



A VIRAL MARKET UPDATE IX: A DIY VALUATION OF THE INDEX

Heat and Light...

The Lead In

- Markets are up: In the last few week, markets have settled in, mostly with an upward bias in these last few weeks, and the big question, as US equities climb back towards pre-crisis levels is whether the market has lost its bearings.
- In the midst of bad news: After all, the news, whether on macroeconomic indicators or company-level earnings, is not just bad, but historically so.
- And the experts are skittish: market gurus who are pointing to this disconnect as evidence that markets are just wrong and that a major correction is around the corner, but their credibility is undercut by the fact that many in this group have been forecasting this for the last decade.

Market Action: Equities

			Levels			% Change				
	Index	Country/Region	14-Feb	20-Mar	1-Jun	4/24-5/1	4/1-5/1	2/14-3/20	3/20-6/1	2/14 - 6/1
Americas	S&P 500	US	3214	2305	3044	0.48%	3.01%	-28.28%	32.06%	-5.29%
	NASDAQ 100	US	9624	6994	9556	1.47%	1.50%	-27.33%	36.63%	-0.71%
	TSX	Canada	17848	11852	15193	-0.46%	1.87%	-33.59%	28.19%	-14.88%
	IPC Mexico	Mexico	45000	34270	36123	-1.06%	0.95%	-23.84%	5.41%	-19.73%
	iBovespa	Brazil	114381	67069	87403	0.52%	6.36%	-41.36%	30.32%	-23.59%
Europe	FTSE 100	UK	7409	5191	6077	-2.29%	1.39%	-29.94%	17.07%	-17.98%
	DAX	Germany	13744	8929	11587	-1.65%	4.63%	-35.03%	29.77%	-15.69%
	CAC 40	France	6069	4131	4701	-1.48%	5.77%	-31.93%	13.80%	-22.54%
	S&P Europe 350	Europe	1731	1181	1398	-1.61%	2.81%	-31.77%	18.34%	-19.26%
Asia	Nikkei 225	Japan	23688	16553	21878	-0.18%	7.31%	-30.12%	32.17%	-7.64%
	Shanghai 50	China	2895	2628	2807	-0.11%	1.11%	-9.22%	6.81%	-3.04%
	Hang Seng	Hong Kong	27816	22805	22961	-0.74%	0.14%	-18.01%	0.68%	-17.45%
	Sensex	India	41258	29916	32424	0.69%	5.71%	-27.49%	8.38%	-21.41%
Australia & NZ	ASX 200	Australia	7133	4825	5756	-1.63%	4.71%	-32.36%	19.30%	-19.30%
	NZX 50	New Zealand	11835	9202	10882	0.24%	2.06%	-22.25%	18.26%	-8.05%
Africa	FTSE/JSE TOP 40	South Africa	52050	36302	46545	-1.89%	0.24%	-30.26%	28.22%	-10.58%
	NSE-All Share	Nigeria	27756	22198	25268	0.40%	0.25%	-20.02%	13.83%	-8.96%

Market Action: Treasuries

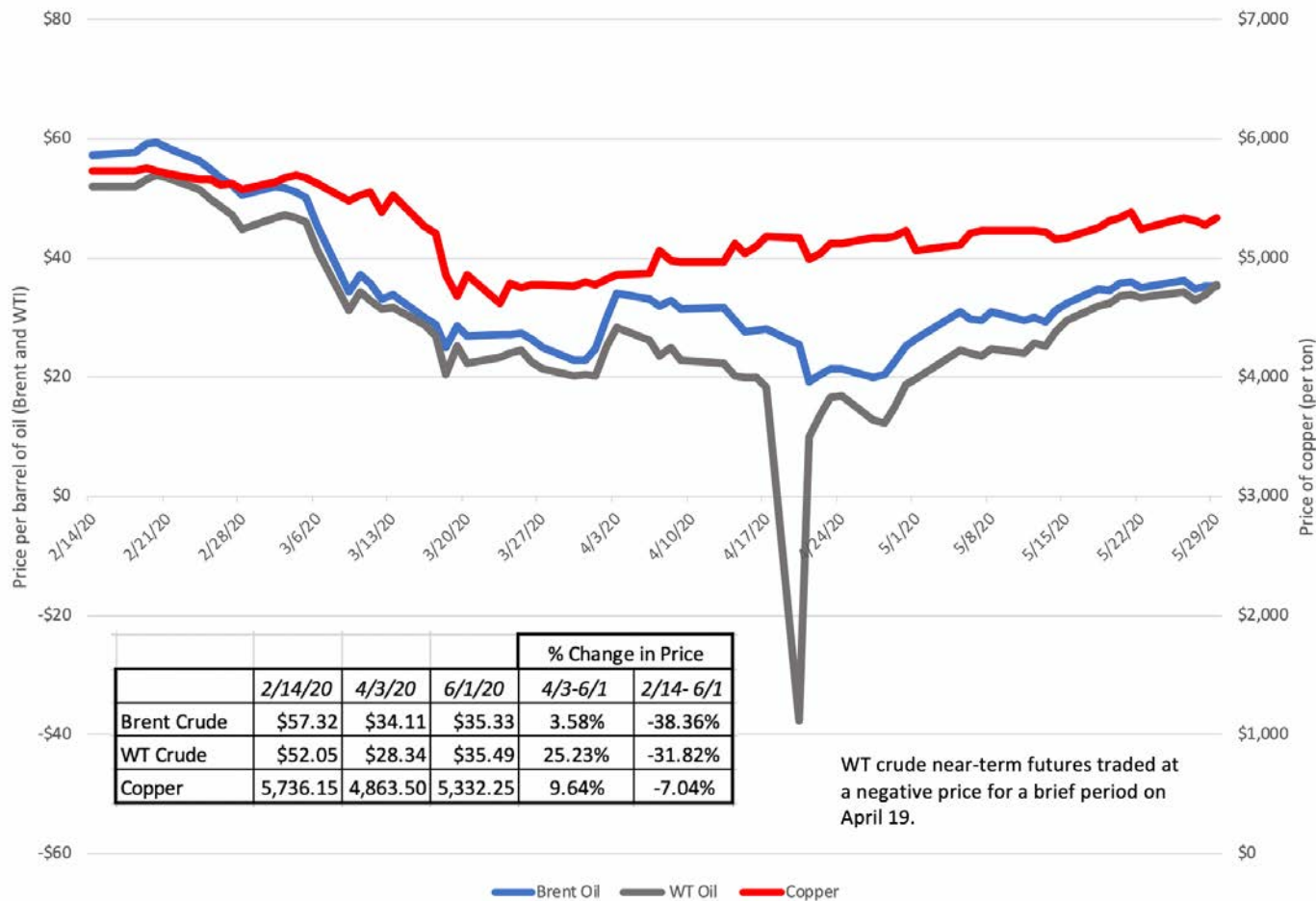
	Yields on US Treasuries				
Maturity	2/14/20	3/20/20	4/3/20	5/1/20	6/1/20
3 month	1.58%	0.05%	0.10%	0.12%	0.14%
2 year	1.42%	0.37%	0.23%	0.20%	0.14%
5 year	1.42%	0.52%	0.39%	0.36%	0.31%
10 year	1.59%	0.92%	0.62%	0.64%	0.66%
20 year	1.89%	1.35%	1.05%	1.04%	1.22%
30 year	2.04%	1.55%	1.24%	1.27%	1.46%
	Yield curve slope				
2 yr - 3 month	-0.16%	0.32%	0.13%	0.08%	0.00%
10 yr - 2 yr	0.17%	0.55%	0.39%	0.44%	0.52%
30 yr - 10 yr	0.45%	0.63%	0.62%	0.63%	0.80%

Market Action: Corporate Bonds

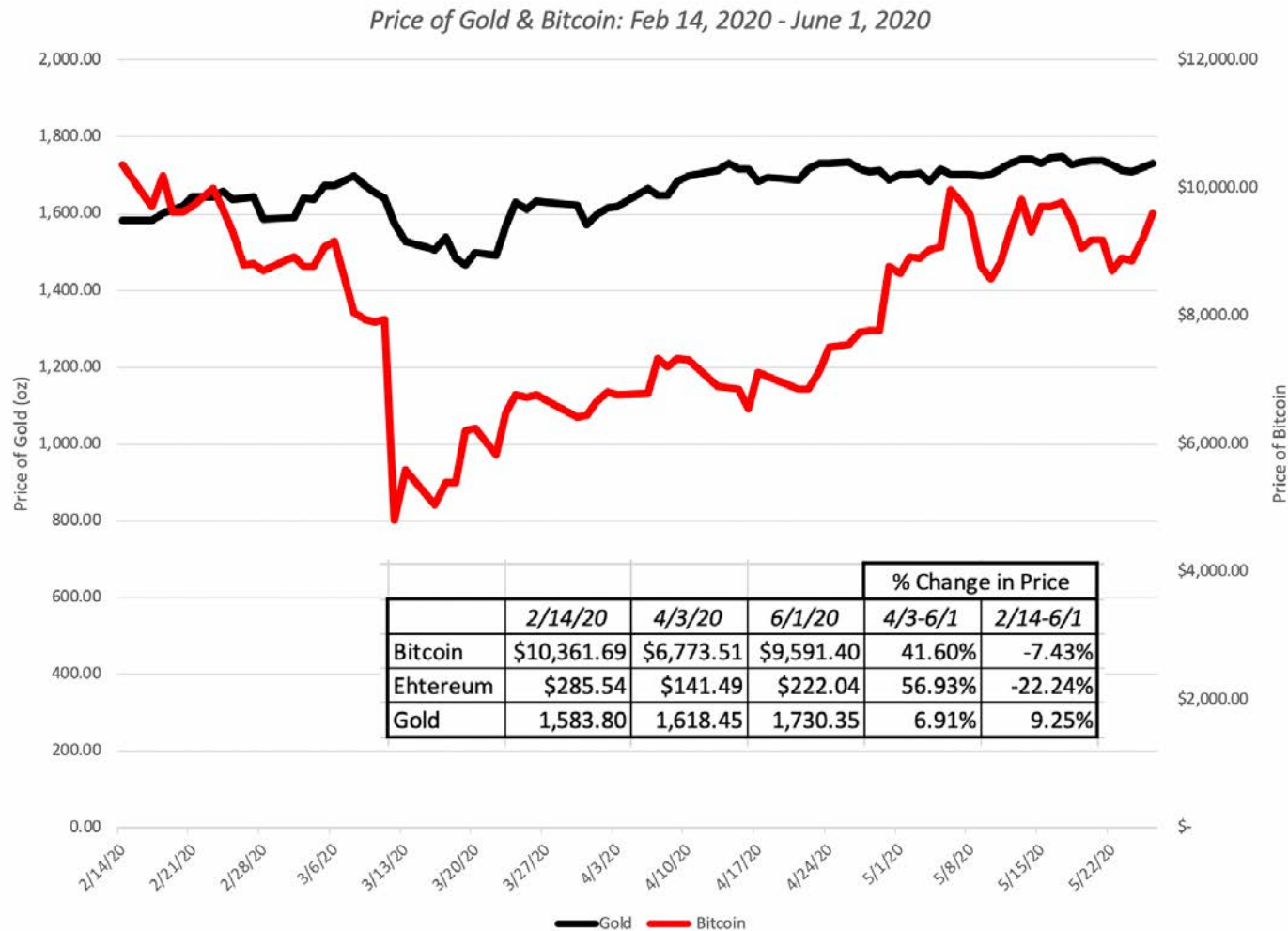
	Yields and Spreads on Corporates								Change from 2/14 - 6/1	
	Spread over 10-yr Treasury				Yield on Treasury				Spread	Yield
S&P Bond Rating	2/14/20	4/3/20	5/1/20	6/1/20	2/14/20	4/3/20	5/1/20	6/1/20		
AAA	0.69%	1.50%	1.19%	0.89%	2.28%	2.12%	1.85%	1.55%	0.20%	-0.73%
AA	0.72%	1.77%	1.24%	0.99%	2.31%	2.39%	1.90%	1.65%	0.27%	-0.66%
A	0.80%	2.29%	1.62%	1.36%	2.39%	2.91%	2.28%	2.02%	0.56%	-0.37%
BBB	1.33%	3.97%	2.78%	2.38%	2.92%	4.59%	3.44%	3.04%	1.05%	0.12%
BB	1.93%	6.76%	5.28%	4.44%	3.52%	7.38%	5.94%	5.10%	2.51%	1.58%
B	3.40%	10.14%	7.78%	6.29%	4.99%	10.76%	8.44%	6.95%	2.89%	1.96%
CCC or lower	9.65%	18.80%	17.56%	14.75%	11.24%	19.42%	18.22%	15.41%	5.10%	4.17%

Market Action: Commodity Prices

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



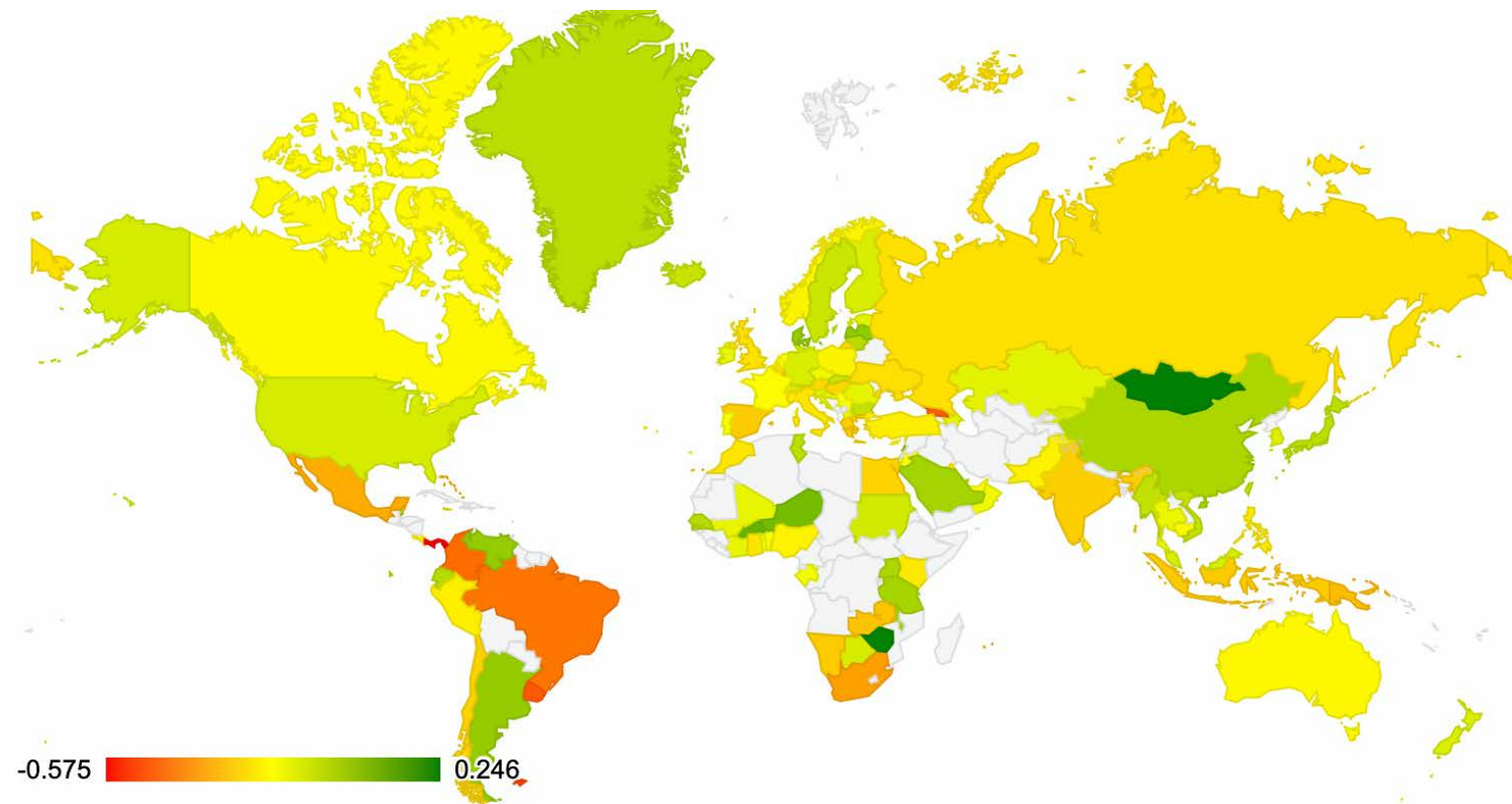
Market Action: Gold and Bitcoin



Equities: By Region

Sub Region	Number of firms	Market Capitalization (in US dollars)			\$ Change			Percentage Change		
		2/14/20	3/20/20	6/1/20	2/14-3/20	3/20-6/1	2/14-6/1	2/14-3/20	3/20-6/1	2/14-6/1
Africa	655	\$ 576,084	\$ 359,853	\$ 414,035	\$ (216,232)	\$ 54,182	\$ (162,049)	-37.53%	15.06%	-28.13%
Australia & NZ	1,363	\$ 1,616,915	\$ 952,040	\$ 1,339,679	\$ (664,875)	\$ 387,639	\$ (277,236)	-41.12%	40.72%	-17.15%
Canada	1,564	\$ 2,228,711	\$ 1,353,111	\$ 1,836,062	\$ (875,600)	\$ 482,951	\$ (392,649)	-39.29%	35.69%	-17.62%
China	6,154	\$14,025,870	\$12,424,923	\$13,287,400	\$ (1,600,947)	\$ 862,477	\$ (738,470)	-11.41%	6.94%	-5.27%
EU & Environs	4,749	\$13,588,107	\$ 9,216,361	\$11,611,072	\$ (4,371,746)	\$ 2,394,711	\$ (1,977,035)	-32.17%	25.98%	-14.55%
Eastern Europe & Russia	415	\$ 817,097	\$ 490,049	\$ 648,184	\$ (327,048)	\$ 158,135	\$ (168,913)	-40.03%	32.27%	-20.67%
India	1,945	\$ 2,196,185	\$ 1,513,439	\$ 1,662,964	\$ (682,746)	\$ 149,525	\$ (533,221)	-31.09%	9.88%	-24.28%
Japan	3,811	\$ 6,038,139	\$ 4,465,538	\$ 5,670,480	\$ (1,572,601)	\$ 1,204,942	\$ (367,659)	-26.04%	26.98%	-6.09%
Latin America & Caribbean	938	\$ 2,376,669	\$ 1,375,966	\$ 1,617,132	\$ (1,000,703)	\$ 241,166	\$ (759,537)	-42.11%	17.53%	-31.96%
Middle East	1,212	\$ 3,090,712	\$ 2,571,686	\$ 2,914,860	\$ (519,026)	\$ 343,175	\$ (175,852)	-16.79%	13.34%	-5.69%
Small Asia	7,848	\$ 5,072,793	\$ 3,548,190	\$ 4,433,098	\$ (1,524,603)	\$ 884,908	\$ (639,694)	-30.05%	24.94%	-12.61%
UK	1,092	\$ 3,060,708	\$ 1,917,843	\$ 2,415,155	\$ (1,142,865)	\$ 497,312	\$ (645,553)	-37.34%	25.93%	-21.09%
United States	4,901	\$35,637,157	\$23,876,241	\$32,025,273	\$ (11,760,916)	\$ 8,149,031	\$ (3,611,885)	-33.00%	34.13%	-10.14%
Global	36,647	\$90,325,147	\$64,065,238	\$79,231,056	\$ (26,259,909)	\$15,165,818	\$ (11,094,091)	-29.07%	23.67%	-12.28%

Equities: Country Heat Map



Equities: By Sector

Primary Sector	Number of firms	Market Capitalization (in US dollars)			\$ Change			Percentage Change		
		2/14/20	3/20/20	6/1/20	2/14-3/20	3/20-6/1	2/14-6/1	2/14-3/20	3/20-6/1	2/14-6/1
Communication Services	1,686	\$ 7,347,019	\$ 5,489,830	\$ 6,770,054	\$ (1,857,189)	\$ 1,280,224	\$ (576,965)	-25.28%	23.32%	-7.85%
Consumer Discretionary	4,971	\$10,150,616	\$ 7,060,810	\$ 9,323,383	\$ (3,089,806)	\$ 2,262,573	\$ (827,233)	-30.44%	32.04%	-8.15%
Consumer Staples	2,342	\$ 7,122,436	\$ 5,706,302	\$ 6,682,282	\$ (1,416,133)	\$ 975,980	\$ (440,154)	-19.88%	17.10%	-6.18%
Energy	1,310	\$ 5,934,869	\$ 3,849,972	\$ 4,772,551	\$ (2,084,896)	\$ 922,579	\$ (1,162,317)	-35.13%	23.96%	-19.58%
Financials	3,904	\$14,928,359	\$ 9,928,379	\$11,040,564	\$ (4,999,981)	\$ 1,112,185	\$ (3,887,796)	-33.49%	11.20%	-26.04%
Health Care	3,412	\$ 8,913,236	\$ 6,860,569	\$ 9,064,738	\$ (2,052,667)	\$ 2,204,168	\$ 151,502	-23.03%	32.13%	1.70%
Industrials	6,575	\$10,108,324	\$ 6,889,556	\$ 8,471,348	\$ (3,218,768)	\$ 1,581,791	\$ (1,636,977)	-31.84%	22.96%	-16.19%
Information Technology	4,866	\$13,593,804	\$ 9,733,574	\$12,866,228	\$ (3,860,230)	\$ 3,132,654	\$ (727,576)	-28.40%	32.18%	-5.35%
Materials	4,418	\$ 4,979,016	\$ 3,515,132	\$ 4,342,273	\$ (1,463,884)	\$ 827,141	\$ (636,743)	-29.40%	23.53%	-12.79%
Real Estate	2,332	\$ 4,044,904	\$ 2,703,365	\$ 3,165,400	\$ (1,341,538)	\$ 462,035	\$ (879,504)	-33.17%	17.09%	-21.74%
Utilities	826	\$ 3,201,607	\$ 2,326,996	\$ 2,731,318	\$ (874,611)	\$ 404,321	\$ (470,290)	-27.32%	17.38%	-14.69%
All	36,647	\$90,325,147	\$64,065,238	\$79,231,056	\$(26,259,909)	\$15,165,818	\$(11,094,091)	-29.07%	23.67%	-12.28%

Equities: Worst hit and Best Industries

Worst Performing Industries										
		Market Capitalization (in US dollars)			\$ Change			Percentage Change		
Industry	Number of firms	2/14/20	3/20/20	6/1/20	2/14-3/20	3/20-6/1	2/14-6/1	2/14-3/20	3/20-6/1	2/14-6/1
Air Transport	149	\$ 556,213	\$ 313,549	\$ 360,990	\$ (242,665)	\$ 47,441	\$ (195,223)	-43.63%	15.13%	-35.10%
Reinsurance	34	\$ 180,664	\$ 98,286	\$ 120,010	\$ (82,379)	\$ 21,725	\$ (60,654)	-45.60%	22.10%	-33.57%
Oil/Gas (Production and Exploration)	472	\$ 692,325	\$ 317,620	\$ 467,201	\$ (374,705)	\$ 149,581	\$ (225,123)	-54.12%	47.09%	-32.52%
Aerospace/Defense	211	\$1,217,804	\$ 674,126	\$ 835,696	\$ (543,678)	\$161,571	\$ (382,107)	-44.64%	23.97%	-31.38%
Bank (Money Center)	577	\$6,822,648	\$4,637,480	\$4,739,982	\$ (2,185,168)	\$102,502	\$ (2,082,666)	-32.03%	2.21%	-30.53%
Broadcasting	122	\$ 164,633	\$ 93,940	\$ 118,442	\$ (70,693)	\$ 24,502	\$ (46,191)	-42.94%	26.08%	-28.06%
Food Wholesalers	120	\$ 93,278	\$ 50,166	\$ 67,431	\$ (43,112)	\$ 17,264	\$ (25,847)	-46.22%	34.41%	-27.71%
Hotel/Gaming	538	\$ 708,307	\$ 381,770	\$ 514,681	\$ (326,538)	\$132,911	\$ (193,626)	-46.10%	34.81%	-27.34%
Insurance (General)	177	\$ 831,734	\$ 506,306	\$ 611,193	\$ (325,428)	\$104,887	\$ (220,541)	-39.13%	20.72%	-26.52%
Best Performing Industries										
		Market Capitalization (in US dollars)			\$ Change			Percentage Change		
Industry	Number of firms	2/14/20	3/20/20	6/1/20	2/14-3/20	3/20-6/1	2/14-6/1	2/14-3/20	3/20-6/1	2/14-6/1
Software (Internet)	108	\$ 226,923	\$ 166,709	\$ 281,047	\$ (60,214)	\$114,338	\$ 54,125	-26.54%	68.59%	23.85%
Precious Metals	515	\$ 417,720	\$ 296,911	\$ 471,378	\$ (120,810)	\$174,468	\$ 53,658	-28.92%	58.76%	12.85%
Drugs (Biotechnology)	908	\$1,407,999	\$1,133,945	\$1,561,080	\$ (274,054)	\$427,135	\$ 153,081	-19.46%	37.67%	10.87%
Healthcare Information and Technology	316	\$ 780,832	\$ 614,357	\$ 858,979	\$ (166,475)	\$244,623	\$ 78,147	-21.32%	39.82%	10.01%
Retail (Online)	249	\$2,455,458	\$1,989,439	\$2,688,216	\$ (466,019)	\$698,777	\$ 232,758	-18.98%	35.12%	9.48%
Healthcare Products	633	\$1,831,401	\$1,351,145	\$1,861,377	\$ (480,256)	\$510,232	\$ 29,977	-26.22%	37.76%	1.64%
Software (System & Application)	1,072	\$3,763,152	\$2,790,639	\$3,768,913	\$ (972,513)	\$978,274	\$ 5,761	-25.84%	35.06%	0.15%
Drugs (Pharmaceutical)	1,055	\$3,561,443	\$2,835,198	\$3,542,117	\$ (726,245)	\$706,919	\$ (19,327)	-20.39%	24.93%	-0.54%
Retail (Building Supply)	82	\$ 452,742	\$ 269,623	\$ 449,064	\$ (183,119)	\$179,441	\$ (3,677)	-40.45%	66.55%	-0.81%
Entertainment	510	\$1,114,636	\$ 843,035	\$1,090,046	\$ (271,601)	\$247,011	\$ (24,589)	-24.37%	29.30%	-2.21%



Valuing the Market

Fundamentals...

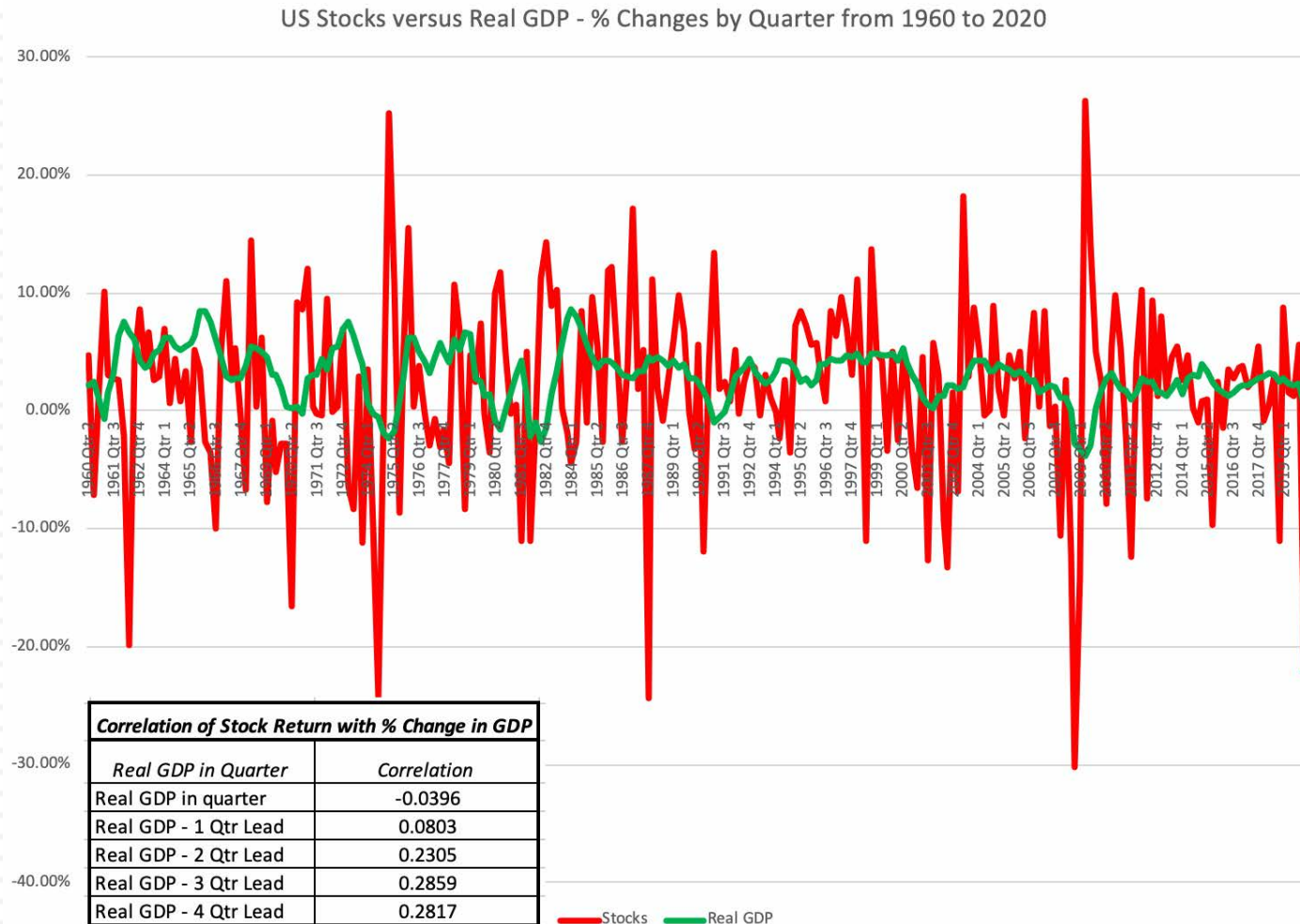
Market Worries

- Disconnect from economic news: For some, the skepticism comes from the disconnect with macroeconomic numbers that are abysmal, as unemployment claims climb into the tens of millions and consumer confidence hovers around historic lows. I will spend the first part of this section arguing that this reflects a fundamental misunderstanding of what markets try to do, and a misreading of history.
- In denial? For others, the question is whether markets are adequately reflecting the potential for long term damage to earnings and cash flows, as well as the cost of defaults, from this crisis. Since that answer to that question lies in the eyes of the beholder, I will provide a framework for converting your fears and hopes into numbers and a value for the market.

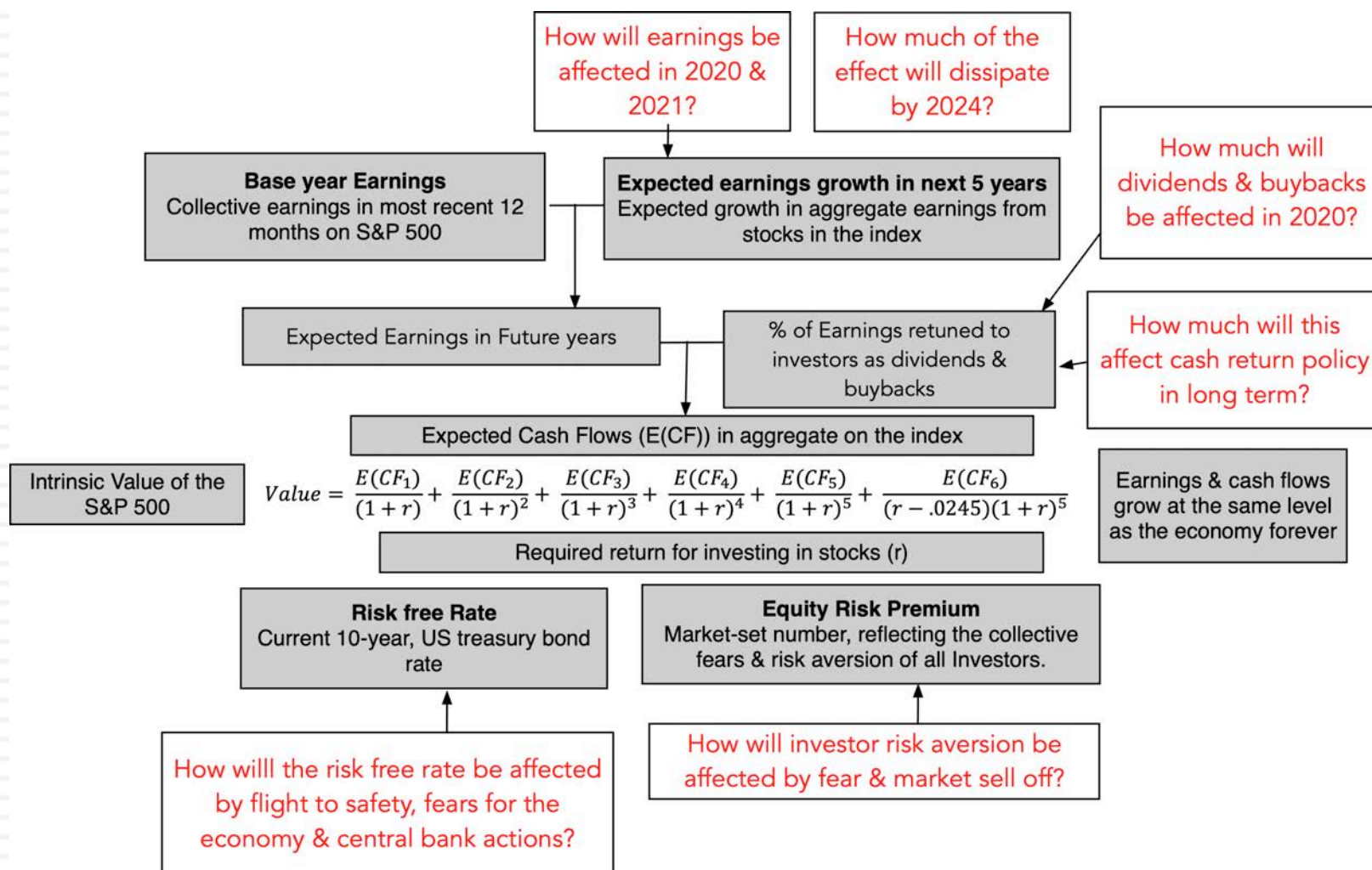
Explaining the disconnect...

- The first is that stocks are driven by earnings, not real growth in the economy or employment, and to the extent that companies can continue to generate income, even in stagnant or declining economies, you may see stock prices rise.
- The second is that the “economy” that stocks are tied to does not always have to be the domestic one, since globalization has made it possible for companies to continue to prosper in slow-growing economies.
- The third is time, since stock markets are prediction machines, albeit with a lot of noise and error, the link between markets and the economy, even if it exists, will be with a lag of months or longer.

Stocks and GDP



Value Drivers for the Index



1. Earnings

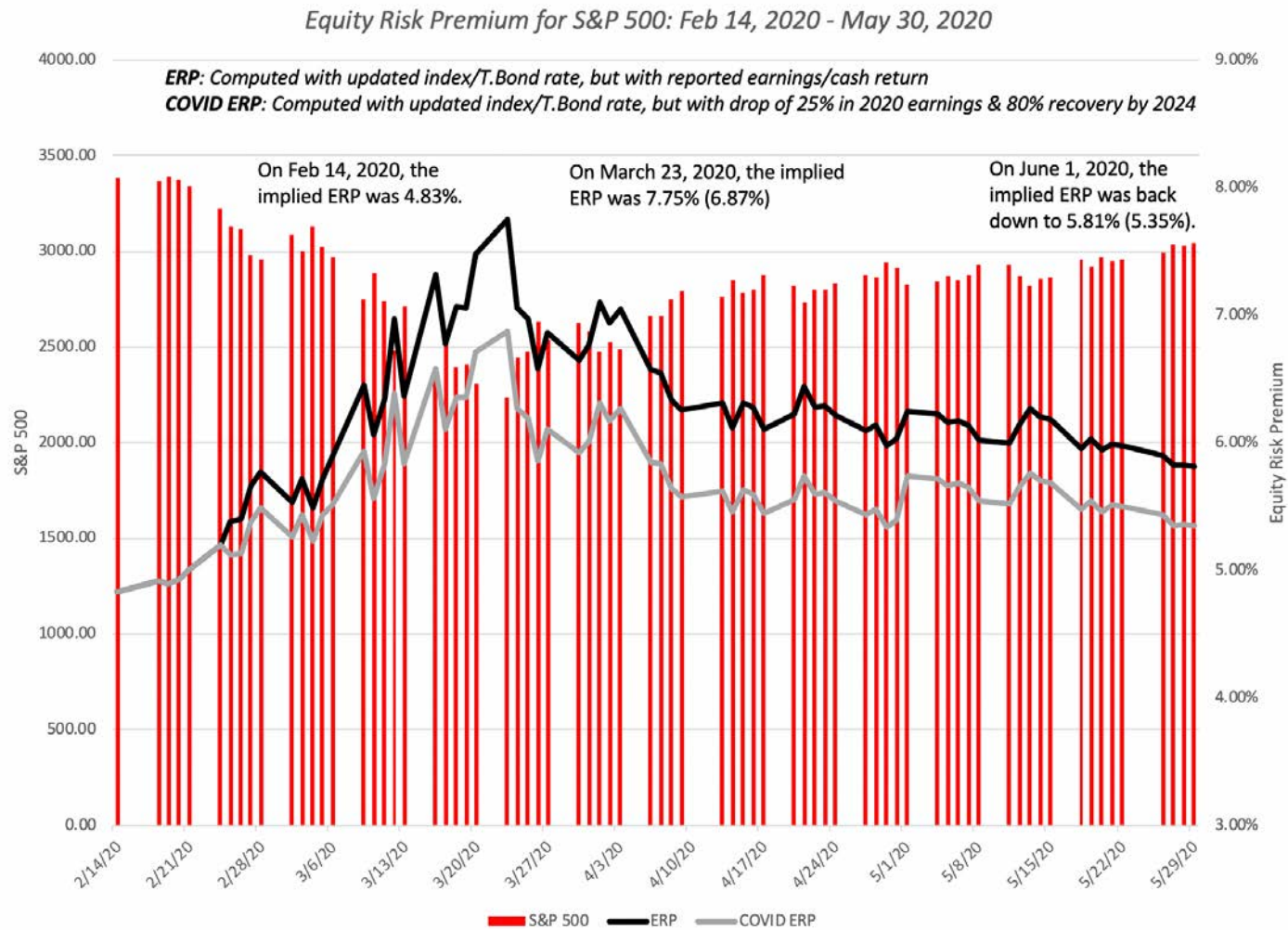
Ed Yardeni (6/1/20)		Analyst Consensus (6/1/20)		Thomson Reuters (6/1/20)	
Year	Earnings on Index	Year	Earnings on Index	Year	Earnings on Index
2019	163	2019	162.97	2019	162.93
2020	120	2020	125.79	2020	125.22
2021	150	2021	164.04	2021	163.67

Market Strategists Forecasts for S&P 500 Earnings in 2020		
Firm	Strategist	2020 EPS Estimate
Bank of America Merrill Lynch	Savita Subramanian	\$115.00
Barclays	Maneesh Deshpande	\$119.00
BMO	Brian Belski	Suspended
BTIG	Julian Emanuel	\$127.00
Canaccord Genuity	Tony Dwyer	\$128.00
CFRA	Sam Stovall	\$162.37
Citigroup	Tobias Levkovich	\$125.00
Credit Suisse	Jonathan Golub	\$125.00
Deutsche Bank	Binky Chadha	\$133.00
Goldman Sachs	David Kostin	\$110.00
JPMorgan Chase	Dubravko Lakos-Bujas	\$150.00
Morgan Stanley	Mike Wilson	\$130.00
Oppenheimer	John Stoltzfus	Suspended
RBC	Lori Calvasina	\$135.00
UBS	Francois Trahan	\$140.00
Wells Fargo Investment Institute	Darrell Cronk	\$115.00
Average		\$129.60
Median		\$127.50
High		\$162.37
Low		\$110.00

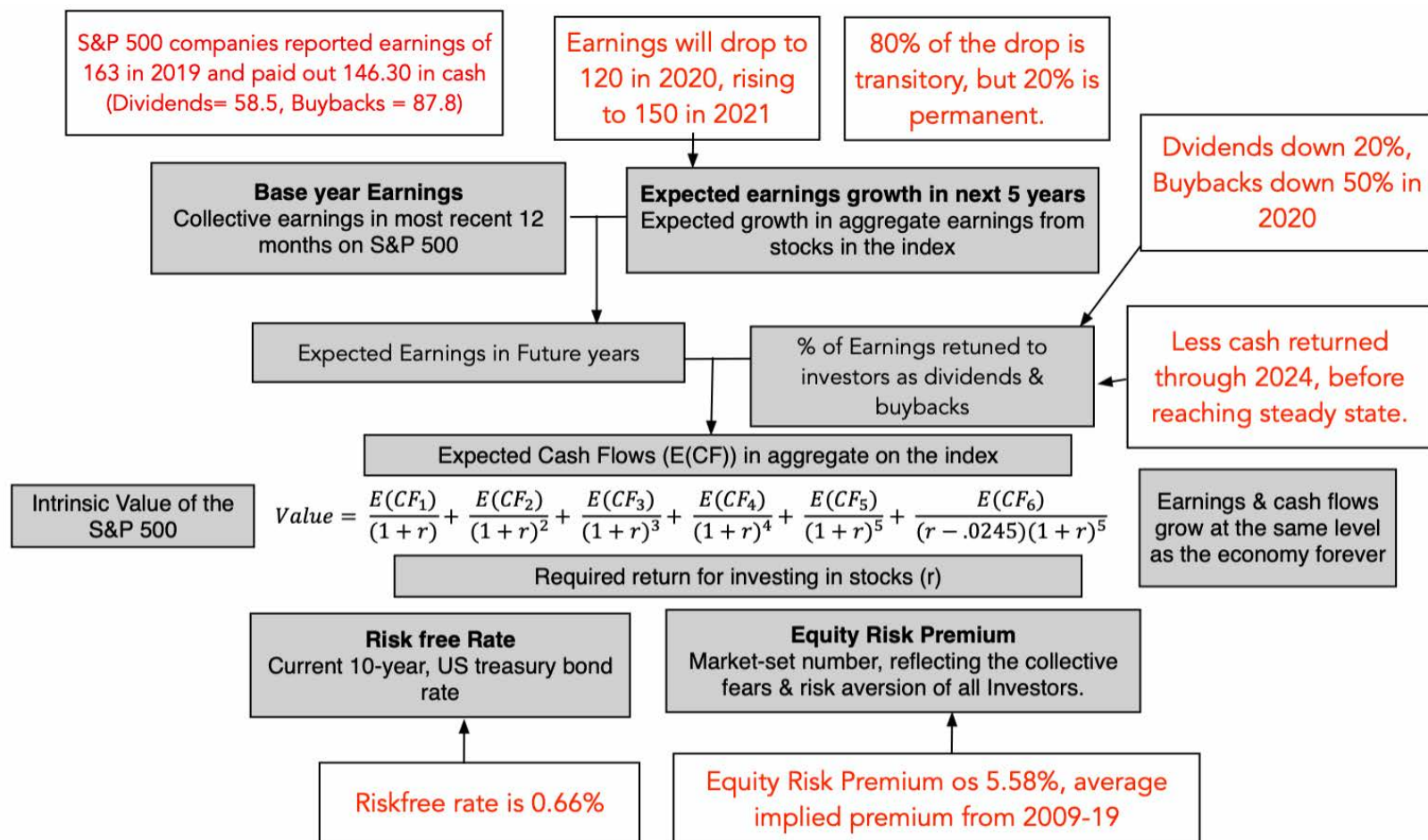
2. Cash Flows

	S&P 500					
Year	Market value	Earnings	Dividends	Buybacks	Cash Returned as % of Earnings	Cash Returned as % of Market Cap
2001	1148.09	38.85	15.74	14.34	77.43%	2.62%
2002	879.82	46.04	15.96	13.87	64.78%	3.39%
2003	1111.91	54.69	17.88	13.70	57.74%	2.84%
2004	1211.92	67.68	19.01	21.59	59.99%	3.35%
2005	1248.29	76.45	22.34	38.82	80.01%	4.90%
2006	1418.30	87.72	25.04	48.12	83.40%	5.16%
2007	1468.36	82.54	28.14	67.22	115.53%	6.49%
2008	903.25	49.51	28.45	39.07	136.37%	7.47%
2009	1115.00	56.86	21.97	15.46	65.82%	3.36%
2010	1257.64	83.77	22.65	32.88	66.28%	4.42%
2011	1257.60	96.44	26.53	44.75	73.91%	5.67%
2012	1426.19	96.82	31.25	44.65	78.39%	5.32%
2013	1848.36	104.92	34.90	53.23	84.00%	4.77%
2014	2058.90	116.16	39.55	62.44	87.79%	4.95%
2015	2043.94	100.48	43.41	64.94	107.83%	5.30%
2016	2238.82	106.26	45.70	62.32	101.66%	4.82%
2017	2673.61	124.51	48.93	60.85	88.17%	4.11%
2018	2506.85	152.78	54.39	96.11	98.51%	6.00%
2019	3230.78	163.00	58.50	87.81	89.76%	4.53%
				Median	83.40%	4.82%
				High	136.37%	7.47%
				Low	57.74%	2.84%

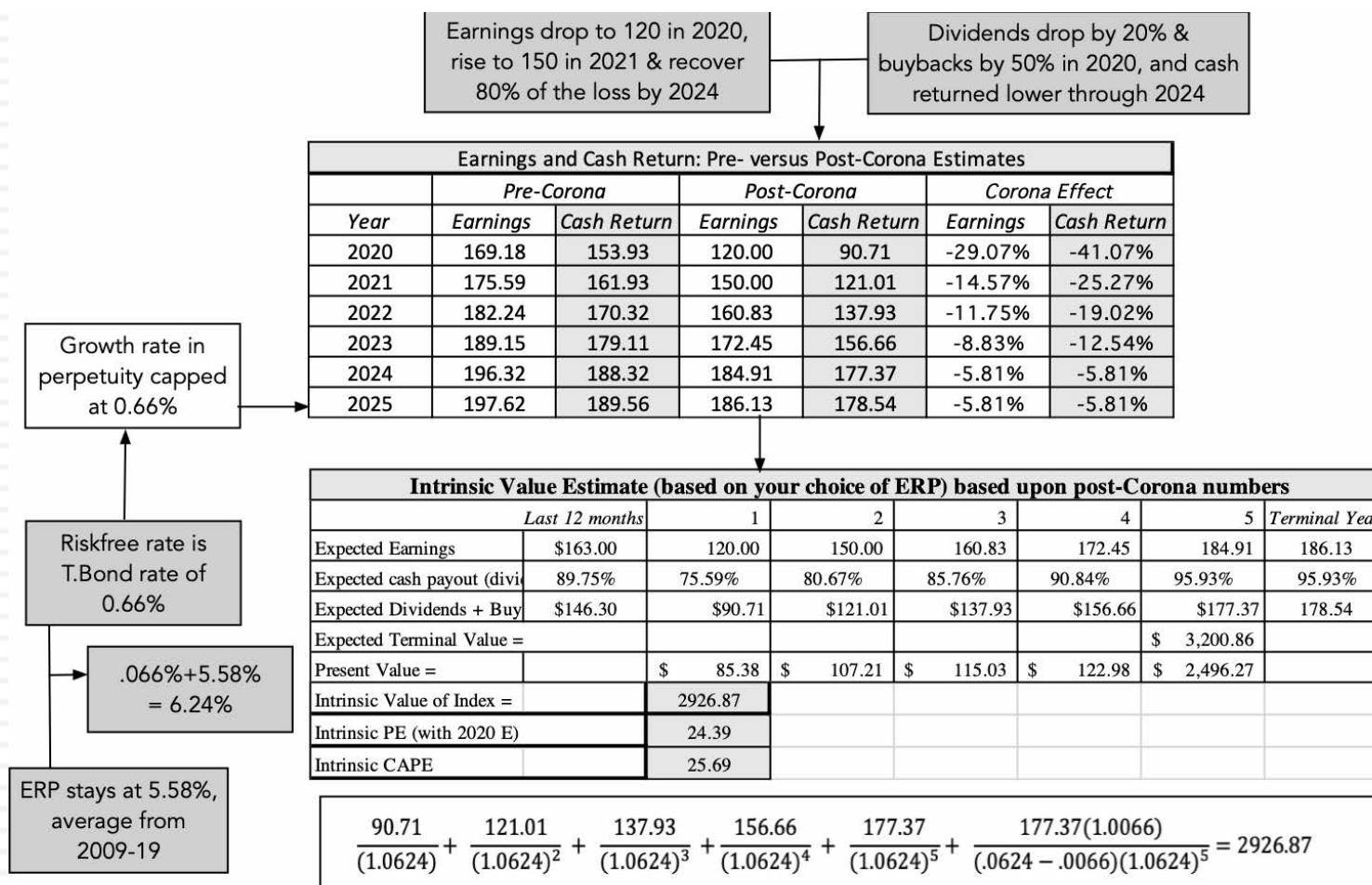
3. Risk



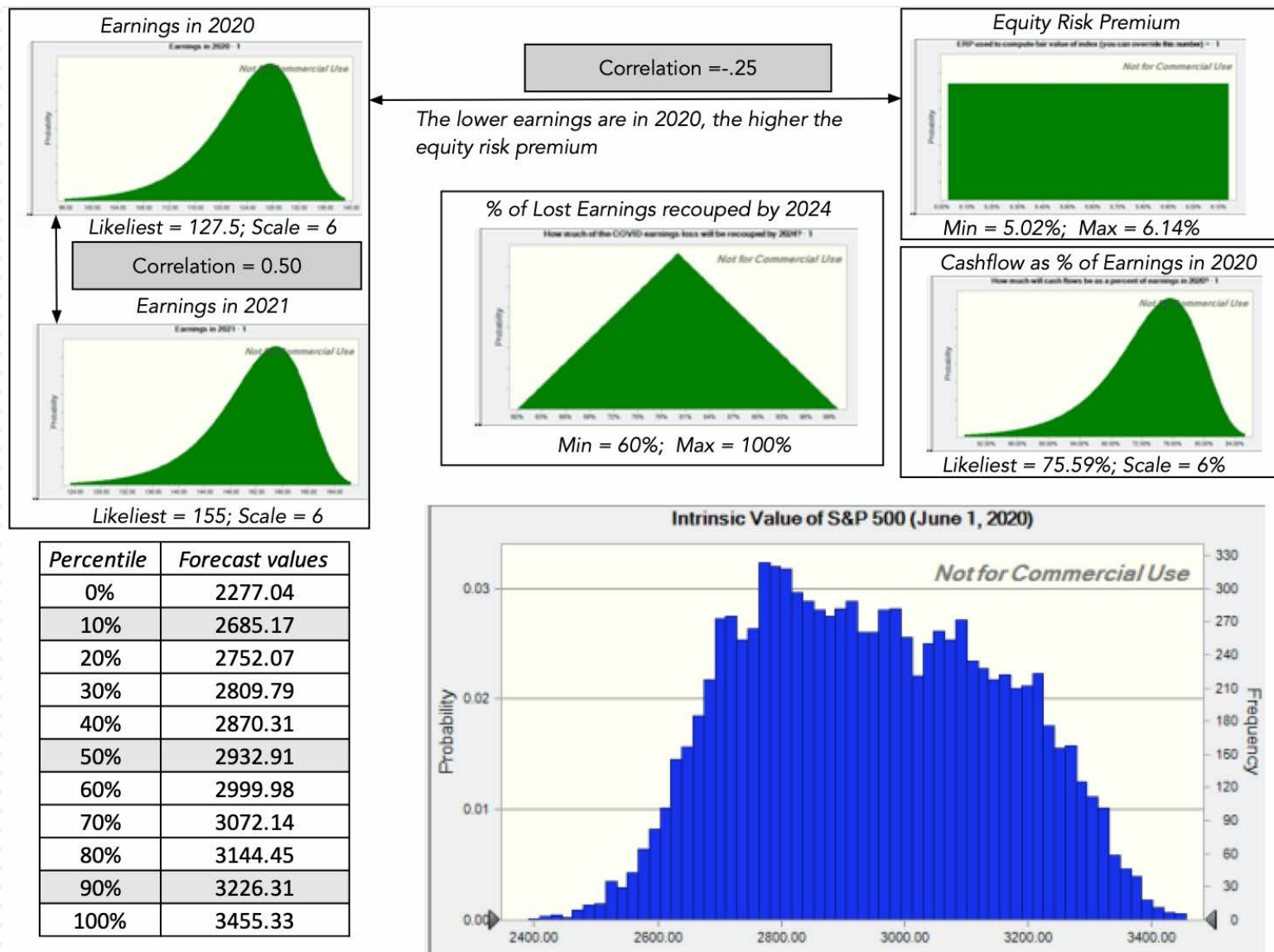
My Story for the Market



My Valuation of the Index



Facing up to uncertainty



Under, Over or Correctly Valued?

- On June 1, the S&P 500 was trading at close to 3100, putting it near the 80th percentile of the distribution, bolstering the "market has gotten ahead of itself" camp, but there is something here for everyone.
 - If you are more optimistic about earnings in 2020 and 2021 than the the median analyst, and about how quickly and completely the market will recover from the crisis shock, you will arrive at a higher value than mine.
 - If you are more pessimistic about the future, perhaps because you think the market is under estimating the likelihood of a second wave of shutdowns or a surge in company defaults, your valuations will be much lower.
- I have not mentioned the Fed, and to those who are Fed-focused, it may seem like I am ignoring the elephant in the room. I have argued for much of the last decade that analysts and investors over estimate the effect that the Fed has on markets. To the counter that it is low interest rates that are keeping the index level high, my response is that low interest rates cut both ways, first by lowering the discount rate (and thus increasing value) but also by signaling much lower growth in the long term (which I capture by lowering growth in perpetuity to the risk free rate).

In conclusion

- Dueling narratives: All investors have narratives, some explicit and implicit, about how they believe the economy and markets will evolve over time. Markets reflect a collective narrative and pricing.
- Narrative clashes: There are times when your narrative will be at odds with that of the market. It is during those times that you will feel the urge to label markets as crazy or irrational, and to view yourself as the last sane person left on the planet. It is my experience that projecting your personal fears and hopes on to the market, and then getting angry when the market responds differently is a recipe for frustration.
- Question, with humility: That is not to say that markets cannot be wrong, but even if they are, a dose of humility is always in order. Right now, it is true that markets are collectively more upbeat about the future than most economists/market experts, but given their relative track records over time, are you really more willing to trust the latter? I most certainly am not!