



POSTCARDS FROM THE EDGE: COVID
LESSONS FOR INVESTING/BUSINESS

Glimmers of light?

Lesson 1: Listen to markets, not experts

- During a crisis, you are often told by experts and market gurus that markets are irrational, and behave in crazy and chaotic ways.
- To back this up, the evidence that is offered is that markets have wild swings on a day-to-day basis, and that these swings are incompatible with rational investing.
- They very conveniently ignore the fact that their advice is even more volatile, veering from day to day...

Macro Review: Equity Indices

	Index	Country/Region	Level on 2/14			% Change				
			14-Feb	20-Mar	1-May	4/24-5/1	4/1-5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Americas	S&P 500	US	3214	2305	2831	-0.21%	12.02%	-28.28%	22.82%	-11.92%
	NASDAQ 100	US	9624	6994	8718	-0.78%	14.18%	-27.33%	24.65%	-9.41%
	TSX	Canada	17848	11852	14620	1.39%	11.62%	-33.59%	23.35%	-18.09%
	IPC Mexico	Mexico	45000	34270	36470	6.51%	5.54%	-23.84%	6.42%	-18.96%
	iBovespa	Brazil	114381	67069	80506	1.05%	10.25%	-41.36%	20.03%	-29.62%
Europe	FTSE 100	UK	7409	5191	5763	0.19%	5.16%	-29.94%	11.02%	-22.22%
	DAX	Germany	13744	8929	10862	3.31%	9.32%	-35.03%	21.65%	-20.97%
	CAC 40	France	6069	4131	4559	2.43%	3.71%	-31.93%	10.36%	-24.88%
	S&P Europe 350	Europe	1731	1181	1351	1.99%	7.15%	-31.77%	14.39%	-21.95%
Asia	Nikkei 225	Japan	23688	16553	19619	1.86%	10.11%	-30.12%	18.52%	-17.18%
	Shanghai 50	China	2895	2628	2862	2.30%	6.42%	-9.22%	8.90%	-1.14%
	Hang Seng	Hong Kong	27816	22805	24644	3.14%	6.34%	-18.01%	8.06%	-11.40%
	Sensex	India	41258	29916	33718	5.82%	14.42%	-27.49%	12.71%	-18.28%
Australia & NZ	ASX 200	Australia	7133	4825	5246	0.06%	1.78%	-32.36%	8.73%	-26.45%
	NZX 50	New Zealand	11835	9202	10449	0.28%	5.86%	-22.25%	13.55%	-11.71%
Africa	FTSE/JSE TOP 40	South Africa	52050	36302	46188	1.15%	13.38%	-30.26%	27.23%	-11.26%
	NSE-All Share	Nigeria	27756	22198	23021	2.45%	8.08%	-20.02%	3.71%	-17.06%

Macro Review: US Treasuries

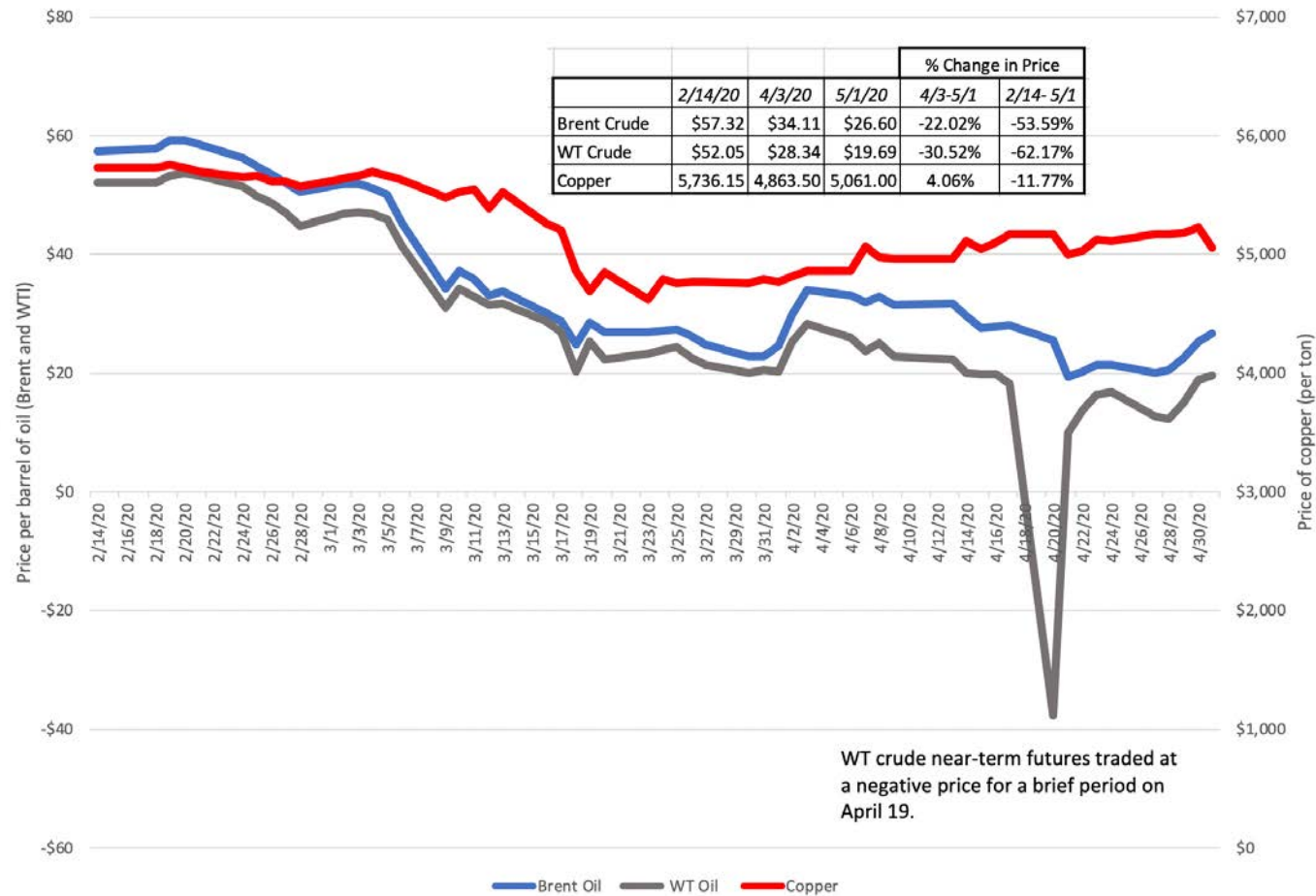
	Yields on US Treasuries			
Maturity	2/14/20	4/3/20	4/17/20	5/1/20
3 month	1.58%	0.10%	0.12%	0.12%
2 year	1.42%	0.23%	0.20%	0.20%
5 year	1.42%	0.39%	0.36%	0.36%
10 year	1.59%	0.62%	0.65%	0.64%
20 year	1.89%	1.05%	1.08%	1.04%
30 year	2.04%	1.24%	1.27%	1.27%
	Yield curve slope			
2 yr - 3 month	-0.16%	0.13%	0.08%	0.08%
10 yr - 2 yr	0.17%	0.39%	0.45%	0.44%
30 yr - 10 yr	0.45%	0.62%	0.62%	0.63%

Macro Review: Corporate Bonds

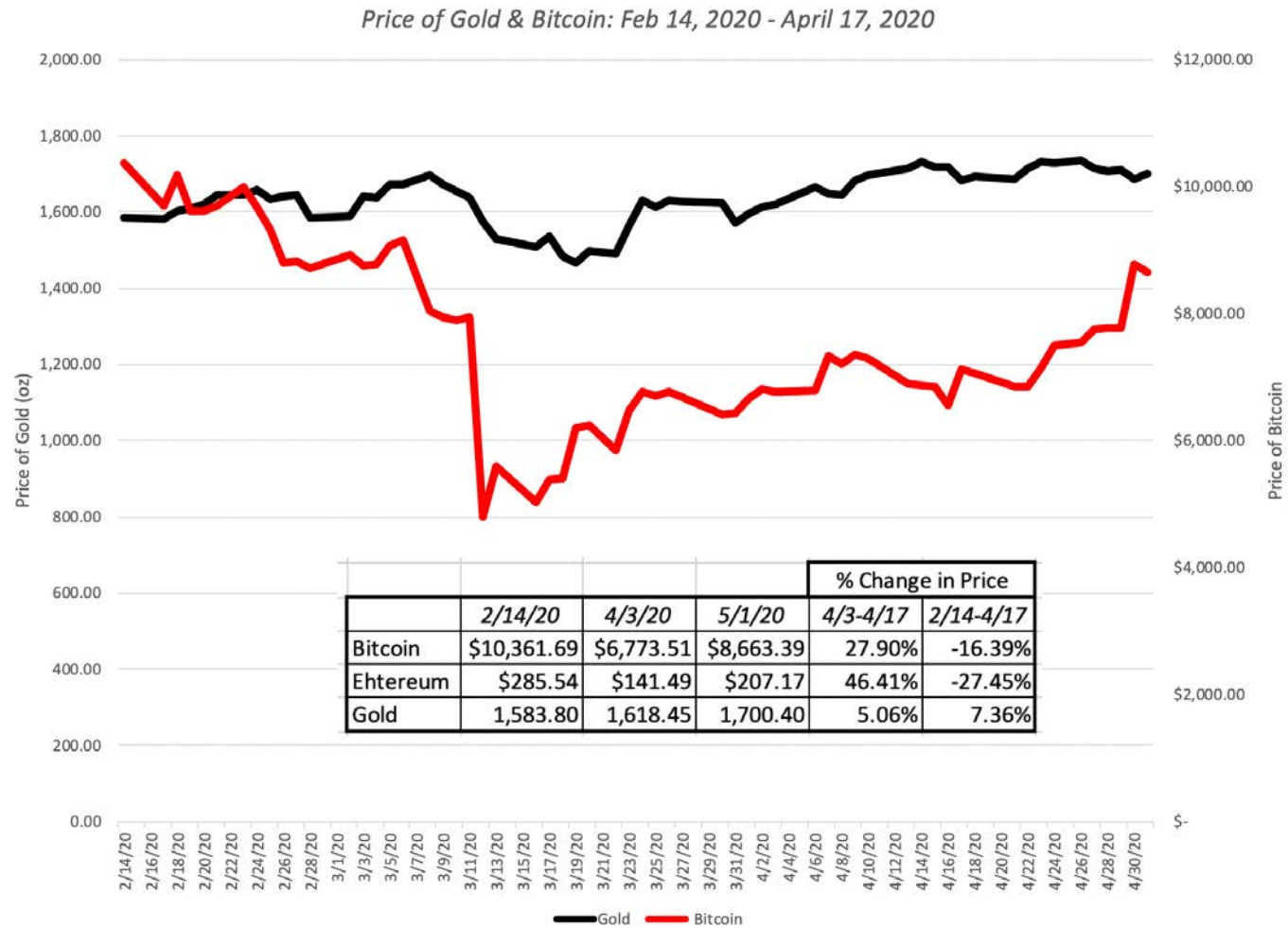
S&P Bond Rating	Yields and Spreads on Corporates								Change from 2/14 - 5/1	
	Spread over 10-yr Treasury				Yield on Treasury				Spread	Yield
	2/14/20	4/3/20	4/17/20	5/1/20	2/14/20	4/3/20	4/17/20	5/1/20		
AAA	0.69%	1.50%	1.16%	1.21%	2.28%	2.12%	1.81%	1.85%	0.52%	-0.43%
AA	0.72%	1.77%	1.29%	1.26%	2.31%	2.39%	1.94%	1.90%	0.54%	-0.41%
A	0.80%	2.29%	1.70%	1.64%	2.39%	2.91%	2.35%	2.28%	0.84%	-0.11%
BBB	1.33%	3.97%	3.03%	2.80%	2.92%	4.59%	3.68%	3.44%	1.47%	0.52%
BB	1.93%	6.76%	4.81%	5.30%	3.52%	7.38%	5.46%	5.94%	3.37%	2.42%
B	3.40%	10.14%	7.93%	7.80%	4.99%	10.76%	8.58%	8.44%	4.40%	3.45%
CCC or lower	9.65%	18.80%	16.32%	17.58%	11.24%	19.42%	16.97%	18.22%	7.93%	6.98%

Macro Review: Oil & Copper

Commodity Prices: February 14, 2020 to May 1, 2020



Macro Review: Gold & Bitcoin



Global Equities: By Region

Sub Region	Number of firms	Market Cap			Dollar Change			% Change		
		2/14/20	3/20/20	5/1/20	2/14-3/20	3/20-5/1	2/14 - 5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Africa	648	\$ 579,098	\$ 363,274	\$ 396,826	\$ (215,824)	\$ 33,552	\$ (182,272)	-37.27%	9.24%	-31.48%
Australia & NZ	1,356	\$ 1,616,626	\$ 951,839	\$ 1,171,480	\$ (664,787)	\$ 219,642	\$ (445,146)	-41.12%	23.08%	-27.54%
Canada	1,574	\$ 2,240,034	\$ 1,360,137	\$ 1,725,687	\$ (879,897)	\$ 365,550	\$ (514,347)	-39.28%	26.88%	-22.96%
China	6,153	\$ 14,006,589	\$12,410,337	\$ 13,353,129	\$ (1,596,253)	\$ 942,792	\$ (653,461)	-11.40%	7.60%	-4.67%
EU & Environs	4,756	\$ 13,652,192	\$ 9,274,331	\$ 11,009,786	\$ (4,377,861)	\$ 1,735,454	\$ (2,642,406)	-32.07%	18.71%	-19.36%
Eastern Europe & Russia	411	\$ 815,900	\$ 492,836	\$ 586,922	\$ (323,064)	\$ 94,086	\$ (228,978)	-39.60%	19.09%	-28.06%
India	1,945	\$ 2,196,205	\$ 1,513,432	\$ 1,688,416	\$ (682,774)	\$ 174,984	\$ (507,790)	-31.09%	11.56%	-23.12%
Japan	3,813	\$ 6,038,444	\$ 4,465,873	\$ 5,236,432	\$ (1,572,571)	\$ 770,560	\$ (802,012)	-26.04%	17.25%	-13.28%
Latin America & Caribbean	938	\$ 2,379,522	\$ 1,378,909	\$ 1,508,455	\$ (1,000,613)	\$ 129,546	\$ (871,067)	-42.05%	9.39%	-36.61%
Middle East	1,148	\$ 3,073,392	\$ 2,557,872	\$ 2,816,287	\$ (515,520)	\$ 258,415	\$ (257,105)	-16.77%	10.10%	-8.37%
Small Asia	7,660	\$ 5,057,996	\$ 3,538,866	\$ 4,285,223	\$ (1,519,130)	\$ 746,357	\$ (772,773)	-30.03%	21.09%	-15.28%
UK	1,094	\$ 3,066,192	\$ 1,923,416	\$ 2,313,548	\$ (1,142,776)	\$ 390,132	\$ (752,644)	-37.27%	20.28%	-24.55%
United States	4,929	\$ 35,641,758	\$23,877,391	\$ 29,461,339	\$ (11,764,366)	\$ 5,583,948	\$ (6,180,419)	-33.01%	23.39%	-17.34%
Global	36,425	\$ 90,363,948	\$64,108,512	\$ 75,553,528	\$ (26,255,436)	\$ 11,445,016	\$ (14,810,420)	-29.06%	17.85%	-16.39%

Global Equities: By Sector

Sub Region	Number of firms	Market Cap			Dollar Change			% Change		
		2/14/20	3/20/20	5/1/20	2/14-3/20	3/20-5/1	2/14 - 5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Communication Services	1,690	\$ 7,342,037	\$ 5,488,763	\$ 6,489,211	\$ (1,853,275)	\$ 1,000,448	\$ (852,827)	-25.24%	18.23%	-11.62%
Consumer Discretionary	4,930	\$ 10,148,621	\$ 7,059,451	\$ 8,539,340	\$ (3,089,170)	\$ 1,479,890	\$ (1,609,280)	-30.44%	20.96%	-15.86%
Consumer Staples	2,300	\$ 7,116,299	\$ 5,701,278	\$ 6,476,403	\$ (1,415,022)	\$ 775,126	\$ (639,896)	-19.88%	13.60%	-8.99%
Energy	1,313	\$ 5,930,247	\$ 3,852,615	\$ 4,586,674	\$ (2,077,632)	\$ 734,059	\$ (1,343,573)	-35.03%	19.05%	-22.66%
Financials	3,853	\$ 14,919,880	\$ 9,915,070	\$ 11,045,925	\$ (5,004,810)	\$ 1,130,855	\$ (3,873,955)	-33.54%	11.41%	-25.97%
Health Care	3,408	\$ 8,970,146	\$ 6,909,417	\$ 8,529,498	\$ (2,060,729)	\$ 1,620,081	\$ (440,649)	-22.97%	23.45%	-4.91%
Industrials	6,546	\$ 10,112,845	\$ 6,894,349	\$ 8,021,543	\$ (3,218,496)	\$ 1,127,194	\$ (2,091,302)	-31.83%	16.35%	-20.68%
Information Technology	4,867	\$ 13,594,754	\$ 9,734,631	\$ 11,846,660	\$ (3,860,123)	\$ 2,112,029	\$ (1,748,093)	-28.39%	21.70%	-12.86%
Materials	4,400	\$ 4,988,086	\$ 3,526,263	\$ 4,233,418	\$ (1,461,823)	\$ 707,155	\$ (754,669)	-29.31%	20.05%	-15.13%
Real Estate	2,298	\$ 4,040,386	\$ 2,699,214	\$ 3,143,627	\$ (1,341,172)	\$ 444,413	\$ (896,758)	-33.19%	16.46%	-22.19%
Utilities	814	\$ 3,199,760	\$ 2,326,774	\$ 2,640,444	\$ (872,986)	\$ 313,670	\$ (559,316)	-27.28%	13.48%	-17.48%
Global	36,425	\$ 90,363,948	\$64,108,512	\$ 75,553,528	\$ (26,255,436)	\$ 11,445,016	\$ (14,810,420)	-29.06%	17.85%	-16.39%

Global Equities: Industry Winners & Losers

		Worst Performing Industries								
		Market Cap			Dollar Change			% Change		
Industry	Number of firms	2/14/20	3/20/20	5/1/20	2/14-3/20	3/20-5/1	2/14 - 5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Air Transport	150	\$ 556,178	\$ 313,482	\$ 351,688	\$ (242,697)	\$ 38,207	\$ (204,490)	-43.64%	12.19%	-36.77%
Oil/Gas (Production and Exploration)	480	\$ 692,963	\$ 318,155	\$ 444,392	\$ (374,807)	\$ 126,237	\$ (248,571)	-54.09%	39.68%	-35.87%
Aerospace/Defense	212	\$ 1,217,844	\$ 674,146	\$ 799,015	\$ (543,697)	\$ 124,868	\$ (418,829)	-44.64%	18.52%	-34.39%
Broadcasting	121	\$ 164,681	\$ 93,967	\$ 108,625	\$ (70,714)	\$ 14,658	\$ (56,056)	-42.94%	15.60%	-34.04%
Hotel/Gaming	505	\$ 715,671	\$ 386,318	\$ 483,034	\$ (329,354)	\$ 96,716	\$ (232,638)	-46.02%	25.04%	-32.51%
Homebuilding	147	\$ 247,004	\$ 127,536	\$ 166,749	\$ (119,469)	\$ 39,214	\$ (80,255)	-48.37%	30.75%	-32.49%
Reinsurance	33	\$ 180,567	\$ 98,174	\$ 122,043	\$ (82,393)	\$ 23,869	\$ (58,524)	-45.63%	24.31%	-32.41%
Food Wholesalers	118	\$ 93,191	\$ 50,097	\$ 64,748	\$ (43,094)	\$ 14,651	\$ (28,443)	-46.24%	29.24%	-30.52%
Oil/Gas Distribution	186	\$ 649,295	\$ 357,879	\$ 455,453	\$ (291,416)	\$ 97,574	\$ (193,842)	-44.88%	27.26%	-29.85%
		Best Performing Industries								
		Market Cap			Dollar Change			% Change		
Industry	Number of firms	2/14/20	3/20/20	5/1/20	2/14-3/20	3/20-5/1	2/14 - 5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Precious Metals	518	\$ 418,987	\$ 297,954	\$ 448,303	\$ (121,034)	\$ 150,350	\$ 29,316	-28.89%	50.46%	7.00%
Healthcare Information and Technology	318	\$ 772,658	\$ 607,128	\$ 772,518	\$ (165,530)	\$ 165,390	\$ (140)	-21.42%	27.24%	-0.02%
Drugs (Biotechnology)	912	\$ 1,408,988	\$ 1,134,635	\$ 1,401,350	\$ (274,352)	\$ 266,714	\$ (7,638)	-19.47%	23.51%	-0.54%
Software (Internet)	108	\$ 226,938	\$ 166,704	\$ 224,947	\$ (60,234)	\$ 58,243	\$ (1,991)	-26.54%	34.94%	-0.88%
Retail (Online)	251	\$ 2,455,864	\$ 1,989,522	\$ 2,418,166	\$ (466,342)	\$ 428,644	\$ (37,697)	-18.99%	21.55%	-1.53%
Drugs (Pharmaceutical)	1,050	\$ 3,626,610	\$ 2,891,126	\$ 3,493,441	\$ (735,483)	\$ 602,315	\$ (133,169)	-20.28%	20.83%	-3.67%
Food Processing	1,019	\$ 1,786,740	\$ 1,497,757	\$ 1,703,795	\$ (288,983)	\$ 206,038	\$ (82,945)	-16.17%	13.76%	-4.64%
Household Products	410	\$ 1,453,701	\$ 1,186,736	\$ 1,351,159	\$ (266,966)	\$ 164,424	\$ (102,542)	-18.36%	13.86%	-7.05%
Healthcare Products	633	\$ 1,830,537	\$ 1,350,855	\$ 1,699,442	\$ (479,682)	\$ 348,587	\$ (131,095)	-26.20%	25.80%	-7.16%
Retail (Grocery and Food)	151	\$ 479,616	\$ 397,678	\$ 444,071	\$ (81,938)	\$ 46,393	\$ (35,546)	-17.08%	11.67%	-7.41%

Lesson 2: Listen, but verify..

- Every crisis brings forth explanations for why it is happening, and what we should do about it, with half-baked rationales and anecdotal evidence. Listen, with respect, but verify for yourself.
- Here are two stories that are making the rounds
 - ▣ Just punishment: The market drop is well-deserved punishment for those who invested in high flying companies and on momentum.
 - ▣ Buybacks are the problem: The surge in buybacks are caused companies to become weak and exposed, and the market is punishing those companies.

PE and Market Damage

Trailing PE	Number of firms	Market Cap			Dollar Change			% Change		
		2/14/20	3/20/20	5/1/20	2/14-3/20	3/20-5/1	2/14 - 5/1	2/14-3/20	3/20-5/1	2/14 - 5/1
Bottom(Lowest)	2,531	\$ 3,282,173	\$ 2,067,866	\$ 2,469,017	\$ (1,214,307)	\$ 401,151	\$ (813,156)	-37.00%	19.40%	-24.77%
2nd decile	2,532	\$ 1,314,373	\$ 784,661	\$ 955,373	\$ (529,713)	\$ 170,713	\$ (359,000)	-40.30%	21.76%	-27.31%
3rd decile	2,531	\$ 4,201,046	\$ 2,935,427	\$ 3,335,668	\$ (1,265,619)	\$ 400,242	\$ (865,378)	-30.13%	13.63%	-20.60%
4th decile	2,532	\$ 4,398,039	\$ 2,936,459	\$ 3,474,370	\$ (1,461,579)	\$ 537,911	\$ (923,668)	-33.23%	18.32%	-21.00%
5th decile	2,531	\$ 5,799,579	\$ 3,983,157	\$ 4,700,279	\$ (1,816,421)	\$ 717,122	\$ (1,099,300)	-31.32%	18.00%	-18.95%
6th decile	2,532	\$ 8,207,321	\$ 5,856,874	\$ 6,814,739	\$ (2,350,447)	\$ 957,865	\$ (1,392,582)	-28.64%	16.35%	-16.97%
7th decile	2,531	\$ 14,744,137	\$10,859,347	\$ 12,724,324	\$ (3,884,790)	\$ 1,864,977	\$ (2,019,813)	-26.35%	17.17%	-13.70%
8th decile	2,532	\$ 15,431,521	\$10,982,010	\$ 13,282,527	\$ (4,449,511)	\$ 2,300,517	\$ (2,148,995)	-28.83%	20.95%	-13.93%
9th decile	2,531	\$ 12,257,330	\$ 9,060,024	\$ 10,828,207	\$ (3,197,306)	\$ 1,768,182	\$ (1,429,123)	-26.08%	19.52%	-11.66%
Top (Highest)	2,532	\$ 7,316,749	\$ 5,522,276	\$ 6,685,775	\$ (1,794,472)	\$ 1,163,499	\$ (630,973)	-24.53%	21.07%	-8.62%
Negative Earnings	11,110	\$ 13,411,680	\$ 9,120,410	\$ 10,283,249	\$ (4,291,270)	\$ 1,162,839	\$ (3,128,431)	-32.00%	12.75%	-23.33%
All firms	36,425	\$ 90,363,948	\$64,108,512	\$ 75,553,528	\$ (26,255,436)	\$ 11,445,016	\$ (14,810,420)	-29.06%	17.85%	-16.39%

Momentum and Damage

% Price Change (2/14/19-2/14/20)	Number of firms	Mkt Cap (2/14)	Mkt Cap (4/3)	Mkt Cap (4/17)	Mkt Cap: 4/3- 4/17		Mkt Cap: 2/14 - 4/17	
					\$ Change	% Change	\$ Change	% Change
Bottom decile	3,422	\$ 905,123	\$ 583,348	\$ 668,360	\$ 85,011	14.57%	\$ (236,763)	-26.16%
2nd decile	3,422	\$ 2,454,210	\$ 1,736,244	\$ 1,875,711	\$ 139,467	8.03%	\$ (578,499)	-23.57%
3rd decile	3,422	\$ 5,395,297	\$ 3,872,391	\$ 4,161,348	\$ 288,957	7.46%	\$ (1,233,948)	-22.87%
4th decile	3,423	\$ 5,625,289	\$ 4,062,448	\$ 4,360,648	\$ 298,200	7.34%	\$ (1,264,641)	-22.48%
5th decile	3,422	\$ 7,642,411	\$ 5,653,773	\$ 6,137,408	\$ 483,635	8.55%	\$ (1,505,003)	-19.69%
6th decile	3,422	\$ 8,278,809	\$ 6,200,125	\$ 6,773,927	\$ 573,802	9.25%	\$ (1,504,882)	-18.18%
7th decile	3,423	\$ 13,054,234	\$ 9,688,601	\$ 10,741,574	\$1,052,973	10.87%	\$ (2,312,660)	-17.72%
8th decile	3,422	\$ 21,189,585	\$ 15,777,106	\$ 17,836,342	\$2,059,236	13.05%	\$ (3,353,243)	-15.82%
9th decile	3,422	\$ 13,520,053	\$ 10,242,320	\$ 11,556,248	\$1,313,928	12.83%	\$ (1,963,805)	-14.53%
Top decile	3,423	\$ 8,811,611	\$ 6,849,442	\$ 7,911,414	\$1,061,972	15.50%	\$ (900,197)	-10.22%
All firms	36,481	\$ 90,411,233	\$ 67,723,989	\$ 75,142,899	\$7,418,910	10.95%	\$ (15,268,334)	-16.89%

A Test: Buybacks vs No Buybacks

Sub Region	[Buybacks/Market Cap = 0.00%]	count	Market Cap (2/14/20)	Market Cap (3/20/20)	Market Cap (3/27/20)	3/20-3/27		2/14 - 3/27	
						\$ Change	% Change	\$ Change	% Change
Africa	Buybacks	131	\$ 184,573	\$ 104,839	\$ 104,697	\$ (142)	-0.14%	\$ (79,876)	-43.28%
	No Buybacks	518	\$ 393,802	\$ 258,553	\$ 263,368	\$ 4,814	1.86%	\$ (130,435)	-33.12%
Australia & NZ	Buybacks	198	\$ 918,106	\$ 524,059	\$ 548,057	\$ 23,998	4.58%	\$ (370,049)	-40.31%
	No Buybacks	1,025	\$ 698,233	\$ 428,103	\$ 466,865	\$ 38,762	9.05%	\$ (231,368)	-33.14%
Canada	Buybacks	311	\$ 1,329,530	\$ 811,789	\$ 882,146	\$ 70,357	8.67%	\$ (447,385)	-33.65%
	No Buybacks	1,072	\$ 947,707	\$ 577,118	\$ 645,859	\$ 68,741	11.91%	\$ (301,848)	-31.85%
China	Buybacks	517	\$ 3,079,745	\$ 2,644,924	\$ 2,737,579	\$ 92,655	3.50%	\$ (342,167)	-11.11%
	No Buybacks	5,638	\$ 10,952,414	\$ 9,786,548	\$ 9,933,086	\$ 146,538	1.50%	\$ (1,019,328)	-9.31%
EU & Environs	Buybacks	981	\$ 7,410,273	\$ 5,109,535	\$ 5,608,557	\$ 499,021	9.77%	\$ (1,801,717)	-24.31%
	No Buybacks	3,667	\$ 6,268,130	\$ 4,197,365	\$ 4,564,530	\$ 367,166	8.75%	\$ (1,703,600)	-27.18%
Eastern Europe &	Buybacks	72	\$ 273,054	\$ 169,736	\$ 171,615	\$ 1,879	1.11%	\$ (101,439)	-37.15%
	No Buybacks	344	\$ 548,064	\$ 327,937	\$ 349,479	\$ 21,541	6.57%	\$ (198,585)	-36.23%
India	Buybacks	10	\$ 87,380	\$ 64,478	\$ 63,050	\$ (1,428)	-2.22%	\$ (24,330)	-27.84%
	No Buybacks	1,751	\$ 2,119,358	\$ 1,456,768	\$ 1,411,620	\$ (45,148)	-3.10%	\$ (707,738)	-33.39%
Japan	Buybacks	404	\$ 2,581,570	\$ 1,926,472	\$ 2,253,688	\$ 327,215	16.99%	\$ (327,882)	-12.70%
	No Buybacks	3,410	\$ 3,471,934	\$ 2,554,470	\$ 2,989,679	\$ 435,209	17.04%	\$ (482,256)	-13.89%
Latin America &	Buybacks	197	\$ 721,055	\$ 428,766	\$ 449,556	\$ 20,790	4.85%	\$ (271,499)	-37.65%
	No Buybacks	719	\$ 1,664,005	\$ 953,425	\$ 1,040,531	\$ 87,106	9.14%	\$ (623,474)	-37.47%
Middle East	Buybacks	111	\$ 1,971,311	\$ 1,705,871	\$ 1,742,222	\$ 36,352	2.13%	\$ (229,089)	-11.62%
	No Buybacks	1,119	\$ 1,127,502	\$ 873,355	\$ 867,243	\$ (6,112)	-0.70%	\$ (260,259)	-23.08%
Small Asia	Buybacks	1,051	\$ 883,172	\$ 615,416	\$ 662,409	\$ 46,993	7.64%	\$ (220,763)	-25.00%
	No Buybacks	6,915	\$ 4,217,379	\$ 2,961,812	\$ 3,147,994	\$ 186,182	6.29%	\$ (1,069,385)	-25.36%
UK	Buybacks	324	\$ 2,140,244	\$ 1,317,339	\$ 1,479,924	\$ 162,585	12.34%	\$ (660,321)	-30.85%
	No Buybacks	730	\$ 931,038	\$ 610,024	\$ 673,132	\$ 63,108	10.35%	\$ (257,906)	-27.70%
United States	Buybacks	2,473	\$ 29,219,828	\$ 19,388,811	\$ 21,458,076	\$ 2,069,265	10.67%	\$ (7,761,752)	-26.56%
	No Buybacks	2,410	\$ 6,525,839	\$ 4,564,903	\$ 5,007,885	\$ 442,981	9.70%	\$ (1,517,955)	-23.26%
Global	Buybacks	6,780	\$ 50,799,843	\$ 34,812,035	\$ 38,161,575	\$ 3,349,539	9.62%	\$ (12,638,269)	-24.88%
	No Buybacks	29,318	\$ 39,865,405	\$ 29,550,382	\$ 31,361,270	\$ 1,810,888	6.13%	\$ (8,504,135)	-21.33%

A follow up with dividends

Sub Region	Dividends/No Dividends	Number of firms	Market Cap (2/14/20)	Market Cap (3/20/20)	Market Cap (3/27/20)	3/20-3/27		2/14 - 3/27	
						\$ Change	% Change	\$ Change	% Change
Africa	Dividends	423	\$ 493,780	\$ 309,056	\$ 314,105	\$ 5,049	1.63%	\$ (179,674)	-36.39%
	No Dividends	226	\$ 84,596	\$ 54,336	\$ 53,959	\$ (377)	-0.69%	\$ (30,637)	-36.22%
Australia & NZ	Dividends	484	\$ 1,466,946	\$ 858,434	\$ 910,963	\$ 52,529	6.12%	\$ (555,983)	-37.90%
	No Dividends	739	\$ 149,392	\$ 93,729	\$ 103,959	\$ 10,230	10.91%	\$ (45,434)	-30.41%
Canada	Dividends	353	\$ 1,895,037	\$ 1,165,017	\$ 1,273,298	\$ 108,281	9.29%	\$ (621,739)	-32.81%
	No Dividends	1,030	\$ 382,200	\$ 223,889	\$ 254,707	\$ 30,817	13.76%	\$ (127,494)	-33.36%
China	Dividends	2,722	\$ 8,334,400	\$ 7,453,374	\$ 7,611,312	\$ 157,937	2.12%	\$ (723,088)	-8.68%
	No Dividends	3,433	\$ 5,697,760	\$ 4,978,097	\$ 5,059,353	\$ 81,256	1.63%	\$ (638,407)	-11.20%
EU & Environs	Dividends	2,171	\$ 12,114,913	\$ 8,254,640	\$ 9,023,901	\$ 769,261	9.32%	\$ (3,091,012)	-25.51%
	No Dividends	2,477	\$ 1,563,490	\$ 1,052,260	\$ 1,149,186	\$ 96,926	9.21%	\$ (414,304)	-26.50%
Eastern Europe &	Dividends	224	\$ 769,403	\$ 463,851	\$ 486,066	\$ 22,215	4.79%	\$ (283,337)	-36.83%
	No Dividends	192	\$ 51,716	\$ 33,823	\$ 35,028	\$ 1,206	3.56%	\$ (16,688)	-32.27%
India	Dividends	77	\$ 312,782	\$ 234,560	\$ 233,311	\$ (1,249)	-0.53%	\$ (79,471)	-25.41%
	No Dividends	1,684	\$ 1,893,956	\$ 1,286,686	\$ 1,241,359	\$ (45,327)	-3.52%	\$ (652,597)	-34.46%
Japan	Dividends	1,041	\$ 3,300,131	\$ 2,457,886	\$ 2,868,630	\$ 410,744	16.71%	\$ (431,501)	-13.08%
	No Dividends	2,773	\$ 2,753,374	\$ 2,023,056	\$ 2,374,737	\$ 351,681	17.38%	\$ (378,637)	-13.75%
Latin America &	Dividends	601	\$ 2,071,329	\$ 1,208,609	\$ 1,299,495	\$ 90,886	7.52%	\$ (771,834)	-37.26%
	No Dividends	315	\$ 313,731	\$ 173,582	\$ 190,592	\$ 17,010	9.80%	\$ (123,139)	-39.25%
Middle East	Dividends	646	\$ 2,835,427	\$ 2,387,214	\$ 2,415,628	\$ 28,414	1.19%	\$ (419,799)	-14.81%
	No Dividends	584	\$ 263,386	\$ 192,011	\$ 193,837	\$ 1,826	0.95%	\$ (69,549)	-26.41%
Small Asia	Dividends	4,811	\$ 4,549,653	\$ 3,195,934	\$ 3,400,169	\$ 204,235	6.39%	\$ (1,149,484)	-25.27%
	No Dividends	3,155	\$ 550,897	\$ 381,293	\$ 410,233	\$ 28,940	7.59%	\$ (140,664)	-25.53%
UK	Dividends	630	\$ 2,864,840	\$ 1,799,235	\$ 2,013,193	\$ 213,958	11.89%	\$ (851,646)	-29.73%
	No Dividends	424	\$ 206,442	\$ 128,128	\$ 139,862	\$ 11,734	9.16%	\$ (66,580)	-32.25%
United States	Dividends	1,866	\$ 26,070,398	\$ 17,167,148	\$ 19,062,133	\$ 1,894,985	11.04%	\$ (7,008,264)	-26.88%
	No Dividends	3,017	\$ 9,675,270	\$ 6,786,567	\$ 7,403,828	\$ 617,261	9.10%	\$ (2,271,442)	-23.48%
Global	Dividends	16,049	\$ 67,079,036	\$ 46,954,959	\$ 50,912,204	\$ 3,957,245	8.43%	\$ (16,166,832)	-24.10%
	No Dividends	20,049	\$ 23,586,212	\$ 17,407,458	\$ 18,610,640	\$ 1,203,182	6.91%	\$ (4,975,572)	-21.10%

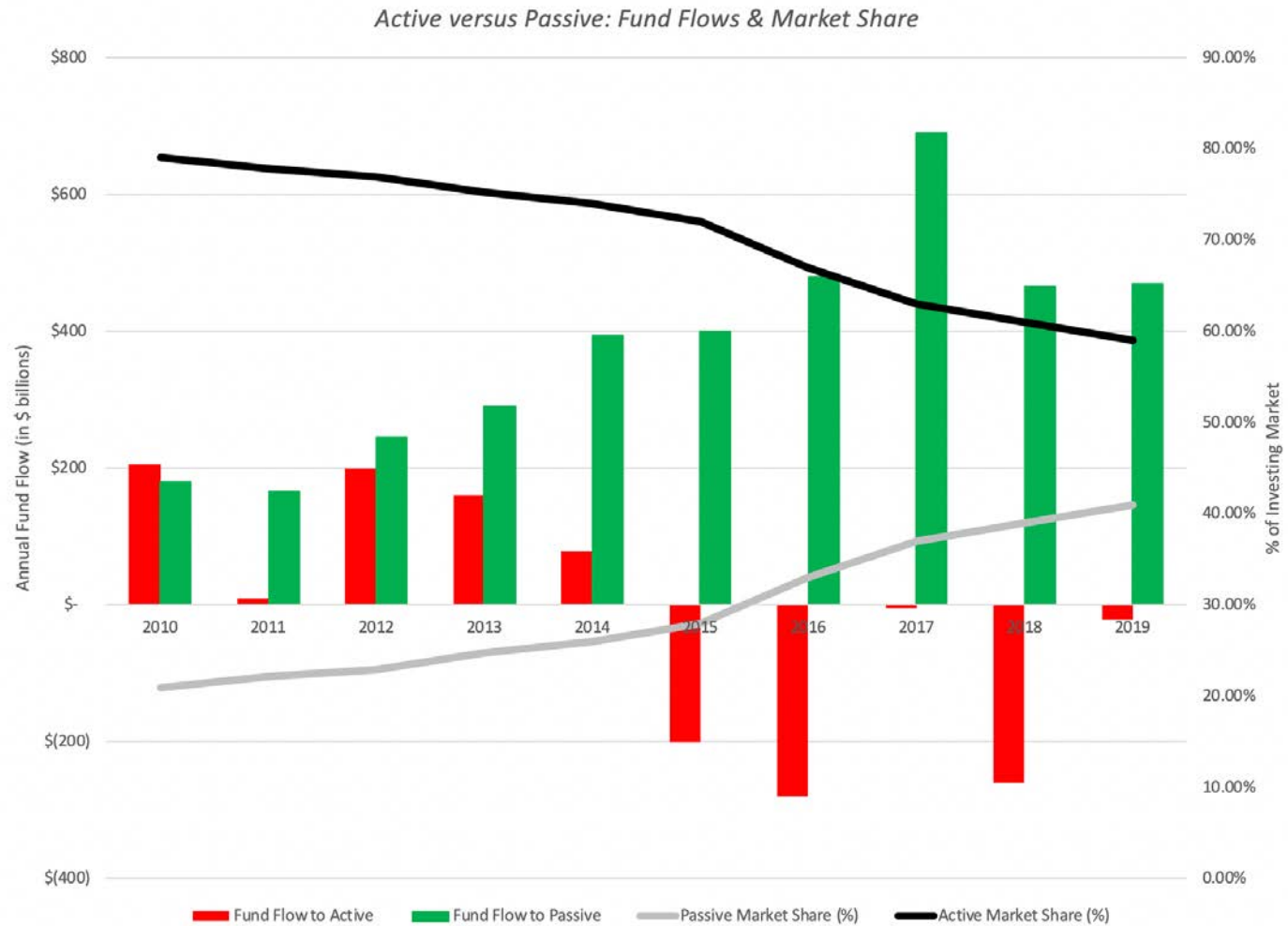
Lesson 3: There is no smart money...

- In investing mythology, there are smart investors and stupid investors.
 - Smart investors sense when markets are going to turn, and get in sooner than others, and get out sooner than others. After every crisis, there are a few who are anointed as gurus. They are also much better at picking the right stocks to buy and sell
 - Stupid investors are uninformed, act on emotion, and panic quickly.
- Professional money managers and talking heads on financial TV land are smart investors. Retail investors are stupid investors.

One test: Active vs Passive

- ❑ In passive investing, as an investor, you allocate your wealth across asset classes (equities, bonds, real assets) based upon your risk aversion, liquidity needs and time horizon, and within each class, rather than pick individual stocks, bonds or real assets, you invest in index funds or exchange traded funds (ETFs) to cover the spectrum of choices.
- ❑ In active investing, you try to time markets (by allocating more money to asset classes that you believe are under valued and less to those that you think are over valued) or pick individual assets that you believe offer the potential for higher returns.
- ❑ Active investing covers a whole range of different philosophies from day trading to buying entire companies and holding them for the long term.

The Lead In



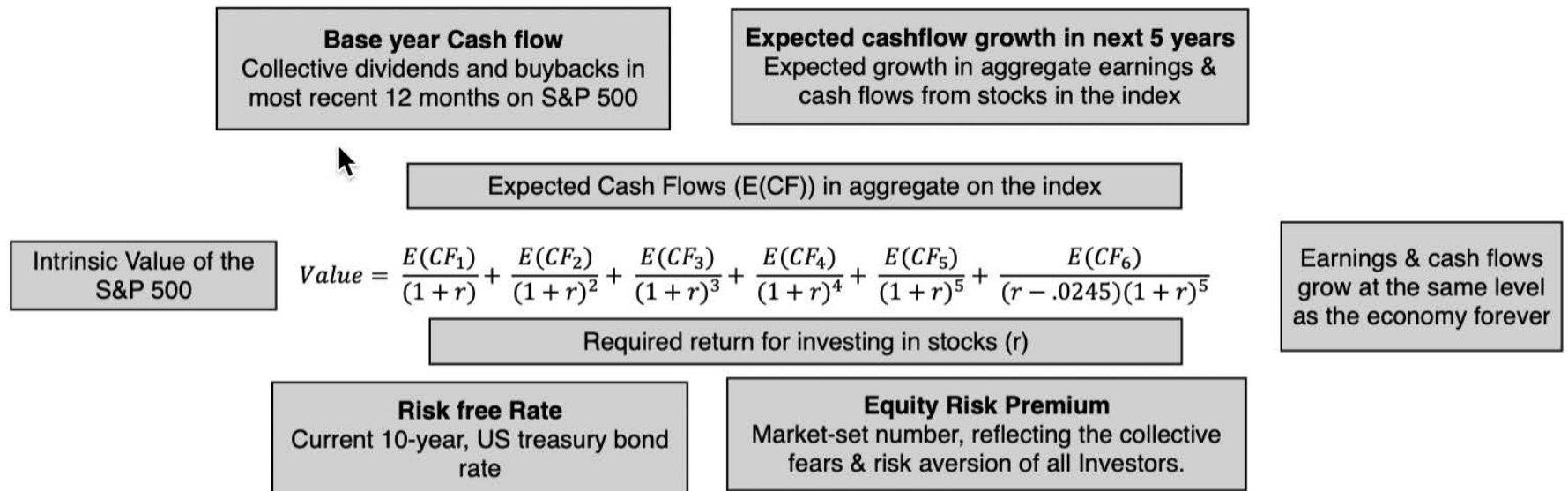
The Crisis Test

<i>Equity Mutual Funds</i>	<i>Returns in 2020, First Quarter</i>		
	<i>Mutual Funds</i>	<i>MS Index</i>	<i>Active Excess Return</i>
Large Blend	-20.92%	-17.86%	-3.06%
Large Growth	-15.48%	-11.51%	-3.97%
Large Value	-26.77%	-25.10%	-1.67%
Mid-Cap Blend	-28.28%	-26.42%	-1.86%
Mid-Cap Growth	-20.64%	-17.00%	-3.64%
Mid-Cap Value	-32.53%	-35.52%	2.99%
Small Blend	-32.37%	-31.61%	-0.76%
Small Growth	-24.59%	-21.45%	-3.14%
Small Value	-36.89%	-39.68%	2.79%
All US Equity Funds	-21.94%	-20.57%	-1.37%

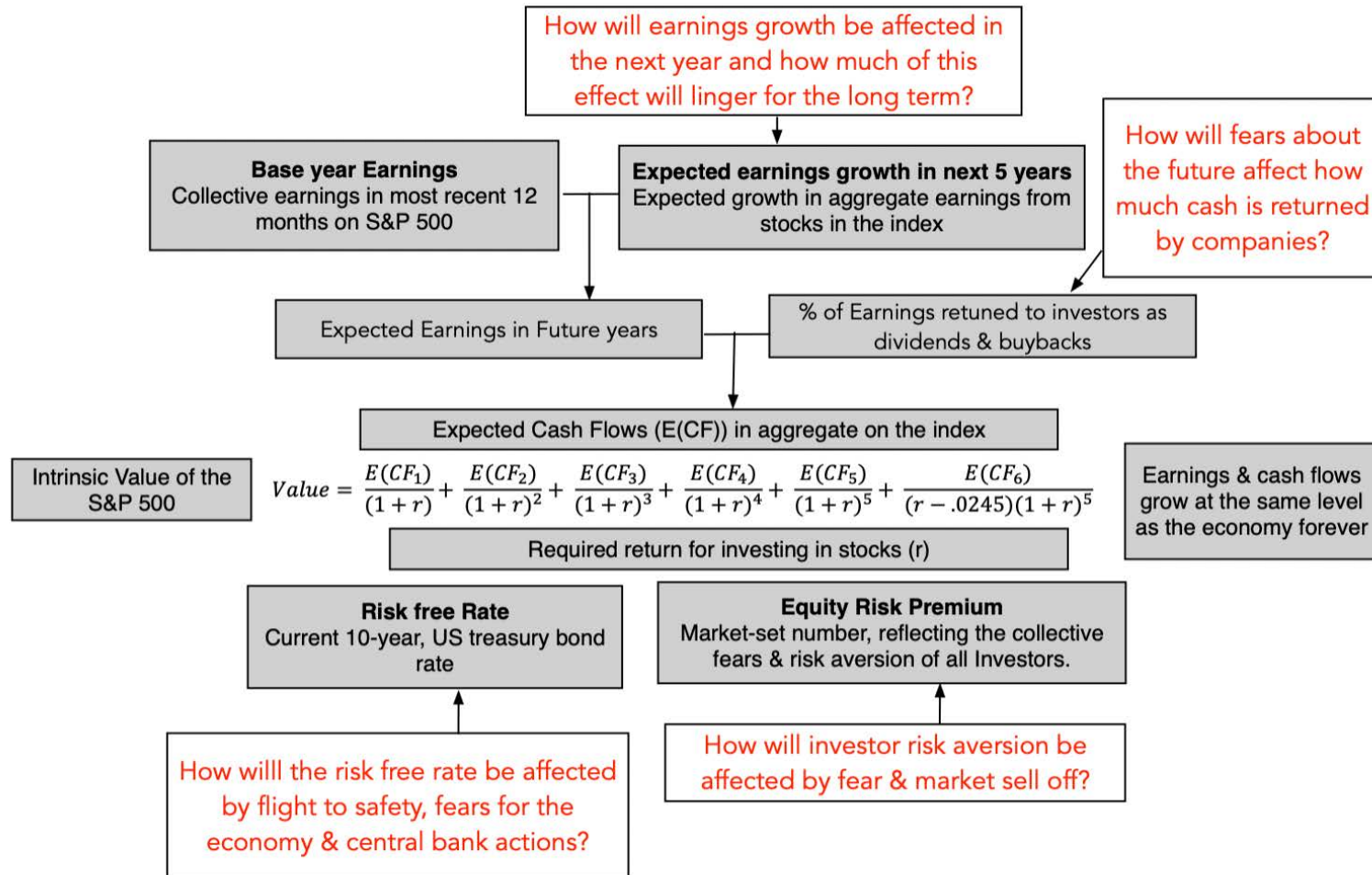
Humble or Arrogant Money?

- I think that investors are better grouped into humble and arrogant, with humble investors recognizing that success, when it comes, is as much a function of luck as it is of skill, and failure, when it too arrives, is part of investing and an occasion for learning.
- Arrogant investors claim every investing win as a sign of their skill and view every loss as an affront, doubling down on their mistakes.
- If I had to pick someone to manage my money, the quality that I would value the most in making that choice is humility, since humble investors are less likely to overpromise and overcommit.

Lesson 4: The fundamentals matter, more than ever... in a crisis

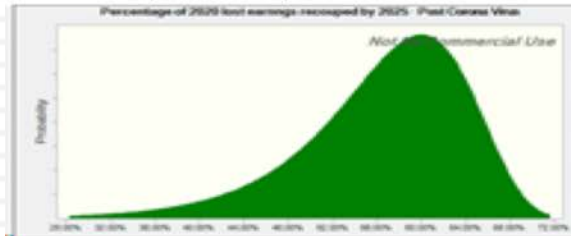


A Framework for assessing value effects: Index

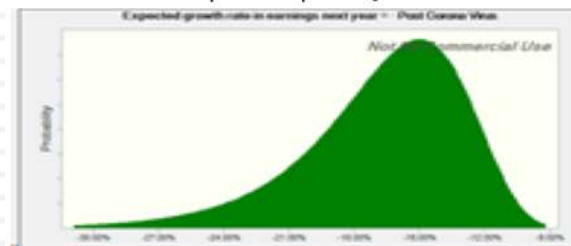


What now? Valuing the Index on March 13, 2020

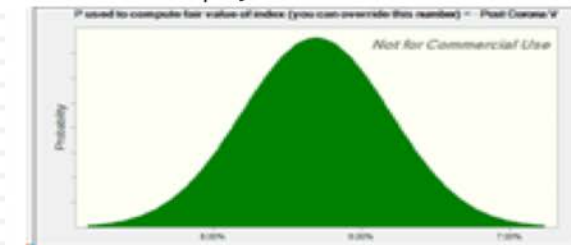
Expected drop in 2020 Earnings



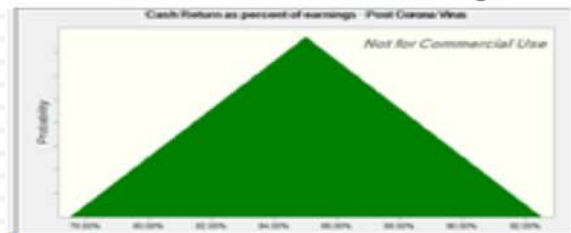
% of drop recouped by 2025



Equity Risk Premium

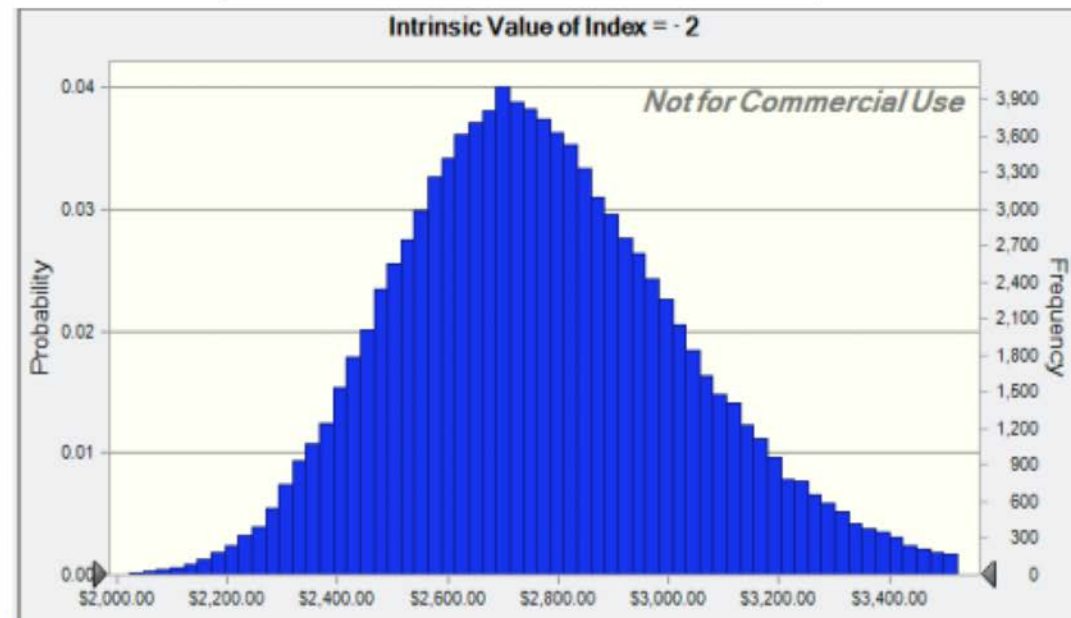


Cash Returned as % of Earnings

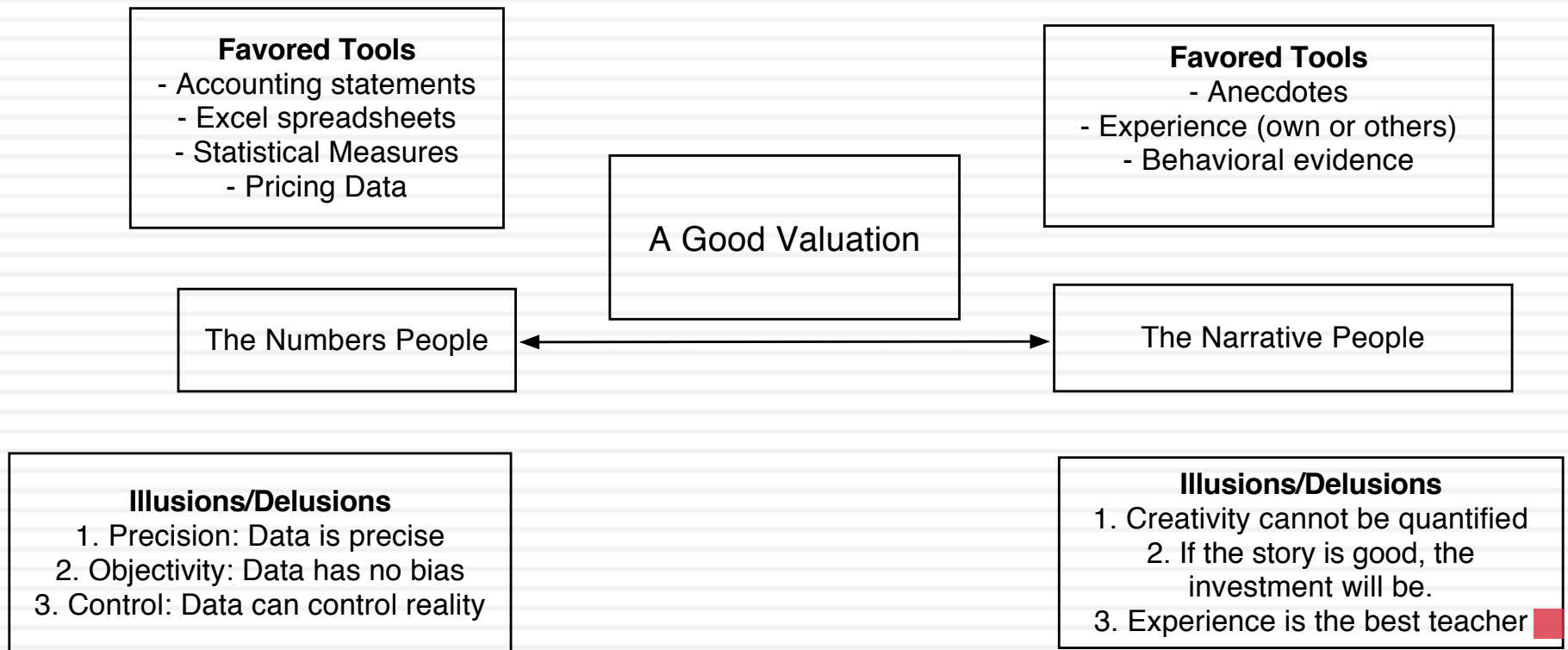


Valuing the S&P 500 Index: March 13, 2020

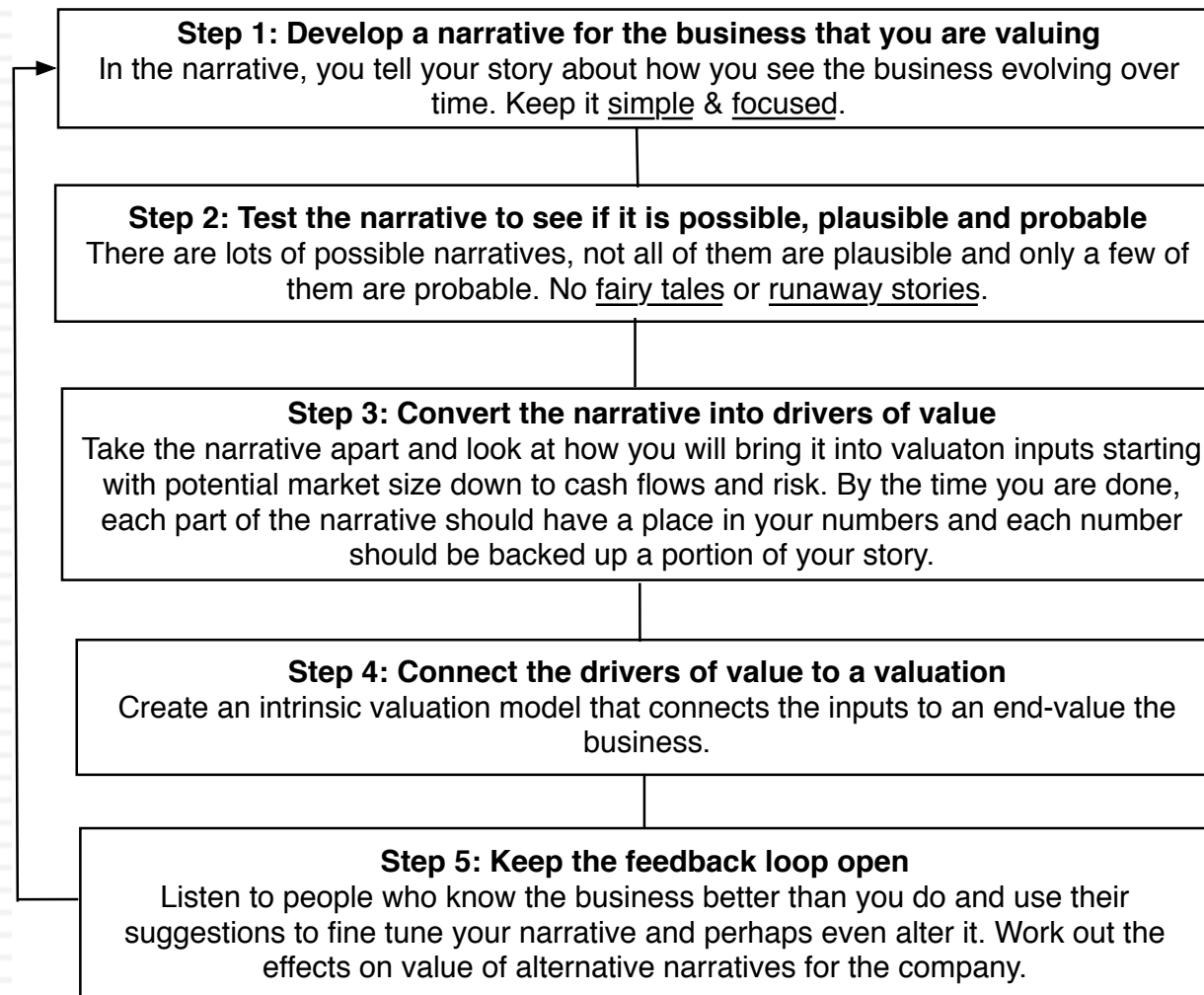
Percentile	S&P 500 Index
0%	\$1,903.33
10%	\$2,450.16
20%	\$2,547.91
30%	\$2,621.98
40%	\$2,688.01
50%	\$2,750.84
60%	\$2,817.83
70%	\$2,893.02
80%	\$2,986.04
90%	\$3,123.78
100%	\$4,452.38



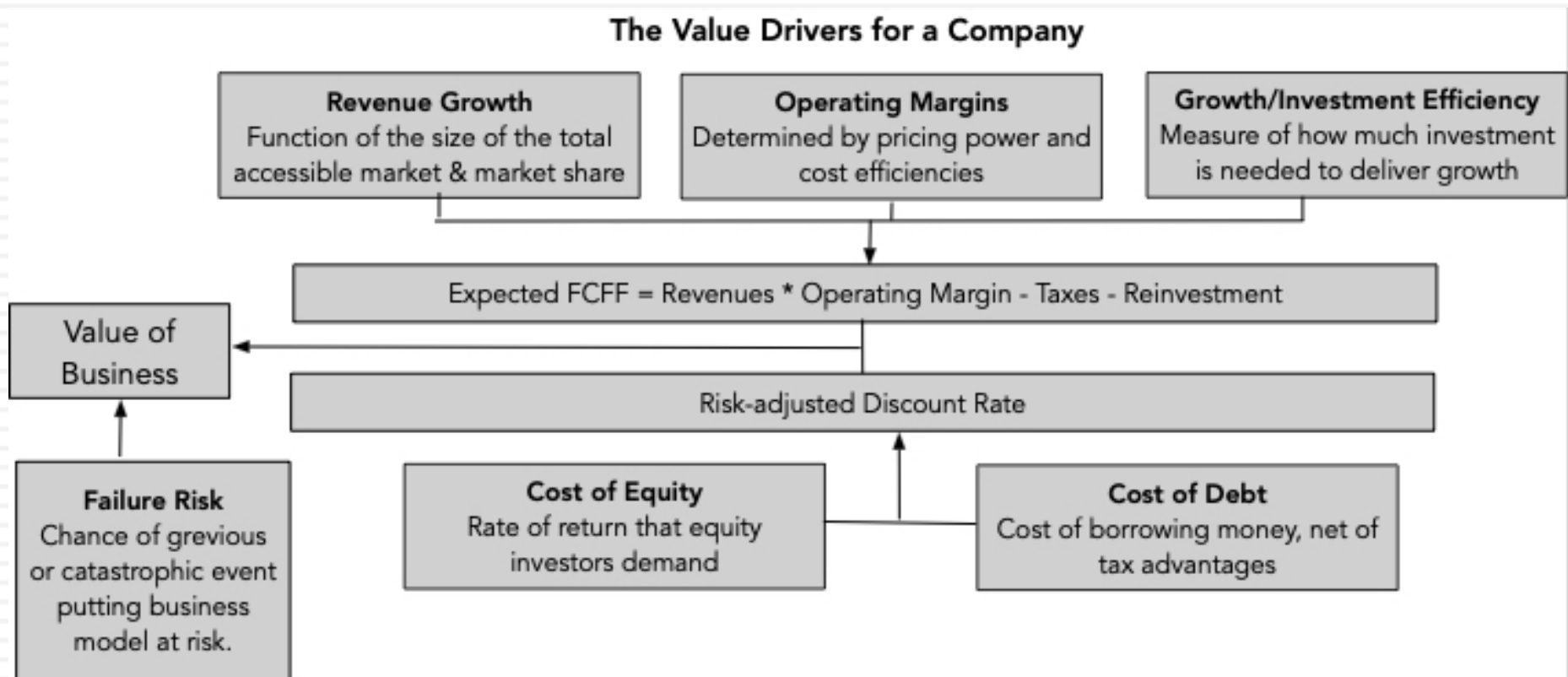
Lesson 5: Stories + Numbers



From story to numbers and beyond..



The Basics of Value



Tesla

Silence is golden!

With the wind behind its back, Tesla has consolidated its hold on the electric car market and will continue to grow that market, at the expense of conventional car makers. Pushing its production towards 2 million cars by 2030, it will also be able to deliver higher margins than conventional auto companies in steady state. The rise in its market capitalization has reduced its cost of capital and the chance of failure. While Tesla will be able to invest less than other auto companies to add to capacity, its need to ramp up production will require more capital, creating negative cash flows in the near years. While other revenue sources (green energy, driverless cars in ride sharing) will supplement revenues, it will remain at its core an electric car company.

The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	\$ 24,578	25.00%	→ 1.75%		1.75%	Growth in EV market & Tesla's early mover advantage work in its favor.
Operating margin (b)	1.60%	1.60%	→ 12.00%		12.00%	Continued economies of scale & brand
Tax rate	25.00%	25.00%	→ 25.00%		25.00%	Global tax rate
Reinvestment (c)		Sales to capital ratio 3.00		RIR =	17.50%	Capacity build up allows for less reinvestment in the near years.
Return on capital	1.59%	Marginal ROIC =	34.86%		10.00%	Cost of entry will limit competition.
Cost of capital (d)		7.00%	→ 7.40%		7.40%	Moves to median company cost of capital

The Cash Flows

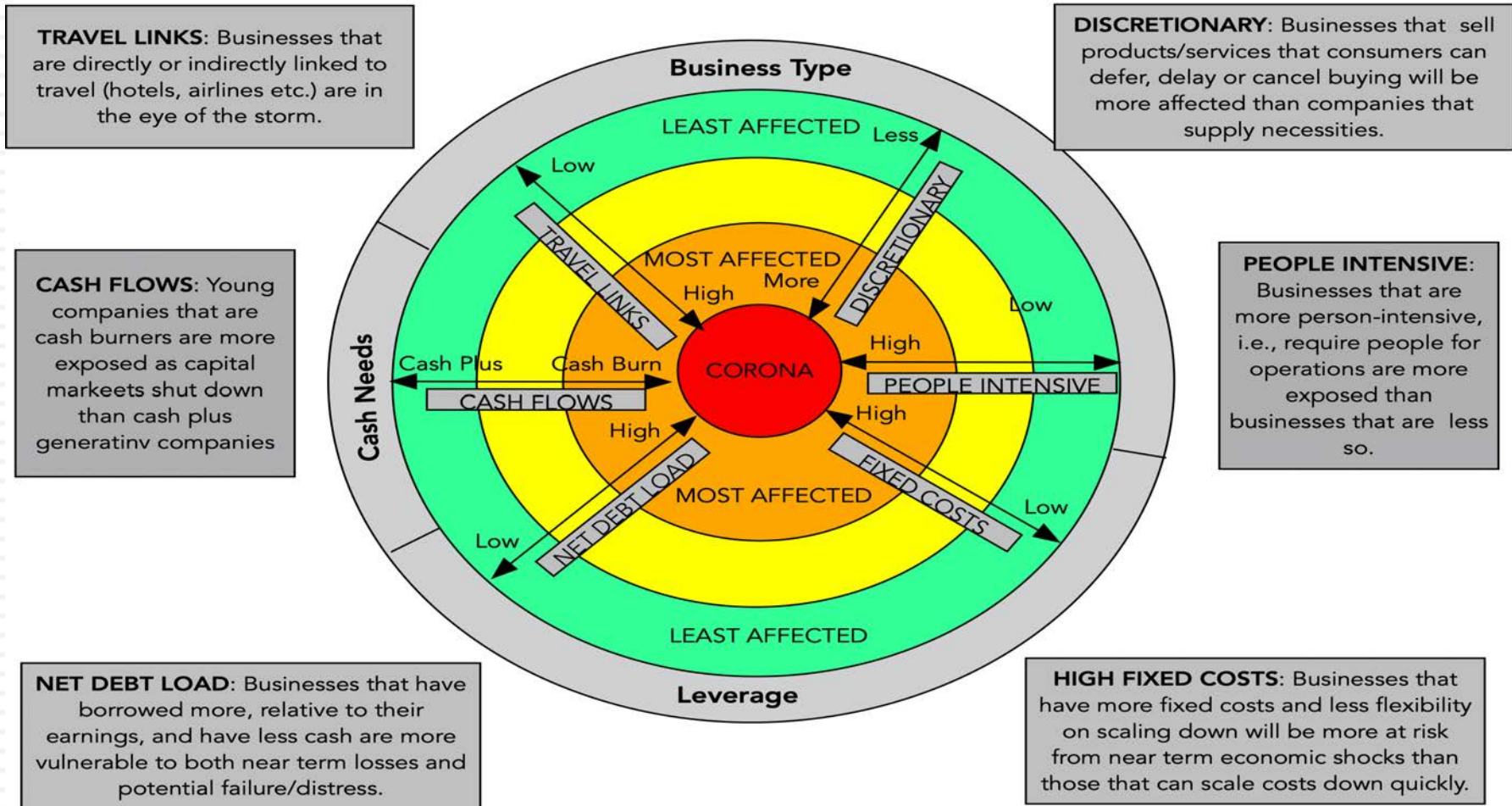
	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	\$ 30,723	3.68%	\$ 1,132	\$ 849	\$ 2,048	\$(1,199)
2	\$ 38,403	5.76%	\$ 2,213	\$ 1,660	\$ 2,560	\$(900)
3	\$ 48,004	7.84%	\$ 3,764	\$ 2,823	\$ 3,200	\$(377)
4	\$ 60,005	9.92%	\$ 5,953	\$ 4,465	\$ 4,000	\$ 464
5	\$ 75,006	12.00%	\$ 9,001	\$ 6,751	\$ 5,000	\$ 1,750
6	\$ 90,270	12.00%	\$ 10,832	\$ 8,124	\$ 7,632	\$ 492
7	\$ 104,442	12.00%	\$ 12,533	\$ 9,400	\$ 7,086	\$ 2,314
8	\$ 115,983	12.00%	\$ 13,918	\$ 10,438	\$ 5,770	\$ 4,668
9	\$ 123,406	12.00%	\$ 14,809	\$ 11,107	\$ 3,711	\$ 7,395
10	\$ 125,566	12.00%	\$ 15,068	\$ 11,301	\$ 1,080	\$ 10,221
Terminal year	\$ 127,763	12.00%	\$ 15,332	\$ 11,499	\$ 2,012	\$ 9,486

The Value

Terminal value	\$ 167,901		
PV(Terminal value)	\$ 84,402		
PV (CF over next 10 years)	\$ 12,988		
Value of operating assets =	\$ 97,390		
Adjustment for distress	\$ 4,869	Probability of failure =	10.00%
- Debt & Mnority Interests	\$ 14,708		
+ Cash & Other Non-operating assets	\$ 6,514		
Value of equity	\$ 84,326		
- Value of equity options	\$ 8,822		
Number of shares	177.00		
Value per share	\$ 426.58	Stock was trading at =	\$581.00

The Virus Effect: A Picture

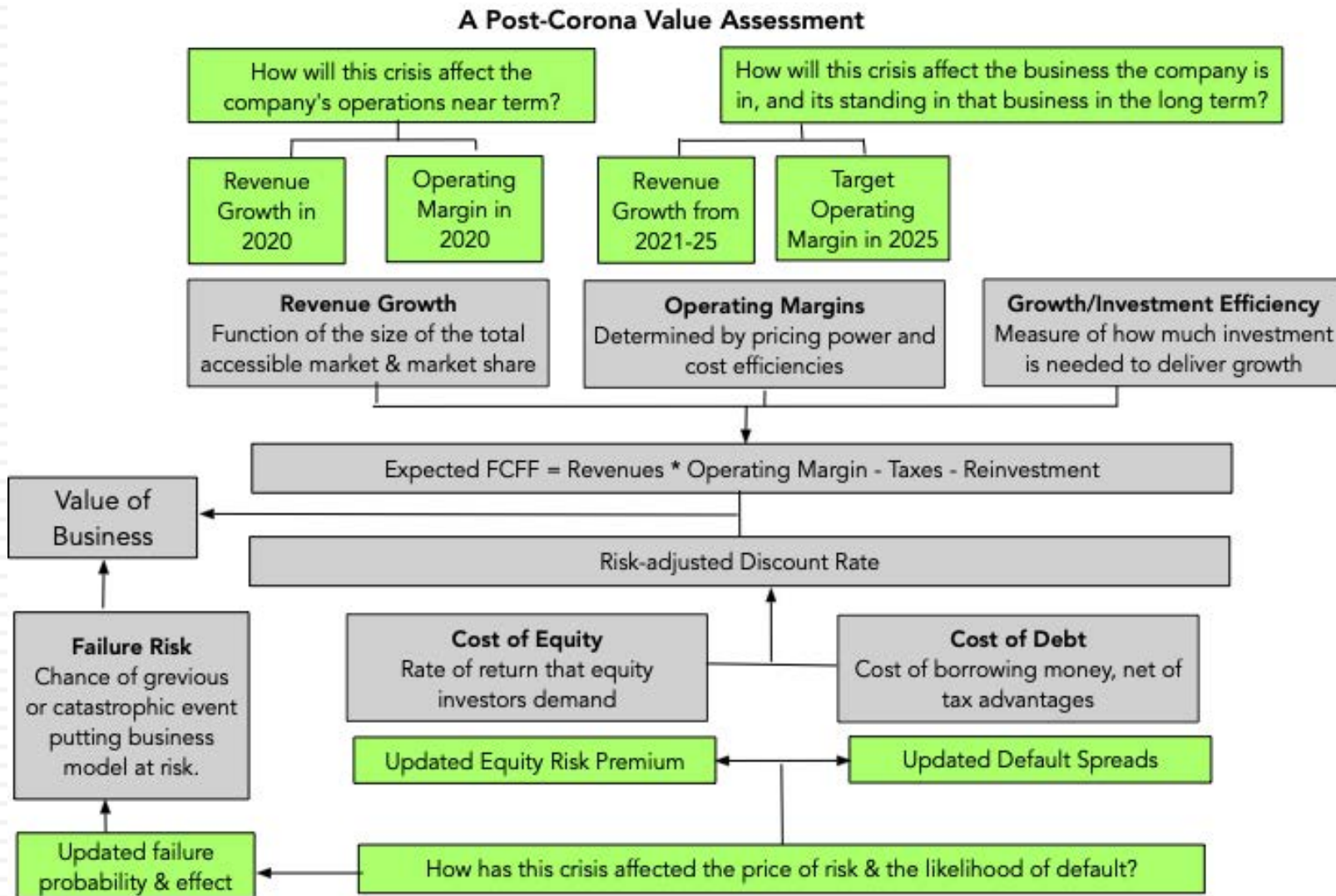
CIRCLES OF INFECTION: CORONA'S EFFECT ON BUSINESSES



And the dark side beckons...

- if your concept of valuation is downloading last year's financials for a company into a spread sheet and then using historical growth rates, with some mean reversion thrown in, to forecast future numbers, you are probably feeling lost right now, and with good reason.
- It is also not a time to wring our hands, complain that there is too much uncertainty and argue that the fundamentals don't matter.
 - ▣ If you do so, you will be drawn to the dark side of investing, where fundamentals don't matter (paradigm shifts, anyone?), new pricing metrics get invented and you are at the mercy of mood and momentum.
- Ironically, it is precisely at times like these that you need to go back to basics.

A Post-Corona Version



Zoom

The Story

With its technology and ease of use, Zoom is uniquely positioned to take advantage of a boom in online business/other meetings, driven partly by increased comfort on the part of managers with the technology and partly by costs. The Corona Virius will accelerate this shift to online meetings, increasing the overall market size, and while competitors will emerge, the networking benefits that Zoom builds up will allow it to keep a significant market share. Along the way, Zoom's margins will converge on the lofty margins earned by business and application software companies and the cost of capital will decline to reflect the fact that once mature it will be a diversified business services company, giving it the cost of capital of a mature company (at today's riskfree rate of 0.67%).

The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	\$ 623	50.00%	0.67%		0.67%	
Operating margin (b)	9.70%	9.70%	22.25%		22.25%	
Tax rate	25.00%	25.00%	25.00%		25.00%	
Reinvestment (c)		Sales to capital ratio 0.85		RIR =	11.17%	
Return on capital	23.66%	Marginal ROIC =	19.59%		6.00%	
Cost of capital (d)		7.39%	6.00%		6.00%	

The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	\$ 934	12.21%	\$ 114	\$ 86	\$ 365	\$ (279)
2	\$ 1,401	14.72%	\$ 206	\$ 155	\$ 547	\$ (393)
3	\$ 2,102	17.23%	\$ 362	\$ 272	\$ 821	\$ (550)
4	\$ 3,152	19.74%	\$ 622	\$ 467	\$ 1,232	\$ (765)
5	\$ 4,729	22.25%	\$ 1,052	\$ 789	\$ 1,848	\$ (1,059)
6	\$ 6,626	22.25%	\$ 1,474	\$ 1,106	\$ 2,225	\$ (1,119)
7	\$ 8,632	22.25%	\$ 1,921	\$ 1,441	\$ 2,351	\$ (911)
8	\$ 10,393	22.25%	\$ 2,313	\$ 1,734	\$ 2,065	\$ (330)
9	\$ 11,488	22.25%	\$ 2,556	\$ 1,917	\$ 1,284	\$ 633
10	\$ 11,565	22.25%	\$ 2,573	\$ 1,930	\$ 90	\$ 1,840
Terminal year	\$ 11,643	22.25%	\$ 2,591	\$ 1,943	\$ 217	\$ 1,726

The Value

Terminal value	\$ 32,383		
PV(Terminal value)	\$ 16,501		
PV (CF over next 10 years)	\$ (2,559)		
Value of operating assets =	\$ 13,942		
Adjustment for distress	\$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	\$ 119		
+ Cash & Other Non-operating assets	\$ 855		
Value of equity	\$ 14,679		
- Value of equity options	\$ 868		
Number of shares	276.40		
Value per share	\$ 49.97	Stock was trading at =	\$113.75

Boeing

The Story

Boeing is in deep trouble. Already exposed to significant pain because of its mishandling of the Boeing 737 Max, which caused revenues to plummet in 2019, the company is facing a mountain of pain with the Corona Virus decimating the airline business (Boeing's customers). I assume more pain the year to come, with revenues dropping even with the 737 Max returning to the fold and increased losses. After that, I assume that there will be higher growth, as airlines start playing catch up and buy more aircraft from a duopoly. I assume that margins will revert back to pre-2018 levels over the next 5 years and that during the next year, Boeing is exposed to a risk of failure, not so much because it will go out of business (it is too big to fail) but from needing a bailout from the government that is large enough to wipe out equity (as was the case with GM in 2009).

The Assumptions

	Base year	In 2020	Years 1-5	Years 6-10	After year 10	Link to story
Revenues (a)	\$ 76,559	-10.0%	15.00%	2.00%	2.00%	Duopoly, growing market
Operating margin (b)	-3.10%	-5.0%	-3.10%	9.60%	9.60%	Industry margins, also close to historical
Tax rate	25.00%		25.00%	25.00%	25.00%	
Reinvestment (c)			Sales to capital ratio	3.80	20.00%	
Return on capital	-11.78%		Marginal ROIC =	76.00%	10.00%	
Cost of capital (d)			8.51%	7.50%	7.50%	

The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	\$ 68,903	-5.00%	\$ (3,445)	\$ (3,445)	\$ (2,014)	\$ (1,431)
2	\$ 79,239	4.73%	\$ 3,751	\$ 3,675	\$ 2,719	\$ 955
3	\$ 91,124	9.60%	\$ 8,749	\$ 6,562	\$ 3,127	\$ 3,435
4	\$ 104,793	9.60%	\$ 10,061	\$ 7,546	\$ 3,596	\$ 3,950
5	\$ 120,512	9.60%	\$ 11,571	\$ 8,678	\$ 4,136	\$ 4,542
6	\$ 135,455	9.60%	\$ 13,005	\$ 9,754	\$ 3,932	\$ 5,822
7	\$ 148,730	9.60%	\$ 14,280	\$ 10,710	\$ 3,493	\$ 7,217
8	\$ 159,439	9.60%	\$ 15,308	\$ 11,481	\$ 2,817	\$ 8,664
9	\$ 166,773	9.60%	\$ 16,012	\$ 12,009	\$ 1,930	\$ 10,080
10	\$ 170,108	9.60%	\$ 16,333	\$ 12,249	\$ 878	\$ 11,372
Terminal year	\$ 173,510	9.60%	\$ 16,659	\$ 12,494	\$ 2,499	\$ 9,996

The Value

Terminal value	\$ 181,737		
PV(Terminal value)	\$ 82,610		
PV (CF over next 10 years)	\$ 30,378		
Value of operating assets =	\$ 112,988		
Adjustment for distress	\$ 11,299	Probability of failure =	20.00%
- Debt & Mnority Interests	\$ 28,532		
+ Cash & Other Non-operating assets	\$ 10,030		
Value of equity	\$ 83,187		
- Value of equity options	\$ -		
Number of shares	566.00		
Value per share	\$ 146.97	Stock was trading at =	\$127.68