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Dot-Com Bubble vs. Dot-Com 2.0
A Tale of Two Time Frames

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Key Takeaways

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Our view: *Given the popularity of companies across the US* ***Information Technology (IT) sector*** *(within the S&P 1500 index) with clients, we have fielded many questions, especially as these stocks have sold off quite aggressively from their respective peaks. Many investors (both institutional and retail) have referred to the striking similarities of the current sell-off across US IT stocks and that of the* ***2000s Dot-Com Bubble (Dot-Com Bubble)****. In the subsequent pages, we delve into the similarities, differences, and opportunities between the Dot-Com Bubble and the most recent IT bubble, which we refer to as* ***Dot-Com 2.0*** *(we believe it began in 2020). We share insights on our expectations moving forward for the group, given how things transpired during the Dot-Com Bubble and what fundamentals and macro indicators are suggesting today.*

- **Similarities are many across <u>both</u> time frames.** During the Dot-Com Bubble, the US economy remained robust and was growing above-trend during the boom years, which was also the case during Dot-Com 2.0, but economic growth slowed materially and eventually contracted ahead of and during the 2001 recession. Higher yields/rates began to move higher as early as 1998 and were largely responsible for the slowdown, but given the lack of precision of rate hikes/monetary policy changes and the lag effect of these decisions on the real economy, investors only began seeing the slowdown in macro/corporate fundamentals in early 2000. Consumer sentiment was also strong during the boom years, as was the case during Dot-Com 2.0, while employment levels fell to cycle lows. But both measures quickly reversed course as higher rates/yields began to weigh on the real economy. We are already seeing signs of the impacts of tighter policy on the real economy. As for the IT sector as a whole, as yields began to rise, valuation multiples compressed, which we note was the **first leg down for the group during the Dot-Com Bubble.** And as the economy began to slow and eventually contract, corporate earnings fell sharply, resulting in the **second leg lower for the sector**. The S&P 400 Mid-Cap IT index fared the **best** from peak-to-trough, followed by small and large-cap IT stocks.
- **Notable differences—a tale of two time frames.** Corporate fundamentals for the US IT sector as a whole, namely profitability and margins, remain the major differences between the two periods—i.e., they are much higher now than in the early 2000s. Moreover, peak valuations during the Dot-Com Bubble were more extreme than at the start of the Dot-Com 2.0 sell-off on both NTM P/Es and also on EV/EBITDA multiples. **We expect the combination of lower extreme valuations and higher profitability to prevent a repeat of a 2000s peak-to-trough sell-off (which totaled ~80%) for the IT sector moving forward**. However, we note that the rapid move in rates/yields during Dot-Com 2.0 has resulted in a much steeper sell-off than what was observed during the Dot-Com Bubble.
- **Pockets of opportunity, while downside risks remain.** We see the **greatest risk/reward across the S&P 400 Mid-Cap IT index** from both an earnings and relative value perspective with the S&P 500 Large-Cap IT group as the least attractive. However, that said, we advise investors to remain **very selective (i.e., leverage the accompanying screens provided with this report)** to seek out companies across market capitalizations that are high-quality, led by strong management teams, trade at attractive valuations, and offer durable forward earnings that provide a reasonable buffer to help cushion the blow from the many uncertainties that may lay ahead. In a nutshell, we expect the selling pressure/weakness to continue for the IT group as a whole, especially if rates/yields continue to move higher, cost pressures/inflation stays elevated, and the economy heads into a hard-landing/recession (this appears to be the most likely scenario). **That said, opportunities are many for the long-term oriented investor.**

Similarities & Differences

Dot-Com Bubble vs. Dot-Com 2.0

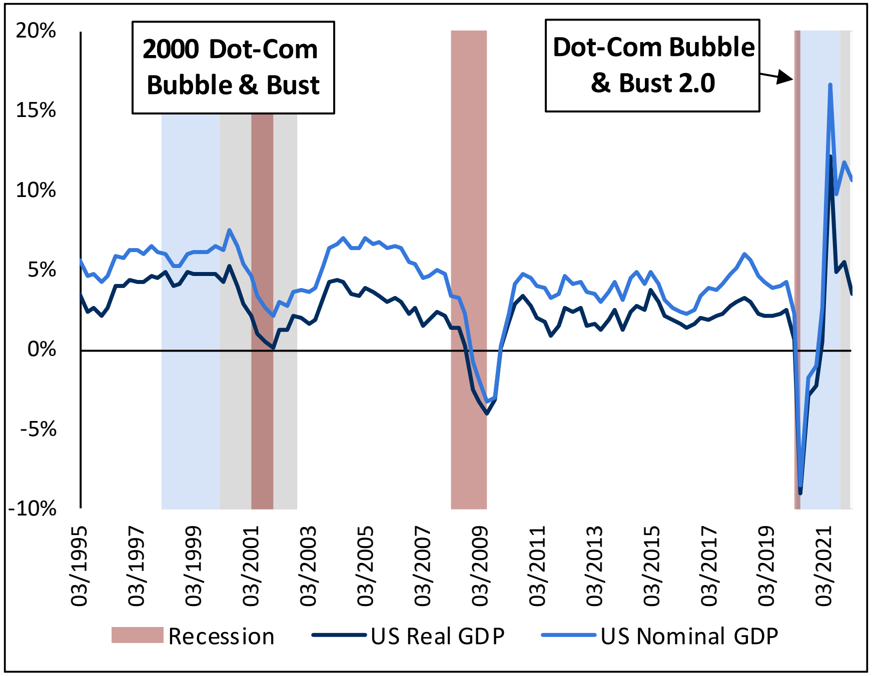
Covered below:

- *Changes in macro fundamentals*
- *Velocity, magnitude & duration of sell-off*
- *Changes in valuations*
- *Evolution of profitability*

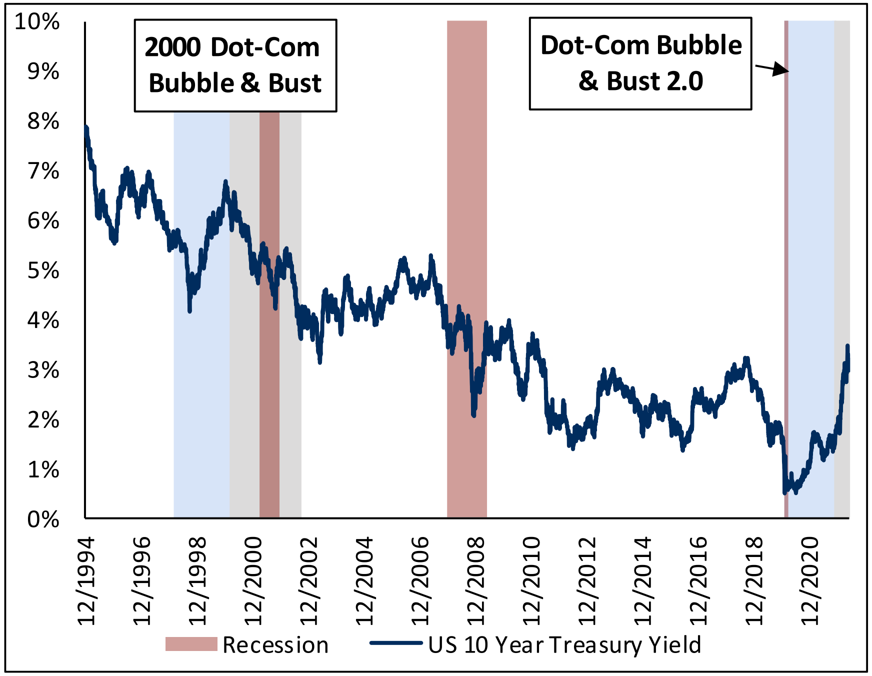
US GDP & Interest Rates/Yields

We note that during the Dot-Com Bubble, the US economy was strong and growing above-trend levels during the boom years, with economic growth slowing materially and eventually contracting into a nine-month long recession beginning in March of 2001. Higher yields/rate increases were largely responsible for the slowing in the economy with the negative impacts to the real economy appearing in late-2000/early-2001. Likewise, for the current environment, we are expecting something similar to unfold, with the economy continuing to cool from peak levels and likely moving into a hard-landing/recession in 2023, if not sooner (mild/shallow is what we are hoping for vs. long/deep) that is, unless we see a Fed pivot.

US GDP Soars in Bubble Years & Softens During Bust



Rates Rise During Bubble Years, but Soften Thereafter

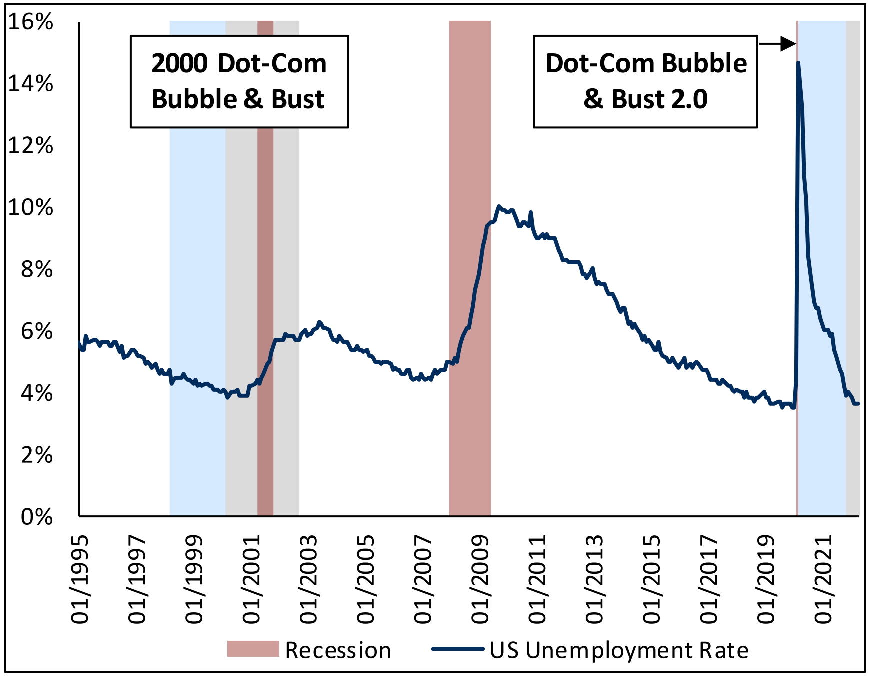


Source: FactSet; Raymond James Ltd.; GDP data as of March 31, 2022; US 10 year treasury yield as of June 30, 2022.

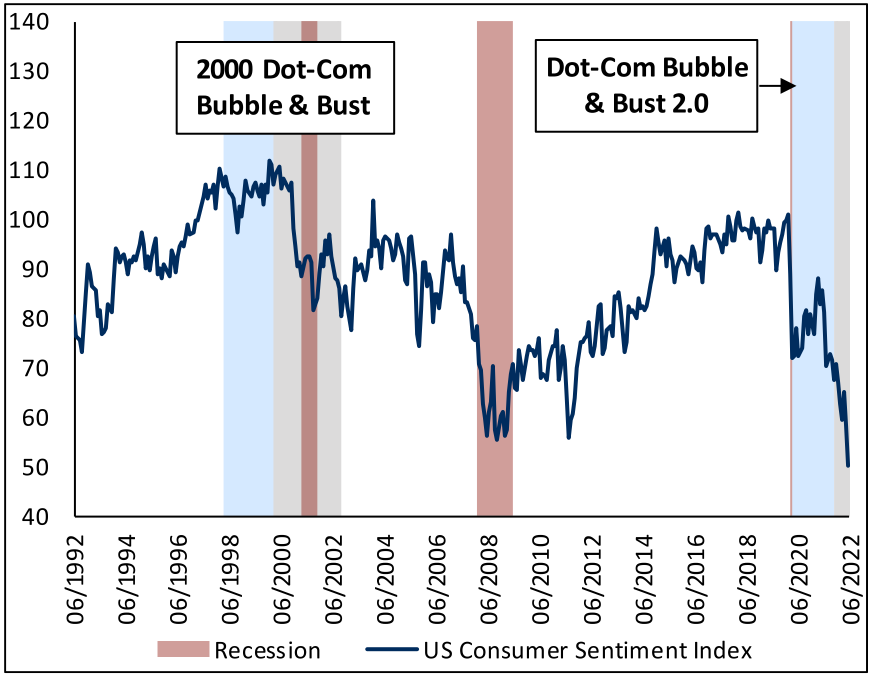
Unemployment & Consumer Sent.

Moreover, during the Dot-Com Bubble, we saw unemployment levels fall to near record lows during the boom years with unemployment levels rising sharply in the bust years and also during the 2001 recession. Likewise, the US Consumer Sentiment index remained strong during the Dot-Com boom years, but declined in the bust years. Similarly, amid the Dot-Com 2.0 sell-off, while we have observed a meaningful decline in the US Consumer Sentiment index, we are only now beginning to see signs of weakness in the employment picture. We expect the unemployment rate to rise in the coming quarters as tighter policy begins to slow the economy and eventually push it into contraction territory resulting in job losses/layoffs.

The US Unemployment Rate Still Has Yet to Rise



Consumer Sentiment Index Collapses in Both Periods

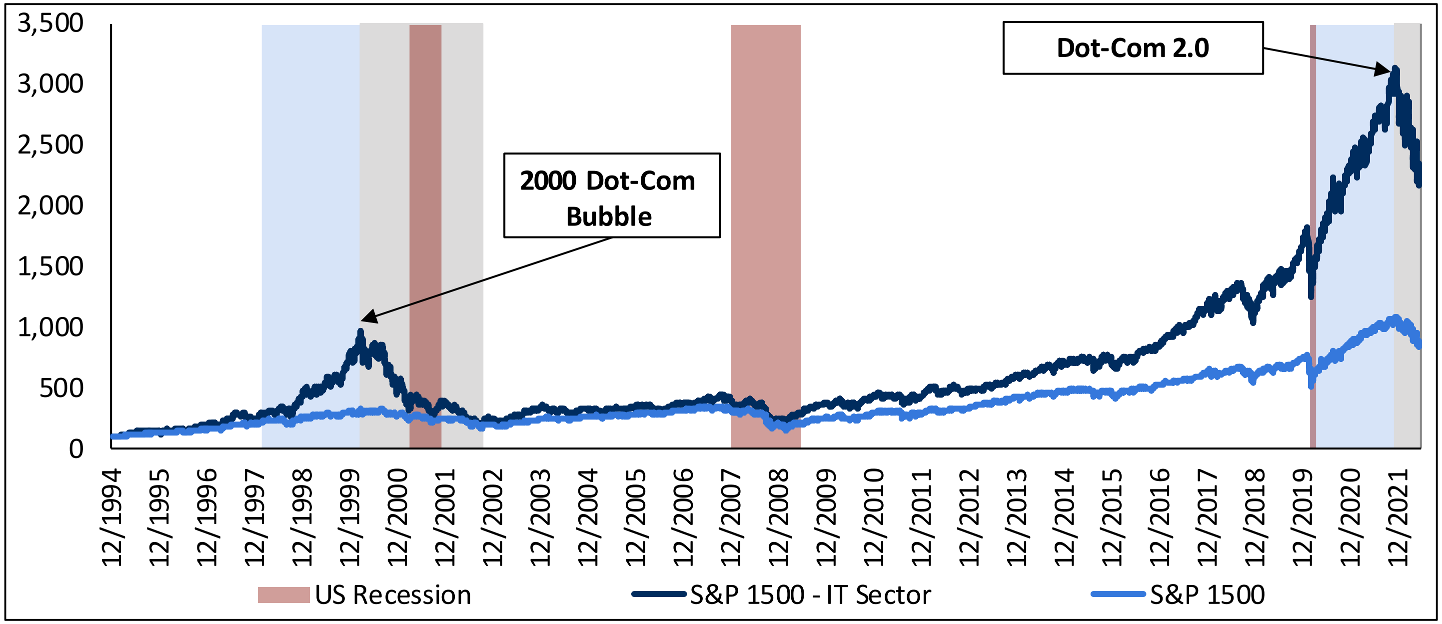


Source: FactSet; Raymond James Ltd.; US unemployment data as of May 31, 2022; US consumer sentiment data as of June 30, 2022.

Velocity, Magnitude & Duration…

Some notable differences between the two periods were the velocity, magnitude, and the duration of the sell-offs. In the 2000s, the drawdown maxed out at ~80% from peak-to-trough over a 30-month period. Whereas today, the S&P 1500 IT index is down ~27% from peak with more downside likely. We also note that the velocity/pace of the recent sell-off has occurred much more rapidly and over a much shorter period than during the Dot-Com Bubble. We attribute this to the rather swift pace of rate increases/rise in yields we have observed so far this year.

	Historical	2000 Dot-Com Bubble (2000 - 2002)				Dot-Com 2.0 (2022 YTD)			
	Return*	Duration	Return*	Drawdown	Velocity**	Duration	Return*	Drawdown	Velocity**
S&P 1500	8.5%	30 Months	-20.3%	-43.3%	-1.4%	6 Months	-37.1%	-20.5%	-3.4%
S&P 1500 - IT Sector	12.4%	30 Months	-46.9%	-79.5%	-2.6%	6 Months	-47.2%	-27.2%	-4.5%



Source: FactSet; Raymond James Ltd.; Indexed to 100 on December 31, 1994; Data as of June 30, 2022; *All returns are annualized; **Velocity: drawdown divided by duration.

P/E Multiples: Expand...then Contract

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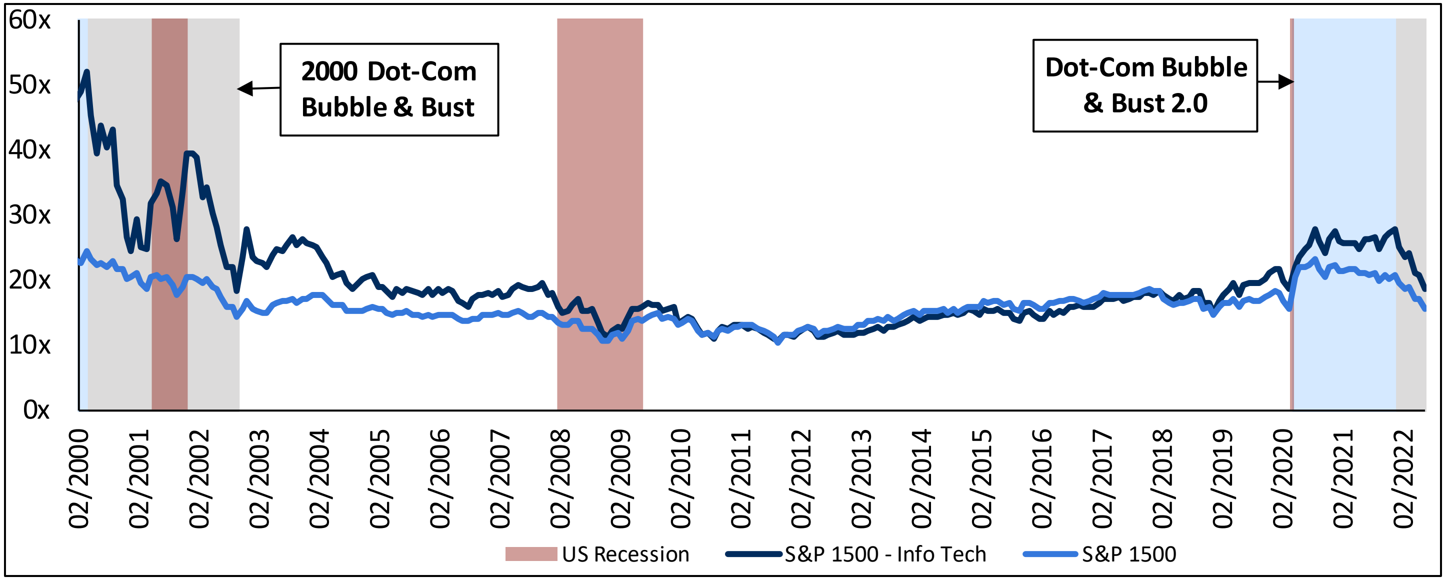
During the Dot-Com Bubble, valuations for the S&P 1500 IT index rose to an extreme of ~52x next-twelve-months (NTM) earnings but only to collapse in the years following and finally stabilize at ~18x. So far during Dot-Com 2.0 we have seen forward P/E multiples contract from a high of ~28x NTM earnings to ~19x. The main difference between the two periods was the starting/peak valuations before the downturn, which we note have been much less extreme this time around compared to the 2000s.

S&P 500 IT - P/E NTM Multiples Contract From Peak Levels as Yields Rise

	Dot-Com Bubble Burst (2000 - 2002)			Dot-Com 2.0 (2022 YTD)		
	Beginning P/E NTM	End P/E NTM	Change in P/E NTM	Beginning P/E NTM	Current P/E NTM	Change in P/E NTM
S&P 1500	24.3	14.4	-9.9	20.8	15.4	-5.4
S&P 1500 - IT	52.1	18.4	-33.8	27.7	18.7	-9.0



Source: FactSet; Raymond James Ltd.; Data as of June 30, 2022

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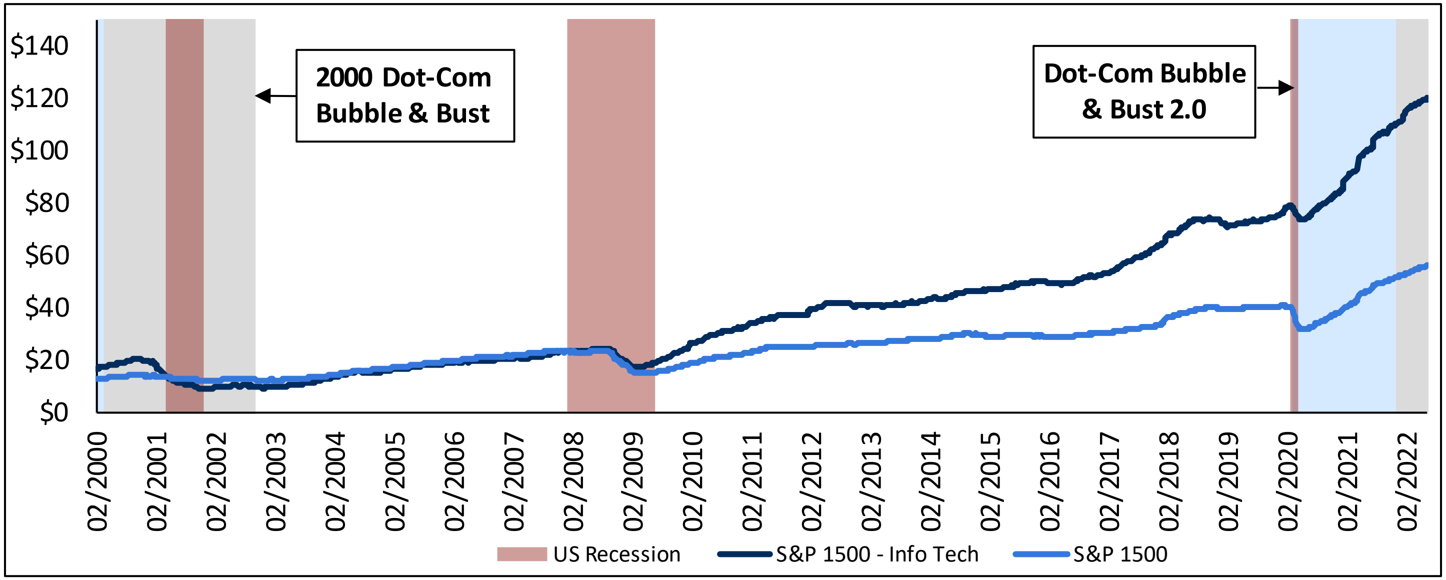
Profitability – A Tale of Two Periods…

While the "P" in the NTM P/E multiple has been largely responsible for the majority of the sell-off thus far across the S&P 1500 IT group, as yields have risen multiples have compressed. We expect the next leg lower to be a function of how far NTM earnings or "E" are revised lower from current expectations. Unless we see central banks globally reverse course and begin to re-stimulate with inflation pressures softening faster than expected, we expect NTM earnings to be revised lower. However, that said, we do not foresee the same level of earnings contraction as we observed during the 2000s.

EPS NTM Holding in Currently, but Expect Earnings to be Revised Lower…

	Dot-Com Bubble Burst (2000 - 2002)			Dot-Com 2.0 (2022 YTD)		
	Beginning EPS NTM	End EPS NTM	Change in EPS NTM	Beginning EPS NTM	Current EPS NTM	Change in EPS NTM
S&P 1500	13.1	12.6	-0.5	52.1	56.1	3.9
S&P 1500 - IT	17.3	10.0	-7.3	111.2	120.2	9.0

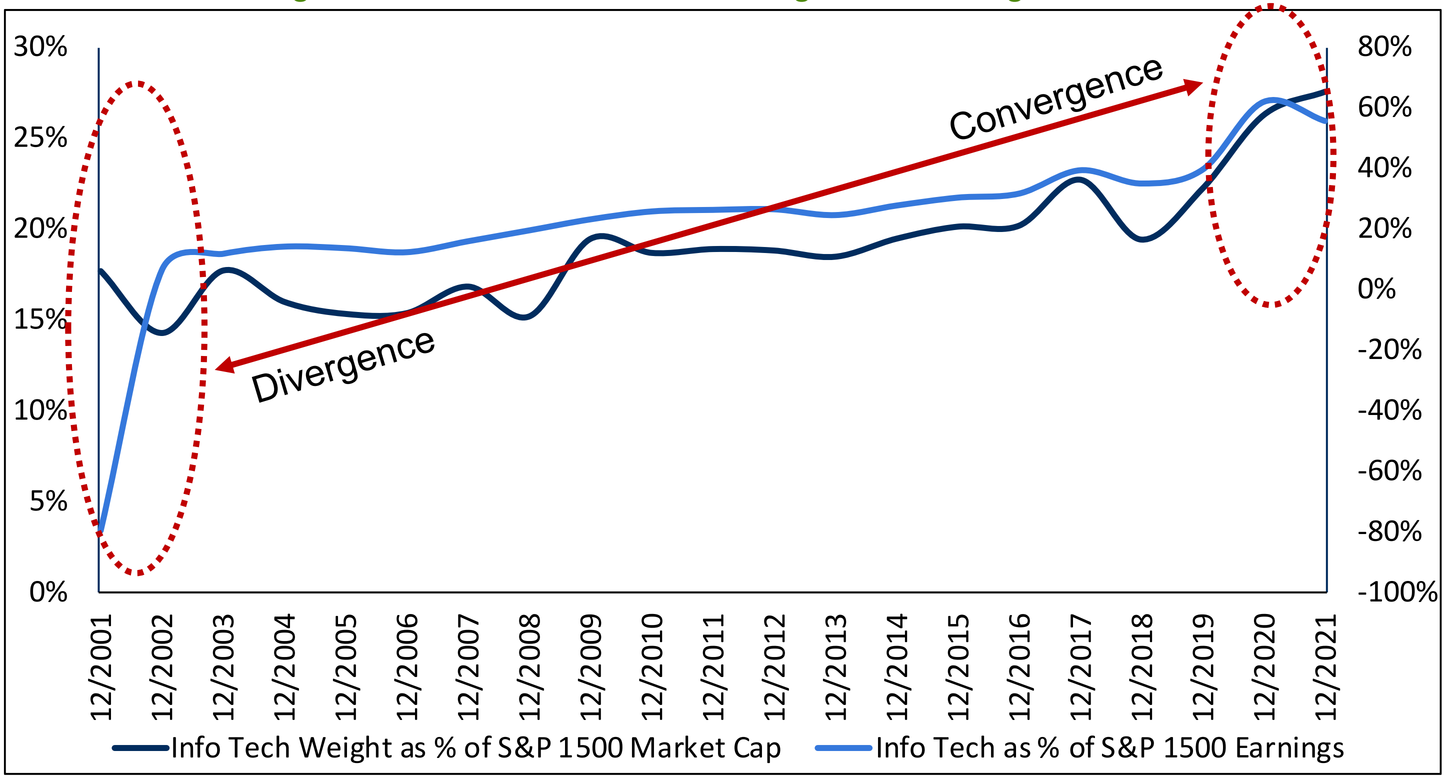


Source: FactSet; Raymond James Ltd.; Data as of June 24, 2022

Profitability Materially Stronger Now

We note that the profitability levels for the S&P 1500 IT index have risen materially since the 2000s and have also moved in lock-step with the weighting/representation in the broader S&P 1500 index. We believe, on the aggregate, that the S&P 1500 IT group today is composed of higher quality, more profitable businesses, with earnings that are viewed by investors as more durable and offering greater visibility than those in the early 2000s. In our view, this should prevent a repeat of the extreme peak-to-trough correction the S&P 1500 IT group experienced during the Dot-Com Bubble (~80%).

S&P 1500 IT Earnings Rise As % of S&P 1500 Earnings with % Weight in the S&P 1500 Index



Source: Bloomberg; Data as of December 31, 2021.

S&P 1500 IT Margins > Broader Market

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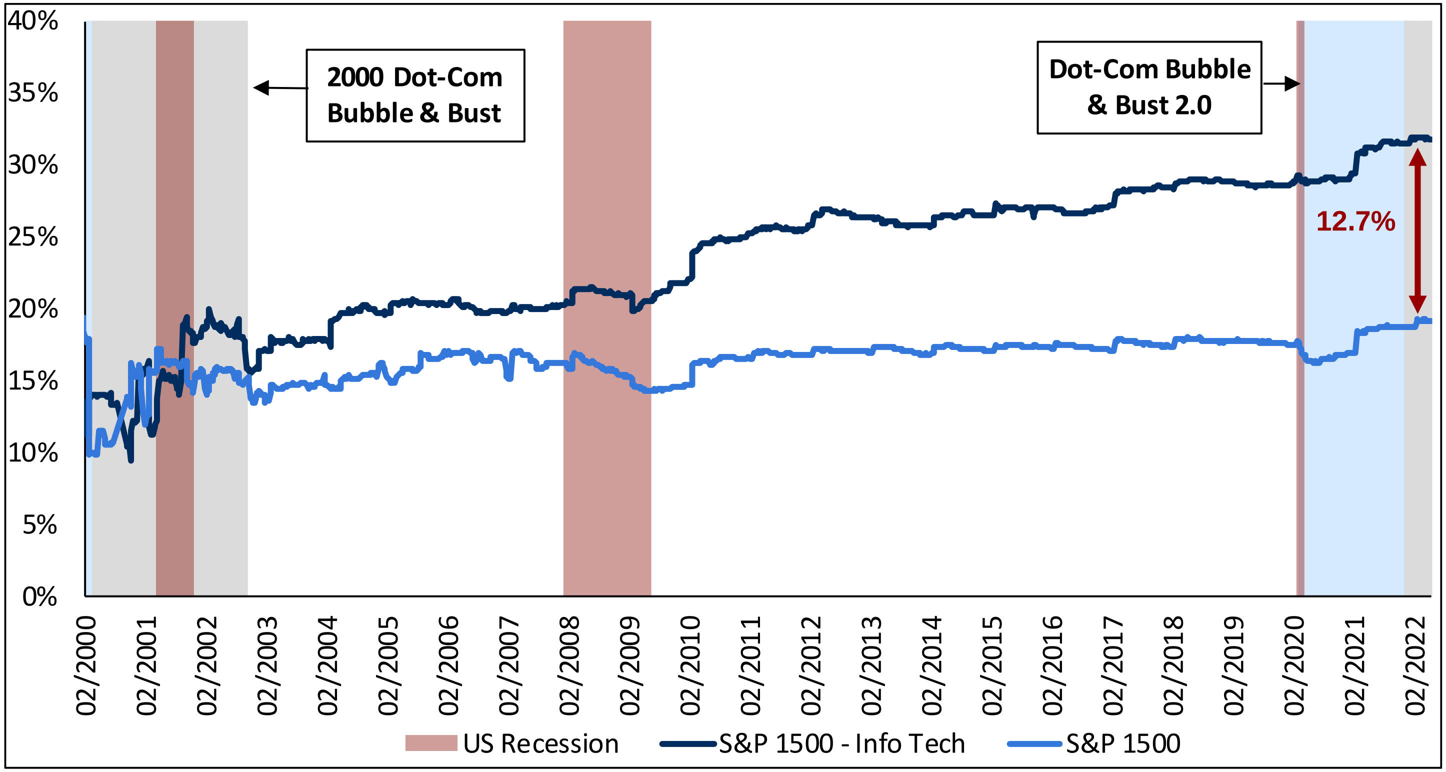
Moreover, given the recent surge in inflationary pressures, companies across the board face challenges to offset or pass along higher input costs to consumers even as the top-line is likely to slow. One notable difference, however, is that EBITDA margins for the S&P 1500 IT group have risen materially from below/inline levels with the broader market (S&P 1500 index) in the early 2000s to well above the broader market today. We believe strong relative margins provide the S&P 1500 IT sector greater flexibility and a much larger cushion to earnings to help offset the impacts from higher inflationary impulses.

EBITDA Margins - Materially Different Today vs. During the 2000s Dot-Com Bubble



Source: FactSet; Raymond James Ltd.; Data as of June 24, 2022

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Dot-Com Bubble vs. Dot-Com 2.0 Opportunities

Opportunities

Dot-Com Bubble vs. Dot-Com 2.0

Covered below:

- *Relative performance across market caps*
- *NTM earnings trend*
- *Valuation differences*
- *Performance following Dot-Com Bubble lows*
- *Final thoughts*

S&P 400 Mid-Cap IT Outperformance

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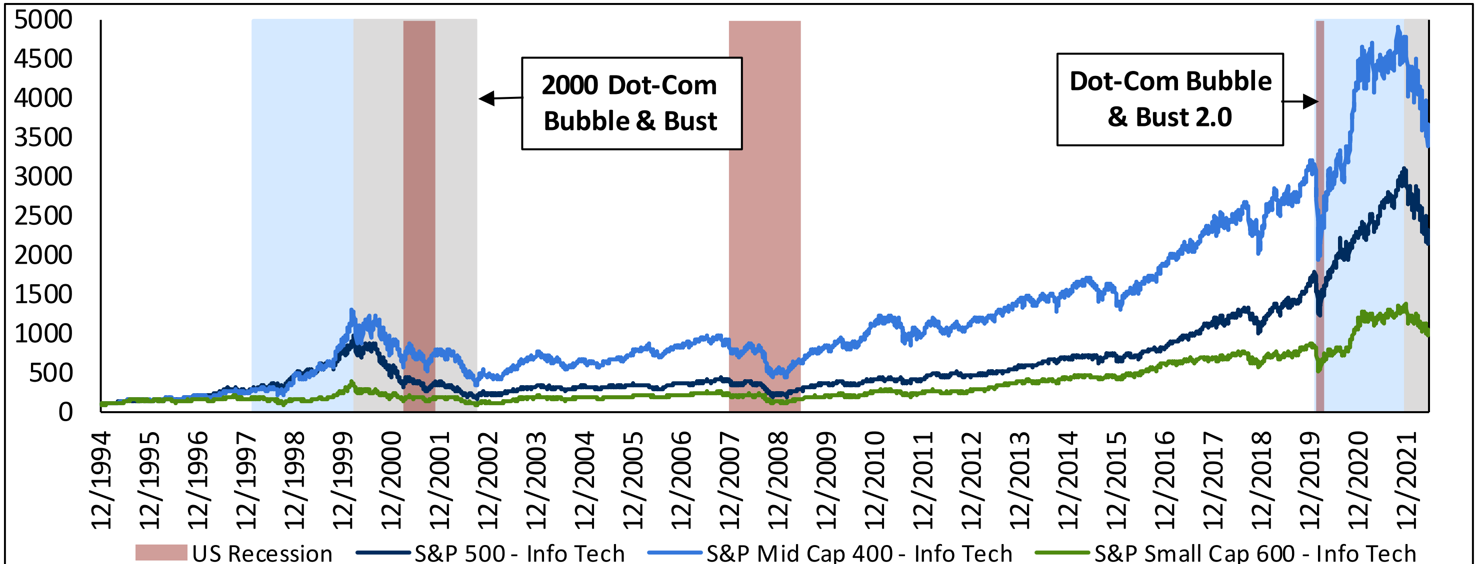
An interesting and a notable observation is the strong outperformance of the mid-cap IT group (S&P Mid-Cap 400 IT index) relative to their large-cap (S&P 500 IT index) & small-cap (S&P Small-Cap 600 index) peers during the Dot-Com Bubble. We also note that since the 2002 market trough, mid-cap IT stocks have outperformed small-cap and large-cap IT indices. More importantly, mid-cap IT stocks experienced a much slower pace of selling pressure versus large-cap and small-cap IT peers.

S&P 400 Mid-Cap IT Outperformed on the Way Up and Down…

	Dotcom Bubble Burst (2000 - 2002)				Dot-Com 2.0				Historical Return*
	Duration	Return*	Drawdown	Velocity**	Duration	Return*	Drawdown	Velocity**	Since 1/1/1995
Large Cap	30 Months	-47.8%	-78.4%	-2.6%	6 Months	-48.4%	-28.5%	-4.6%	11.9%
Mid Cap	29 Months	-33.8%	-65.7%	-2.2%	8 Months	-40.2%	-28.5%	-3.6%	13.8%
Small Cap	29 Months	-37.5%	-70.3%	-2.3%	6 Months	-45.9%	-25.9%	-4.4%	8.8%



Source: FactSet; Raymond James Ltd.; Indexed to 100 on December 31, 1994; Data as of June 30, 2022; *All returns are annualized; **Velocity: drawdown divided by duration.

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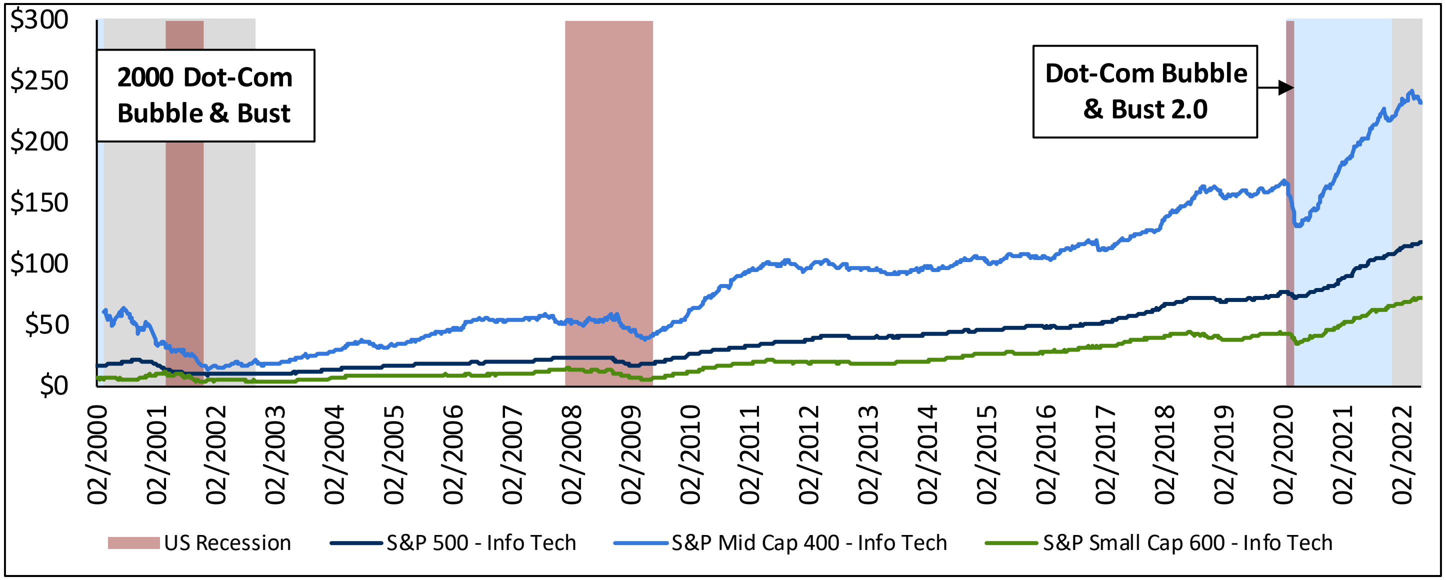
Earnings - A Floor to Selling Pressure

We believe that part of the stronger relative performance in both up/down markets and also over the longer-term cycle for the S&P Mid-Cap 400 IT index has been attributed to its stronger relative and absolute earnings. We note that while earnings for the S&P Mid-Cap 400 IT index fell the most during the Dot-Com Bubble relative to peers, earnings in absolute terms remained well above both. We are see something very similar today, with the S&P Mid-Cap 400 IT index NTM EPS 2-3x above their peers.

S&P Mid-Cap 400 NTM EPS Coming in Hotter than Large and Small-Cap IT Peers

	Dot-Com Bubble Burst (2000 - 2002)			Dot-Com 2.0		
	Beginning EPS NTM	End EPS NTM	Change in EPS NTM	Beginning EPS NTM	Current EPS NTM	Change in EPS NTM
Large Cap	16.8	9.9	-6.9	108.6	117.7	9.1
Mid Cap	61.7	19.2	-42.5	226.8	232.8	6.0
Small Cap	5.8	3.9	-2.0	65.9	71.8	5.9



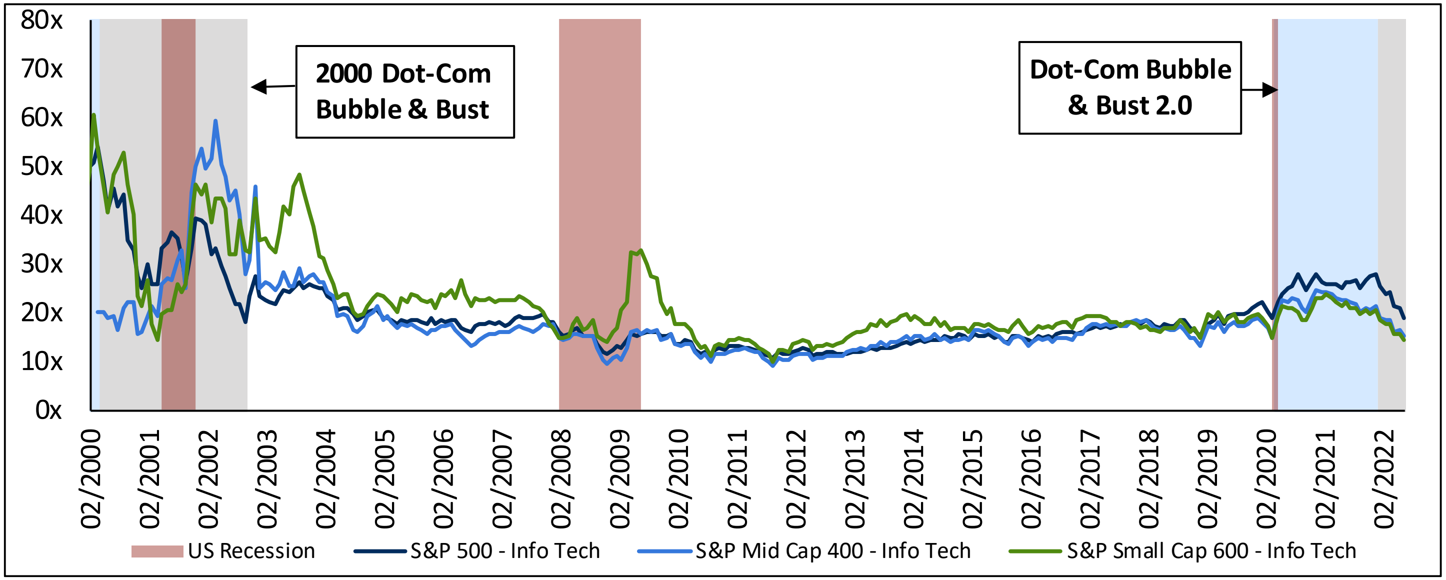
Source: FactSet; Raymond James Ltd.; Data as of June 30, 2022

Mid-Cap IT Valuations Still Attractive

Beginning valuations in the Dot-Com Bubble years were the most extreme for large/small-cap IT stocks, and as a result these segments experienced the largest contraction in valuations, versus the mid-cap IT group which saw valuations expand during the same period. We believe the extreme starting valuations and the collapse in earnings for both large/small-caps were the main culprits to their weaker relative performance. Looking ahead, we see the greatest valuation risks among the large-cap IT segment, while the most attractive segments remain mid/small-cap IT stocks.

P/E NTM Change in Dotcom Bubble and Dot-Com 2.0

	Dot-Com Bubble Burst (2000 - 2002)			Dot-Com 2.0		
	Beginning P/E NTM	End P/E NTM	Change in P/E NTM	Beginning P/E NTM	Current P/E NTM	Change in P/E NTM
Large Cap	50.8	18.2	-32.6	28.1	19.0	-9.1
Mid Cap	20.0	27.8	7.8	20.9	15.1	-5.8
Small Cap	53.8	32.8	-21.0	20.7	14.3	-6.4



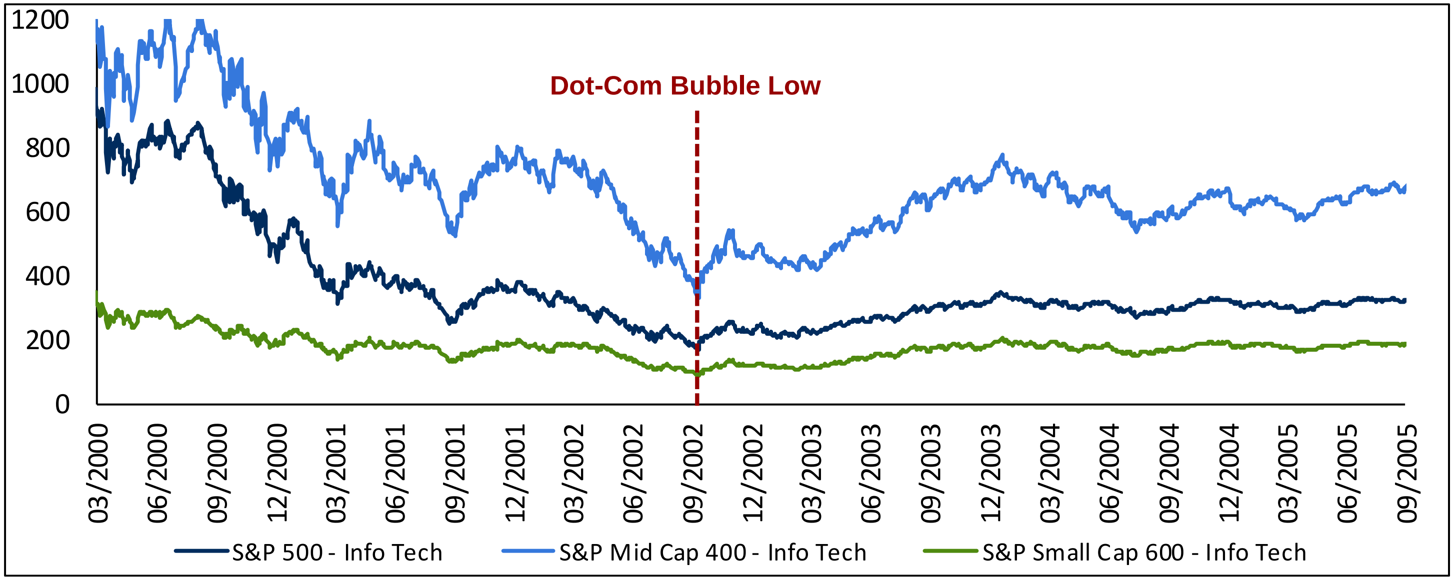
Source: FactSet; Raymond James Ltd.; Data as of June 30, 2022

1 - 3 Yrs. Following the Dot-Com Lows

Finally, in the years following the Dot-Com market lows (1-3 years from the trough), the mid-cap IT group marginally lagged their large/small-cap peers, but we believe this was the case since the mid-cap IT group did not experience the same level of drawdown as their peers during the bust (peak-to-trough sell-off for mid-cap IT group was -65.7% versus small-caps at 70.3% and large-caps at -78.4%).

Performance Following Dot-Com Market Lows..

	1 Yr Return After Dot-Com Low (2002/9/30 - 2003/9/30)	2 Yr Return After Dot-Com Low (2002/9/30 - 2004/9/30)	3 Yr Return After Dot-Com Low (2002/9/30 - 2005/9/30)
Large Cap	59.0%	27.0%	22.1%
Mid Cap	59.3%	24.3%	21.5%
Small Cap	63.1%	29.8%	23.5%



Source: FactSet; Raymond James Ltd.; Indexed to 100 on December 31, 1994; Data as of May 31, 2022; *Velocity: drawdown divided by duration.

Final Thoughts

- **Pockets of opportunity, while downside risks still remain in our view**
- We see the **greatest risk/reward across the S&P 400 Mid-Cap IT index** from both an earnings and relative value perspective with the S&P 500 Large-Cap IT group as the least attractive.
- We advise investors to remain **very selective (i.e., leverage the accompanying screens provided with this report)** to seek out companies across market capitalizations that are high-quality, led by strong management teams, trade at attractive valuations, and offer durable forward earnings that provide a reasonable buffer to help cushion the blow from the many uncertainties that may lay ahead.
- In a nutshell, we expect the selling pressure/weakness to continue for the IT group as a whole, especially if rates/yields continue to move higher, cost pressures/inflation stays elevated, and the economy heads into a hard-landing/recession (this appears to be the most likely scenario).
- **That said, opportunities are many for the long-term oriented investor.**

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