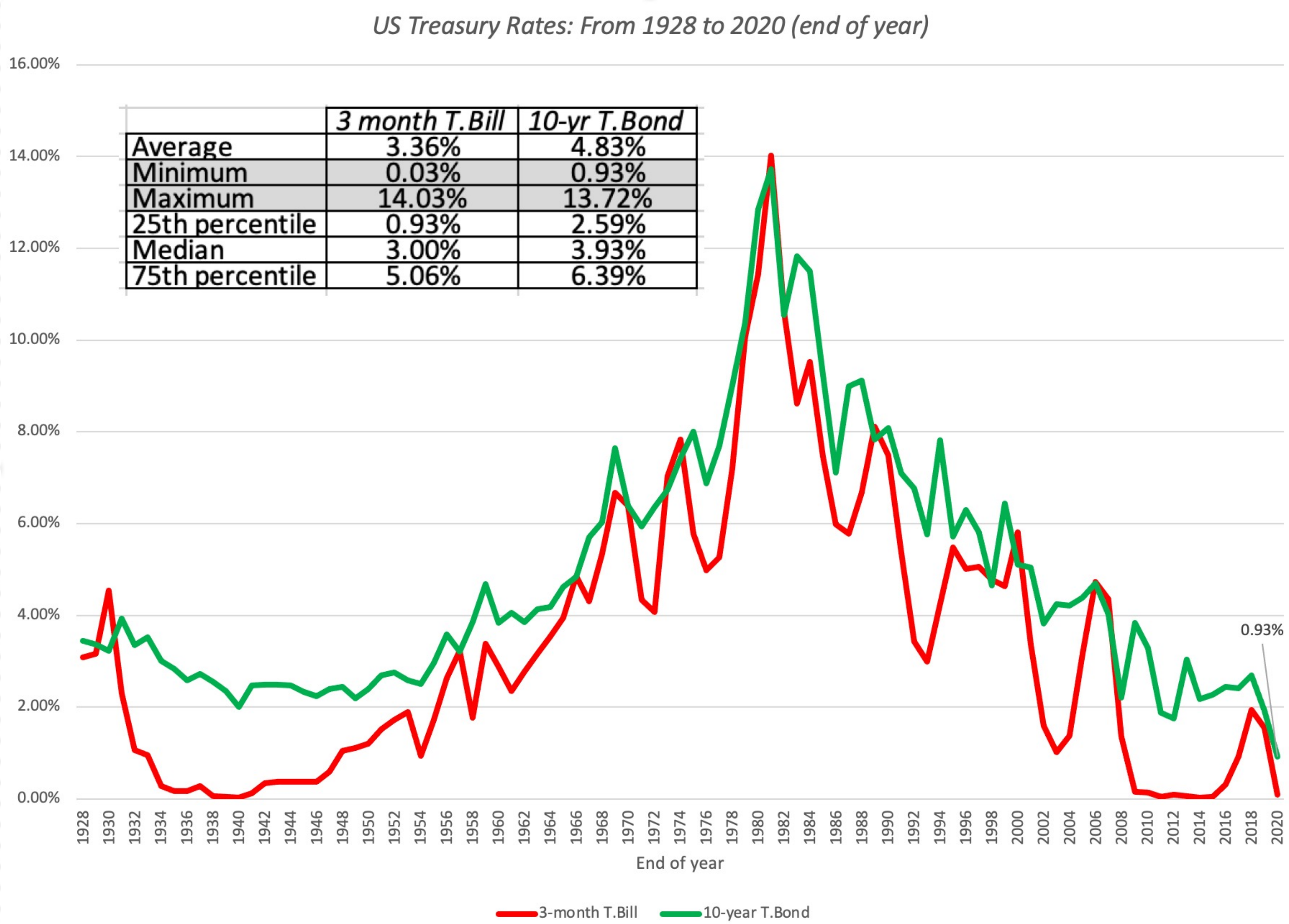
INTEREST RATES AND VALUE

If rates go up, stocks go ?

Interest rates take center stage...

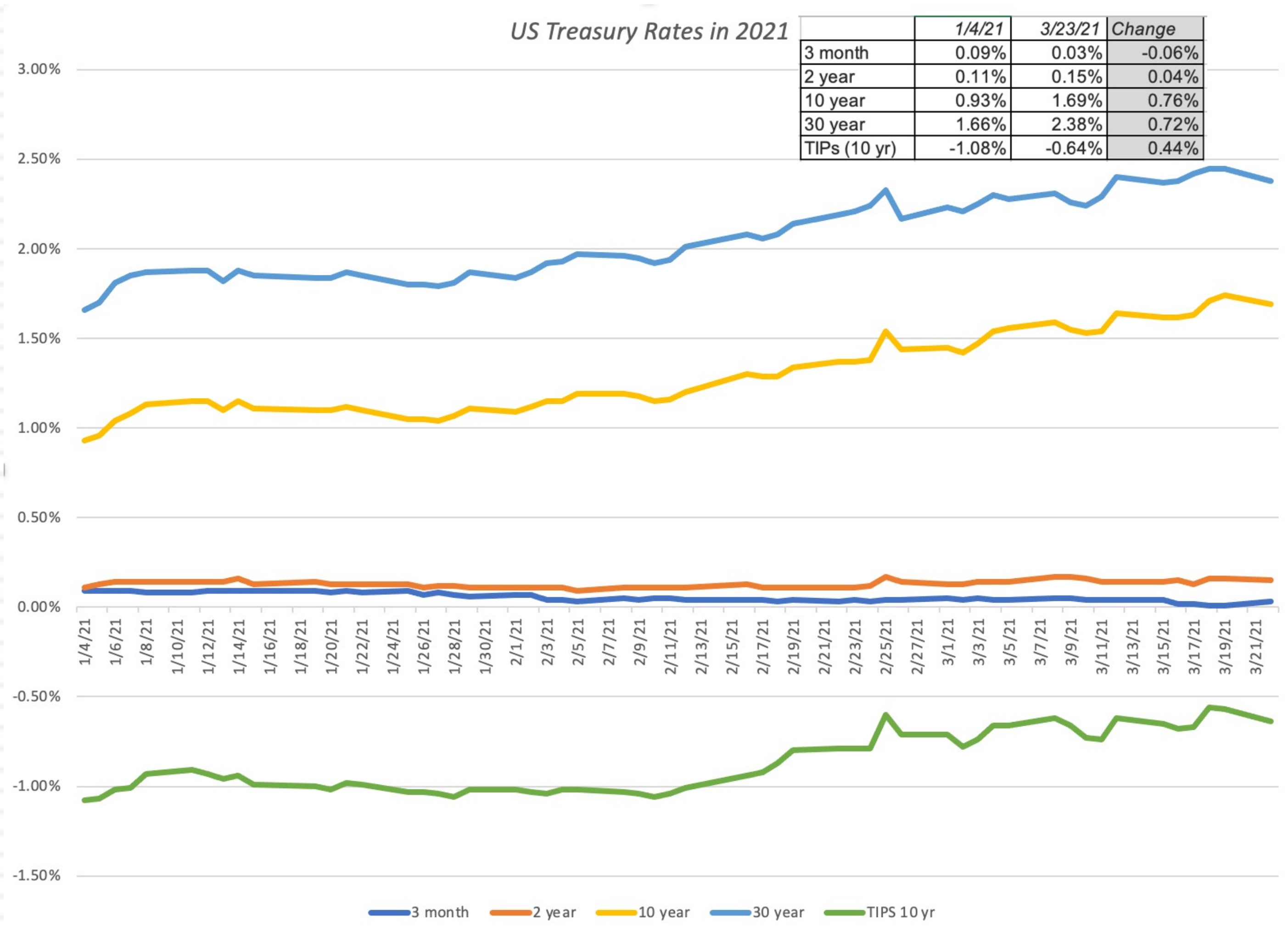
- The first quarter of 2021 has been, for the most part, a good time for equity markets, but there have been surprises.
  - The first has been the steep rise in treasury rates in the last twelve weeks, as investors reassess expected economic growth over the rest of the year and worry about inflation.
  - The second has been a shift within equity markets, a "rotation" in Wall Street terms, as the winners from last year underperformed the losers, raising questions about whether this shift is a long term shift or just a short term adjustment.

Interest Rates: Long Term Perspective



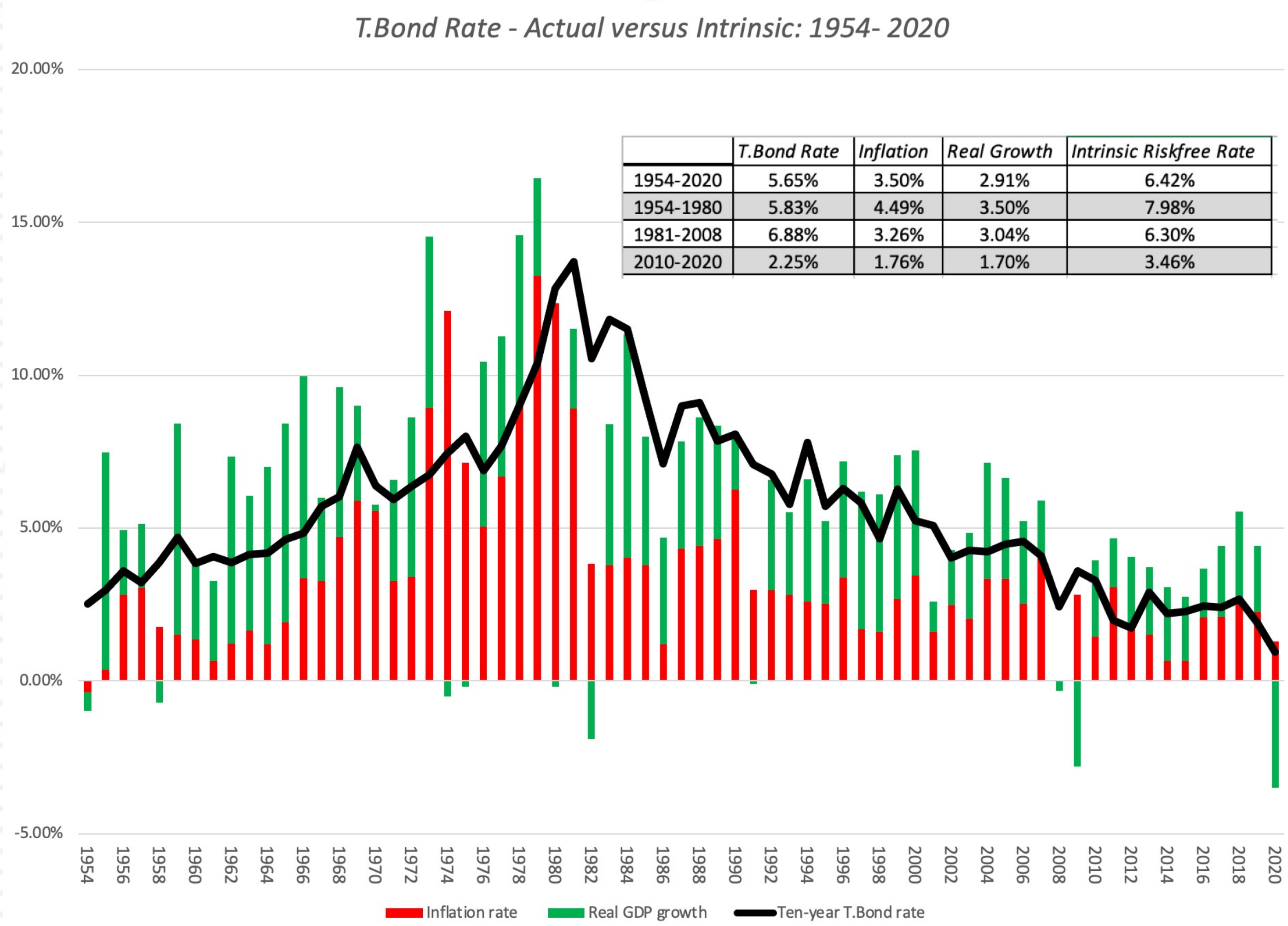
	3 month T.Bill	10-yr T.Bond
Average	3.36%	4.83%
Minimum	0.03%	0.93%
Maximum	14.03%	13.72%
25th percentile	0.93%	2.59%
Median	3.00%	3.93%
75th percentile	5.06%	6.39%

Interest Rates in 2021



	1/4/21	3/23/21	Change
3 month	0.09%	0.03%	-0.06%
2 year	0.11%	0.15%	0.04%
10 year	0.93%	1.69%	0.76%
30 year	1.66%	2.38%	0.72%
TIPs (10 yr)	-1.08%	-0.64%	0.44%

The Fed's Role

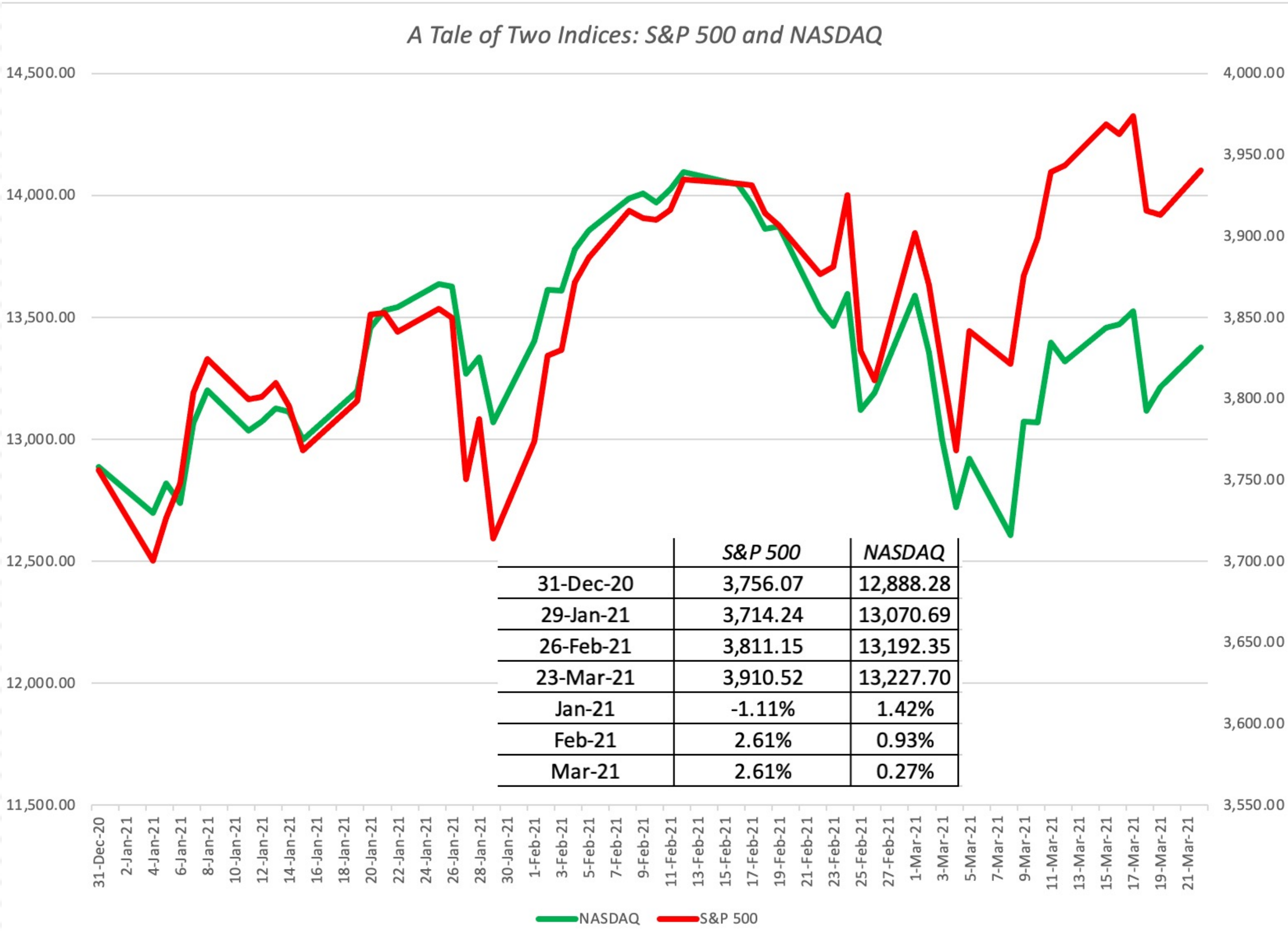


	T.Bond Rate	*Inflation*	*Real Growth*	*Intrinsic Riskfree Rate*
1954-2020	5.65%	3.50%	2.91%	6.42%
1954-1980	5.83%	4.49%	3.50%	7.98%
1981-2008	6.88%	3.26%	3.04%	6.30%
2010-2020	2.25%	1.76%	1.70%	3.46%

Looking forward…

- As for rates for the rest of the year, you may draw comfort from the Fed's assurances that it will keep rate low, but I don't. Put bluntly, the only rate that the Fed directly sets is the Fed Funds rate, and while it may send signals to the market with its words and actions, it faces two limits.
  - One is that the Fed Funds rate is currently close to zero, limiting the Fed's capacity to signal with lower rates.
  - The second and more powerful reason is that the only reason that a central bank is able to signal to markets is if it has credibility, since the signal is more about what the Fed sees, using data that only it might have, about inflation and real growth in the future. Every time a Federal Reserve chair or any of the FOMC members make utterances that undercut that credibility, the Fed risks losing even the limited signaling power it continues to have.
- In particular, the Fed's own assessments of real growth of 6.5% for 2021 and inflation of 2.2% for the year are at war with its concurrent promise that it will keep rates low; after all, the intrinsic riskfree rate is 8.7%, based on those numbers.

The Equities Story in 2021



	S&P 500	*NASDAQ*
31-Dec-20	3,756.07	12,888.28
29-Jan-21	3,714.24	13,070.69
26-Feb-21	3,811.15	13,192.35
23-Mar-21	3,910.52	13,227.70
Jan-21	-1.11%	1.42%
Feb-21	2.61%	0.93%
Mar-21	2.61%	0.27%

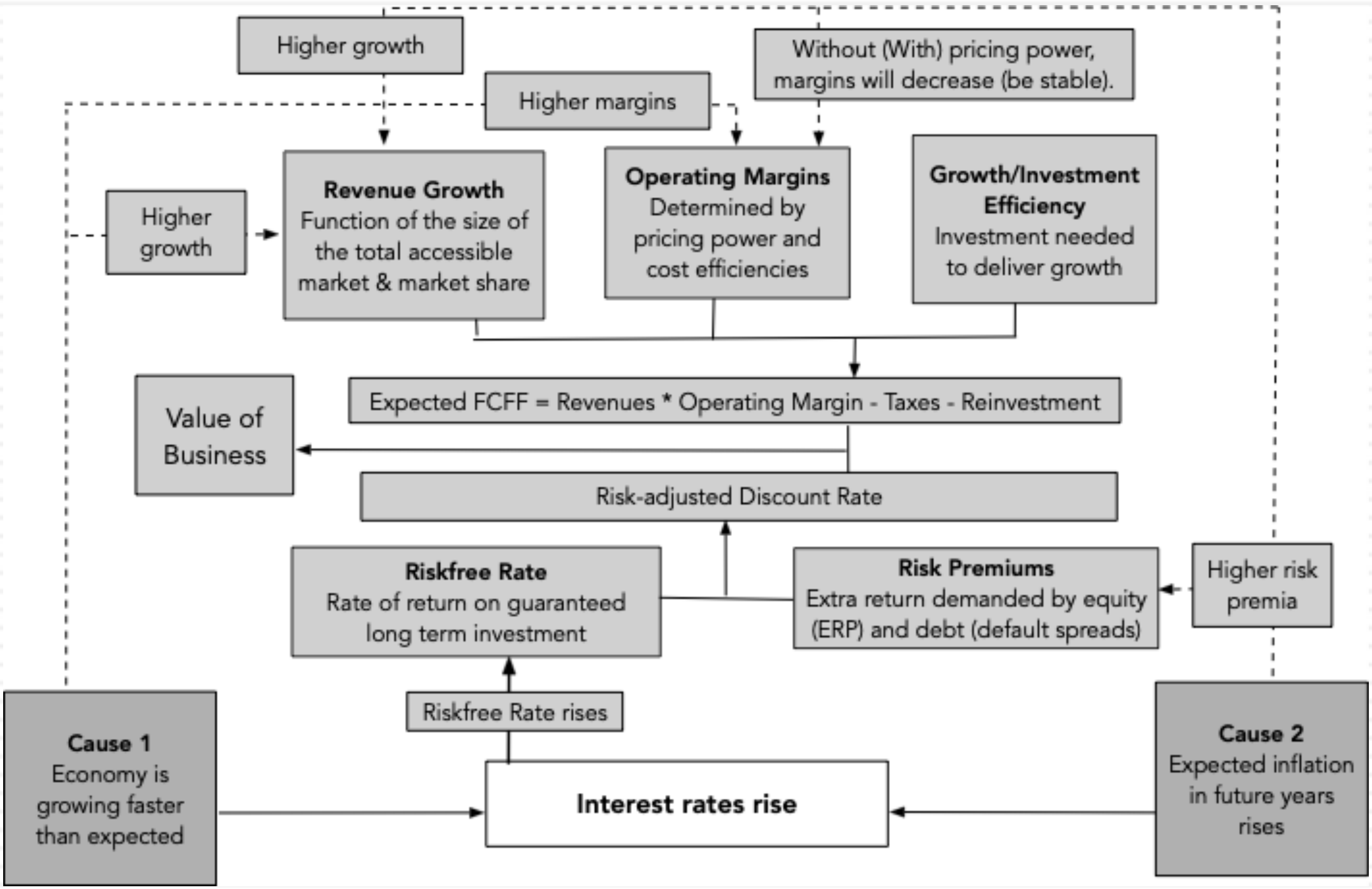
Divergence across sectors

		Market Cap (US$ millions)			% Change in Market Cap	
Primary Sector	*Number of firms*	*3/23/20*	*12/31/20*	*3/23/21*	*3/23/20 - 12/31/20*	*12/31/20 - 3/23/21*
Communication Services	402	$2,543,067	$4,379,484	$4,750,530	72.21%	8.47%
Consumer Discretionary	718	$2,444,410	$5,499,906	$5,734,078	125.00%	4.26%
Consumer Staples	368	$1,973,897	$2,706,842	$2,695,961	37.13%	-0.40%
Energy	481	$652,021	$1,080,023	$1,306,026	65.64%	20.93%
Financials	1,329	$2,770,728	$4,522,434	$5,078,375	63.22%	12.29%
Health Care	1,376	$3,419,910	$5,573,346	$5,700,270	62.97%	2.28%
Industrials	880	$2,009,873	$3,693,547	$3,960,582	83.77%	7.23%
Information Technology	991	$5,708,495	$11,054,952	$11,056,342	93.66%	0.01%
Materials	397	$539,622	$1,025,623	$1,112,321	90.06%	8.45%
Real Estate	280	$858,858	$1,267,126	$1,366,254	47.54%	7.82%
Utilities	111	$773,711	$1,067,189	$1,067,621	37.93%	0.04%
All US firms	7,336	$23,694,597	$41,870,482	$43,828,372	76.71%	4.68%

Value vs Growth (A Lazy Categorization)

		Market Cap (US$ millions)			% Change in Market Cap	
Price to Book	*Number of firms*	*3/23/20*	*12/31/20*	*3/23/21*	*3/23/20 - 12/31/20*	*12/31/20 - 3/23/21*
Bottom decile	240	$275,488	$376,495	$398,444	36.66%	5.83%
2nd decile	241	$606,330	$975,551	$1,175,119	60.89%	20.46%
3rd decile	240	$347,306	$598,186	$686,102	72.24%	14.70%
4th decile	241	$1,675,539	$2,372,717	$2,580,727	41.61%	8.77%
5th decile	240	$1,804,046	$2,986,111	$3,374,069	65.52%	12.99%
6th decile	241	$4,104,562	$7,205,054	$7,332,247	75.54%	1.77%
7th decile	240	$4,132,174	$6,526,181	$6,850,938	57.94%	4.98%
8th decile	241	$3,065,341	$5,019,888	$5,061,715	63.76%	0.83%
9th decile	240	$3,434,993	$5,919,395	$5,881,599	72.33%	-0.64%
Top decile	241	$1,513,262	$3,092,329	$3,097,180	104.35%	0.16%

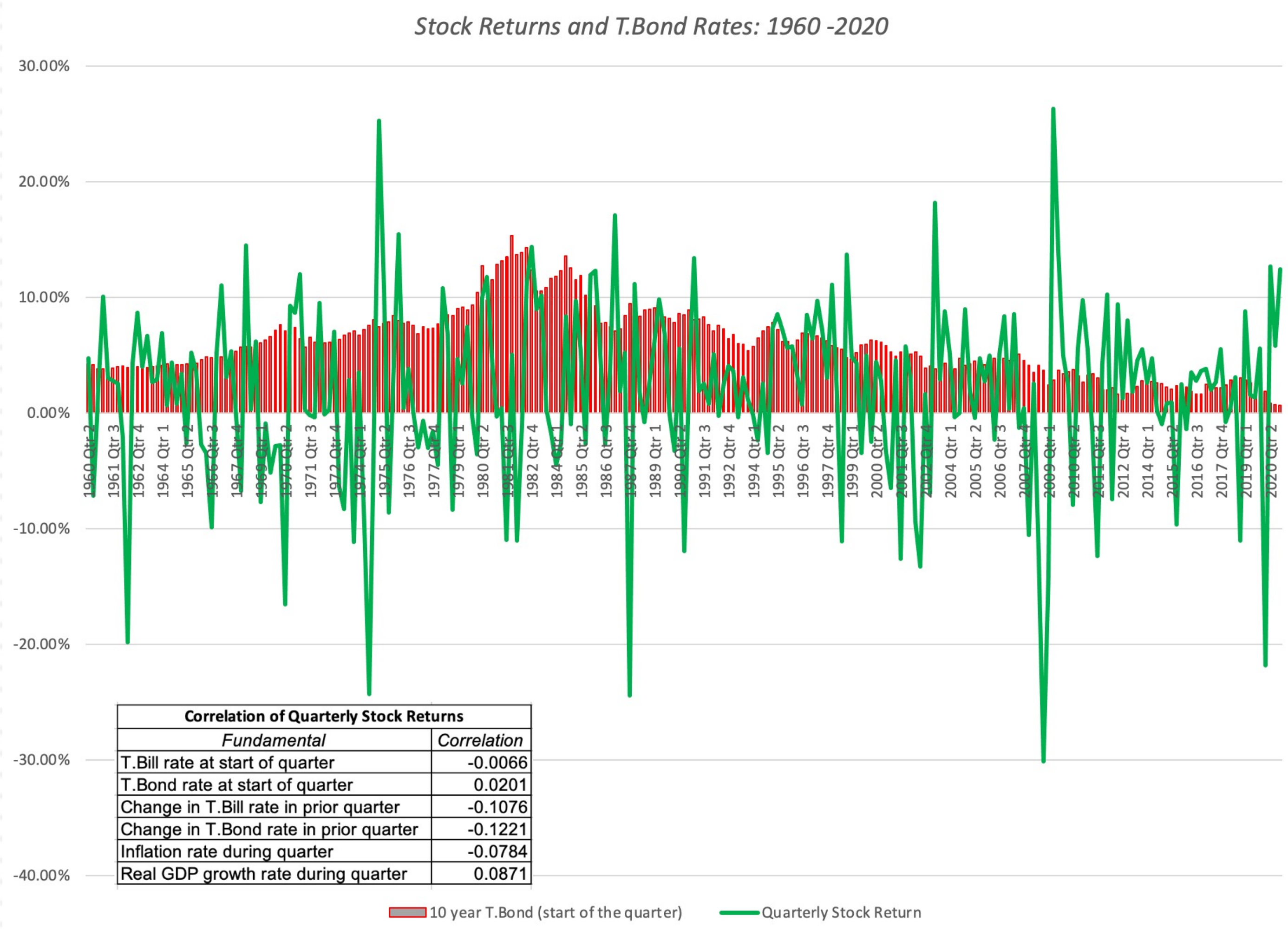
Interest Rates and Value



Drivers of Interest Rates

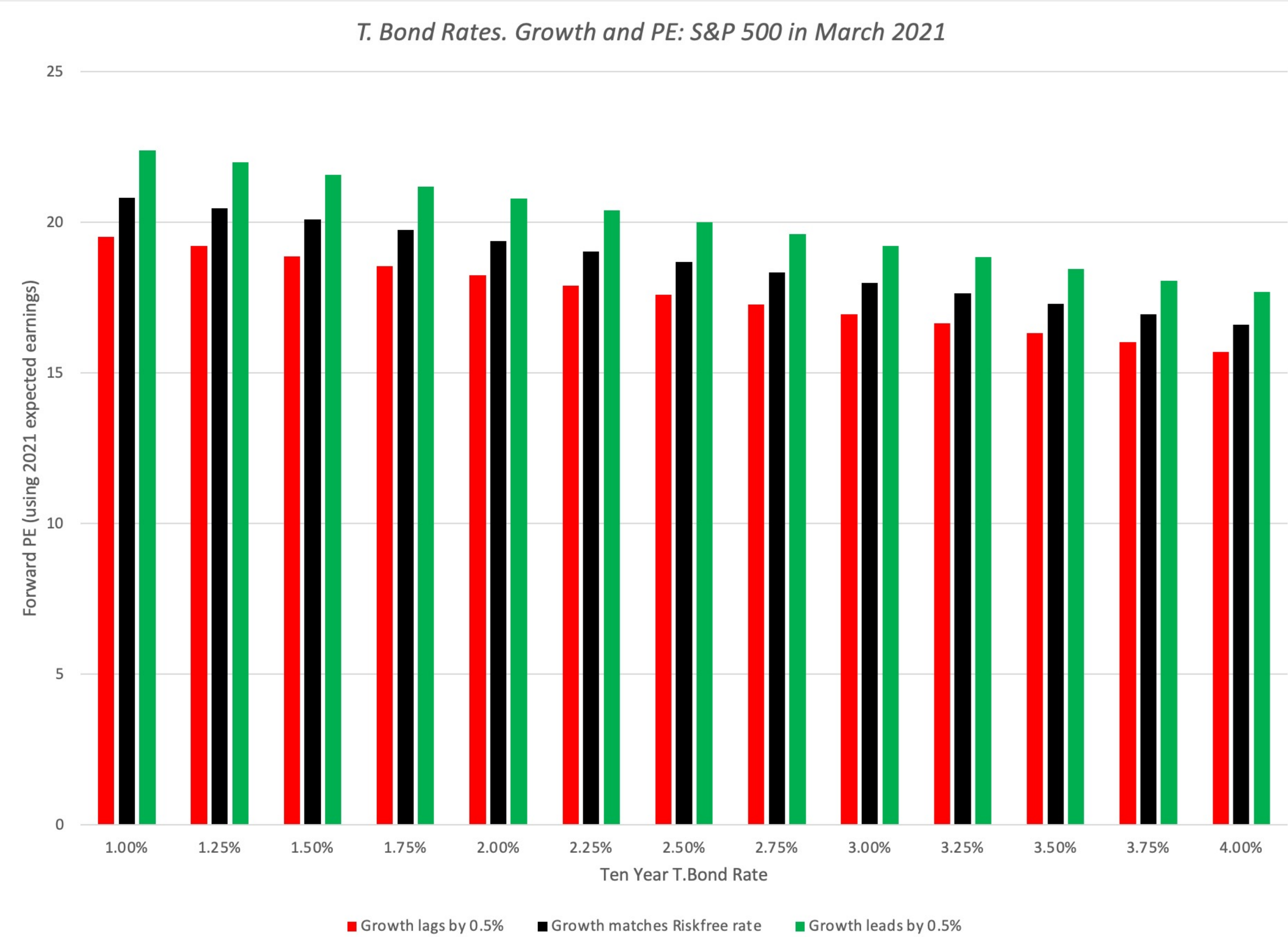
	Higher real growth	Higher inflation
Riskfree Rate	Riskfree rate will rise.	Riskfree rate will rise.
Risk premia	No effect or even a decrease.	Risk premia may rise as inflation increases, because higher inflation is almost always more volatile than low inflation.
Revenue Growth	Increases with economic growth, and more so economy-dependent companies	Increases, as inflation provides a backdraft adding to existing real growth.
Operating Margins	Increases, as increased consumer spending/demand allows for price increases	For companies with the power to pass through inflation to their customers, stable margins, but for companies without that pricing power, margins decrease.
Investment Efficiency	Improves, as the same investment delivers more revenues/profits.	No effect, in real terms, but in nominal terms, companies can look more efficient.
Value Effect	More likely to be positive. Investors will demand higher rates of return (negative), but higher earnings and cash flows can more than offset effect.	More likely to be negative. Investors will demand higher rates of return (negative), and while revenue growth will increase, lower margins will lead to lagging earnings.

Stock Returns and Rates: History



Correlation of Quarterly Stock Returns	
Fundamental	*Correlation*
T.Bill rate at start of quarter	-0.0066
T.Bond rate at start of quarter	0.0201
Change in T.Bill rate in prior quarter	-0.1076
Change in T.Bond rate in prior quarter	-0.1221
Inflation rate during quarter	-0.0784
Real GDP growth rate during quarter	0.0871

Intrinsic PE: S&P 500

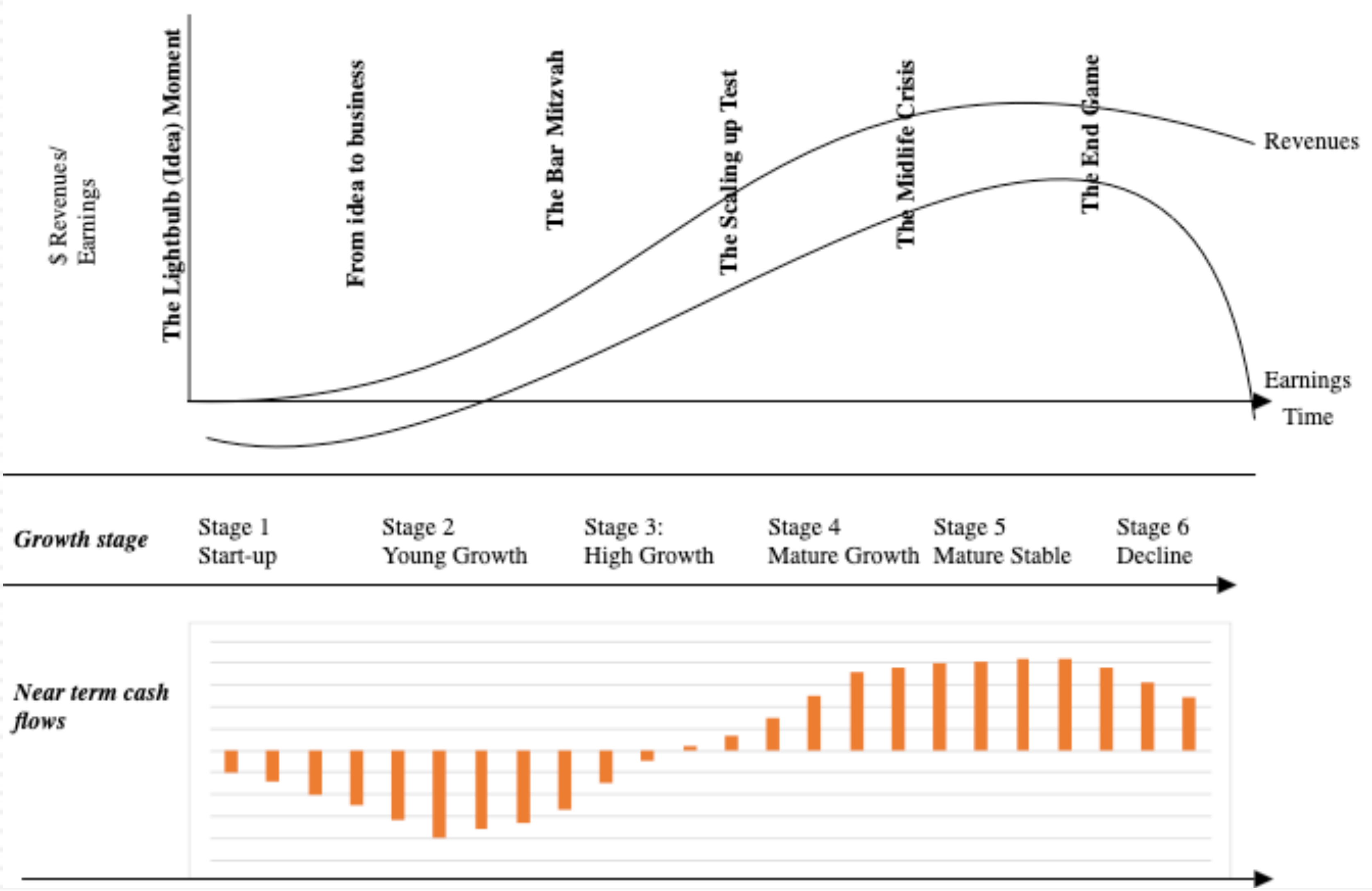


	Intrinsic Value of S&P 500		
T.Bond Rate	Growth lags by 0.5%	Growth matches Riskfree rate	Growth leads by 0.5%
1.00%	3418	3644	3919
1.25%	3362	3581	3849
1.50%	3304	3518	3779
1.75%	3248	3457	3709
2.00%	3192	3394	3640
2.25%	3135	3332	3570
2.50%	3079	3271	3502
2.75%	3024	3208	3434
3.00%	2968	3149	3366
3.25%	2912	3087	3297
3.50%	2858	3026	3231
3.75%	2804	2967	3163
4.00%	2750	2905	3096

Explaining and looking forward

- This should provide some insight into both why the equity market has been able to maintain its upward trend in the face of rising rates as well as the periods of whiplash, when stocks have sold off.
- For the most part, the primary story driving interest rates, for much of 2021, has been one of economic resurgence, and it does not surprise me that the positives have outweighed the negatives.
- At the same time, there is concern that inflation might be lurking under the surface, and on days when these worries surface, the market is much more susceptible to melting down.
- My guess is that this dance will continue for the foreseeable future, but as economic reports come out on both real growth and inflation, one or other point of view will get vindication.

The Corporate Life Cycle and Cash Flows

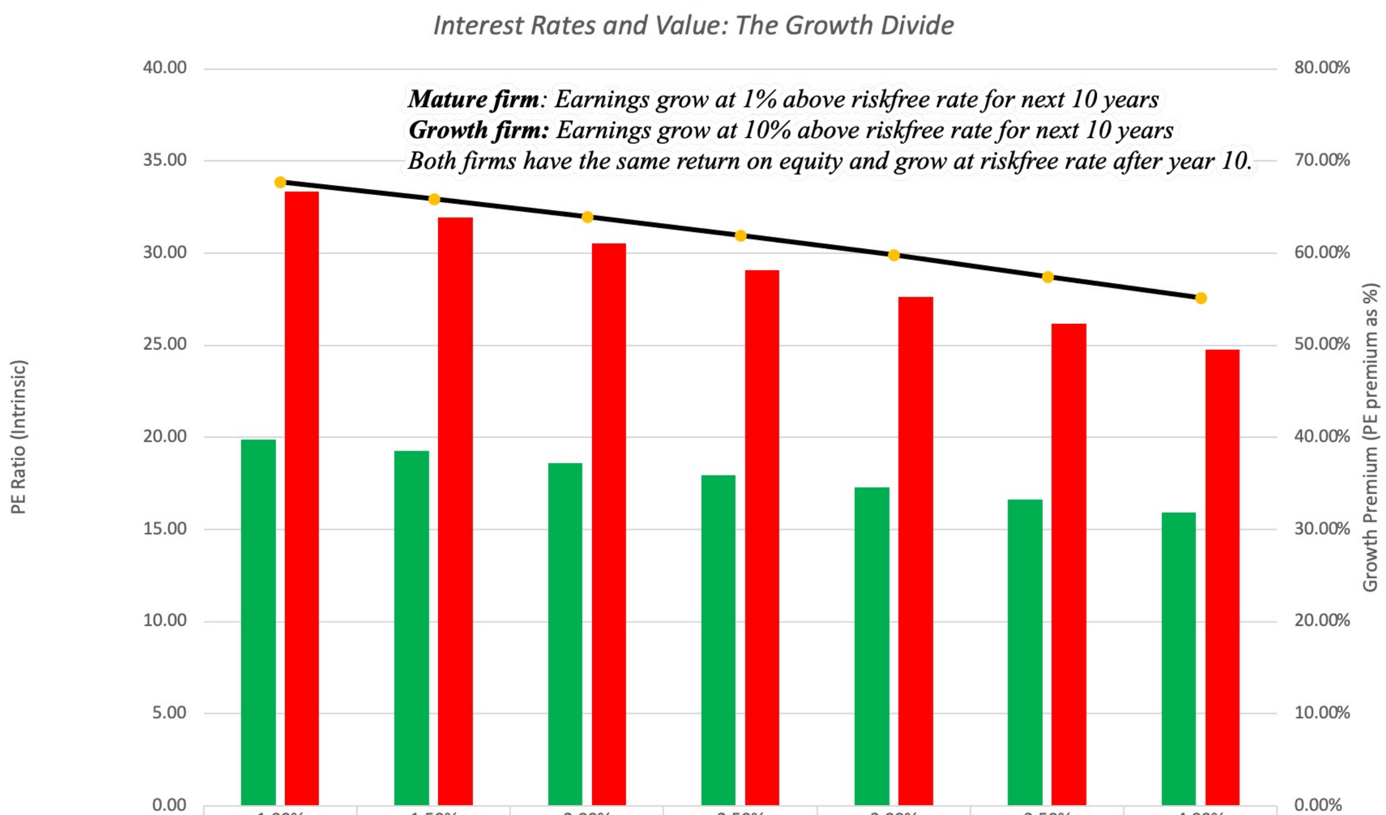


The Corporate Life Cycle and Financial Balance Sheet

Growth stage	Stage 1 Start-up	Stage 2 Young Growth	Stage 3: High Growth	Stage 4 Mature Growth	Stage 5 Mature Stable	Stage 6 Decline
Value Decomposition	All of the value comes from growth assets	Most of the value comes from growth assets	Balanced, but more value comes from growth assets	Balanced, but more value comes from existing assets	Most of the value comes from existing assets	All of the value comes from existing assets.

Value of investments already made by the firm. Value comes from their capacity to continue to generate cash flows.	**Assets in Place**	**Debt**	Lenders have contractual claims on the cash flows of the firm.
Value added by investments you expect the company to take int the future. This value rests on perceptions of the opportunities you see for the firm.	**Growth Assets**	**Equity**	Equity investors get whatever is left over, after meeting the debt obligations.

Interest Rate Effects on Value



	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%
Mature firm	19.89	19.25	18.61	17.95	17.29	16.63	15.95
Growth firm	33.36	31.94	30.51	29.07	27.64	26.19	24.75
Growth Premium	67.72%	65.92%	63.94%	61.95%	59.86%	57.49%	55.17%

T. Bond Rate

Mature firm Growth firm Growth Premium

Conclusion

- This analysis should provide some insight into both why the equity market has been able to maintain its upward trend in the face of rising rates as well as the periods of whiplash, when stocks have sold off.
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- My guess is that this dance will continue for the foreseeable future, but as economic reports come out on both real growth and inflation, one or other point of view will get vindication.
- And for those who count inflation out, or underestimate its impact, I wish you the good fortune of never living with its threat.