



Information Technology Sector Presentation

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Overview

Size of sector: 6.98 Trillion, 68 members

Largest Companies

1. Apple Inc. 905.15 B
2. Alphabet Inc. 777.29 B
3. Microsoft Corp. 725.32 B
4. Facebook Inc. 531.60 B
5. Visa Inc. 254.21 B

Sector Weights in S&P 500



Industries (Global Industry Classification Standard):

- Communications Equipment
- Electronic Equipment, Instruments & Components
- IT Services
- Internet Software & Services
- Semiconductors & Semiconductor Equipment
- Software
- Technology Hardware, Storage & Peripherals

Overview: *Sector Performance*



Q/Q 25 Years

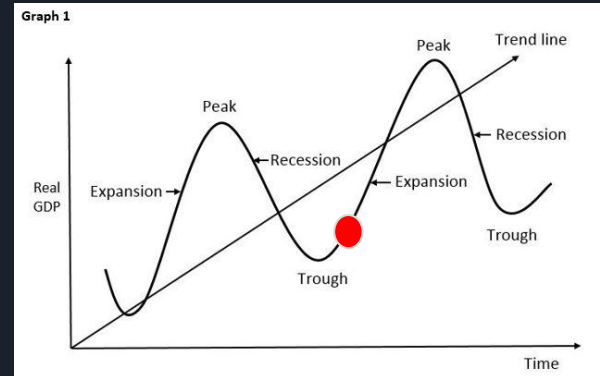
Overview: *Sector Performance*



YTD

Business Analysis: *Demand*

- Mirrors the trend of market (S&P 500) → Mirrors the economy
 - A strong economy provides disposable income for consumers to buy and invest
 - R&D increases and startups get more funding
 - Technology innovation increases
- Sometimes tech demand is not predictable
 - Products and services meet demands that were not even demanded
- Tech consumers tend to skew towards the younger demographics
 - Tech suppliers tend to skew towards the younger demographics as well
 - Suppliers of capital to tech tend to skew towards the older demographics
 - Ex. Venture Capital Limited Partners
- International tech race
 - Countries are competing for human capital to develop the next big thing in tech
 - Usually the home country reaps the benefits
 - Government regulation can hinder tech expansion internationally
 - Ex. Facebook/ Instagram in banned in China





Business Analysis: *Supply*

- Cloud Computing
- Artificial Intelligence
 - Finance Application (Oracle/ J.P. Morgan)
- Virtual Reality
- Blockchain
- Cryptocurrency
 - Expansion of Digital Money
- Internet of Things
- Biotechnology
- Electric/ Autonomous Vehicles
- Robotics
- Energy Extraction Innovation
- Cybersecurity



Business Analysis: *Profitability & Pricing*

Porter's 5 Forces

Threat of New Entrants: High

- The majority of the start-up space is revolved around Tech (high returns).
- Low start-up costs.
- Developments can be made by anyone who spends time studying new technology

Threat of Substitutes: High

- Once a new technology is introduced, new and better versions are quickly released
- Consumers have many choices of what to consume- companies need to offer a unique value

Strength of Suppliers: Medium

- The suppliers change drastically with different technologies. The suppliers for social media platforms are the consumers!
- The strength of suppliers of material products would depend of the number of suppliers and how rare the material is and the demand for it.

Strength of Buyers: High

- Due to the fast changing environment of the tech space, the interest of buyers is very important to the business.
- Demand could become nonexistent if a new technology comes into the market.

Competitive Rivalry: High

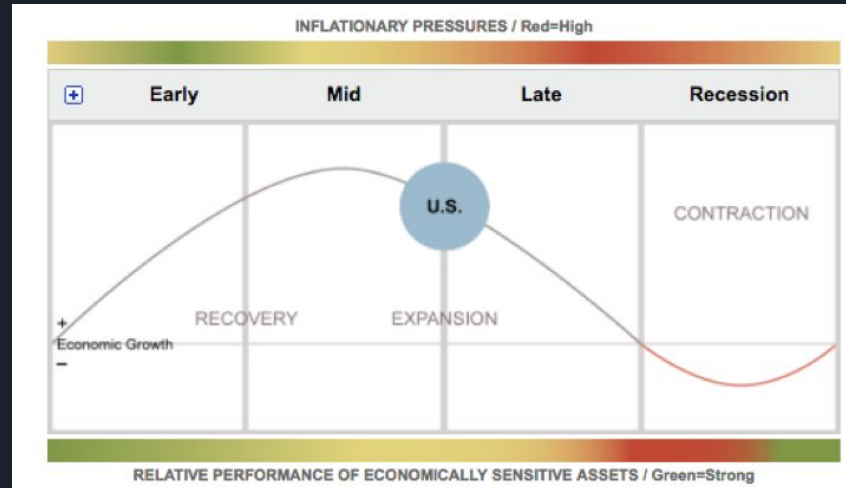
- The payoff in the tech industry can be great but it can be short lived as new technology keeps appearing that is meeting demands of customers that customers did not even know they had.

Economic Analysis: *Business Cycle Correlation*

Sector Performance by Business Cycle Phase

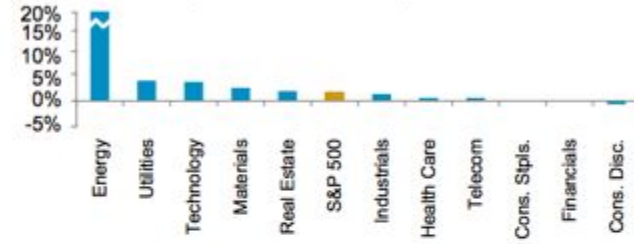
Sector	Early	Mid	Late	Recession
Info Technology	++	+	--	--

++ Consistently Overperform -- Consistently Underperform □ No Clear Pattern
 + Overperform - Underperform

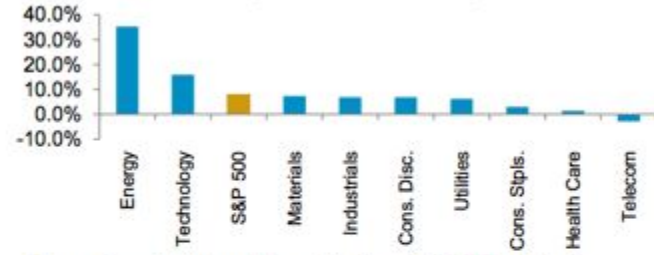


Economic Analysis: *Growth*

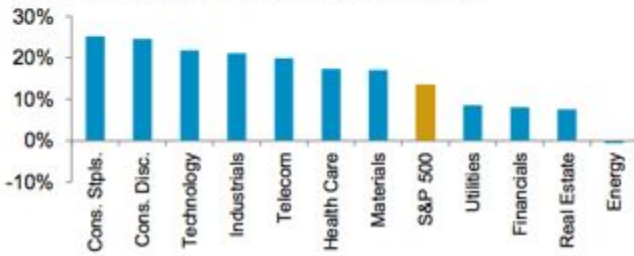
EPS Growth (Last 12 Months)



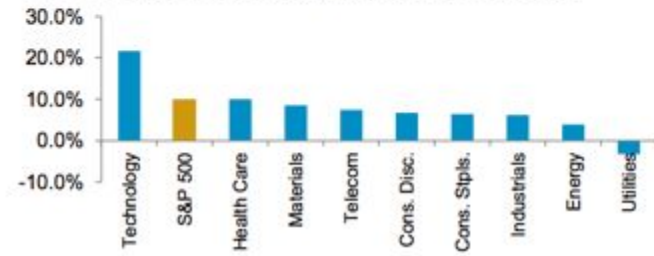
EBITDA Growth (Last 12 Months)



Return on Equity (Last 12 Months)



Free-Cash-Flow Margin (Last 12 Months)

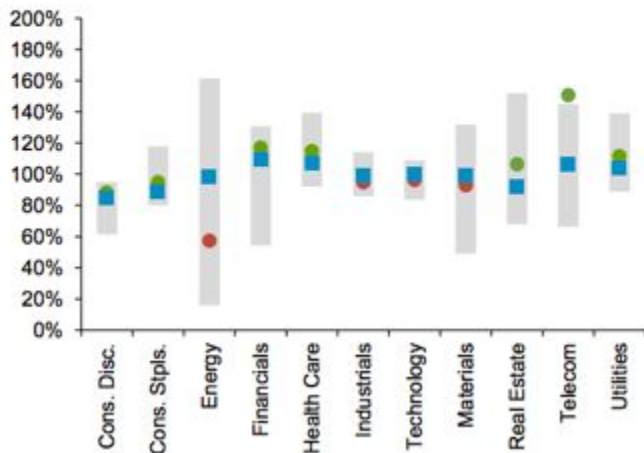


Economic Analysis: *Capacity*

Earnings Yield

■ 10-Year Range (excl. top & bottom 5%) ● Current ■ Historical Average

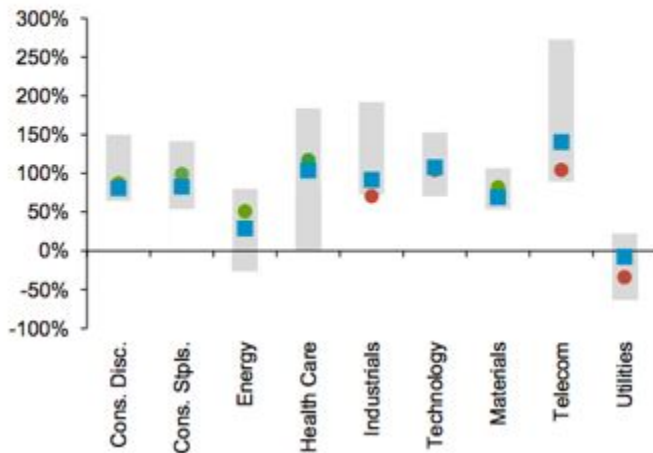
Relative Forward Earnings Yield to S&P 500 Index



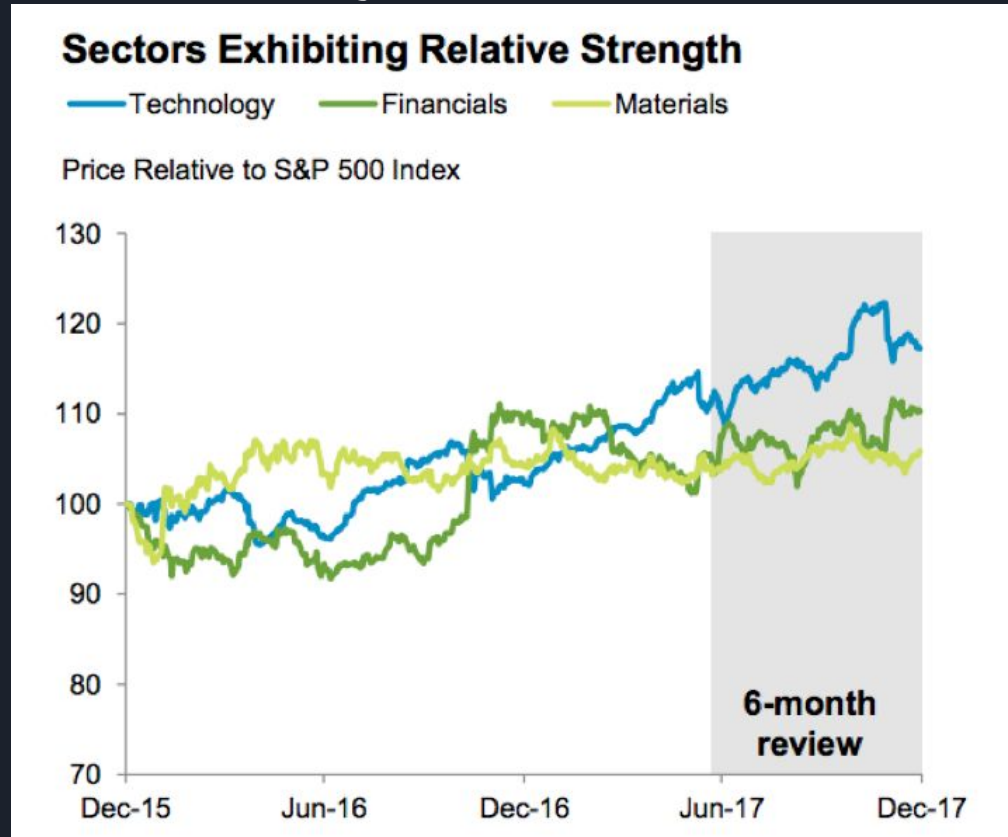
Free-Cash-Flow Yield

■ 10-Year Range (excl. top & bottom 5%) ● Current ■ Historical Average

Relative Free-Cash-Flow Yield to S&P 500 Index



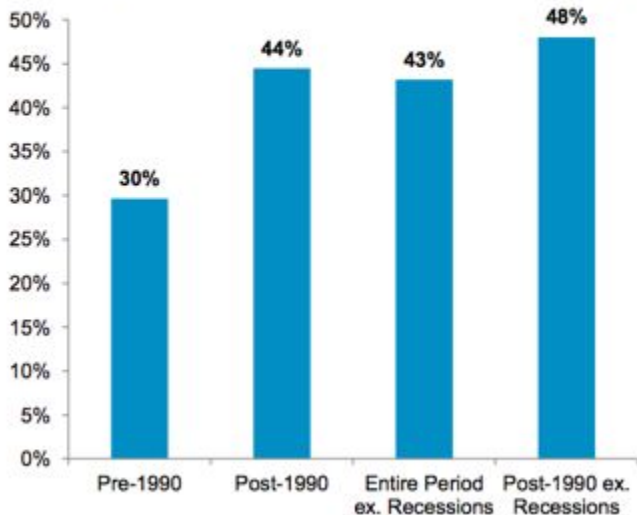
Economic Analysis



Economic Analysis: *Sustainability*

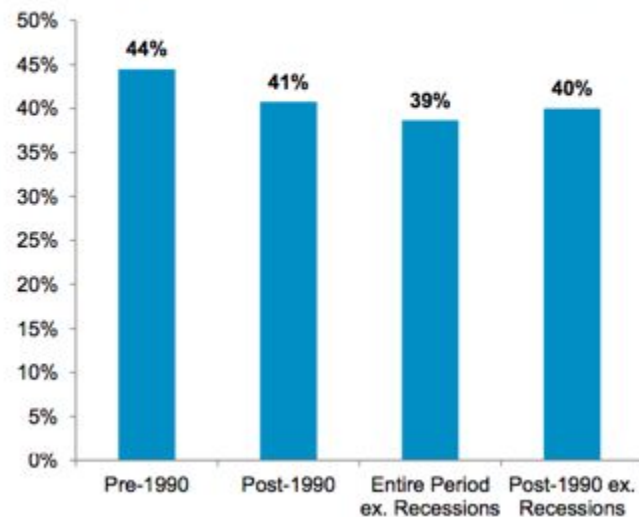
The Sustainability of Sector Leadership Has Been Mixed, but Has Improved Over Time

Odds of the Prior Year's Top Sector Outperformance in the Subsequent Year



But Last Year's Top Sectors Have Been Unlikely to Rank in the Bottom 3 in the Subsequent Year

Odds of the Prior Year's Top Sector in the Bottom 3 the Subsequent Year

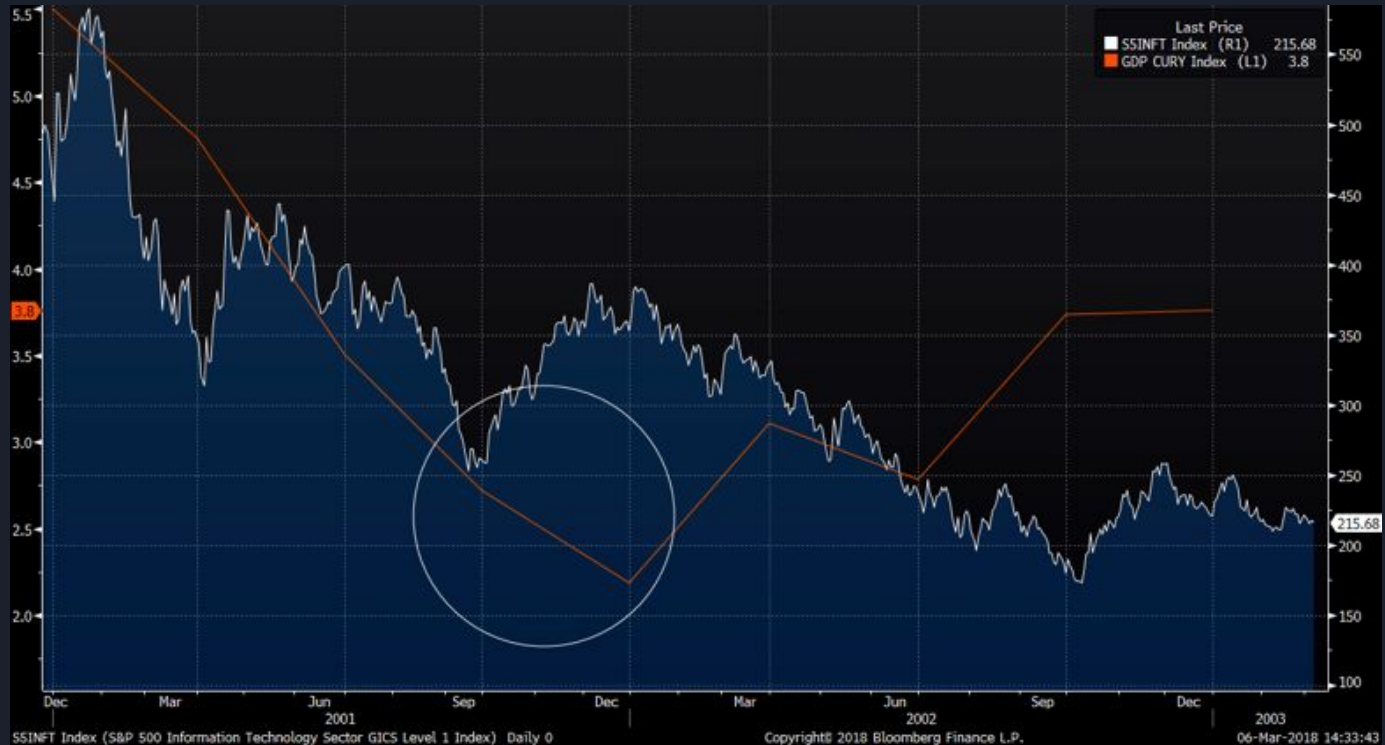


Economic Analysis: *S5INFT* Index vs. *GDP CURY* Index



Economic Analysis: *S5INFT* Index vs. *GDP CURY* Index

2001-2003



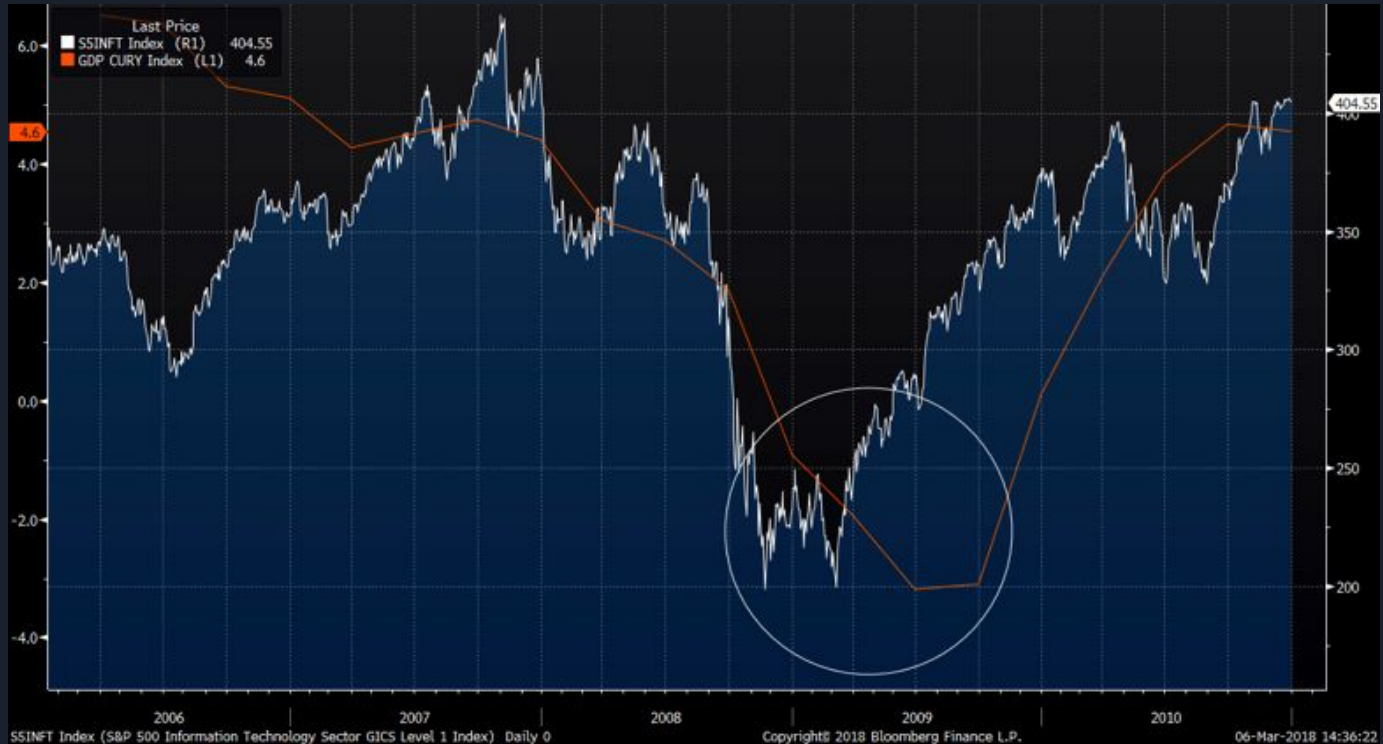
Economic Analysis: *S5INFT* Index vs. *GDP CURY* Index

2001-2002



Economic Analysis: *S5INFT* Index vs. *GDP CURY* Index

2006-2010



Economic Analysis: *S5INFT* Index vs. *GDP CURY* Index

2008-2010



Economic Analysis: *S5INFT* Index vs. *CONSSENT* Index



Economic Analysis: *S5INFT* Index vs. *HOUIMED* Index



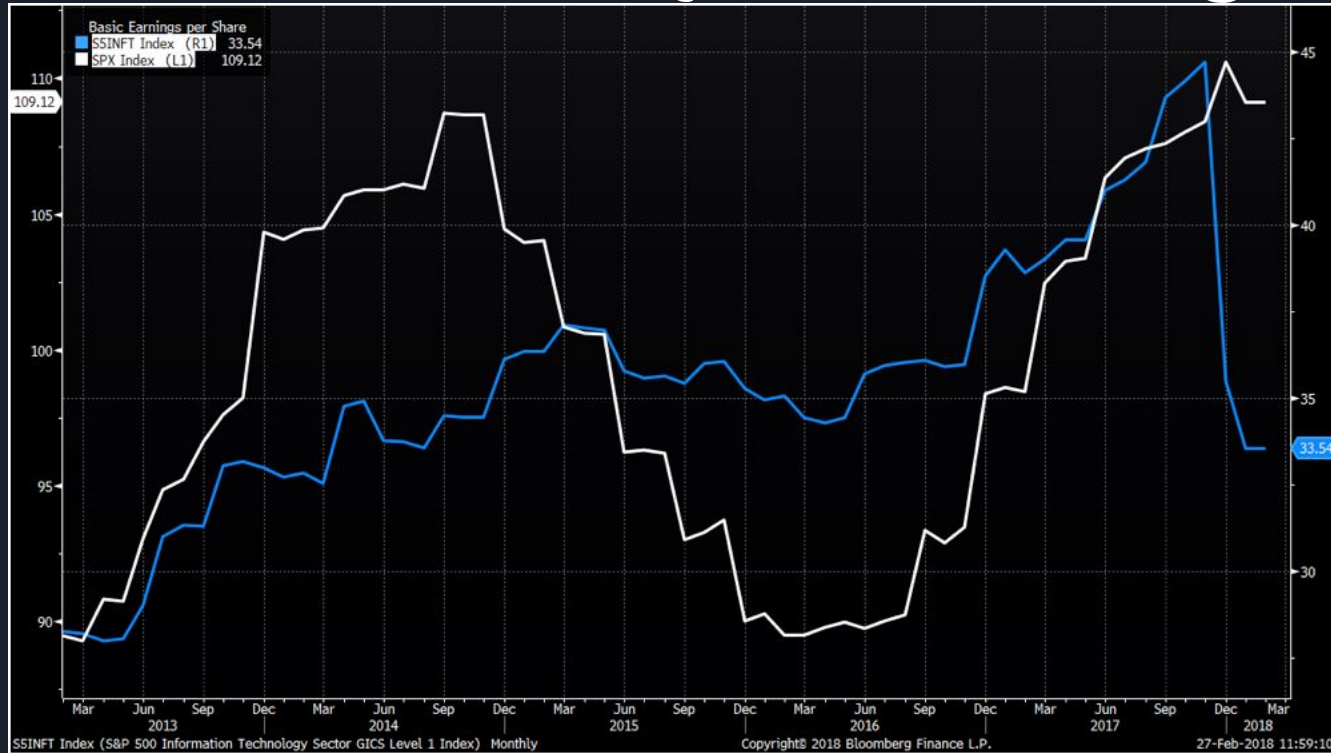
Economic Analysis: *S5INFT* Index vs. *USGG10Y* Index



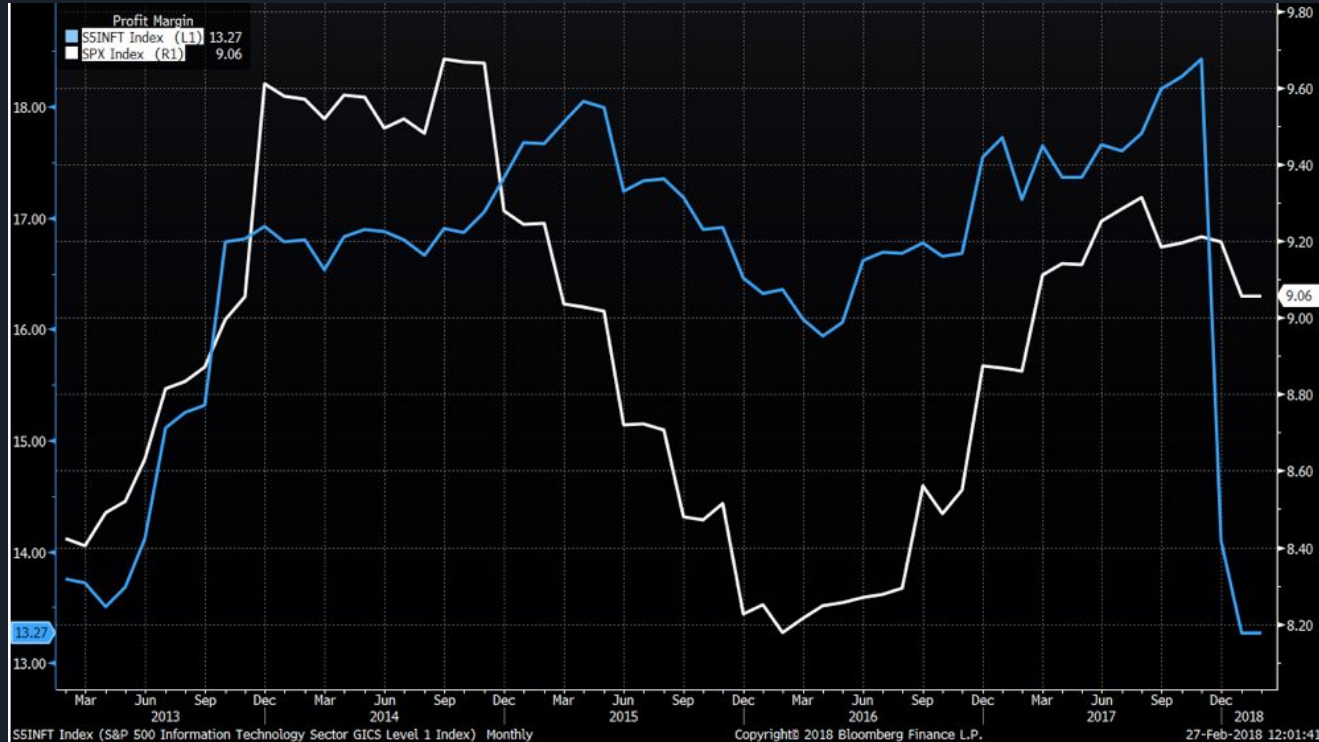
Economic Analysis: *S5INFT* Index vs. *CPTICHING* Index



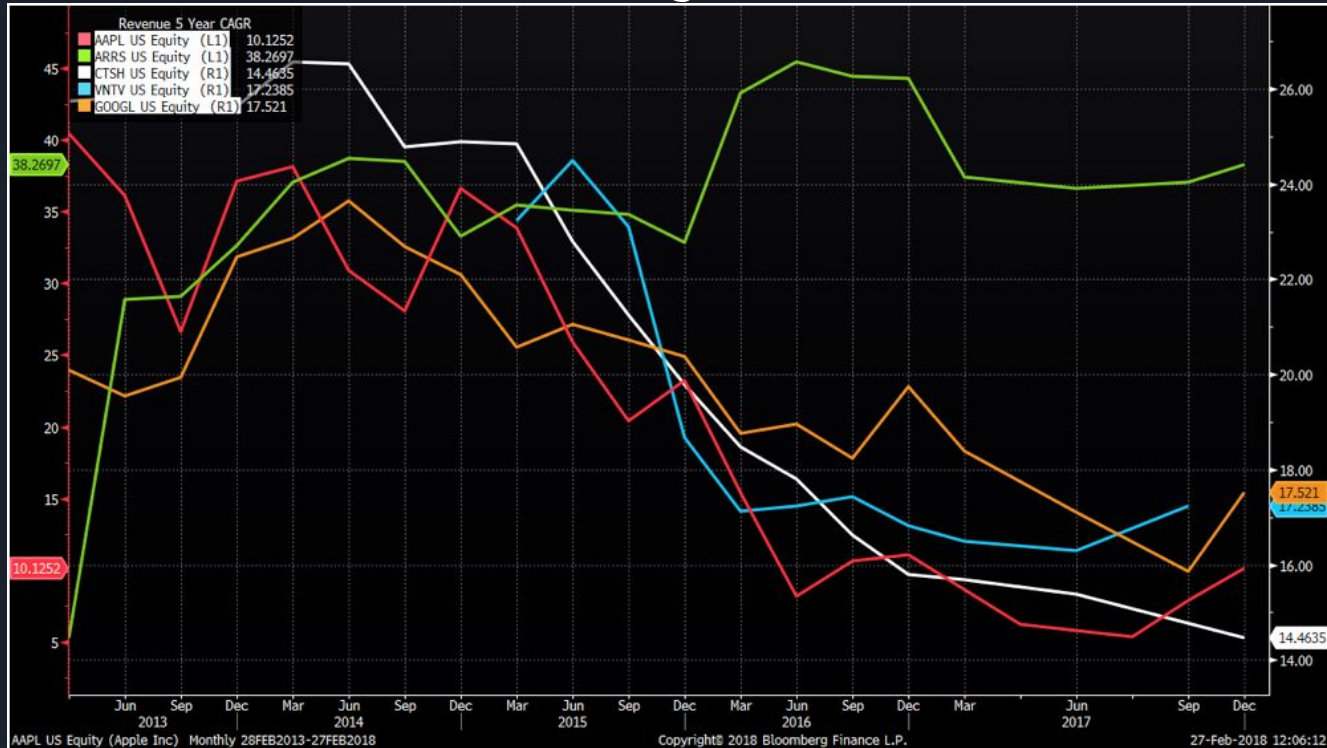
Financial Analysis: *Earnings*



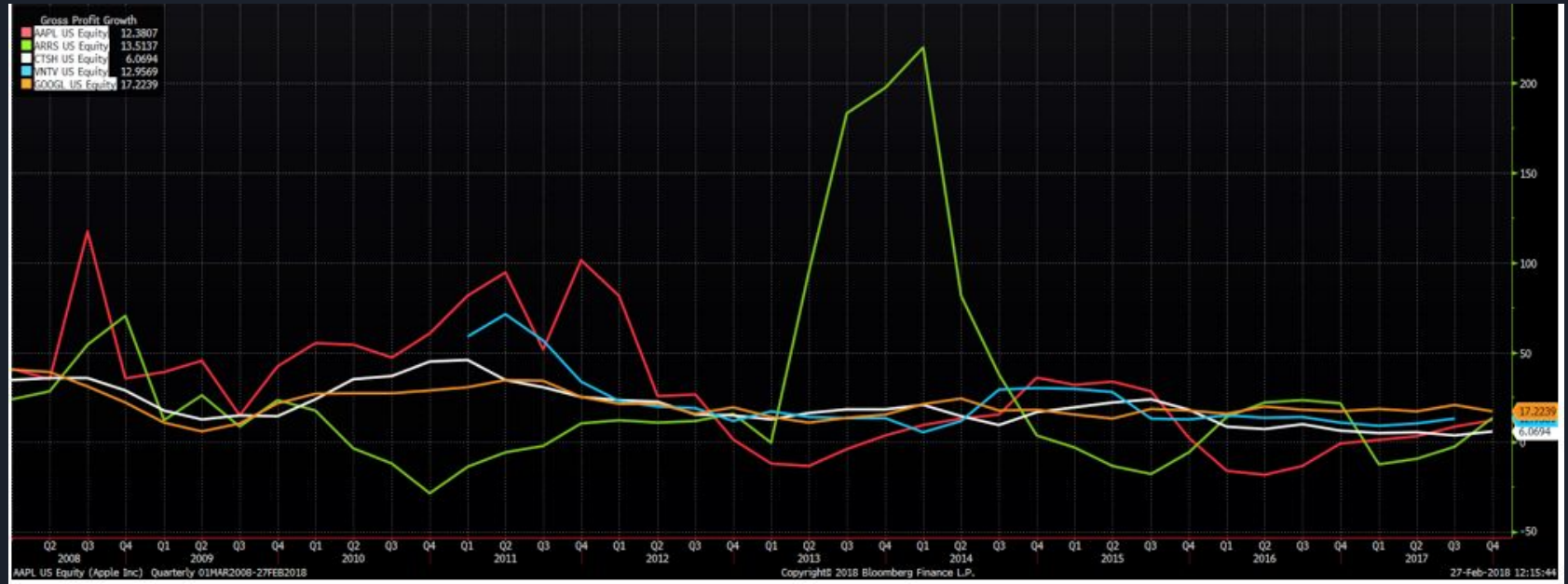
Financial Analysis: *Profit Margins*



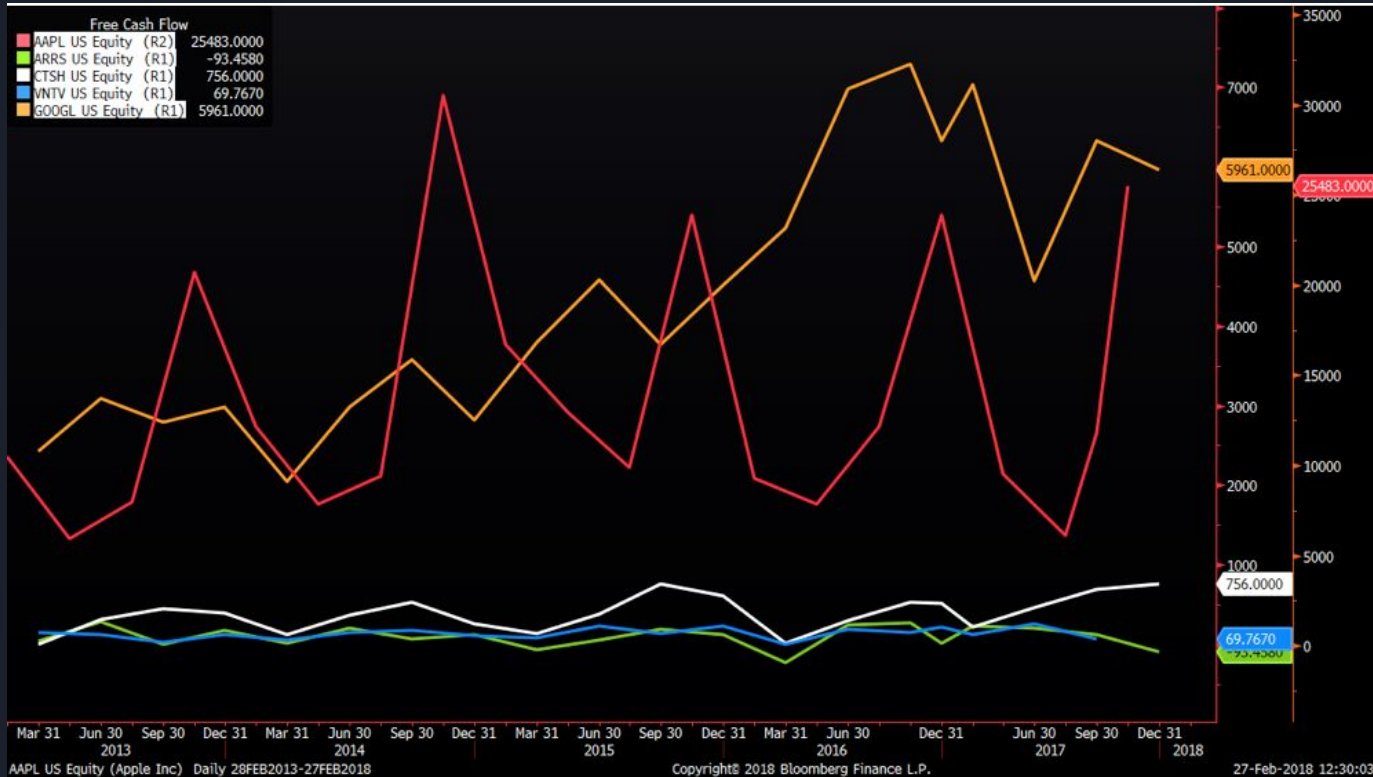
Financial Analysis: *Revenues*



Financial Analysis: *Gross Profits*



Financial Analysis: *FCFs*



Valuation: *Price to Earnings*



SPX Index	S&P 500
SSINFT	IT Sector
SSCMPE	Tech. HW, Storage and Peripherals
SSSOFT	Software
SSSEQ	Semicdt. & Semicdt. Equip.
SSINSSX	Internet Software & Services
SSITSV	IT Services
SSLEIX	Elec. Equip., Inst. & Comp.
SSCOMM	Communications Equip.

Software is trading at 35% above its historical mean, while Internet Software & Services is trading at 6% below its historical mean

Valuation: *Price to Book*



SPX Index	S&P 500
SSINFT	IT Sector
SSCMPE	Tech. HW, Storage and Peripherals
SSSOFT	Software
SSSSEQ	Semicdt. & Semicdt. Equip.
SSINSSX	Internet Software & Services
SSITSV	IT Services
SSELEIX	Elec. Equip., Inst. & Comp.
SSCOMM	Communications Equip.

Software is trading at 56% above its historical mean. S&P 500 and IT sector are both trading at 18% and 44% above their historical mean.

Valuation: *Price to Sales*



SPX Index	S&P 500
SSINFT	IT Sector
SSCMPE	Tech. HW, Storage and Peripherals
SSSOFT	Software
SSSEQ	Semicdt. & Semicdt. Equip.
SSINSSX	Internet Software & Services
SSITSV	IT Services
SSELEIX	Elec. Equip., Inst. & Comp.
SSCOMM	Communications Equip.

Software is trading at 44% above its historical mean, while Internet Software & Services is trading at only 1% above its historical mean.

Valuation: *Price to EBITDA*



SPX Index	S&P 500
SSINFT	IT Sector
SSCMPE	Tech. HW, Storage and Peripherals
SSSOFT	Software
SSSEQ	Semicdt. & Semicdt. Equip.
SSINSSX	Internet Software & Services
SSITSV	IT Services
SSELEIX	Elec. Equip., Inst. & Comp.
SSCOMM	Communications Equip.

Software is trading at 34% above its historical mean, while Internet Software & Services is trading at only 6% above its historical mean.



Relative Valuation

P/E	SPX Index	SSINFT	SSCMPE	SSSOFT	SSSEQ	SSINSSX	SSITSV	SSELEIX	SSCOMM
High	23.25	24.53	18.26	35.56	22.11	44.75	27.29	23.49	20.83
Low	15.44	14.06	9.52	14.44	13.93	18.00	15.18	13.34	12.74
Mean	18.90	19.38	14.23	23.96	18.47	31.52	19.39	18.09	16.08
Median	18.68	19.09	14.01	22.23	18.46	32.48	18.08	17.63	16.02
Current	21.74	23.92	17.80	32.26	19.01	29.69	26.30	21.79	20.72

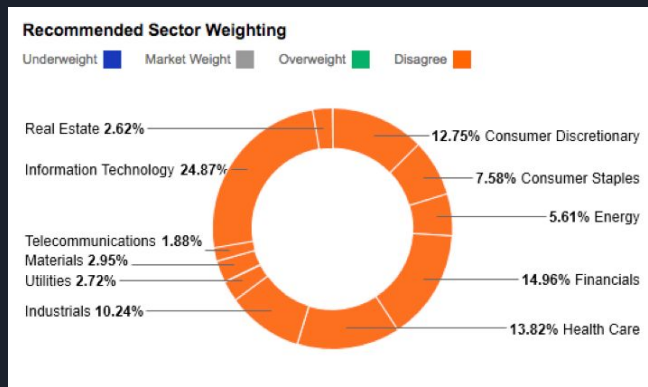
P/B	SPX Index	SSINFT	SSCMPE	SSSOFT	SSSEQ	SSINSSX	SSITSV	SSELEIX	SSCOMM
High	3.51	6.08	5.80	7.84	4.99	6.04	8.18	3.52	4.47
Low	2.29	2.99	2.43	3.45	2.28	2.53	5.84	1.54	2.16
Mean	2.79	4.18	4.05	5.01	3.26	4.17	6.70	2.28	2.75
Median	2.78	4.11	4.07	4.68	3.26	4.19	6.63	2.22	2.72
Current	3.29	6.02	5.70	7.80	4.90	5.60	7.88	3.27	4.45

P/EBITDA	SPX Index	SSINFT	SSCMPE	SSSOFT	SSSEQ	SSINSSX	SSITSV	SSELEIX	SSCOMM
High	12.29	16.11	11.65	20.71	13.31	27.83	17.19	13.64	14.58
Low	8.15	9.75	6.23	9.46	7.70	11.53	9.93	8.18	8.79
Mean	10.02	12.25	8.91	15.19	10.23	20.75	12.61	10.88	11.75
Median	10.21	11.92	8.68	15.95	9.67	21.74	12.04	11.04	11.57
Current	11.50	15.73	11.48	20.32	12.59	21.91	16.57	12.65	14.50

P/S	SPX Index	SSINFT	SSCMPE	SSSOFT	SSSEQ	SSINSSX	SSITSV	SSELEIX	SSCOMM
High	2.22	4.47	2.71	6.82	4.48	9.66	3.93	2.98	4.05
Low	1.38	2.14	1.28	3.40	2.20	4.17	2.44	1.21	2.37
Mean	1.78	3.26	2.04	4.65	3.19	7.39	2.98	2.15	3.03
Median	1.80	3.23	2.02	4.48	3.15	7.60	2.96	2.28	3.02
Current	2.07	4.35	2.60	6.68	4.31	7.47	3.79	2.74	4.03

Recommendation

- Positives
 - Cloud computing growth
 - Flexible Consumption
 - Data and data mining
 - Cognitive computing
 - User friendly tools, API, and apps
- Risks
 - Cyber security
 - Struggle creating workforce for demand with complexity in the business they're backing





Recommendation

- Based on the strong Free Cash Flows of the IT sector compared to other sector in the S&P 500 and the potential for innovation in this specific sector, we are recommending the board to :
 - Match the weight of the sector with the weight in the S&P 500

- Based on the relative valuation of each industries, we are recommending the board to:
 - Overweight Internet Software & Services
 - Underweight Software