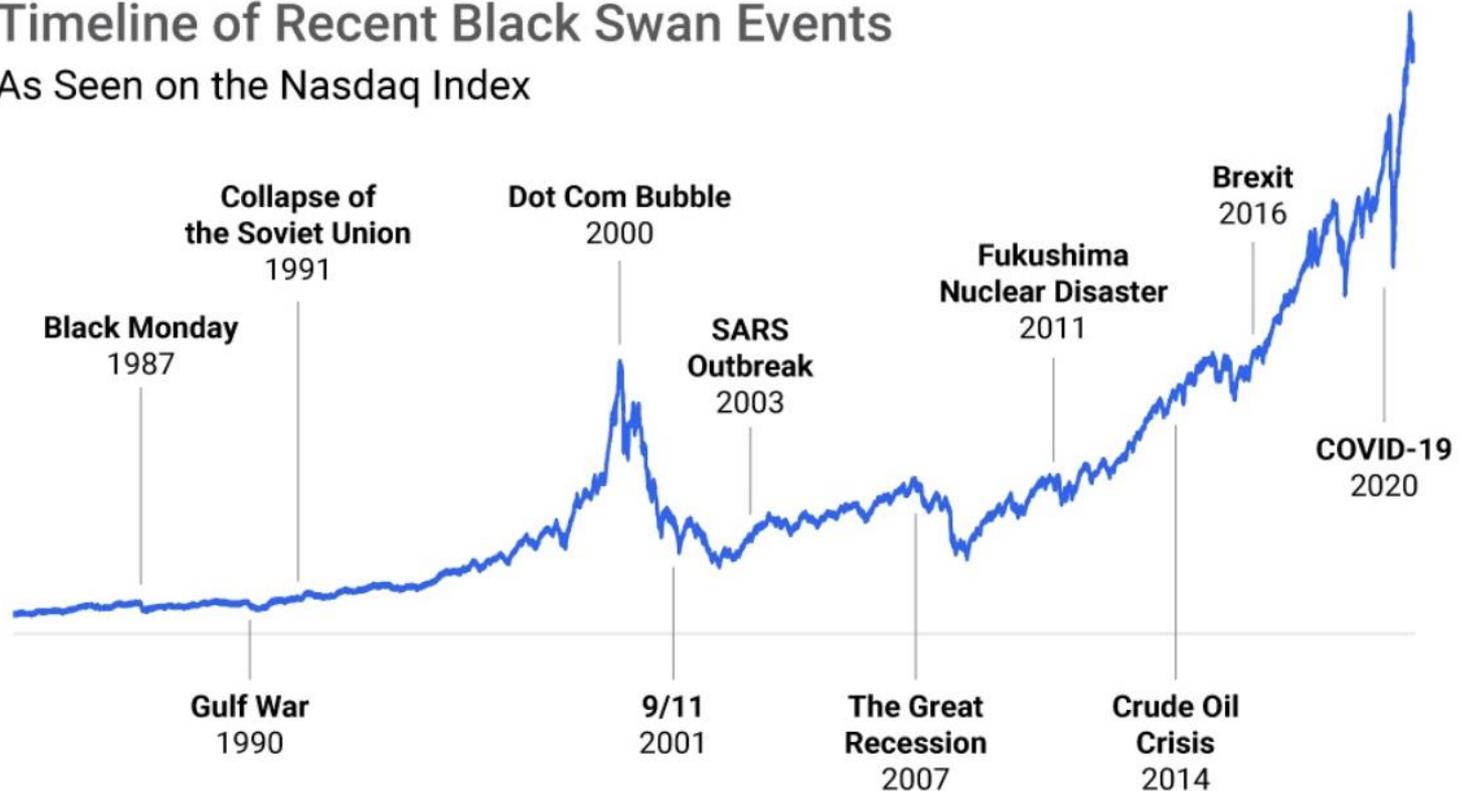
Incerto is a group of works by Taleb as philosophical essays on uncertainty. It was bundled into a group of four works in November 2016 [ISBN 978-0399590450](#). A fifth book, *Skin in the Game*, was published in February 2018. This fifth book is bundled with the other four works in July 2019 as *Incerto* (Deluxe Edition) [ISBN 978-1984819819](#).

- *Foiled by Randomness: The Hidden Role of Chance in Life and in the Markets*. New York: Random House. 2001. [ISBN 978-0-8129-7521-5](#). Second ed., 2005. [ISBN 1-58799-190-X](#).
- *The Black Swan: The Impact of the Highly Improbable*. New York: Random House and Penguin Books. 2007. [ISBN 978-1-4000-6351-2](#). Expanded 2nd ed, 2010 [ISBN 978-0812973815](#).
- *The Bed of Procrustes: Philosophical and Practical Aphorisms*. New York: Random House. 2010. [ISBN 978-1-4000-6997-2](#). Expanded 2nd ed, 2016 [ISBN 978-0812982404](#).
- *Antifragile: Things That Gain from Disorder*. New York: Random House. 2012. [ISBN 978-1-4000-6782-4](#).
- *Skin in the Game: Hidden Asymmetries in Daily Life*. New York: Random House. 2018. [ISBN 978-0-4252-8462-9](#). (This book was not published with the original bundling of the *Incerto* series.)

RECENT WELL KNOWN BLACK SWAN EVENTS*

Timeline of Recent Black Swan Events

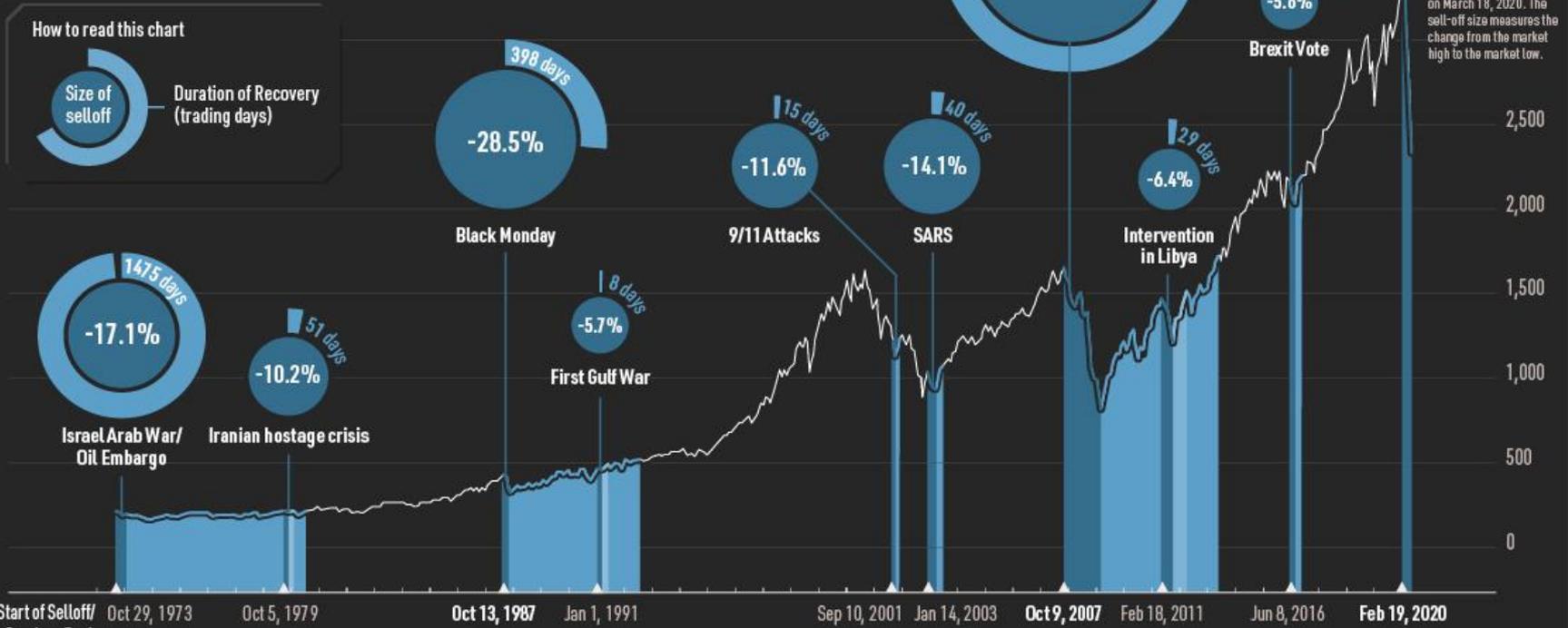
As Seen on the Nasdaq Index



Rare, unexpected events—known as Black Swans—can have severe consequences in the stock market. Below, we compare the COVID-19 reaction with other historical events, charting their downturn and length of recovery.

S&P 500 Performance (October 1, 1973 to March 18, 2020)

SOURCE: HAVER, DEUTSCHE BANK VIA ZEROHEDGE (SEP 2017), YAHOO FINANCE (MAR 2020)



RECENT WELL KNOWN BLACK SWAN EVENTS*

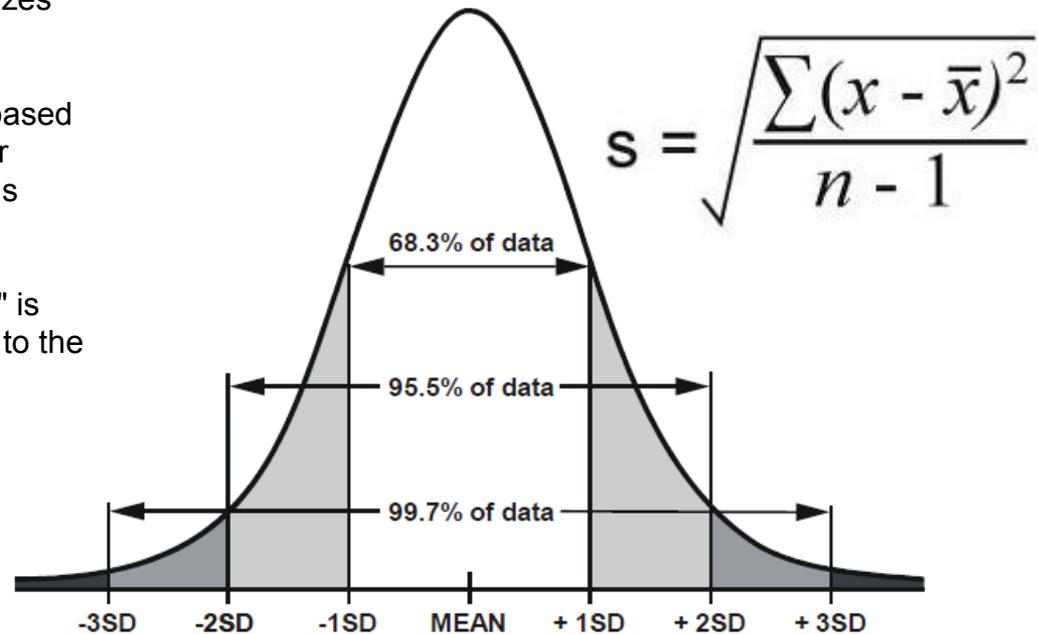
DEFINING IMPACTABLE DATA SETS

- To imagine what types of events are exposed to black swans, we can imagine two fictitious countries, Mediocristan and Extremistan. One primary distinguishing factor between the people and events that occur in these two counties would be the concept of scalability.
- In Mediocristan, we imagine those who have finite outputs that are labor dependent such as a Dentist, Baker, or Tax Accountant. No matter how hard these individuals work, they bill or create by the piece/hour, all output is in a predictable realm.
- In Extremistan, we imagine those who have a more scalable profession, such as a trader or venture capitalist. The positions and impact an individual can execute on varies greatly in comparison.
- To visualize this better, imagine a football stadium of with a randomly selected human population of 1000 people how does an extreme outlier (previously unobserved) affect the relative total:
 - Height/Weight.
 - Wealth/Book sales.
- Its all about “Scalability”.
 - In Extremistan, inequalities are such that one single observation can disproportionately impact the aggregate.
- “Errors in both “stans” are caused by our ignorance, and not by randomness, and they are to be cured in both cases by creating better models, theories, conjectures and other formulations of knowledge claims that can survive our best tests, criticisms, and evaluations.”
- If we use analytical tools from Mediocristan in the domain of Extremistan, we can have enormous consequences, likely having an adverse impact greater than we would be prepared for.

A FAMILIAR STATISTICAL LOOK

- For extremely rare events, Taleb argues that the standard tools of probability and prediction, such as the normal distribution, do not apply since they depend on large population and past sample sizes that are never available for rare events.
- This means extrapolating and using statistics based on observations of past events is not helpful for predicting black swans and might even make us more vulnerable to them.
- "The Bell Curve, That Great Intellectual Fraud," is that it is often applied to areas that are subject to the dynamics of Extremistan, even though it only accurately describes Mediocristan.
 - Height/weight vs wealth.

Figure 3.9
Areas under the normal curve that lie between 1, 2, and 3 standard deviations on each side of the mean

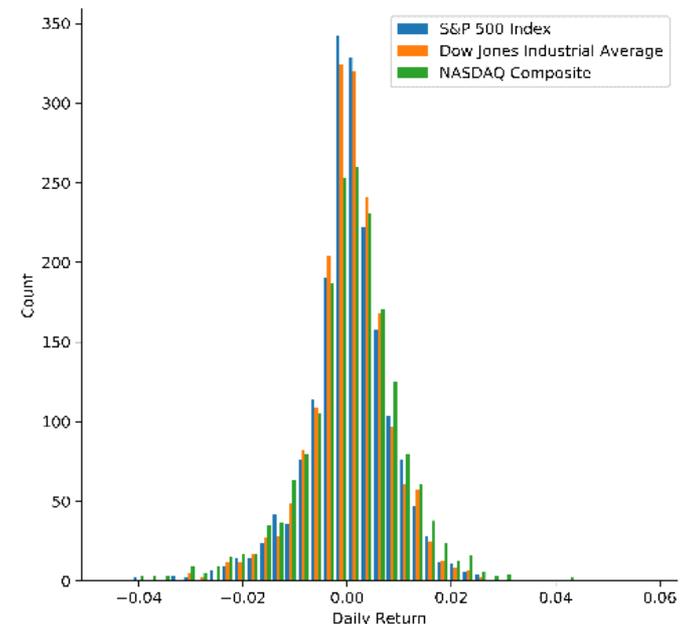


IN RECENT US CYCLES, RECESSIONS HAVE HAPPENED EVERY 6-10 YEARS

Largest daily percentage losses^[3]

Rank ↕	Date ↕	Close ↕	Change	
			Net ↕	% ↕
1	1987-10-19	1,738.74	-508.00	-22.61
2	2020-03-16	20,188.52	-2,997.10	-12.93
3	1929-10-28	260.64	-38.33	-12.82
4	1929-10-29	230.07	-30.57	-11.73
5	2020-03-12	21,200.62	-2,352.60	-9.99
6	1929-11-06	232.13	-25.55	-9.92
7	1899-12-18	58.27	-5.57	-8.72
8	1932-08-12	63.11	-5.79	-8.40
9	1907-03-14	76.23	-6.89	-8.29
10	1987-10-26	1,793.93	-156.83	-8.04
11	2008-10-15	8,577.91	-733.08	-7.87
12	1933-07-21	88.71	-7.55	-7.84
13	2020-03-09	23,851.02	-2,013.76	-7.79
14	1937-10-18	125.73	-10.57	-7.75
15	2008-12-01	8,149.09	-679.95	-7.70

- 3 of the worst stock days for the DJIA were within 8 days of each other when looking back to the early 1900's.
- These events wouldn't even be considered as possible through traditional bell curve risk assessment, reducing the requirement to hedge.



https://en.wikipedia.org/wiki/List_of_largest_daily_changes_in_the_Dow_Jones_Industrial_Average#Largest_percentage_changes

https://www.researchgate.net/figure/Histogram-of-Daily>Returns-of-Major-Stock-Indices-Data-was-taken-from-Yahoo-Finance-and_fig1_334027873

WHY HUMANS ARE SO BAD AT PREDICTING BLACK SWAN EVENTS

- The Risk Perception is skewed.
 - It is difficult to prepare for high-consequence, low-probability events.
 - Humans have a tendency to focus on immediate threats instead of risks that are perceived to be far in the future.
 - These imminent low-level threats take priority to high-level threats/events that are hard to imagine.
 - In general, humans assume these events are unlikely to happen to us.
- Praise goes to those who fix instead of those who prevent.
 - Firefighter vs. Engineer.
 - 9/11 Example.
- One something becomes a historically important event; observers are eager to explain it.
 - Speculations into how we could have predicted in retrospect.
 - This backward-looking approach rarely helps identify future black swans.



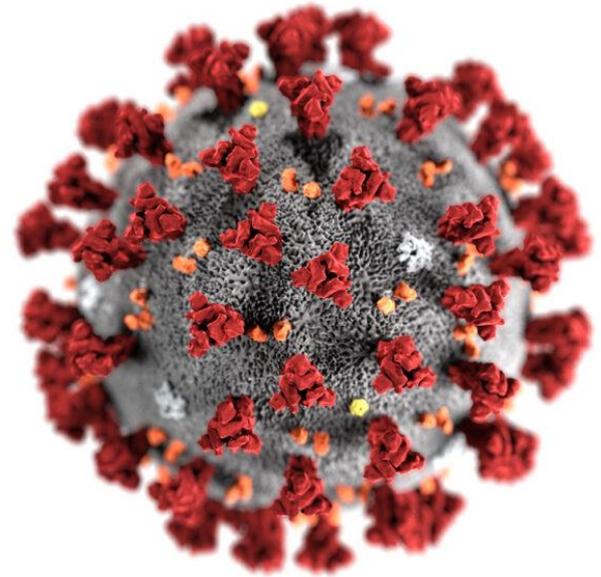
CASE STUDIES

PART II



CASE STUDY 1, COVID-19

- There is some debate on whether COVID-19 is a true black swan event.
- Those who argue for the categorization say it fits all three criteria for an event, whereas those who argue against say pandemics are predictable and happen often (SARS, Asian Flu, Ebola).
 - If part of the criteria is that "nothing in the past can convincingly point to its possibility", then we know a disease breakout is always possible. Hence, the CDC exists.
- I thought it was at first which led me to read more about the book and list it as a case study.
- Taleb himself said in an article: "Had they read that book [The Black Swan], they would have known that such a global pandemic is explicitly presented there as a White Swan: something that would eventually take place with great certainty".

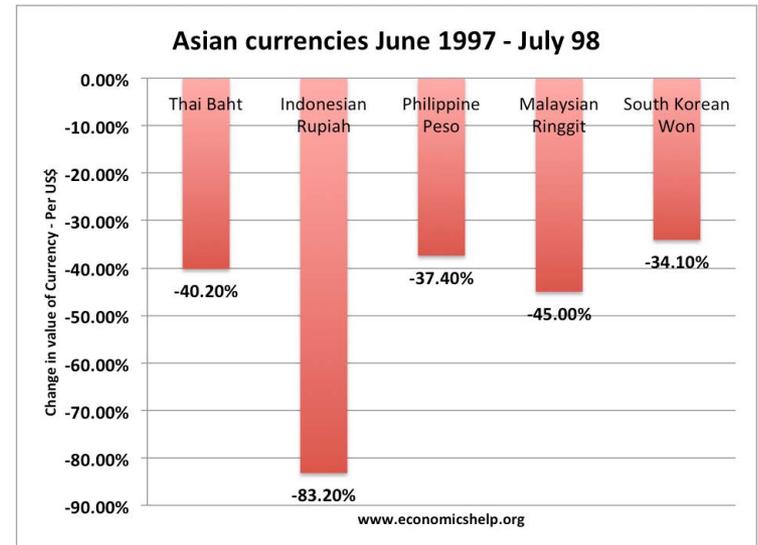


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CASE STUDY 2, ASIAN FINANCIAL CRISIS

- This financial crisis came at the end of incredible growths of the “Asian Tigers”, countries including South Korea, Thailand, Malaysia, Indonesia, Singapore and the Philippines.
- There was considerable foreign direct investment (FDI) in a hot money bubble due to export growth - coupled with high interest rates and fixed currency exchange rates, generated a large capital inflow.
- Once the U.S. started recovering from its recession (early 1990’s), the FED raised its interest rate against inflation which then attracted capital to the U.S. appreciating the USD.
- Originally pegged to the USD, the Thai government ran out of foreign currency and could not support its exchange rate, causing the Thai Baht to break the peg into a free float, decimating the local exchange rate.
- The crisis then started in Thailand in July 1997 after the Thai baht plunged in value, sweeping over East and Southeast Asia.
 - The popping of the asset bubbles resulted in losses of over 70% in the currencies & stock markets of these neighboring countries.
- IMF eventually stepped in with short-term loans of about \$110 billion to Thailand, Indonesia, and South Korea conditional of higher taxes, reduced public spending, privatization of state-owned businesses and higher interest rates.
- These measures eventually helped the region recover by 1999 as Asia gained back the growth momentum.



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CASE STUDY 3, DOTCOM BUBBLE OF 2001

- The Dotcom bubble started between 1995 and 2000, where investors were throwing money at internet-based startups on hopes they would be incredibly profitable.
 - The Internet was still in its infancy in terms of commercial use.
- The valuations were exceedingly high, ignoring traditional investment metrics (P/E), and these speculative investments in “.com” companies bolstered equity markets.
 - Fortunes were essentially made overnight by startup founders, fueling the craze.
 - These companies were using similar models to start-ups now where the focus was on marketing and acquiring market share often at a loss to push growth.
 - Various investment funds were investing in technology companies with inflated valuations and no market traction. When these companies folded, the funds were hit hard, and the downside risk was passed on to the investors.
- Large companies, such as Pets.com, started declaring bankruptcy in 2000, leading to a cascade of companies folding.
- As the digital frontier was new, it was nearly impossible to predict the collapse.



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NASDAQ VISUALIZED DURING THE BUBBLE

The Rise and Fall

The Nasdaq Composite Index, daily close





HOW BLACK SWAN EVENTS AFFECT MORRISANDERSON

PART III



EXAMPLE BLACK SWANS

Real World Examples

- Extended power outages and rate premiums in Texas due to a winter weather event.
 - Have backups, if possible, like off location generators.
 - If offering true floating rate, have verbiage in the contract to price fix at a cap of something below catastrophic levels.
- Meme stocks like AMC and GME blew up naked short positions from hedge funds.
 - At the very least have an extremely cheap downside hedge.
- Colonial Pipeline's ransomware attack by DarkSide.
 - Had to take the pipeline offline and shutdown 5,500 miles.

Future Problems

- A Chemical, biological, radiological and nuclear (CBRN) attack on a highly populated central business district.
- A severe space weather incident.
- A nuclear winter type incident caused by a super volcano eruption.
- Fire burns down sole supplier warehouse.
- Consider the impact of a hyperinflationary environment.
- Global warming suddenly accelerating due to the non-support of renewables and windmill-based energy (For Mark: <https://www.evwind.es/2020/10/01/the-realities-of-bird-and-bat-deaths-by-wind-turbines/77477>).

HOW BLACK SWANS COULD AFFECT MORRISANDERSON

Generally

- In a morbid way, some of these types of events can be a net positive for our specialty of turnaround and restructuring.
 - The churning of the business cycle provides us with opportunity in the same way that volatility provides opportunity for traders and investment banks.
 - Think 2007/2008 when MorrisAnderson had 40+ consultants working as the economy reeled.
- We are, as an organization, rather insulated from the impact of black swans unless we are working through an external company turnaround.
 - Potentially impacted by a black swan by the government or other entity providing outsized relief to prevent failure (PPP?).

Indirectly

- Our work typically involves a client who is directly impacted by external business conditions.
 - Should they be hit hard enough, we could lose our work with them through attempted self preservation – we mostly rely on a distressed, yet not decimated client opportunity.
- If there is a new work changing event (think pandemic) we are restricted from doing our jobs.

HOW BLACK SWANS COULD AFFECT MORRISANDERSON

Specifically

- We are considered the experts needed to guide the client towards the agreed direction, any preventative liability that is not mitigated is potentially our error.
 - Watersports Company.
 - Supply Chain Disruption with the Suez Canal – We had completed the sale at that time but would need to work to fix this situation had we not left.
 - Potential lawsuit liability – Gap in insurance that, although no recorded injury had resulted in a lawsuit in the past, left us open for liability.
 - Sweets Manufacturer.
 - Successor Liability.
 - General D&O insurance from managerial error, could always be sued.
- While these are smaller scale, the point of how a low probability or unthinkable event could impact us is a good thought exercise.
- Others – open to floor if anyone can think of risks that were rare but possible.

HOW BLACK SWANS COULD AFFECT MORRISANDERSON EMPLOYEES

- With all the demanding work that management consultants do in general, at times it seems that it could be easy to neglect personal health.
- As much as we would not like to think about it (cognitive dissonance), there can be health risks to repeated behaviors that are supported during times of stress or travel.
 - Lack of sleep
 - Lack of exercise
 - Restricted dietary options
 - Stress
- Working proactively to protecting the companies' greatest assets could provide more value than responding reactively to an event.



HOW TO COMBAT BLACK SWAN EVENTS

PART IV

TEN PRINCIPLES FOR A BLACK-SWAN-ROBUST WORLD

- **1. What is fragile should break early while it is still small.** Nothing should ever become too big to fail. Evolution in economic life helps those with the maximum amount of hidden risks – and hence the most fragile – become the biggest.
- **2. No socialisation of losses and privatisation of gains.** Whatever may need to be bailed out should be nationalised; whatever does not need a bail-out should be free, small and risk-bearing. We have managed to combine the worst of capitalism and socialism. In France in the 1980s, the socialists took over the banks. In the US in the 2000s, the banks took over the government. This is surreal.
- **3. People who were driving a school bus blindfolded (and crashed it) should never be given a new bus.** The economics establishment (universities, regulators, central bankers, government officials, various organisations staffed with economists) lost its legitimacy with the failure of the system. It is irresponsible and foolish to put our trust in the ability of such experts to get us out of this mess. Instead, find the smart people whose hands are clean.
- **4. Do not let someone making an “incentive” bonus manage a nuclear plant – or your financial risks.** Odds are he would cut every corner on safety to show “profits” while claiming to be “conservative”. Bonuses do not accommodate the hidden risks of blow-ups. It is the asymmetry of the bonus system that got us here. No incentives without disincentives: capitalism is about rewards and punishments, not just rewards.

TEN PRINCIPLES FOR A BLACK-SWAN-ROBUST WORLD

- **5. Counter-balance complexity with simplicity.** Complexity from globalisation and highly networked economic life needs to be countered by simplicity in financial products. The complex economy is already a form of leverage: the leverage of efficiency. Such systems survive thanks to slack and redundancy; adding debt produces wild and dangerous gyrations and leaves no room for error. Capitalism cannot avoid fads and bubbles: equity bubbles (as in 2000) have proved to be mild; debt bubbles are vicious.
- **6. Do not give children sticks of dynamite, even if they come with a warning.** Complex derivatives need to be banned because nobody understands them and few are rational enough to know it. Citizens must be protected from themselves, from bankers selling them “hedging” products, and from gullible regulators who listen to economic theorists.
- **7. Only Ponzi schemes should depend on confidence.** Governments should never need to “restore confidence”. Cascading rumours are a product of complex systems. Governments cannot stop the rumours. Simply, we need to be in a position to shrug off rumours, be robust in the face of them.
- **8. Do not give an addict more drugs if he has withdrawal pains.** Using leverage to cure the problems of too much leverage is not homeopathy, it is denial. The debt crisis is not a temporary problem, it is a structural one. We need rehab.

TEN PRINCIPLES FOR A BLACK-SWAN-ROBUST WORLD

- **9. Citizens should not depend on financial assets or fallible “expert” advice for their retirement.** Economic life should be definancialised. We should learn not to use markets as storehouses of value: they do not harbour the certainties that normal citizens require. Citizens should experience anxiety about their own businesses (which they control), not their investments (which they do not control).
- **10. Make an omelette with the broken eggs.** Finally, this crisis cannot be fixed with makeshift repairs, no more than a boat with a rotten hull can be fixed with ad-hoc patches. We need to rebuild the hull with new (stronger) materials; we will have to remake the system before it does so itself. Let us move voluntarily into Capitalism 2.0 by helping what needs to be broken break on its own, converting debt into equity, marginalising the economics and business school establishments, shutting down the “Nobel” in economics, banning leveraged buyouts, putting bankers where they belong, clawing back the bonuses of those who got us here, and teaching people to navigate a world with fewer certainties.
- Then we will see an economic life closer to our biological environment: smaller companies, richer ecology, no leverage. A world in which entrepreneurs, not bankers, take the risks and companies are born and die every day without making the news.



CONCLUSION & DISCUSSION

PART V



WHAT DO YOU DO?

- The nature of black swan events is that they are unpredictable, which leads to a paradoxical dilemma of trying to predict them.
- My belief is that understanding the effect of an extreme outlier can have on your personal, MA's, or client's life is a step in the right direction.
 - Recognize situations where an unpredictable impact might have devastating consequences and do a thought exercise of how you would handle it.
 - Mark – What do you do if a ransomware/cyber attack hits your oil project?
 - Dan – What do you do if the cell tower on your property has exposed electrical wires that electrocute due to misdrawn property lines?
 - Be prepared and aware, while limiting any extreme risk through simple hedges, is often the best course of action.

OPEN ENDED DISCUSSION ON THE CONCEPT

