

## US Equity Strategy

### Above-Trend Revenue Growth, Better Than Expected Margins and Record Buybacks

**S&P 500 companies should deliver 4-5% earnings surprise on better than feared margins.** This should result in positive 2-3% EPS growth this quarter vs. consensus expectation of negative 2% (~\$39 EPS vs. consensus of \$37.43). The above-trend revenue growth of 5% is indicative of healthy demand while lower margins are largely due to temporary factors (e.g., 4Q18 collapse in oil prices, US/China trade headwinds, normalizing effective tax rate after having undershoot in 2018). The Street expects net income margin to compress by -104bp y/y and -70bp q/q, which we view as too pessimistic. We believe the margin drags should fade into year-end with recovering global growth and reflationary policies. As for performance, we expect equities to remain resilient during the reporting season as results should hint at a global growth recovery at a time when investor positioning and sentiment remains relatively low (a similar setup to [last earnings season](#) when companies delivered a strong excess return even though earnings growth was underwhelming). More broadly, we reiterate our S&P 500 price target of 3,000 and expect corporate guidance to be supportive of the ongoing cyclical recovery. At the sector level, we remain overweight cyclical sectors (Tech, Cons Disc, Industrials, and Energy). We continue to view Energy as the sector with the best risk-reward (see [Energy de-coupled from Oil](#)) and anticipate positive guidance to help reverse the sector's earnings momentum (2019 consensus Energy EPS growth estimate has been revised down sharply to -8% from +26% last October).

**Companies across sectors should provide stronger growth outlook.** We expect fundamentals to improve on the back of stronger global growth (up-tick in US and Asia QMIs and global cycle, see pages 3-4) and reflationary policies. Also central to our growth view, we expect some margin recovery as transient drags fade and capacity continues to tighten. We maintain this positive view on growth with the assumption that the largest 4Q drags will ultimately prove to be temporary (trade escalation and oil weakness). For example, S&P 500 companies with high China exposure have seen disproportionately larger negative revisions to margins and earnings (see Figure 35). Consequently, sectors that have seen the sharpest negative revisions in recent quarters should deliver better than expected results in 2019. Also, consensus estimate revisions for Energy and Materials have trailed commodity price recovery (i.e., 2019 Energy EPS growth estimate is near the low at -8% and Materials is at -13%, see Figure 3). Similarly, stronger global growth and progress in trade have yet to translate into stronger growth for cyclically-sensitive sectors such as Tech and Industrials where 2019 EPS growth has been revised down by -6% and -5%, respectively.

- **Consensus margin expectations particularly low for 1Q.** While we expect some margin pressure during 1Q, net income margin estimates are too conservative. The recent margin compression is not related to late-cycle dynamics (i.e., falling demand, rising input costs, declining pricing power). Instead, the margin compression is driven by temporary drags that should begin to fade starting in 2Q. For example, stabilization and possibly, based on global QMIs, a pickup in global growth would be most beneficial for Tech/Communication Services and Financials. A reduction in trade tension and tariffs should be a significant positive for Industrials/Consumer Discretionary. Energy and Materials should benefit from rising commodity prices and reflationary policies. However, after a sharp rise in oil (+45% YTD) and more broadly S&P GSCI (+20%), input cost concerns could resurface for goods producers, especially Staples (e.g., Food Retail, Food and Beverage, Household Products) in the coming months.

**See page 10 for analyst certification and important disclosures.**

J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

#### US Equity Strategy

**Dubravko Lakos-Bujas** <sup>AC</sup>

(1-212) 622-3601  
dubravko.lakos-bujas@jpmorgan.com

**Bhupinder Singh**

(1-212) 622-9812  
bhupinder.singh@jpmorgan.com

**Kamal Tamboli**

(1-212) 622-5794  
kamal.r.tamboli@jpmorgan.com

**Narendra Singh**

(1-212) 622-0087  
narendra.x.singh@jpmorgan.com

**Arun Jain**

(1-212) 622-9454  
arun.p.jain@jpmorgan.com

**Marko Kolanovic, PhD**

(1-212) 622-3677  
marko.kolanovic@jpmorgan.com  
J.P. Morgan Securities LLC

Figure 1: US and Asia Cycles in Recovery

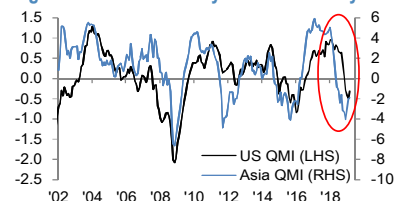


Figure 2: Net Analyst Revisions Turning Positive, a Leading Signal for EPS Revisions



Figure 3: 1Q and 2019 EPS Estimates too Low after Sharp Negative Revisions YTD

	1Q19 EPS Growth			2019 EPS Growth		
	01/2019	Current	Delta	01/2019	Current	Delta
Discretionary	2.3%	-2.9%	-5.2%	9%	7%	-2.2%
Staples	2.5%	-0.7%	-3.2%	5%	1%	-3.9%
Energy	18.0%	-27.5%	-45.5%	11%	-8%	-18.5%
Financials	7.5%	6.3%	-1.2%	10%	9%	-0.7%
Healthcare	9.2%	5.1%	-4.1%	7%	6%	-1.7%
Industrials	9.0%	3.5%	-5.5%	11%	7%	-4.6%
Materials	3.9%	-15.6%	-19.5%	6%	-13%	-19.3%
Real Estate	4.1%	3.0%	-1.1%	5%	4%	-1.4%
Technology	1.9%	-6.1%	-8.0%	4%	-2%	-5.5%
Communication Svcs	-1.9%	-4.6%	-2.7%	7%	3%	-3.6%
Utilities	0.6%	-0.5%	-1.1%	5%	4%	-0.4%
<b>S&amp;P 500</b>	<b>5.3%</b>	<b>-1.3%</b>	<b>-6.6%</b>	<b>7.3%</b>	<b>3.0%</b>	<b>-4.3%</b>

- Input costs concerns should shift from tariff compliance to higher raw material and transportation costs.** While tariffs will remain an ongoing risk, there has been a noticeable tick down in focus based on textual analysis of company reports (see [report](#)), suggesting the market is now better versed on this risk. After an uptick in trade/tariff discussion among Tech Hardware, Household & Personal Products, Retailing, Capital Goods, and Auto companies last quarter, there should be fewer negative tariff-related surprises during this reporting season. While trade and tariffs remains a headwind for margins, companies are softening the drag by raising prices where possible, idling and shifting production to geographies unaffected by tariffs, and/or passing cost to suppliers. If a trade deal were to materialize, it could be a source of positive revisions (mainly through margins) since this catalyst is mostly not in consensus numbers. Goods producers will increasingly highlight rising commodity prices as a risk; however, we expect the majority of the headwind to be passed down to end users given expanding labor markets and reaccelerating global growth.
- Effective tax rate normalization a drag on margins, while lower rate is a smaller incremental benefit.** The effective tax rate overshot to the downside last year was partially driven by earlier recognition of benefits compared to delayed recognition of costs (i.e., Treasury/IRS guidance on section 965 related to undistributed earnings of foreign subsidiaries was not finalized until [January 2019](#)). As shown in Figure 6, the median effective tax rate is expected to rise to 21.5% in 2019 from 20.7% in 2018. As for interest expense, we expect the S&P 500 implied interest rate to now remain flat at ~4% this year on the back of more a dovish Fed. In our view, the larger driver of interest expense this year will be M&A activity. Overall, large-cap balance sheets remain healthy given companies' ability to service debt has improved over the cycle and balance sheet cash remains elevated at ~\$1.5t ex-financials.
- Reinvestment activity to remain robust.** Contrary to popular narratives, we expect S&P 500 companies to continue reinvesting at a strong pace during this quarter and the rest of the year. The drivers include above-trend revenue growth, tighter capacity, higher commodity prices, and robust tech spending cycle (cloud/data centers, big data/ML/AI, 5G, etc.). In fact, reinvestment activity remained resilient throughout 4Q18 when market volatility was severe (capex was up 12% and R&D was up 11%). We expect reinvestment activity to remain robust throughout this year at an annualized rate of ~\$1 trillion. A trade resolution could trigger additional investment given it will remove policy uncertainty and could create incremental demand for US exports over multiple years.
- Record buyback activity should provide EPS upside.** As discussed above, companies are likely to continue reinvesting in new growth opportunities, but we expect the majority of incremental profits to flow to buybacks. After a record year for buybacks in 2018, this year should be even higher at ~\$850b, which would alone drive EPS growth of ~2%. This view is supported by record buyback announcements YTD of \$213b led by Tech ~\$46b and Industrials ~\$40b. Also, the existing cumulative buyback authorizations that have not been realized yet have grown to ~\$700b as of 4Q. Lastly, corporates still have excess capital (cash balance of ~\$1.5tn ex-Financials) while payout ratio of ~75% is still relatively low (adjusted for cash repatriation). We expect capital return to remain predominantly funded by operating cash flow and excess cash during 1Q (debt-funded buybacks peaked at 34% in 2017 and since have fallen to ~14%).

Figure 4: Above-Trend Sales Growth



Figure 5: Margin Expectation Low, Drag to Fade

	Net Income Margin Change, Y/Y				
	4Q/18	1Q/19	2Q/19	3Q/19	4Q/19
Energy	307bp	-130bp	15bp	-62bp	-3bp
Materials	42bp	-176bp	-100bp	-30bp	42bp
Industrials	146bp	-40bp	2bp	22bp	40bp
Discretionary	63bp	-59bp	-19bp	7bp	35bp
Staples	5bp	-40bp	-31bp	-21bp	-13bp
HealthCare	24bp	-85bp	-88bp	-79bp	-12bp
Financials	90bp	-63bp	-19bp	-26bp	149bp
Technology	80bp	-216bp	-231bp	-189bp	-37bp
Communications	223bp	-246bp	87bp	-160bp	-83bp
Utilities	-95bp	-40bp	2bp	-41bp	184bp
<b>S&amp;P 500</b>	<b>89bp</b>	<b>-104bp</b>	<b>-48bp</b>	<b>-62bp</b>	<b>15bp</b>

Figure 6: Effective Tax Rate

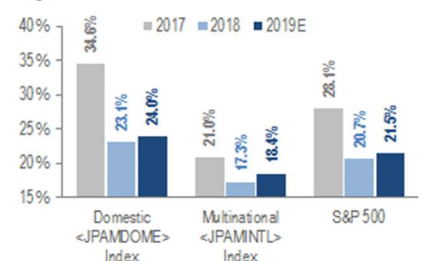
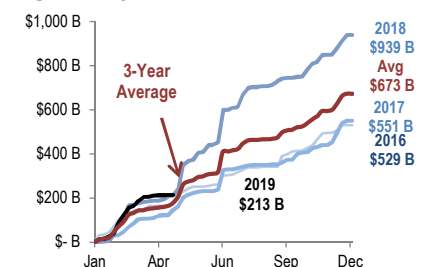


Figure 7: Buyback Announcements YTD



Source for all: J.P. Morgan US Equity Strategy and Quantitative Research

## US and Asia Business Cycles in Recovery

Figure 8: US Quantitative Macro Index Ticked Up

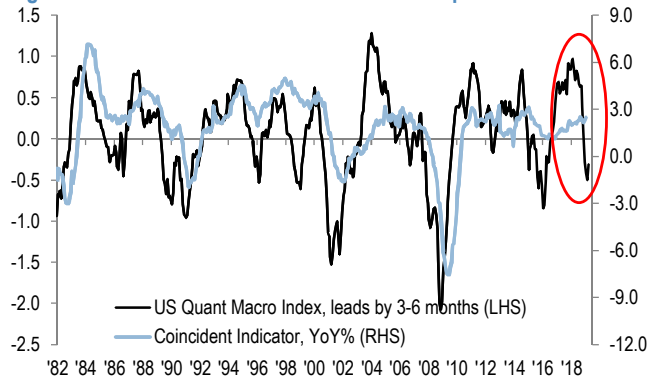


Figure 9: Asia Quantitative Macro Index also Turning Up

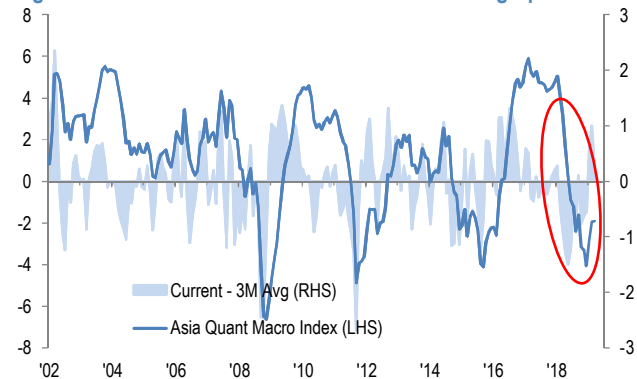


Figure 10: US Growth QMI

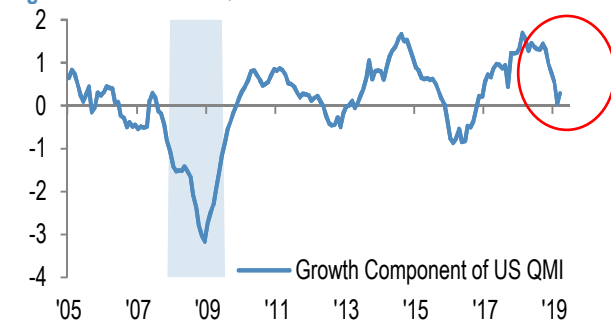


Figure 11: US Liquidity QMI

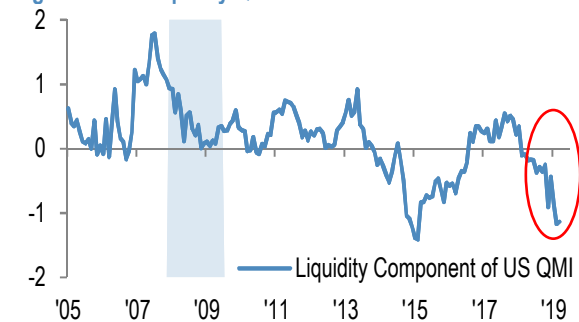


Figure 12: US Sentiment QMI

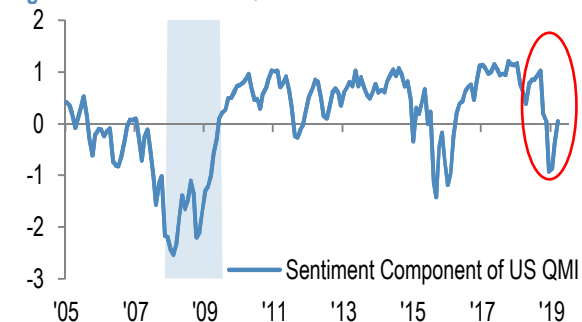
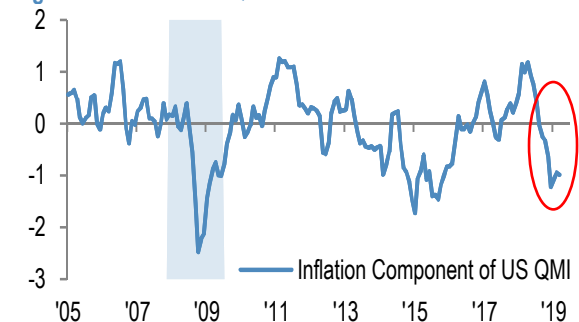


Figure 13: US Inflation QMI



Source for all: J.P. Morgan US Equity Strategy and Quantitative Research

## Global Macro Stabilizing/Recovering

Figure 14: Global Economic Momentum Reversing

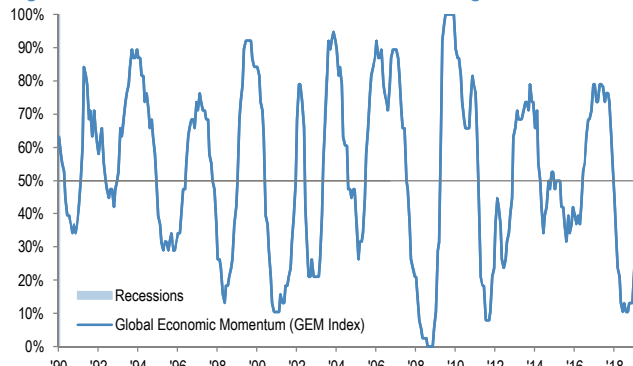


Figure 16: US PMI Stabilizing, while Semis at a Record

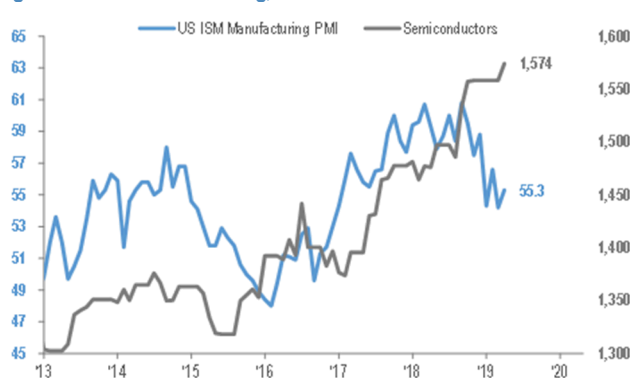


Figure 18: China New Export Orders Rebounding



Source for all (unless otherwise specified): J.P. Morgan US Equity Strategy and Quantitative Research

Figure 15: Commodity Complex Rebounding

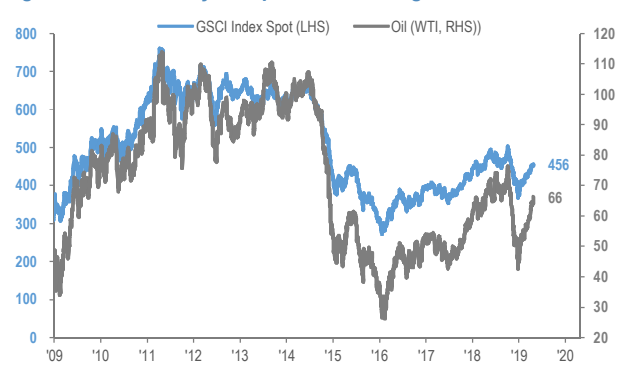


Figure 17: Germany Factory Sales and Output Moving Higher

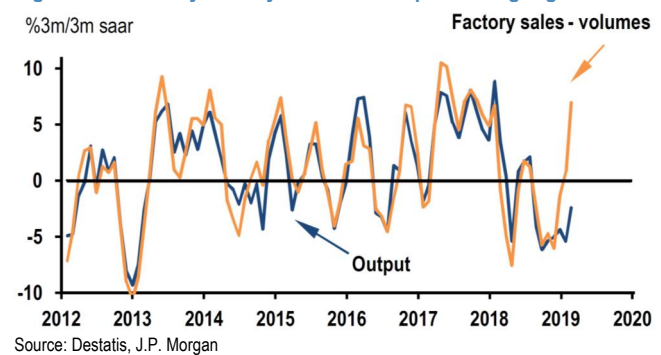
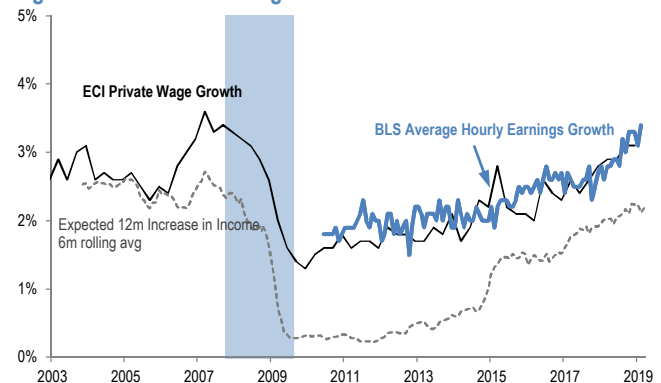


Figure 19: Moderate US Wage Growth a Positive for Demand



## Earnings Growth Expectation Low for 1Q19 and 2019

Figure 20: Sales Growth Still Healthy after Revisions

YTD Change

	1Q19 Sales Growth			2019 Sales Growth		
	01/2019	Current	Delta	01/2019	Current	Delta
Discretionary	4.8%	3.6%	-1.2%	5.9%	4.8%	-1.1%
Staples	2.9%	2.5%	-0.4%	3.2%	3.1%	-0.1%
Energy	16.9%	-0.1%	-17.0%	5.8%	0.1%	-5.7%
Financials	5.8%	4.7%	-1.1%	2.5%	5.0%	2.5%
Healthcare	8.6%	13.0%	4.4%	12.3%	11.9%	-0.4%
Industrials	5.5%	2.6%	-2.9%	4.8%	3.6%	-1.2%
Materials	10.5%	3.2%	-7.3%	7.3%	-5.5%	-12.8%
Real Estate	4.4%	4.7%	0.3%	4.3%	4.3%	0.0%
Technology	3.1%	-1.2%	-4.3%	2.8%	1.0%	-1.8%
Communication Svcs	12.6%	11.8%	-0.8%	9.9%	11.5%	1.6%
Utilities	2.4%	3.9%	1.5%	3.4%	4.3%	0.9%
<b>S&amp;P 500</b>	<b>7.0%</b>	<b>4.8%</b>	<b>-2.2%</b>	<b>6.0%</b>	<b>4.9%</b>	<b>-1.1%</b>

Source: J.P. Morgan US Equity Strategy and Quantitative Research

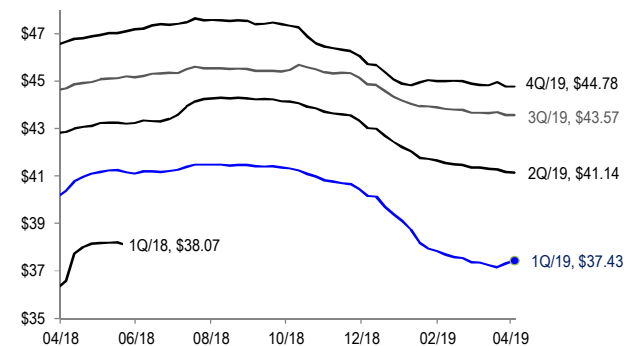
Figure 21: ...while EPS Growth Revised Down Sharply on Conservative Margin Assumptions

YTD Change

	1Q19 EPS Growth			2019 EPS Growth		
	01/2019	Current	Delta	01/2019	Current	Delta
Discretionary	2.3%	-2.9%	-5.2%	9%	7%	-2.2%
Staples	2.5%	-0.7%	-3.2%	5%	1%	-3.9%
Energy	18.0%	-27.5%	-45.5%	11%	-8%	-18.5%
Financials	7.5%	6.3%	-1.2%	10%	9%	-0.7%
Healthcare	9.2%	5.1%	-4.1%	7%	6%	-1.7%
Industrials	9.0%	3.5%	-5.5%	11%	7%	-4.6%
Materials	3.9%	-15.6%	-19.5%	6%	-13%	-19.3%
Real Estate	4.1%	3.0%	-1.1%	5%	4%	-1.4%
Technology	1.9%	-6.1%	-8.0%	4%	-2%	-5.5%
Communication Svcs	-1.9%	-4.6%	-2.7%	7%	3%	-3.6%
Utilities	0.6%	-0.5%	-1.1%	5%	4%	-0.4%
<b>S&amp;P 500</b>	<b>5.3%</b>	<b>-1.3%</b>	<b>-6.6%</b>	<b>7.3%</b>	<b>3.0%</b>	<b>-4.3%</b>

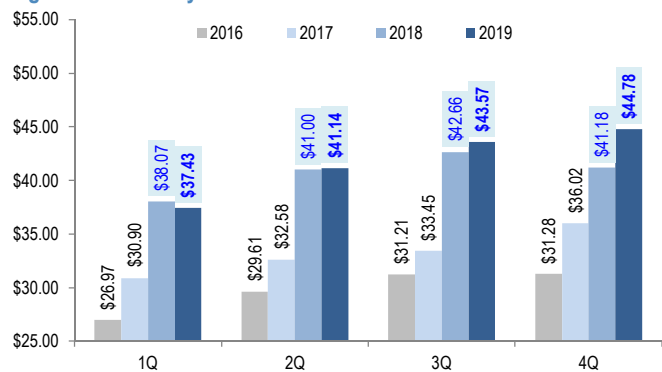
Source: J.P. Morgan US Equity Strategy and Quantitative Research

Figure 22: 1Q19 EPS Lower than 1Q18 despite strong revenue growth and buybacks



Source: J.P. Morgan US Equity Strategy, Thomson IBES

Figure 23: Quarterly Consensus EPS



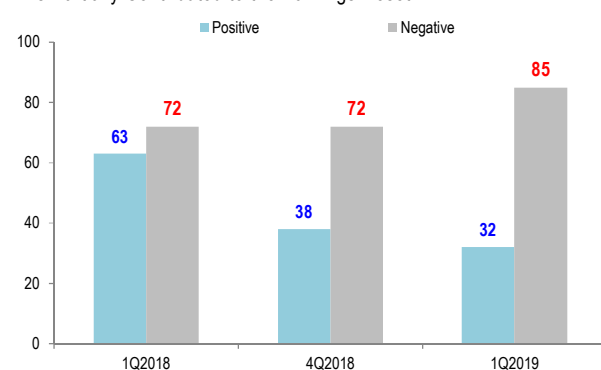
Source: J.P. Morgan US Equity Strategy, Thomson IBES

Figure 24: 2019 EPS Growth Low but No Earnings Recession  
2019 EPS Growth Likely to be Revised Up



Source: J.P. Morgan US Equity Strategy and Quantitative Research

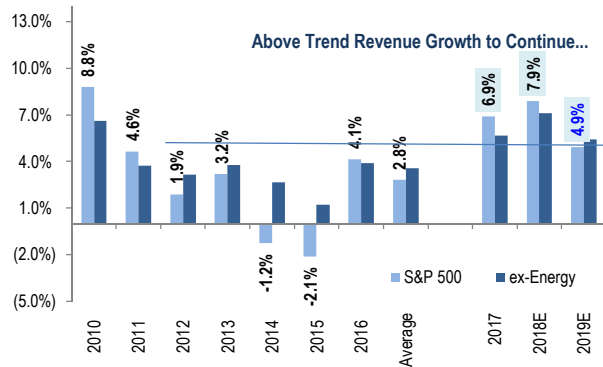
Figure 25: Higher Pre-Announcements This Quarter  
This Partially Contributed to the Earnings Reset



Source: J.P. Morgan US Equity Strategy and Quantitative Research

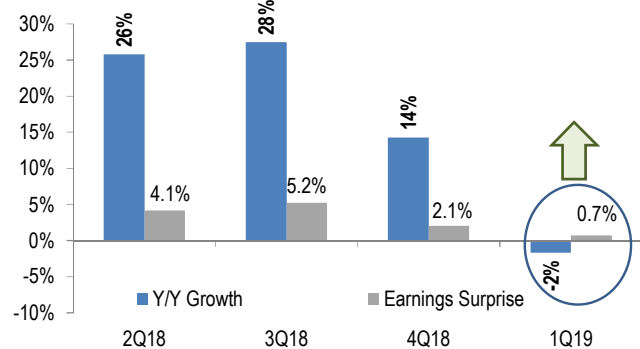


Figure 26: Revenue Growth Implies Healthy Demand



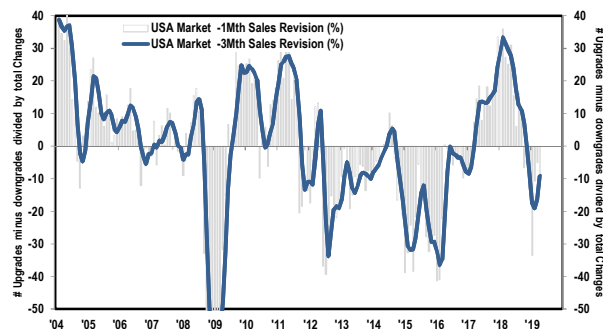
Source: J.P. Morgan US Equity Strategy

Figure 27: 1Q EPS Estimates Low, Expecting Strong Surprises



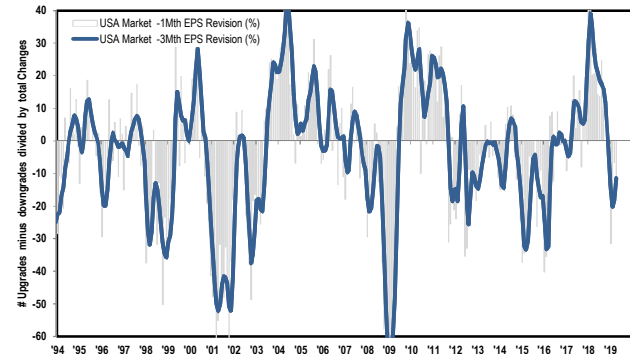
Source: J.P. Morgan US Equity Strategy, Thomson IBES

Figure 28: Net Analyst Sales Revisions (Upgrade Less Downgrades)



Source: J.P. Morgan US Equity Strategy, Thomson IBES

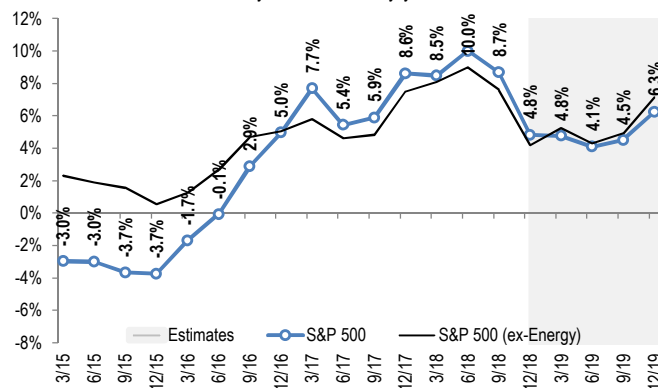
Figure 29: Net Analyst EPS Revisions (Upgrade Less Downgrades)



Source: J.P. Morgan US Equity Strategy, Thomson

Figure 30: Consensus Bottom-Up Sales Growth

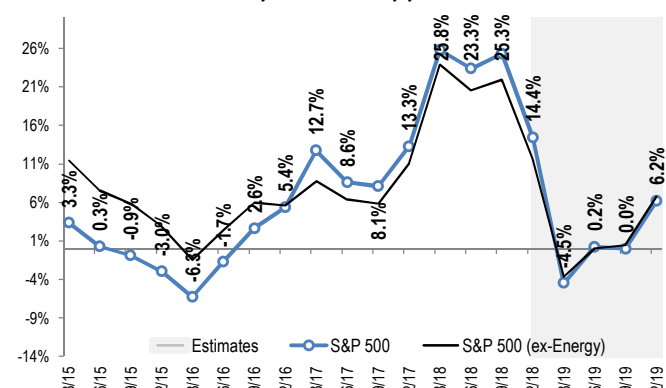
Current Constituents Quarterly Growth Rate, y/y



Source: J.P. Morgan US Equity Strategy, FactSet

Figure 31: Consensus Bottom-Up Net Income Growth

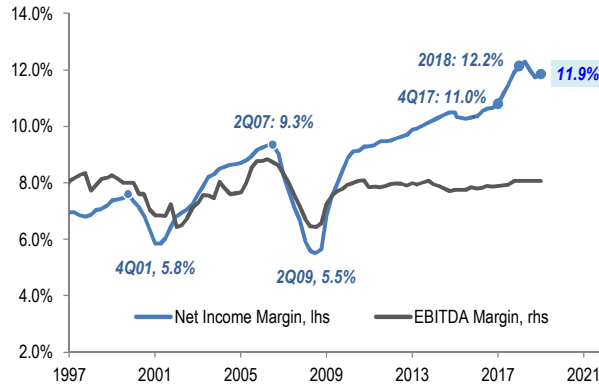
Current Constituents Quarterly Growth Rate, y/y



Source: J.P. Morgan US Equity Strategy, FactSet

Figure 32: Net Income Margin vs. Operating Margin

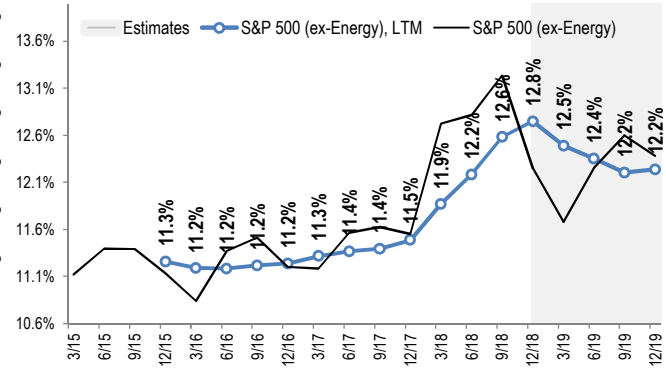
Operating EPS



Source: J.P. Morgan, FactSet

Figure 33: Net Income Margin LTM: S&P 500 ex-Energy

Operating Non-GAAP



Source: J.P. Morgan, FactSet

Figure 34: Net Income Margin by Sector, Quarterly

	Actual Net Income Margin							Consensus Bottom-up Estimate			
	2017/2C	2017/3C	2017/4C	2018/1C	2018/2C	2018/3C	2018/4C	2019/1C	2019/2C	2019/3C	2019/4C
Energy	3.5%	4.4%	4.5%	6.3%	6.5%	7.9%	7.5%	5.0%	6.6%	7.3%	7.5%
Materials	9.8%	9.2%	9.4%	10.7%	12.2%	10.8%	9.8%	9.0%	11.2%	10.5%	10.2%
Industrials	9.6%	9.2%	8.2%	9.1%	10.3%	10.1%	9.6%	8.7%	10.4%	10.3%	10.0%
Discretionary	7.0%	7.4%	6.5%	6.9%	7.8%	8.4%	7.1%	6.3%	7.6%	8.5%	7.4%
Staples	6.7%	6.8%	6.8%	6.6%	7.1%	7.2%	6.8%	6.2%	6.8%	7.0%	6.7%
HealthCare	10.4%	10.4%	9.9%	11.0%	11.3%	11.1%	10.1%	10.1%	10.4%	10.3%	10.0%
Financials	17.4%	15.7%	17.4%	20.9%	20.0%	20.0%	18.3%	20.3%	19.8%	19.7%	19.8%
Technology	20.6%	21.3%	22.8%	22.9%	23.4%	24.0%	23.6%	20.8%	21.1%	22.1%	23.2%
Communicator	13.2%	14.7%	14.2%	17.2%	14.4%	17.2%	16.4%	14.7%	15.3%	15.6%	15.6%
Utilities	11.1%	13.7%	10.0%	13.0%	12.1%	15.5%	9.1%	12.6%	12.1%	15.0%	10.9%
<b>S&amp;P 500</b>	<b>10.9%</b>	<b>11.0%</b>	<b>10.9%</b>	<b>12.1%</b>	<b>12.2%</b>	<b>12.7%</b>	<b>11.8%</b>	<b>11.1%</b>	<b>11.7%</b>	<b>12.1%</b>	<b>12.0%</b>
<b>ex-Energy</b>	<b>11.6%</b>	<b>11.6%</b>	<b>11.6%</b>	<b>12.7%</b>	<b>12.8%</b>	<b>13.2%</b>	<b>12.2%</b>	<b>11.7%</b>	<b>12.3%</b>	<b>12.6%</b>	<b>12.4%</b>

	Incremental Net Margin — YoY Change in BP										
	2017/2C	2017/3C	2017/4C	2018/1C	2018/2C	2018/3C	2018/4C	2019/1C	2019/2C	2019/3C	2019/4C
Energy	252bp	241bp	222bp	245bp	296bp	353bp	307bp	-130bp	15bp	-62bp	-3bp
Materials	-278bp	-17bp	231bp	260bp	241bp	157bp	42bp	-176bp	-100bp	-30bp	42bp
Industrials	26bp	-43bp	-79bp	98bp	73bp	84bp	146bp	-40bp	2bp	22bp	40bp
Discretionary	-13bp	-9bp	-2bp	42bp	71bp	102bp	63bp	-59bp	-19bp	7bp	35bp
Staples	11bp	-1bp	25bp	31bp	41bp	41bp	5bp	-40bp	-31bp	-21bp	-13bp
HealthCare	16bp	18bp	50bp	72bp	87bp	68bp	24bp	-85bp	-88bp	-79bp	-12bp
Financials	97bp	-128bp	35bp	342bp	261bp	423bp	90bp	-63bp	-19bp	-26bp	149bp
Technology	244bp	226bp	195bp	274bp	278bp	267bp	80bp	-216bp	-231bp	-189bp	-37bp
Communicator	-326bp	38bp	-49bp	302bp	117bp	251bp	223bp	-246bp	87bp	-160bp	-83bp
Utilities	6bp	-11bp	142bp	190bp	97bp	172bp	-95bp	-40bp	2bp	-41bp	184bp
<b>S&amp;P 500</b>	<b>32bp</b>	<b>22bp</b>	<b>43bp</b>	<b>160bp</b>	<b>134bp</b>	<b>173bp</b>	<b>89bp</b>	<b>-104bp</b>	<b>-48bp</b>	<b>-62bp</b>	<b>15bp</b>
<b>ex-Energy</b>	<b>20bp</b>	<b>11bp</b>	<b>35bp</b>	<b>154bp</b>	<b>125bp</b>	<b>161bp</b>	<b>70bp</b>	<b>-104bp</b>	<b>-56bp</b>	<b>-64bp</b>	<b>13bp</b>

Source: J.P. Morgan, FactSet

Figure 35: S&P 500, Domestic, Multinational, Europe, and China Earnings

Current Constituents

S&P 500	Net Income Margin, Annual			Net Income Margin, 1Q			Net Income Margin, 1Q Change in Estimate		
	2017	2018	Delta	1Q18	1Q19 (Est.)	Delta	BoY	Today	Delta
Information Technology	21.3%	23.5%	2.2%	22.9%	20.8%	(2.2%)	21.7%	20.8%	(1.0%)
Consumer Discretionary	6.8%	7.5%	0.7%	6.9%	6.3%	(0.6%)	6.6%	6.3%	(0.4%)
Industrials	8.8%	9.8%	1.0%	9.1%	8.7%	(0.4%)	8.9%	8.7%	(0.2%)
Energy	4.1%	7.1%	3.0%	6.3%	5.0%	(1.3%)	7.2%	5.0%	(2.2%)
Materials	9.1%	10.9%	1.8%	10.7%	8.9%	(1.8%)	10.1%	8.9%	(1.2%)
Communication Services	14.1%	16.3%	2.2%	17.2%	14.7%	(2.5%)	15.2%	14.7%	(0.5%)
Financials	17.0%	19.8%	2.8%	20.9%	20.3%	(0.6%)	20.6%	20.3%	(0.3%)
Consumer Staples	6.7%	6.9%	0.3%	6.6%	6.2%	(0.4%)	6.5%	6.2%	(0.3%)
Real Estate	19.9%	19.0%	(0.9%)	18.6%	15.1%	(3.6%)	15.3%	15.1%	(0.2%)
Utilities	11.5%	12.5%	0.9%	13.0%	12.6%	(0.5%)	12.8%	12.6%	(0.3%)
Health Care	10.2%	10.9%	0.6%	11.0%	10.1%	(0.9%)	10.9%	10.1%	(0.8%)
<b>S&amp;P 500</b>	<b>10.8%</b>	<b>12.2%</b>	<b>1.4%</b>	<b>12.2%</b>	<b>11.1%</b>	<b>(1.1%)</b>	<b>11.7%</b>	<b>11.1%</b>	<b>(0.6%)</b>

Domestic (JPAMDOME)	Net Income Margin, Annual			Net Income Margin, 1Q			Net Income Margin, 1Q Change in Estimate		
	2017	2018	Delta	1Q18	1Q19 (Est.)	Delta	BoY	Today	Delta
Information Technology	10.1%	12.2%	2.1%	19.6%	19.7%	0.1%	20.6%	19.7%	(0.8%)
Consumer Discretionary	6.7%	7.7%	1.0%	7.4%	6.8%	(0.6%)	7.4%	6.8%	(0.5%)
Industrials	9.1%	10.8%	1.7%	9.8%	10.0%	0.1%	9.9%	10.0%	0.0%
Communication Services	11.5%	14.2%	2.7%	14.1%	14.0%	(0.1%)	14.2%	14.0%	(0.2%)
Financials	19.7%	22.9%	3.3%	22.7%	22.6%	(0.1%)	22.6%	22.6%	0.0%
Consumer Staples	5.9%	6.6%	0.7%	5.8%	5.6%	(0.2%)	6.0%	5.6%	(0.4%)
Real Estate	9.4%	12.4%	3.1%	9.0%	9.8%	0.8%	9.9%	9.8%	(0.1%)
Utilities	13.2%	14.0%	0.8%	14.8%	13.9%	(0.9%)	14.0%	13.9%	(0.0%)
Health Care	3.4%	4.1%	0.7%	4.2%	4.2%	0.0%	4.4%	4.2%	(0.2%)
<b>Domestic (JPAMDOME)</b>	<b>9.6%</b>	<b>11.2%</b>	<b>1.6%</b>	<b>11.2%</b>	<b>10.7%</b>	<b>(0.5%)</b>	<b>10.9%</b>	<b>10.7%</b>	<b>(0.2%)</b>

Multinationals (JPAMINTL)	Net Income Margin, Annual			Net Income Margin, 1Q			Net Income Margin, 1Q Change in Estimate		
	2017	2018	Delta	1Q18	1Q19 (Est.)	Delta	BoY	Today	Delta
Information Technology	25.9%	29.5%	3.6%	29.4%	24.4%	(5.0%)	25.9%	24.4%	(1.5%)
Consumer Discretionary	11.1%	11.3%	0.2%	8.7%	7.6%	(1.2%)	8.7%	7.6%	(1.1%)
Industrials	8.6%	10.1%	1.5%	9.5%	9.7%	0.2%	9.8%	9.7%	(0.1%)
Communication Services	12.6%	14.6%	2.0%	12.4%	10.2%	(2.3%)	12.9%	10.2%	(2.7%)
Financials	19.3%	21.4%	2.1%	22.5%	21.5%	(1.0%)	22.4%	21.5%	(0.9%)
Consumer Staples	14.6%	15.6%	0.9%	14.4%	14.6%	0.2%	15.1%	14.6%	(0.5%)
Real Estate	9.3%	8.0%	(1.2%)	6.9%	8.4%	1.5%	8.5%	8.4%	(0.1%)
Utilities	7.7%	11.0%	3.3%	10.5%	8.2%	(2.3%)	8.2%	8.2%	0.0%
Health Care	16.8%	17.3%	0.5%	16.2%	16.3%	0.1%	16.8%	16.3%	(0.6%)
<b>Multinationals (JPAMINTL)</b>	<b>15.8%</b>	<b>17.3%</b>	<b>1.5%</b>	<b>16.5%</b>	<b>14.9%</b>	<b>(1.5%)</b>	<b>15.8%</b>	<b>14.9%</b>	<b>(0.9%)</b>

Europe (Top 40 by Revenue Exposure)	Net Income Margin, Annual			Net Income Margin, 1Q			Net Income Margin, 1Q Change in Estimate		
	2017	2018	Delta	1Q18	1Q19 (Est.)	Delta	BoY	Today	Delta
Information Technology	19.9%	21.2%	1.3%	21.1%	18.1%	(2.9%)	20.1%	18.1%	(2.0%)
Consumer Discretionary	11.1%	11.5%	0.4%	8.1%	7.4%	(0.8%)	7.5%	7.4%	(0.1%)
Industrials	9.2%	10.2%	0.9%	9.5%	10.4%	0.8%	10.5%	10.4%	(0.2%)
Materials	12.6%	13.6%	1.0%	12.9%	13.5%	0.6%	13.7%	13.5%	(0.2%)
Communication Services	29.6%	32.0%	2.4%	32.5%	26.0%	(6.5%)	26.6%	26.0%	(0.6%)
Financials	27.1%	28.9%	1.8%	29.2%	27.8%	(1.4%)	28.1%	27.8%	(0.3%)
Consumer Staples	14.9%	15.3%	0.5%	14.5%	15.0%	0.5%	15.3%	15.0%	(0.3%)
Real Estate	5.3%	7.2%	1.9%	5.2%	8.7%	3.5%	8.8%	8.7%	(0.1%)
Health Care	25.4%	27.3%	1.9%	27.0%	26.8%	(0.2%)	27.4%	26.8%	(0.6%)
<b>Europe (Top 40 by Revenue Exposure)</b>	<b>19.4%</b>	<b>20.9%</b>	<b>1.5%</b>	<b>20.4%</b>	<b>18.8%</b>	<b>(1.5%)</b>	<b>19.8%</b>	<b>18.8%</b>	<b>(1.0%)</b>

China (Top 40 by Revenue Exposure)	Net Income Margin, Annual			Net Income Margin, 1Q			Net Income Margin, 1Q Change in Estimate		
	2017	2018	Delta	1Q18	1Q19 (Est.)	Delta	BoY	Today	Delta
Information Technology	23.9%	26.5%	2.5%	26.0%	21.5%	(4.5%)	23.5%	21.5%	(1.9%)
Consumer Discretionary	9.8%	9.6%	(0.2%)	10.9%	9.1%	(1.8%)	9.8%	9.1%	(0.7%)
Industrials	7.7%	9.3%	1.7%	8.7%	7.9%	(0.8%)	6.2%	7.9%	1.7%
Materials	17.1%	18.6%	1.5%	17.5%	18.6%	1.1%	18.4%	18.6%	0.2%
Consumer Staples	16.7%	16.9%	0.2%	16.3%	16.7%	0.5%	17.0%	16.7%	(0.3%)
Health Care	17.1%	17.9%	0.8%	16.7%	17.3%	0.6%	17.5%	17.3%	(0.2%)
<b>China (Top 40 by Revenue Exposure)</b>	<b>18.8%</b>	<b>20.7%</b>	<b>1.9%</b>	<b>20.3%</b>	<b>17.3%</b>	<b>(3.0%)</b>	<b>18.3%</b>	<b>17.3%</b>	<b>(1.0%)</b>

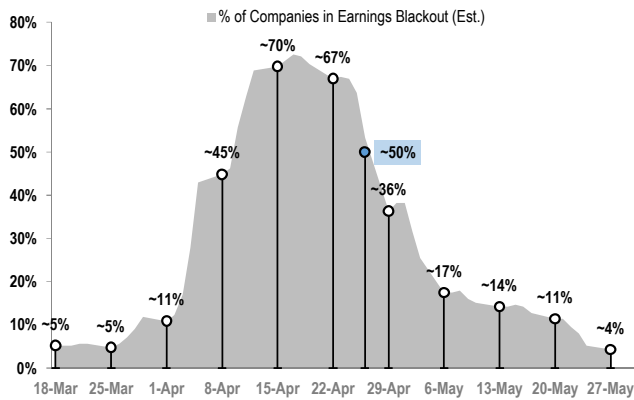
Source: J.P. Morgan US Equity Strategy and Quantitative Research



## Buybacks to Accelerate

Figure 36: Earnings Blackout Period (1Q19)

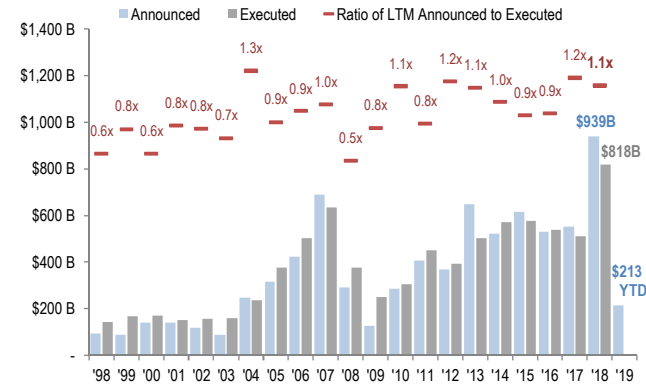
% of companies blackout



Source: J.P. Morgan US Equity Strategy and Quantitative Research

Figure 37: Announced vs. Realized Buybacks

S&P 500 Companies

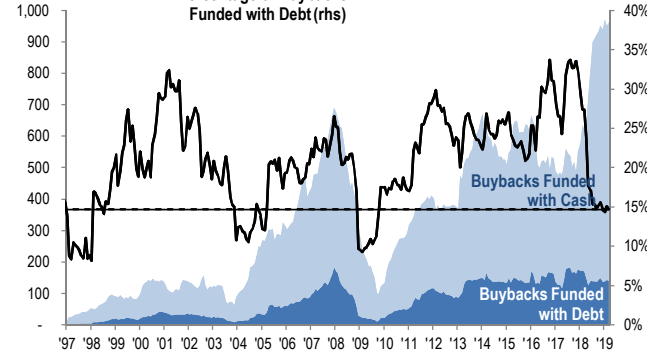


Source: J.P. Morgan US Equity Strategy and Quantitative Research

Figure 38: Source of Funding for Buybacks

Cash, Debt

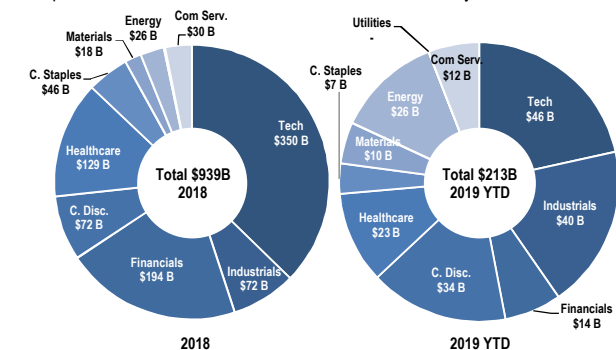
USD billion



Source: J.P. Morgan US Equity Strategy and Quantitative Research, Bloomberg

Figure 39: Repurchase Landscape Led by Tech and Industrials

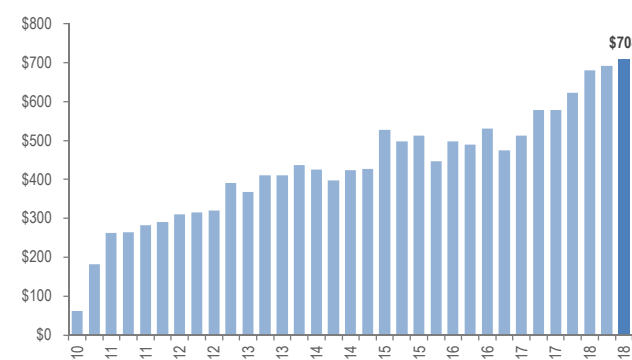
Comparison of 2018 and 2019 YTD announcements by sector



Source: J.P. Morgan US Equity Strategy and Quantitative Research, Bloomberg

Figure 40: Buyback Potential Under Existing Programs

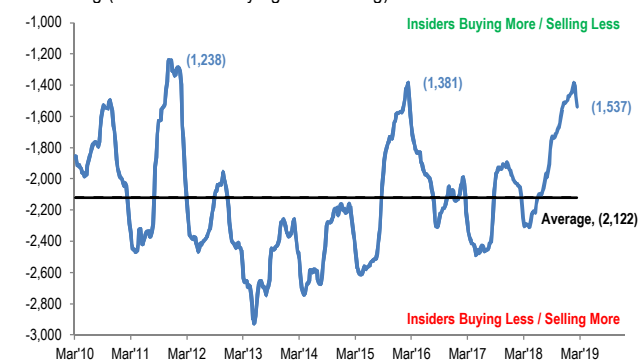
S&P 500



Source: J.P. Morgan US Equity Strategy and Quantitative Research, Bloomberg

Figure 41: Insider Net Buying Still Near Highs

6M Rolling (# of Insiders Buying less Selling)



Source: J.P. Morgan US Equity Strategy and Quantitative Research, Bloomberg

Originally published 24 Apr 2019.

**Analyst Certification:** All authors named within this report are research analysts unless otherwise specified. The research analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report. For all Korea-based research analysts listed on the front cover, they also certify, as per KOFIA requirements, that their analysis was made in good faith and that the views reflect their own opinion, without undue influence or intervention.

## Important Disclosures

This report is a product of the research department's Global Quantitative and Derivatives Strategy group. Views expressed may differ from the views of the research analysts covering stocks or sectors mentioned in this report. Structured securities, options, futures and other derivatives are complex instruments, may involve a high degree of risk, and may be appropriate investments only for sophisticated investors who are capable of understanding and assuming the risks involved. Because of the importance of tax considerations to many option transactions, the investor considering options should consult with his/her tax advisor as to how taxes affect the outcome of contemplated option transactions.

**Company-Specific Disclosures:** Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan-covered companies by visiting <https://www.jpmm.com/research/disclosures>, calling 1-800-477-0406, or e-mailing [research.disclosure.inquiries@jpmorgan.com](mailto:research.disclosure.inquiries@jpmorgan.com) with your request. J.P. Morgan's Strategy, Technical, and Quantitative Research teams may screen companies not covered by J.P. Morgan. For important disclosures for these companies, please call 1-800-477-0406 or e-mail [research.disclosure.inquiries@jpmorgan.com](mailto:research.disclosure.inquiries@jpmorgan.com).

## Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:

J.P. Morgan uses the following rating system: Overweight [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Neutral [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Underweight [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Not Rated (NR): J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia and ex-India) and U.K. small- and mid-cap equity research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying analyst's coverage universe can be found on J.P. Morgan's research website, [www.jpmorganmarkets.com](http://www.jpmorganmarkets.com).

## J.P. Morgan Equity Research Ratings Distribution, as of April 06, 2019

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage	44%	41%	14%
IB clients*	53%	47%	37%
JPMS Equity Research Coverage	42%	44%	14%
IB clients*	74%	64%	56%

\*Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.

For purposes only of FINRA ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

**Equity Valuation and Risks:** For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at <http://www.jpmorganmarkets.com>, contact the primary analyst or your J.P. Morgan representative, or email [research.disclosure.inquiries@jpmorgan.com](mailto:research.disclosure.inquiries@jpmorgan.com). For material information about the proprietary models used, please see the Summary of Financials in company-specific research reports and the Company Tearsheets, which are available to download on the company pages of our client website, <http://www.jpmorganmarkets.com>. This report also sets out within it the material underlying assumptions used.

**Analysts' Compensation:** The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

## Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

All research reports made available to clients are simultaneously available on our client website, J.P. Morgan Markets. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research reports available on a particular stock, please contact your sales representative.

Any data discrepancies in this report could be the result of different calculations and/or adjustments.

**Options and Futures related research:** If the information contained herein regards options or futures related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit <https://www.theocc.com/components/docs/riskstoc.pdf> for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or [http://www.finra.org/sites/default/files/Security\\_Futures\\_Risk\\_Disclosure\\_Statement\\_2018.pdf](http://www.finra.org/sites/default/files/Security_Futures_Risk_Disclosure_Statement_2018.pdf) for a copy of the Security Futures Risk Disclosure Statement.

**Principal Trading:** J.P. Morgan trades or may trade as principal in the derivatives or the debt securities (or related derivatives) that are the subject of this report.

**Private Bank Clients:** Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including but not limited to the J.P. Morgan corporate and investment bank and its research division.

## Legal Entities Disclosures

**U.S.:** JPMS is a member of NYSE, FINRA, SIPC and the NFA. JPMorgan Chase Bank, N.A. is a member of FDIC. **Canada:** J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Investment Industry Regulatory Organization of Canada and the Ontario Securities Commission and is the participating member on Canadian exchanges. **U.K.:** JPMorgan Chase N.A., London Branch, is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and to limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from J.P. Morgan on request. J.P. Morgan Securities plc (JPMS plc) is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Registered in England & Wales No. 2711006. Registered Office 25 Bank Street, London, E14 5JP. **Germany:** This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch which is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht and also by J.P. Morgan AG (JPM AG) which is a member of the Frankfurt stock exchange and is regulated by the Federal Financial Supervisory Authority (BaFin). JPM AG is a company incorporated in the Federal Republic of Germany with registered office at Taunustor 1, 60310 Frankfurt am Main, the Federal Republic of Germany. **South Africa:** J.P. Morgan Equities South Africa Proprietary Limited is a member of the Johannesburg Securities Exchange and is regulated by the Financial Services Board. **Hong Kong:** J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong and/or J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. **Korea:** This material is issued and distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch, which is a member of the Korea Exchange (KRX) and is regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). **Australia:** J.P. Morgan Securities Australia Limited (JPMSAL) (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by ASIC and is a Market, Clearing and Settlement Participant of ASX Limited and CHI-X. **Taiwan:** J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. **India:** J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai - 400098, is registered with Securities and Exchange Board of India (SEBI) as a "Research Analyst" having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number - INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: [www.jpmsipl.com](http://www.jpmsipl.com). For non local research reports, this material is not distributed in India by J.P. Morgan India Private Limited. **Thailand:** This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **Indonesia:** PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is regulated by the OJK a.k.a. BAPEPAM LK. **Philippines:** J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Brazil:** Banco J.P. Morgan S.A. is regulated by the Comissão de Valores Mobiliários (CVM) and by the Central Bank of Brazil. **Mexico:** J.P. Morgan Casa de Bolsa, S.A. de C.V., J.P. Morgan Grupo Financiero is a member of the Mexican Stock Exchange and authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **Singapore:** This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMS) [MCI (P) 058/04/2019 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore) [MCI (P) 046/09/2018], both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this document are to contact JPMS or JPMCB Singapore in respect of any matters arising from, or in connection with, the document. **Japan:** JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. **Malaysia:** This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission in Malaysia. **Pakistan:** J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan.

**Saudi Arabia:** J.P. Morgan Saudi Arabia Ltd. is authorized by the Capital Market Authority of the Kingdom of Saudi Arabia (CMA) to carry out dealing as an agent, arranging, advising and custody, with respect to securities business under licence number 35-07079 and its registered address is at 8th Floor, Al-Faisaliyah Tower, King Fahad Road, P.O. Box 51907, Riyadh 11553, Kingdom of Saudi Arabia. **Dubai:** JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - Building 3, Level 7, PO Box 506551, Dubai, UAE. **Russia:** CB J.P. Morgan Bank International LLC is regulated by the Central Bank of Russia. **Argentina:** JPMorgan Chase Bank Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission)

#### Country and Region Specific Disclosures

**U.K. and European Economic Area (EEA):** Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by JPMS plc. Investment research issued by JPMS plc has been prepared in accordance with JPMS plc's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require a firm to establish, implement and maintain such a policy. Further information about J.P. Morgan's conflict of interest policy and a description of the effective internal organisations and administrative arrangements set up for the prevention and avoidance of conflicts of interest is set out at the following link <https://www.jpmorgan.com/jpmpdf/1320742677360.pdf>. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. **Australia:** This material is issued and distributed by JPMSAL in Australia to "wholesale clients" only. This material does not take into account the specific investment objectives, financial situation or particular needs of the recipient. The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of JPMSAL. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001. J.P. Morgan's research coverage universe spans listed securities across the ASX All Ordinaries index, securities listed on offshore markets, unlisted issuers and investment products which Research management deem to be relevant to the investor base from time to time. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all GIC sectors, as well as across a range of market capitalisation sizes. **Germany:** This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch which is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht. **Korea:** This report may have been edited or contributed to from time to time by affiliates of J.P. Morgan Securities (Far East) Limited, Seoul Branch. **Singapore:** As at the date of this report, JPMSS is a designated market maker for certain structured warrants listed on the Singapore Exchange where the underlying securities may be the securities discussed in this report. Arising from its role as designated market maker for such structured warrants, JPMSS may conduct hedging activities in respect of such underlying securities and hold or have an interest in such underlying securities as a result. The updated list of structured warrants for which JPMSS acts as designated market maker may be found on the website of the Singapore Exchange Limited: <http://www.sgx.com>. In addition, JPMSS and/or its affiliates may also have an interest or holding in any of the securities discussed in this report – please see the Important Disclosures section above. For securities where the holding is 1% or greater, the holding may be found in the Important Disclosures section above. For all other securities mentioned in this report, JPMSS and/or its affiliates may have a holding of less than 1% in such securities and may trade them in ways different from those discussed in this report. Employees of JPMSS and/or its affiliates not involved in the preparation of this report may have investments in the securities (or derivatives of such securities) mentioned in this report and may trade them in ways different from those discussed in this report. **Taiwan:** Research relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material which may give rise to conflicts of interests, unless otherwise disclosed in the "Important Disclosures" in this material. **India:** For private circulation only, not for sale. **Pakistan:** For private circulation only, not for sale. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Advisers Act 2008). The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of JPMSAL. **Canada:** This report is distributed in Canada by or on behalf of J.P.Morgan Securities Canada Inc. The information contained herein is not, and under no circumstances is to be construed as an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient.

**General:** Additional information is available upon request. Information has been obtained from sources believed to be reliable but JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) do not warrant its completeness or accuracy except with respect to any disclosures relative to JPMS and/or its affiliates and the analyst's involvement with the issuer that is the subject of the research. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipient of this report must make its own independent decisions regarding any securities or financial instruments mentioned herein. JPMS distributes in the U.S. research published by non-U.S. affiliates and accepts responsibility for its contents. Periodic updates may be provided on companies/industries based on company specific developments or announcements, market conditions or any other publicly available information. Clients should contact analysts and execute transactions through a J.P. Morgan subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

"Other Disclosures" last revised April 20, 2019.

**Copyright 2019 JPMorgan Chase & Co. All rights reserved. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan.**