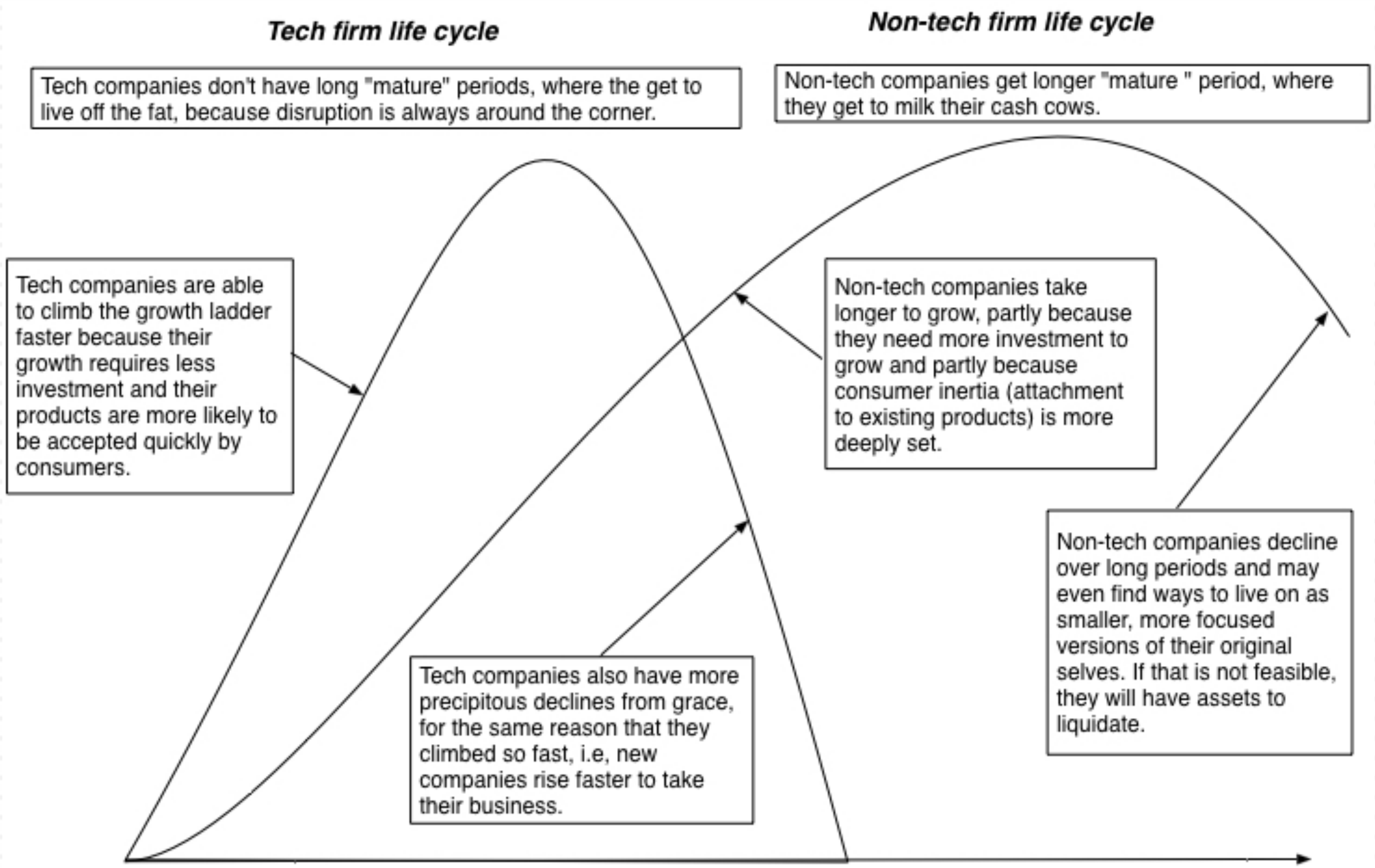
THE TECH COMPANY LIFE CYCLE: THE INVESTORS' CHALLENGE

Old World Investing Lessons in a New World Order

The tech life cycle



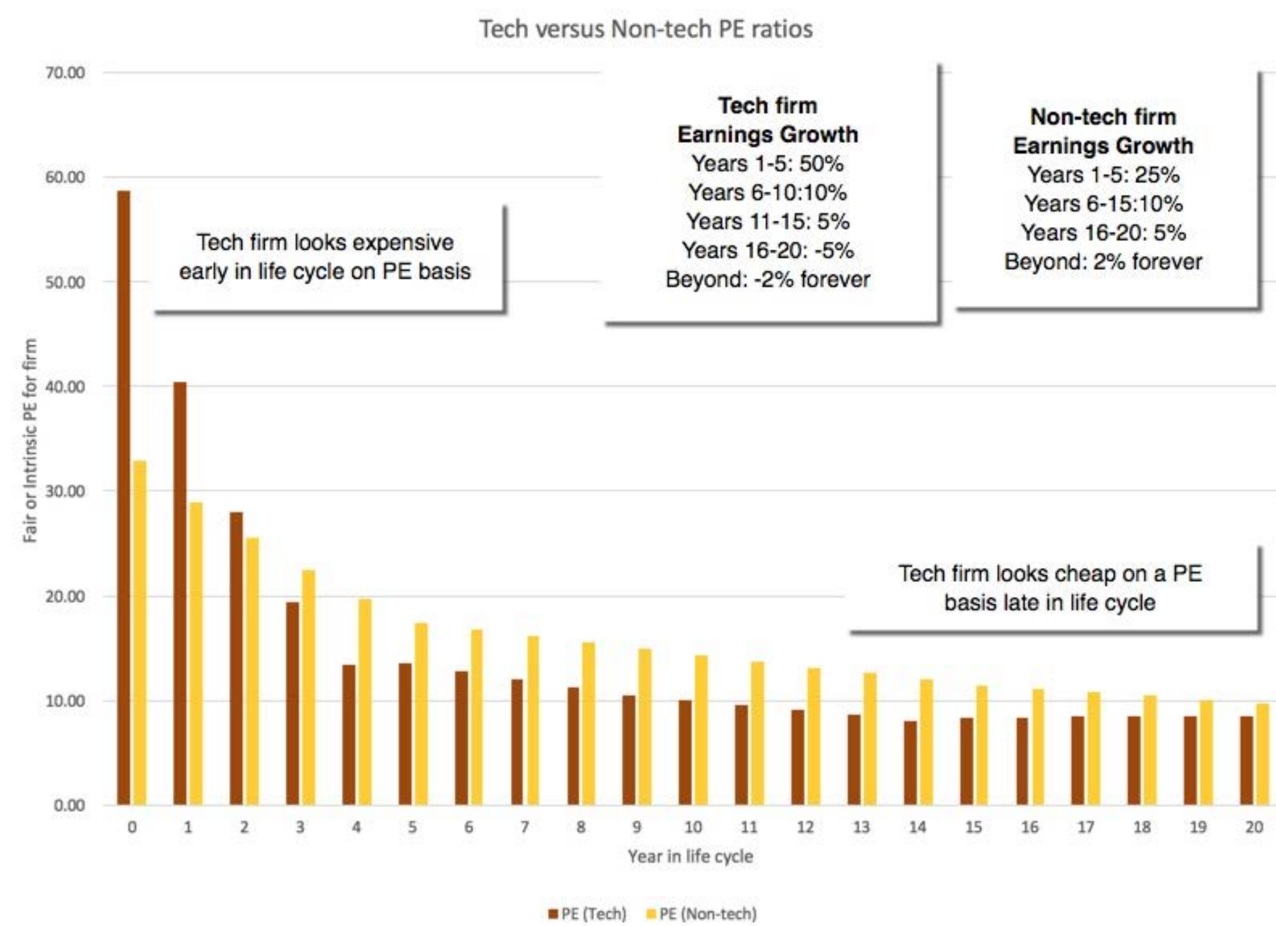
The Investor Challenge

- Much of what we know, learn and practice in investing was developed for a market dominated by non-tech companies, with long life cycles, sustainable competitive advantages.
- As this learning is put to use with tech companies, we risk making systematic mistakes in identifying investment opportunities.
- With value investors, this will manifest itself in tech companies looking too expensive early in the life cycle and too cheap later. With growth investors, the reverse will apply.

The Value Investor Challenge

- The old-time value religion brings in the "bond buying" mentality to stocks, replacing coupons with dividends.
- A good stock in this world looks like a bond, with ever-growing coupons.
- If you are a value investor, there are three oft-quoted edicts that don't make sense with tech companies.
  1. Trust the PE ratio.
  2. Buy and hold "good" companies; good companies have strong moats and good management.
  3. Dividends are solid, buybacks are transient, price appreciation is a dream.

1. Don’t trust PE



Some evidence on growth

	Growth Rate in revenues - Last 3 years	*Growth Rate in EBITDA - Last 3 years*	*Growth Rate in Net Income - Last 3 years*	*LT Expected Growth Rate in EPS*
Young tech (<10 years)	33.20%	13.25%	15.73%	25.32%
Old tech (> 35 years)	1.11%	1.16%	1.44%	13.72%
All tech	11.81%	10.46%	8.10%	17.59%
Young non-tech	67.73%	25.72%	34.61%	17.72%
Old non-tech	6.66%	9.82%	14.55%	12.08%
All non-tech	16.21%	13.29%	16.78%	14.06%

Backed up by pricing

	PE	Non-cash PE	PBV	EV/Sales	EV/EBITDA	EV/EBITDAR&D
Young tech (<10 years)	NA	NA	3.88	4.34	37.61	19.65
Old tech (> 35 years)	17.75	17.24	3.08	2.44	10.44	8.20
All tech	23.67	23.14	2.97	3.12	13.55	9.87
Young non-tech	115.26	109.95	2.41	3.36	22.53	19.35
Old non-tech	18.57	15.48	2.26	2.42	17.23	15.94
All non-tech	21.80	18.92	2.40	2.40	16.62	15.35

2. Don't buy and hold

- The notion that you can buy and forget a company in your portfolio, if it is well managed and has strong competitive advantages, may work for a consumer product company with a very long life cycle.
- It is dangerous advice at a tech company where what you perceive as "good" management today can become "bad" tomorrow and where competitive advantages are neither strong nor sustainable.

3. The Dividend Illusion

- Dividends are ill-suited as a way of returning cash on a residual claim, which is what equity is.
- They become even less appropriate for a firm that has a short life cycle and where the good times may not last for long.
- Tech companies that lock themselves into large dividends are more risky than tech companies that return that cash either as special dividends or as stock buybacks.

Some evidence

	Dividend Yield	*Cash Return Yield*	*Dividends/ Earnings*	*Net Cash Returned*	*FCFE*	*Cash/Firm Value*
Young tech (<10 years)	0.32%	-0.61%	NA	-$ 552	-$ 2,660	7.62%
Old tech (> 35 years)	1.67%	5.87%	29.65%	$ 145,315	$ 64,783	5.39%
All tech	1.12%	3.91%	26.85%	$ 184,841	$ 63,638	5.60%
Young non-tech	2.10%	-2.85%	195.64%	-$ 14,725	-$ 28,724	4.57%
Old non-tech	1.03%	2.49%	19.37%	$ 338,003	$ 405,664	10.17%
All non-tech	1.77%	2.14%	24.09%	$ 406,994	$ 505,631	8.79%

The Growth Investor Challenge: Three lessons (that may not work)

1. Growth is good: The notion that growth is good and that higher growth companies should be worth more than lower growth companies is deeply embedded in the growth investing playbook.
2. Growth lasts: Implicitly, growth investors trust growth to last. That is perhaps why they are so dependent on historical growth in their investing strategies.
3. Growth at a reasonable price (GARP) is a winner: This is considered the holy grail of growth investing, with the big question being what is "reasonable".

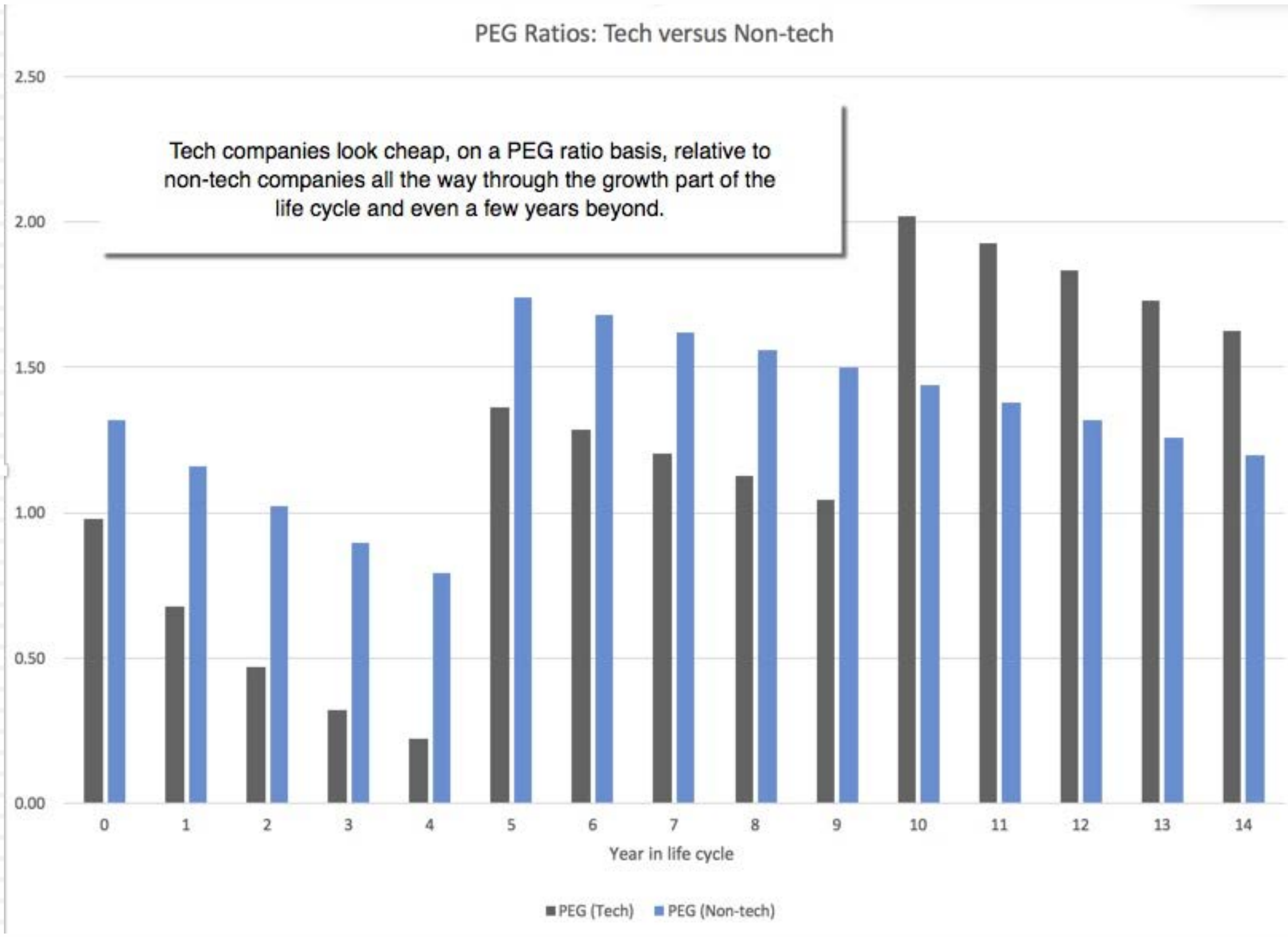
1. Growth may destroy value (be bad)

- The value of growth reflects a trade off between its pluses (it makes earnings grow) and its minuses (it requires reinvestment, which reduces cash flow).
- One simple proxy for whether growth creates value is to compare the return earned on investments (Return on capital or return on equity) to the cost of funding those investments (Cost of capital and cost of equity).
- A company that grows by taking bad investments is destroying value. That general proposition applies in spades to tech companies for two reasons:
  - The returns on new investments change quickly over the life cycle.
  - Their growth plans tend to be more ambitious.
- The net effect is that the potential for growth destruction at a tech company is much greater than at a non-tech company.

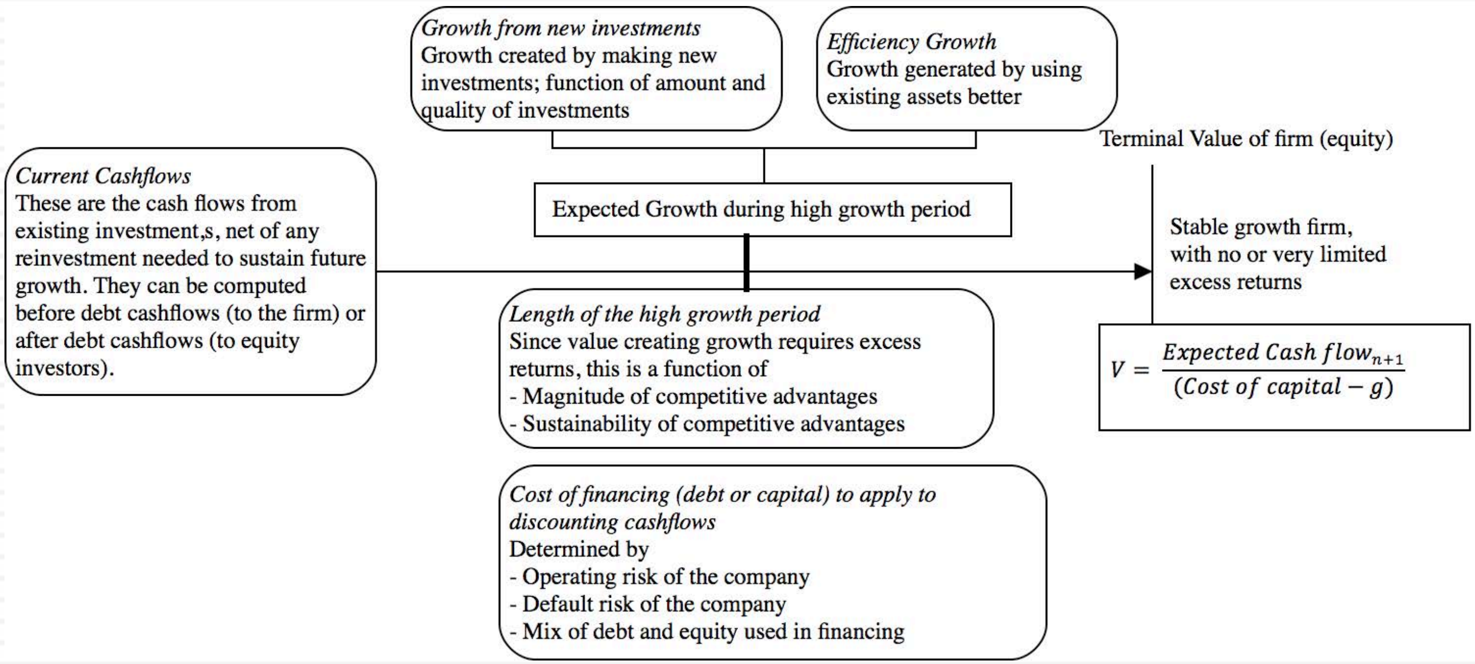
2. Growth does not last long (at least at tech companies)

- When we use historical growth as a proxy for future growth, we are assuming (implicitly or explicitly) that companies that have grown fast in the past will continue to do so in the future.
- This is always a dangerous assumption, but doubly so with technology companies where growth rates can shift abruptly as new competitors emerge or technology ages.

3. GARP Multiples like PEG can be distorted by a short life cycle



The Intrinsic Valuation Challenge



Alternatives to perpetual growth?

1. Liquidation value: The first and most conservative way to approach the rapid decline in some growth companies is to assume that you liquidate its assets, most of which are not physical. That liquidation value will be your terminal value.
2. Growing annuity: In this approach, you assume that your cash flows past your terminal year continue to grow for a finite period and calculate the value of this growing annuity as your terminal value.
3. Declining perpetuity: The easiest fix is to use a perpetual growth model and assume a negative growth rate, resulting your company getting smaller over time and disappearing.