



# GRANDATION CAPITAL

## RESEARCH DEPARTMENT

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Companies mentioned in this report  
 (price as 7/29/19 market close)

Ticker	Price 7/29/19	WoW
NVCR.O	\$ 78.91	13.72%
BGNE.O	\$ 132.79	6.78%
REGN.O	\$ 309.18	3.71%
BIIB.O	\$ 238.21	3.00%
CELG.O	\$ 92.76	2.84%
ILMN.O	\$ 300.90	2.63%
DNLI.O	\$ 21.18	1.73%
HZNP.O	\$ 24.41	1.29%
IMGN.O	\$ 2.35	0.86%
DHR	\$ 142.28	0.47%
MRNA.O	\$ 14.12	0.07%
MRK.N	\$ 81.43	0.05%
ISRG.O	\$ 527.63	-0.22%
IDXX.O	\$ 283.94	-0.26%
BSX	\$ 42.08	-0.40%
INCY.O	\$ 80.15	-0.48%
MGNX.O	\$ 14.23	-3.13%
ALXN.O	\$ 114.63	-5.11%
STIM.O	\$ 11.47	-8.09%
PBYI.O	\$ 9.20	-9.80%

## BIOTECH INDUSTRY REPORT

7/29/2019

### VOLUME 1, ISSUE 4

*Announcement: We start to publish our biotech industry report on a monthly basis starting from Jun'19.*

**Key takeaways:** Market is expecting FED decision this Wednesday. However, as anticipated rate cut was priced in, we warned investors of potential sell-off since we see lacks catalysts in near future. On 7.29.19, Dow is closed at 27,221, up 16.4% YTD. **Biotech Industry:** IBB index is closed at 105.4 on 7/29/19, up 8.3% YTD, underperformed NASDAQ. **Individual stocks:** in our screening portfolio, the top 3 performers are NVCR, BGNE and IMGN, up 29.7%, 9.5% and 5.5% MTD, respectively.

### U.S. Macro Economic Indicators:

- **U.S. GDP quarterly data (Figure 1):** on 7/26/19, U.S. department of commerce released Q2'19 GDP growth at 2.1% YoY, topped the expectation of 2% YoY.
- **U.S. employment monthly data (Figure 2):** on 7/5/19, U.S. department of labor released Jun'19 unemployment rate of 3.7%, remained at 50 years low. Non-farm payroll increased 224,000. Notable job gains occurred in professional and business services, in health care, and in transportation and warehousing.
- **U.S. pending home sales index monthly data (Figure 3):** on 6/27/19, National Association of Realtors released May'19 pending home sales index, increasing 1.1 to 105.2.
- **U.S. retail sales monthly data (Figure 4):** on 7/16/19, U.S. department of commerce released June'19 retail sales of \$519bn, up 0.4% MoM, beat the expectation of 0.1% MoM.
- **U.S. E-Commerce sales quarterly data (Figure 5):** on 5/17/19, U.S. department of commerce released Q1'19 E-commerce sales of \$137bn, accounting for 12.4% of the total retail sales, up 3.6% QoQ.



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**China Macro Economics Indicators:**

- **China GDP quarterly data (Figure 6):** on 7/16/19, China bureau of statistics released Q2'19 GDP growth at 6.2% YoY, in line with the expectation of 6.3% YoY, including 3.3% YoY, 5.6% YoY and 7.0% YoY in primary, secondary and tertiary industries, respectively.
- **China total social financing monthly data (Figure 7):** on 7/12/19, the People Bank of China released Jun'19 total social financing of RMB2,260bn, beat the consensus of RMB1,950bn, higher than \$1,400bn in May'19.
- **China export monthly data (Figure 8):** on 7/12/19, China department of customs released Jun'19 export of RMB145.4bn, down 1.3% YoY and 0.5% MoM and import of RMB110.8bn, down 7.3% YoY and 6.2% MoM. The export data was better-than-expected 2% decrease from street perspective.
- **China CPI monthly data (Figure 9):** on 7/10/19, China bureau of statistics released June'19 CPI growth at 2.7% YoY, with food price up 8.3% and non-food price up 1.4%.
- **China PMI monthly data (Figure 10):** on 7/1/19, China Bureau of Statistics released Jun'19 PMI at 49.4, flat MoM, falling below 50 again due to the U.S.-China trade war.
- **China industrial output data (Figure 11):** on 7/16/19, China bureau of statistics released Jun'19 industrial output growth at 6.3% YoY.

**What happened?**

- **GILD stole LLY's key executive to run Kite Pharma.** On 7/11/19, GILD announced LLY executive Christi Shaw will run Kite Pharma to deliver bigger revenue for Kite's key product Yescarta, CAR-T treatment.
- **White House dropped proposal to eliminate drug rebates.** On 7/11/19, the proposal of eliminating drug rebates was withdrawn by Trump Administration. Trump Administration has advocated the proposal, aiming to lower prescription drug prices. As a result, health insurers stock surged (**upside: ▲ for Health Insurers**).
- **As trade war escalates, Indian drug makers poured into China.** On 7/13/19, Reuters reported Chinese government has considered to grant expedited review pathway for Indian drugs that been approved in EU. One of Chinese largest pharmaceutical company, Fosun, has taken control of India's Gland Pharma for \$1.1bn.
- **Korean pharmaceutical company Celltrion formed JV with Hong Kong Nan Fung Group.** On 7/19/19, Celltrion and Nan Fund signed agreement to form joint venture called Vcell to develop, manufacture and market three Celltrion's approved bio-generic drugs, Remsima, Truxima, Herzuma.

**Earnings Summary:**

- **BIIB reported Q2'19 earnings.** On 7/23/19 pre-market, BIIB released Q2'19 earnings on revenue of \$3.6bn, up 7.7% YoY, beat consensus by \$140mn, and EPS of \$9.15, beat consensus by \$1.6. Management increased BIIB's full year guidance on revenue of mid \$14.1bn vs. previously mid \$13.7bn and Non-GAAP EPS of mid \$31.9 vs. previously mid \$28.5. BIIB's stock rose 5.8% after reporting (**upside: ▲ for BIIB**).
- **ILMN reported Q2'19 earnings.** On 7/29/19 after market, ILMN released Q2'19 earnings on revenue of \$838mn, up 1% YoY, and Non-GAAP EPS of \$1.35, down 5.6% YoY. Investors were disappointed by ILMN's soft 2019 guidance on revenue growth at 6% YoY vs. previously mid 13.5% YoY and non-GAAP EPS of mid \$6.05 vs. previously \$6.78. Notably, ILMN had released the preliminary results that warned investors for the weak quarter on 7/11/19, drove stock down 14% on that day. ILMN's stock fell 2% again after reporting (**downside: ▼ for ILMN**).



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- **EW reported Q2'19 earnings.** On 7/23/19 after market, EW released Q2'19 earnings on revenue of \$1.1bn, up 15.2% YoY, beat consensus by \$50mn, and EPS of \$1.38, beat consensus by \$0.05. Notably, management also upgraded FY19's guidance on revenue with the range of \$4-4.3bn from previous \$3.9-4.3bn and EPS with the range of \$5.2-5.4 from previous \$5.1-5.35. EW's stock surged over 7% after reporting (**upside: ▲ for EW**).
- **NVCR reported Q2'19 earnings.** On 7/25/19 pre-market, NVCR reported Q2'19 earnings on revenue of \$86.7mn, up 41% YoY and EPS of -\$0.01, better than -\$0.17 in Q2'18. Revenue growth was primarily driven by adding 557 new patients in existing market, up 26 % YoY, and an increase in net revenue per active patient. The increase in net revenue per active patient was primarily driven by improved reimbursement rates (**upside: ▲ for NVCR**).

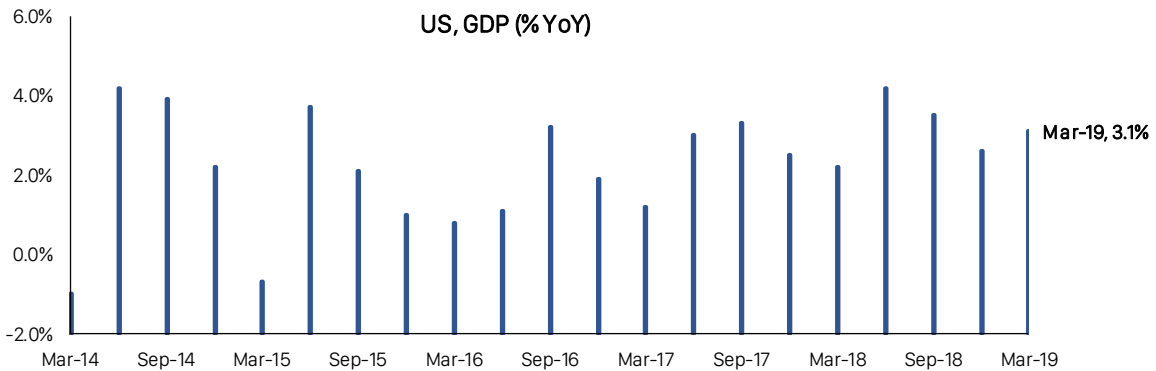
#### Data Tracker:

- **Pipeline tracker (Figure 12):** we added BMY's pipeline to our trackers.
- **M&A tracker (Figure 13):** Pfizer will combine its off-patent drug business with Mylan. The combined company could draw annual sales of more than \$20bn.
- **Key catalyst tracker (Figure 14):** FDA granted approval on big pharma's R&D.
- **Top 10 bestselling drugs in 2019 (Figure 15):** we estimated the total sales of top 10 drugs is \$19bn by 2024.
- **Estimated earning schedule table (Figure 16):** we expect INCY and MRK to report earnings on 7/30/2019.
- **Earnings surprise table (Figure 17):** on 7/25/19, NVCR reported Q2'19 earnings with revenue 8.1% and EPS 86.3% beats.
- **Stock performance (Figure 18):** in our screening stocks, the top 3 performers are NVCR, BGNE and IMGN, up 29.7%, 9.5% and 5.5% MTD, respectively.
- **Short interest tracker (Figure 19):** the latest short interest data with an 7/15/19 settlement was released on 7/24/19. Short interest, when compared with the 6/28/19 settlement data is up 1.51% for PBYI, 1.17% for DNLI and 1.61% for MGNX.
- **Yield Curve Tracker (Figure 21-23):** the spread between the 10YR vs. 2YR has widened by 1bps WoW to 24bps.
- **Currency Tracker (Figure 24-28):** YTD, the USD has appreciated against EUR, CNY, and GBP and depreciated against JPY, CAD and INR.



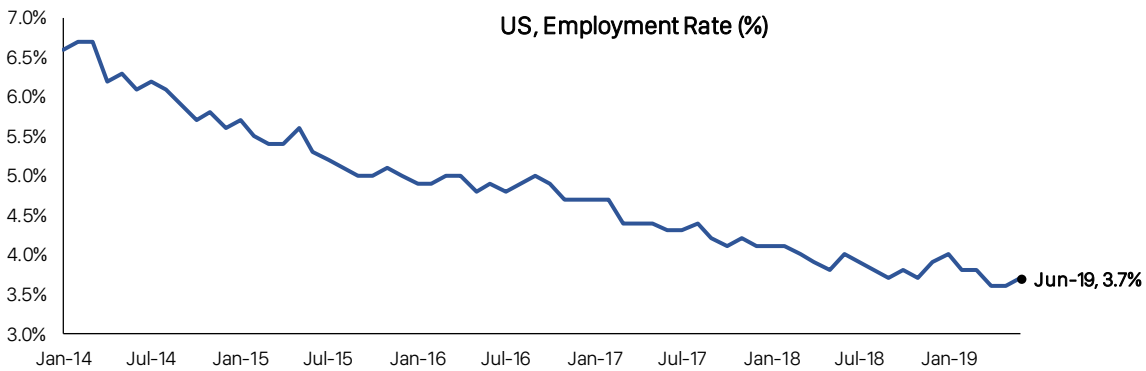
# U.S. Macro Economic Indicator

**Figure 1: U.S. GDP Tracker** -- on 5/20/19, U.S. department of commerce released Q1'19 GDP of 3.1%, topped the expectation of 2.5%.



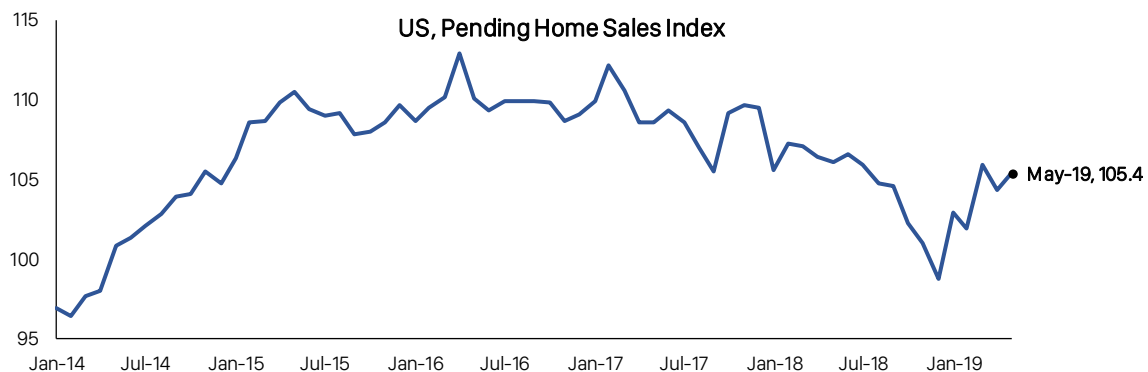
Source: U.S. BEU, Grandation Research

**Figure 2: U.S. employment tracker** -- on 7/5/19, U.S. department of labor released Jun'19 unemployment rate of 3.7%, remained at 50 years low. Non-farm payroll increased 224,000, higher-than-expected 165,000.



Source: U.S. BLS, Grandation Research

**Figure 3: U.S. pending home sales index tracker** -- on 6/27/19, National Association of Realtors released May'19 pending home sales index, increasing 1.1 to 105.2.



Source: U.S. NAR, Grandation Research



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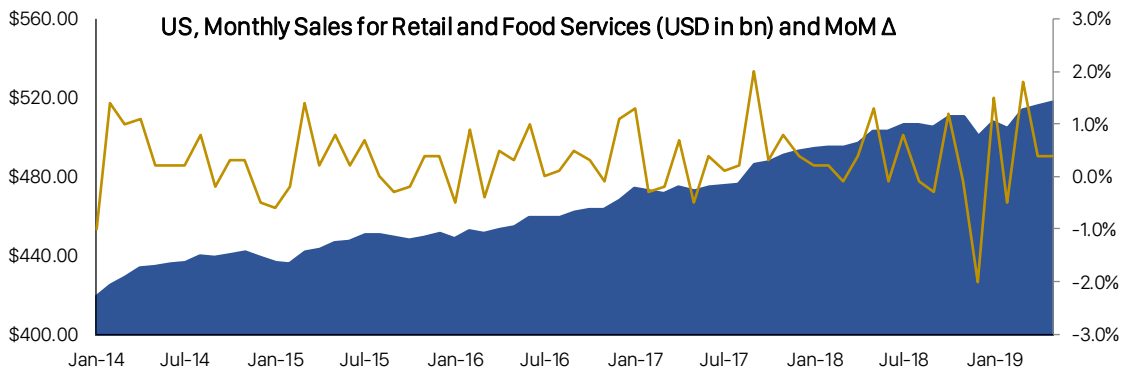


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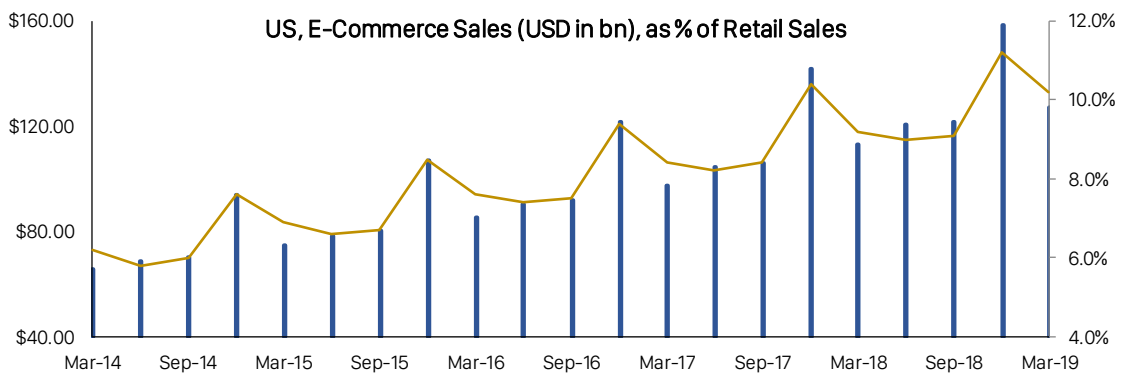
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**Figure 4: U.S. retail sales tracker** -- on 7/16/19, U.S. department of commerce released June'19 retail sales of \$519bn, up 0.4% MoM, beat the expectation of 0.1% MoM.



Source: U.S. Consensus gov, Grandation Research

**Figure 5: U.S. E-Commerce sales tracker** -- on 5/17/19, U.S. department of commerce released Q1'19 E-commerce sales of \$137bn as 12.4% of total retail sales, up 3.6% QoQ.



Source: U.S. Consensus gov, Grandation Research



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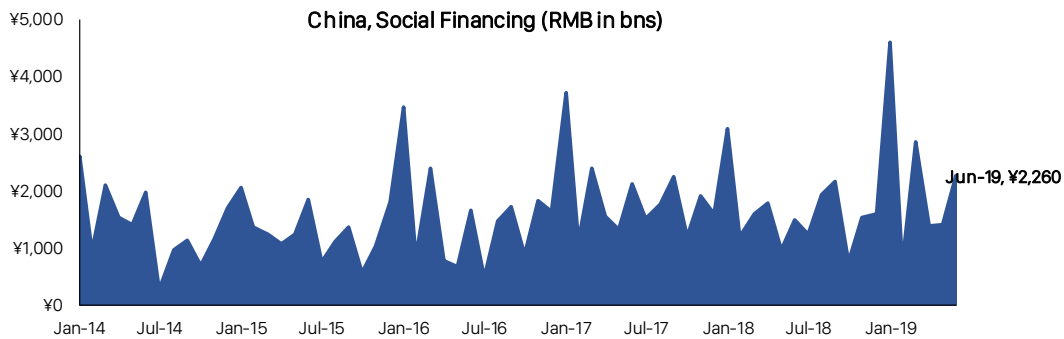
# China Macro Economic Indicator

**Figure 6: China GDP tracker** -- on 7/16/19, China bureau of statistics released Q2'19 GDP growth at 6.2% YoY, in line with the expectation of 6.3% YoY, including 3.3% YoY, 5.6% YoY and 7.0% YoY in primary, secondary and tertiary industries, respectively.



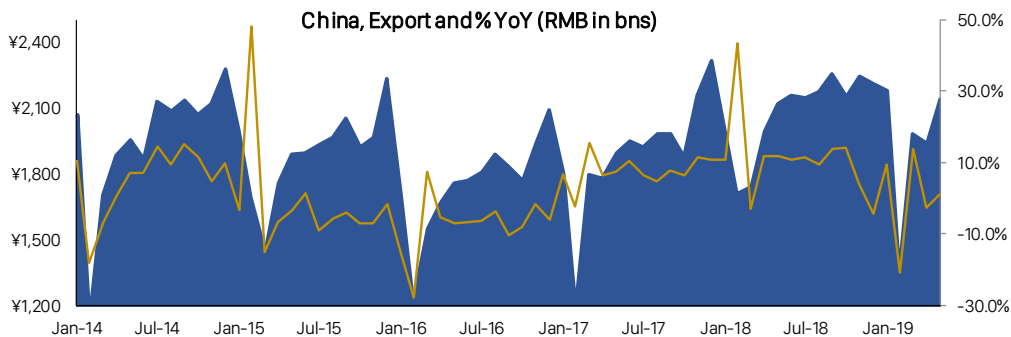
Source: China Stats, Grandation Research

**Figure 7: China total social financing tracker** -- on 7/12/19, the People Bank of China released Jun'19 total social financing of RMB2,260bn, beat the consensus of RMB1,950bn, higher than \$1,400bn in May'19.



Source: Trading Economics, Grandation Research

**Figure 8: China export tracker** -- on 7/12/19, China department of customs released Jun'19 export of RMB145.4bn, down 1.3% YoY and 0.5% MoM and import of RMB110.8bn, down 7.3% YoY and 6.2% MoM. The export data was better-than-expected 2% decrease from street perspective.



Source: China Customs, Grandation Research



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**Figure 9: China CPI tracker**-- on 7/10/19, China bureau of statistics released June'19 CPI growth at 2.7% YoY, with food price up 8.3% and non-food price up 1.4%.



Source: China Stats, Grandation Research

**Figure 10: China PMI tracker** -- on 7/1/19, China Bureau of Statistics released Jun'19 PMI at 49.4, flat MoM, falling below 50 again due to the U.S.-China trade war.



Source: China Stats, Grandation Research

**Figure 11: China industrial output tracker** -- on 7/16/19, China bureau of statistics released Jun'19 industrial output growth at 6.3% YoY.



Source: China Stats, Grandation Research



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## Industry Data Tracker

Figure 12: Pipeline tracker— We added BMY's pipeline to our trackers.

Ticker	Company	Key Candidates	Application	Drug Development					Date Added	Key Focus
				IND	Phase I	Phase II	Phase III	NDA		
BMY	Bristol-Myers Squibb	Opdivo	Gastric cancer				✓		7.29.19	Immuno-Onco
		Sprycel	Chromosome Leukemia					✓	7.29.19	Chronic Disease
		IPI-549	Urothelial cancer			✓			7.29.19	Immuno-Onco
		COSMIC-313	Renal Cell Carcinoma				✓		7.29.19	Immuno-Onco
REGN	Regeneron	Cemiplimab	Non-small cell lung cancer				✓		6.26.19	Immuno-Onco
		REGN2810	Non-small cell lung cancer				✓		6.26.19	Immuno-Onco
		REGN3500	Asthma			✓			6.26.19	Chronic Disease
		REGN1979	Non-Hodgkin Lymphoma		✓				6.26.19	Immuno-Onco
MGNX	MacroGenics	Margetuximab	HER 2 positive Breast Cancer				✓		6.26.19	Immuno-Onco
		MGA009	Solic tumors		✓				6.26.19	Immuno-Onco
NVCR	NovoCure	TTFIELDS	Non-small cell lung cancer				✓		6.26.19	Immuno-Onco
		TTFIELDS	Ovarian cancer				✓		6.26.19	Immuno-Onco
		TTFIELDS	Pancreatic cancer				✓		6.26.19	Immuno-Onco
		Optune	GBM			✓			6.26.19	Immuno-Onco
ALXN	Alexion Pharmaceuticals	CAEL-101	Al amyloidosis				✓		6.26.19	Heart
		ALXN1840	Wilson disease				✓		6.26.19	Rare genetic disorder
		Ultomiris	gMG				✓		6.26.19	Muscle
		ALXN1830	WAIHA			✓			6.26.19	Autoimmune

Source: Google Search, Grandation Research

Figure 13: M&A tracker – Pfizer will combine its off-patent drug business with Mylan. The combined company could draw annual sales of more than \$20bn.

Date	Acquirer	Ticker	Acquiree	Deal Size (\$ in bn)	Price/share (\$)	Description
7/29/2019	Pfizer	PFE	Mylan	N/A	N/A	The combined company could draw annual sales of more than \$20bn
6/24/2019	AbbVie	ABBV	Allergan	\$ 63.00	\$ 188.24	\$120 Cash per share plus 0.87 ABBV share
6/17/2019	Pfizer	PFE	Array Biopharma	\$ 11.40	\$ 48.00	Cash
1/7/2019	Lilly	LLY	LOXO Oncology	\$ 8.00	\$ 235.00	Cash
1/3/2019	Bristol-Myers Squibb	BMY	Celgene	\$ 74.00	\$ 102.43	\$50 Cash per share plus 1 BMY share

Source: Google Search, Grandation Research



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Figure 14: Key catalyst tracker – FDA granted approval on big pharma’s R&amp;D

Date	Company	Ticker	Drug/Thearpy	Area of Practice	Stage/Status	Catalyst
7/26/2019	Pfizer Inc	PFE	Ellence	Breast Cancer	FDA Approval	↑
7/26/2019	Novartis Pharma	NVS	Jadenu	Iron Toxicity	FDA Approval	↑
7/25/2019	Abbvie	ABB	Venclexta	Chronic Lymphocytic Leukemia	FDP Approval	↑
1/17/2019	Sonofi-Aventis	SAN.F	Sotagliflozin	Type I Diabetes	NDA Submission	↑
1/16/2019	Amgen	AMGN	Romozosumab	Osteoporosis	Safety Review	↓
1/11/2019	Takeda	4502.JP	Uloric	Hyperuricemia	NDA Submission	↑
12/24/2018	Pfizer/Merck	PFE/MRK	Bavencio	Ovarian Cancer	Phase III Discontinued	
12/21/2018	Loxo Oncology	LOXO	LOXO-305	Genomically Defined Cancers	Phase I/II Initiation	
12/21/2018	AbbVie Inc	ABBV	Upadacitinib	RA (rheumatoid arthritis)	NDA Submission	
12/21/2018	Alexion	ALXN	Ultomiris	PNH (Paroxysmal Nocturnal Hemoglobinuria)	FDA Early Approval	
12/17/2018	Biogen	BIIB	BIIB098 (Diroximel Fumarate)	MS (multiple sclerosis)	NDA Submission	

Source: Google Search, Grandation Research

Figure 15: Top 10 drugs launched in 2019 – We estimated the total sales of top 10 drugs is \$19bn by 2024.

Top 10	Drug	Company	Category	Sales estimates by 2024	Disease	Launch Date
1	Ultomiris	Alexion	Other	\$ 3.48	paroxysmal nocturnal hemoglobinuria	4/22/2019
2	upadacitinib	AbbVie	Immunology	\$ 2.18	rheumatoid arthritis	Aug'19
3	Skyrizi	AbbVie	Immunology	\$ 2.10	psoriasis	Apr'19
4	Zynteglo	Bluebird	Gene therapy	\$ 1.88	beta thalassemia	Jun'19 in EU
5	roxadustat	AstraZeneca	Other	\$ 1.87	anemia due to chronic kidney disease	2H19
6	AR101	Aimmune	Immunology	\$ 1.75	peanut allergy	2019
7	Zolgensma	Novartis	Gene therapy	\$ 1.56	spinal muscular atrophy	May'19
8	brlucizumab	Novartis	Other	\$ 1.38	wet age-related macular degeneration	Oct'19
9	Mayzent	Novartis	Immunology	\$ 1.30	secondary progressive multiple sclerosis	2019
10	Spravato	Johnson & Johnson	Other	\$ 1.30	major depressive disorder	Jan'19

Source: Google Search, Grandation Research



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Figure 16: Estimated earning schedule tracker-- We expect INCY and MRK to report earnings on 7/30/2019.

Next Earnings Schedule (Est)	Company	Ticker	Stock Price 7/26/2019	Street PT	Grandation PT	% PT/ Price	Consensus Revenue	Consensus EPS
7/11/2019	illumina Inc	ILMN.O	\$299	\$331	NA	10.99%	\$866.16	\$1.34
7/25/2019	Celgene Corp	CELG.O	\$92	\$97	NA	5.65%	\$4,233.96	\$2.63
7/30/2019	Incyte Corp	INCY.O	\$79	\$88	NA	11.77%	\$498.46	\$0.48
7/30/2019	Merck & Co Inc	MRK.N	\$81	\$92	NA	13.16%	\$10,956.84	\$1.16
7/31/2019	MacroGenics Inc	MGNX.O	\$13	\$33	NA	148.51%	\$14.45	-\$0.99
8/1/2019	IDEXX Laboratories Inc	IDXX.O	\$284	\$285	NA	0.58%	\$627.10	\$1.37
8/2/2019	ImmunoGen Inc	IMGN.O	\$2	\$5	NA	110.21%	\$9.48	-\$0.33
8/6/2019	Regeneron Pharmaceuticals Inc	REGN.O	\$303	\$391	NA	28.86%	\$1,804.52	\$5.37
8/6/2019	Neuronetics Inc	STIM.O	\$11	\$30	NA	168.92%	\$15.81	-\$0.41
8/7/2019	Moderna Inc	MRNA.O	\$14	\$30	NA	123.45%	\$18.80	-\$0.44
8/7/2019	Horizon Therapeutics PLC	HZNP.O	\$24	\$33	NA	36.82%	\$297.98	\$0.37
8/8/2019	Puma Biotechnology Inc	PBYI.O	\$9	\$22	NA	136.81%	\$52.98	-\$1.00
8/9/2019	Beigene Ltd	BGNE.O	\$130	\$181	NA	38.89%	\$65.55	-\$3.12
8/12/2019	Denali Therapeutics Inc	DNLI.O	\$21	\$28	NA	34.70%	\$3.92	-\$0.46
10/16/2019	Danaher Corp	DHR	\$143	\$154	NA	7.32%	\$5,028.70	\$1.15
10/16/2019	Intuitive Surgical Inc	ISRG.O	\$532	\$586	NA	10.26%	\$1,065.42	\$2.99
10/25/2019	Biogen Inc	BIIB.O	\$238	\$258	NA	8.11%	\$3,536.03	\$8.19
10/26/2019	Boston Scientific Corp	BSX	\$42	\$48	NA	13.72%	\$2,620.66	\$0.38
10/26/2019	Alexion Pharmaceuticals Inc	ALXN.O	\$118	\$158	NA	34.01%	\$1,223.99	\$2.43
10/27/2019	Novocure Ltd	NVCR.O	\$77	\$77	NA	-0.29%	\$86.64	-\$0.05

Source: Thomson Reuters, Grandation Research

Figure 17: Earnings surprise tracker—on 7/25/19, NVCR reported Q2'19 earnings with revenue 8.1% and EPS 86.3% beats.

Ticker	Company Name	Earnings Release	Revenue	GM	EBITDA	EBIT	EPS
NVCR.O	Novocure Ltd	7/25/2019	8.1%	-	-28.4%	625.9%	86.3%
ALXN.O	Alexion Pharmaceuticals Inc	7/24/2019	2.5%	-	3.1%	7.9%	12.9%
BSX	Boston Scientific Corp	7/24/2019	-0.4%	-	-	-1.7%	2.5%
BIIB.O	Biogen Inc	7/23/2019	4.1%	-	-	11.4%	21.5%
ISRG.O	Intuitive Surgical Inc	7/18/2019	6.4%	0.8%	16.1%	16.0%	13.2%
DHR	Danaher Corp	7/18/2019	1.4%	-	0.1%	0.8%	2.9%
PBYI.O	Puma Biotechnology Inc	5/9/2019	47.3%	-	-	144.1%	61.9%
BGNE.O	Beigene Ltd	5/9/2019	39.5%	-3.1%	-	20.9%	18.3%
DNLI.O	Denali Therapeutics Inc	5/8/2019	-53.9%	-	-47.4%	-29.1%	-1.7%
HZNP.O	Horizon Therapeutics PLC	5/8/2019	17.6%	0.7%	98.0%	88.3%	149.2%
MRNA.O	Moderna Inc	5/8/2019	-50.1%	-	-20.1%	-2.5%	-9.8%
STIM.O	Neuronetics Inc	5/7/2019	0.3%	2.5%	-27.0%	-8.1%	-4.0%
REGN.O	Regeneron Pharmaceuticals Inc	5/7/2019	-2.8%	-6.9%	-11.1%	-18.1%	-18.7%
IMGN.O	ImmunoGen Inc	5/3/2019	-19.0%	0.0%	24.3%	1.7%	-50.0%
MGNX.O	MacroGenics Inc	5/1/2019	-48.6%	-	18.2%	-17.0%	-15.2%
IDXX.O	IDEXX Laboratories Inc	5/1/2019	0.2%	1.6%	7.3%	7.9%	11.3%
INCY.O	Incyte Corp	4/30/2019	2.4%	0.0%	-	117.4%	53.8%
MRK.N	Merck & Co Inc	4/30/2019	3.2%	0.5%	-	12.8%	15.1%
CELG.O	Celgene Corp	4/25/2019	0.4%	0.7%	6.9%	4.6%	4.8%
ILMN.O	illumina Inc	4/25/2019	1.4%	0.7%	7.3%	9.5%	19.6%

Source: Thomson Reuters, Grandation Research



**Figure 18: Stock performance tracker**-- In our screening stocks, the top 3 performers are NVCR, BGNE and IMGN, up 29.7%, 9.5% and 5.5% MTD, respectively.

Ticker	Name	Price 7/29/2019	Market Cap (\$bn)	WTD	MTD	YTD
<b>Index:</b>						
.SPX	Standard & Poor's Corp	3025.86	NA	-0.2%	2.7%	20.5%
.NBI	NASDAQ Stock Exchange	3308.32	NA	0.1%	-3.4%	8.8%
<b>Companies:</b>						
NVCR.O	Novocure Ltd	78.91	7.75	3.9%	29.7%	144.9%
BGNE.O	Beigene Ltd	132.79	7.86	2.2%	9.5%	-3.2%
IMGN.O	ImmunoGen Inc	2.35	0.35	-2.6%	5.5%	-52.3%
IDXX.O	IDEXX Laboratories Inc	283.94	24.42	0.3%	3.5%	53.2%
HZNP.O	Horizon Therapeutics PLC	24.41	4.51	1.2%	2.7%	26.5%
DNLI.O	Denali Therapeutics Inc	21.18	2.02	-0.2%	1.8%	2.3%
BIIB.O	Biogen Inc	238.21	43.94	-0.5%	1.4%	-21.2%
ISRG.O	Intuitive Surgical Inc	527.63	60.81	0.4%	1.0%	10.6%
CELG.O	Celgene Corp	92.76	65.42	0.2%	0.6%	45.1%
DHR	Danaher Corp	142.28	102.07	0.3%	-0.2%	38.4%
BSX	Boston Scientific Corp	42.08	58.52	0.5%	-1.6%	19.7%
MRK.N	Merck & Co Inc	81.43	209.65	1.3%	-1.6%	8.0%
REGN.O	Regeneron Pharmaceuticals Inc	309.18	33.31	-1.0%	-2.2%	-18.1%
INCY.O	Incyte Corp	80.15	17.19	0.1%	-5.5%	26.2%
MRNA.O	Moderna Inc	14.12	4.65	-3.0%	-6.5%	-10.3%
STIM.O	Neuronetics Inc	11.47	0.21	-1.1%	-9.4%	-41.4%
ALXN.O	Alexion Pharmaceuticals Inc	114.63	25.70	-2.0%	-14.2%	15.4%
ILMN.O	Illumina Inc	300.9	44.23	1.2%	-17.3%	1.5%
MGNX.O	MacroGenics Inc	14.23	0.69	-1.5%	-17.4%	10.3%
PBYI.O	Puma Biotechnology Inc	9.2	0.36	1.4%	-26.6%	-54.2%

Source: Thomson Reuters, Grandation Research

**Figure 19: Short Interest tracker**-- The latest short interest data with an 7/15/19 settlement was released on 7/24/19. Short interest, when compared with the 6/28/19 settlement data is up 1.51% for PBYI, 1.17% for DNLI and 1.61% for MGNX.

Ticker	Company	3mon avg daily volume	Short Interest	Days To Cover	Company Shares	Free Float	% of Free Float	SI /Float	SI/Float vs. Prior (% change)
PBYI.O	Puma Biotechnology Inc	1,284,687	7,542,757	6.05	38,612,447	34,274,577	88.8%	22.01%	1.51%
DNLI.O	Denali Therapeutics Inc	333,978	10,712,371	30.92	95,478,391	87,038,410	91.2%	12.31%	1.17%
MGNX.O	MacroGenics Inc	811,978	4,588,594	5.85	48,805,620	45,302,176	92.8%	10.13%	1.61%
BGNE.O	Beigene Ltd	266,409	4,097,290	15.29	780,434,800	53,737,134	99.4%	7.62%	0.04%
NVCR.O	Novocure Ltd	692,210	4,917,357	6.40	98,176,183	77,921,962	81.8%	6.31%	0.87%
HZNP.O	Horizon Therapeutics PLC	1,972,585	5,457,015	2.28	184,883,881	182,861,691	98.7%	2.98%	-1.87%
IMGN.O	ImmunoGen Inc	3,681,462	6,916,706	1.99	149,530,946	147,502,962	98.5%	4.69%	-0.16%
MRNA.O	Moderna Inc	1,313,152	10,315,117	5.49	329,010,929	249,302,482	75.8%	4.14%	0.32%
INCY.O	Incyte Corp	1,254,322	6,168,520	4.96	214,438,549	213,061,281	99.3%	2.90%	-0.18%
REGN.O	Regeneron Pharmaceutica	865,106	2,540,072	2.89	107,727,418	81,524,840	75.7%	3.12%	0.30%
STIM.O	Neuronetics Inc	100,614	562,591	4.25	18,308,125	18,064,145	98.2%	3.11%	0.44%
ISRG.O	Intuitive Surgical Inc	710,413	2,054,947	NA	115,253,433	114,125,753	99.0%	1.80%	-0.14%
ILMN.O	Illumina Inc	1,138,291	2,975,693	NA	147,000,000	146,541,680	99.6%	2.03%	0.30%
sgen.o	Seattle Genetics Inc	982,872	9,707,388	12.58	168,780,747	167,327,361	99.3%	5.80%	-0.29%
ALXN.O	Alexion Pharmaceuticals In	1,518,258	3,097,846	1.96	224,226,878	223,769,328	99.8%	1.38%	-0.04%
CELG.O	Celgene Corp	4,503,414	9,484,506	2.12	705,259,536	703,773,564	99.8%	1.35%	-0.03%
IDXX.O	IDEXX Laboratories Inc	401,603	1,204,552	3.37	86,006,332	84,725,629	98.5%	1.42%	0.12%
BSX	Boston Scientific Corp	7,167,709	15,404,745	2.12	1,390,652,506	1,387,241,860	99.7%	1.11%	0.13%
DHR	Danaher Corp	2,297,938	4,153,333	1.85	717,367,599	637,126,034	88.8%	0.65%	-0.15%
CAPR.O	Capricor Therapeutics Inc	751,351	35,808	0.03	3,467,459	2,359,807	68.1%	1.52%	0.06%

Source: Thomson Reuters, Grandation Research



Figure 20: Compsheet

Ticker	Company	Market Cap (\$bn)	Price	YTD Δ	MTD Δ	Revenue Growth		EPS		FCF Yield	EV /Sales	EV /EBITDA	PE			PEG	Div. Yield
			7/29/19			This yr /Last yr	Next yr /this yr	FY0	FY1				LTM	FY0	FY1		
MRNA.O	Moderna Inc	4.65	14.12	-7.5%	-3.6%	-41.4%	10.7%	(1.63)	-1.81	NA	35.8x	NA	NA	(8.6x)	(7.8x)	NA	NA
DNLI.O	Denali Therapeutics Inc	2.02	21.18	2.5%	2.0%	-90.9%	1028.0%	(1.52)	-1.61	NA	23.3x	NA	NA	(13.9x)	(13.2x)	NA	NA
BIIB.O	Biogen Inc	43.94	238.21	-20.8%	1.9%	5.4%	-1.4%	32.14	32.17	12.2%	3.3x	5.9x	8.8x	7.4x	7.4x	1.6x	NA
CELG.O	Celgene Corp	65.42	92.76	44.7%	0.3%	12.2%	12.3%	10.73	12.47	12.9%	4.3x	7.3x	14.2x	8.6x	7.4x	NA	NA
MGNX.O	MacroGenics Inc	0.69	14.23	12.0%	-16.1%	3.5%	9.8%	(3.96)	-3.96	NA	5.7x	NA	NA	(3.6x)	(3.6x)	NA	NA
IMGN.O	ImmunoGen Inc	0.35	2.35	-51.0%	8.3%	-45.7%	25.0%	(0.96)	-0.55	NA	2.2x	NA	NA	(2.5x)	(4.3x)	NA	NA
INCY.O	Incyte Corp	17.19	80.15	26.0%	-5.7%	11.1%	15.2%	2.26	2.92	NA	6.9x	30.5x	68.5x	35.4x	27.5x	0.7x	NA
NVCR.O	Novocure Ltd	7.75	78.91	135.7%	24.8%	38.1%	33.7%	(0.16)	0.50	NA	18.5x	1748.0x	NA	(484.5x)	157.4x	NA	NA
ALXN.O	Alexion Pharmaceuticals Inc	25.7	114.63	17.7%	-12.5%	17.3%	13.7%	9.86	10.93	NA	5.0x	9.2x	20.9x	11.6x	10.5x	0.7x	NA
REGN.O	Regeneron Pharmaceuticals Inc	33.31	309.18	-17.2%	-1.2%	10.1%	9.9%	21.76	24.17	NA	4.0x	10.1x	15.1x	14.2x	12.8x	2.2x	NA
STIM.O	Neuronetics Inc	0.21	11.47	-40.7%	-8.3%	19.8%	20.6%	(1.64)	-1.60	NA	NA	NA	NA	(7.0x)	(7.2x)	NA	NA
BSX	Boston Scientific Corp	58.52	42.08	19.1%	-2.1%	8.0%	9.6%	1.56	1.79	8.2%	6.0x	21.3x	44.2x	26.9x	23.5x	2.1x	NA
DHR	Danaher Corp	102.07	142.28	38.0%	-0.4%	4.0%	21.9%	4.80	5.71	3.4%	4.7x	21.8x	41.8x	29.7x	24.9x	NA	0.5%
ISRG.O	Intuitive Surgical Inc	60.81	527.63	10.2%	0.6%	16.9%	14.4%	12.12	13.71	2.1%	12.4x	32.1x	52.7x	43.5x	38.5x	3.2x	NA
IDXX.O	IDEXX Laboratories Inc	24.42	283.94	52.6%	3.1%	9.0%	10.1%	4.82	5.53	1.4%	9.9x	38.5x	63.8x	58.9x	51.4x	2.9x	NA
HZNP.O	Horizon Therapeutics PLC	4.51	24.41	24.9%	1.5%	4.6%	9.3%	1.73	2.00	NA	3.8x	11.2x	313.4x	14.1x	12.2x	NA	NA
MRK.N	Merck & Co Inc	209.65	81.43	6.6%	-2.9%	5.8%	5.8%	4.75	5.33	6.4%	4.9x	12.0x	24.6x	17.1x	15.3x	1.7x	2.7%
BGNE.O	Beigene Ltd	7.86	132.79	-5.3%	7.1%	67.4%	18.9%	(12.97)	-12.20	NA	23.3x	NA	NA	(10.2x)	(10.9x)	NA	NA
PBYI.O	Puma Biotechnology Inc	0.36	9.20	-54.8%	-27.6%	13.8%	-1.2%	(2.54)	-2.06	NA	1.3x	NA	NA	(3.6x)	(4.5x)	NA	NA
ILLMN.O	Illumina Inc	44.23	300.90	0.3%	-18.3%	5.7%	14.6%	6.38	7.34	2.5%	10.9x	36.6x	52.2x	47.2x	41.0x	2.9x	NA

Source: Thomson Reuters, Grandation Research



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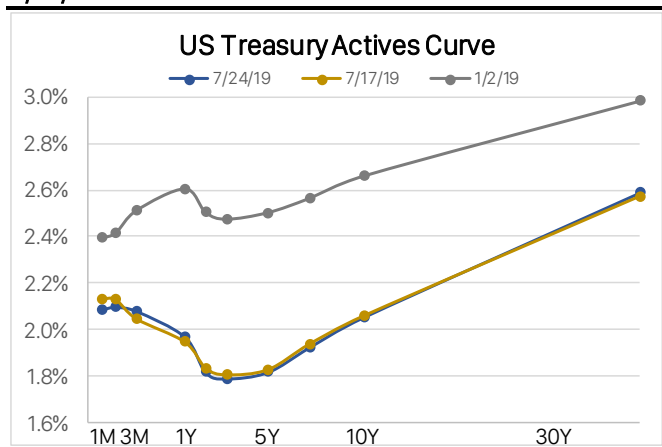
# Yield Curve Tracker

Figure 21: Yield Curve tracker -- The spread between the 10YR vs. 2YR has increased by 1bps WoW to 24bps.

Yield Curve (unit: bps)	7/24/19	7/17/19	WoW Δ	1/2/19	YTD Δ	7/24/18	YoY Δ
US Generic Govt 1MT Yield	2.087	2.133	-2.1%	2.394	-12.8%	1.88	11.0%
US Generic Govt 3MT Yield	2.098	2.128	-1.4%	2.417	-13.2%	2.01	4.5%
US Generic Govt 6MT Yield	2.080	2.046	1.7%	2.513	-17.2%	2.19	-5.1%
US Generic Govt 1YT Yield	1.970	1.947	1.2%	2.605	-24.4%	2.40	-18.0%
US Generic Govt 2YT Yield	1.818	1.836	-1.0%	2.504	-27.4%	2.64	-31.1%
US Generic Govt 3YT Yield	1.791	1.807	-0.9%	2.475	-27.7%	2.73	-34.5%
US Generic Govt 5YT Yield	1.818	1.829	-0.6%	2.503	-27.4%	2.82	-35.5%
US Generic Govt 7YT Yield	1.923	1.938	-0.8%	2.564	-25.0%	2.91	-33.9%
US Generic Govt 10YT Yield	2.055	2.061	-0.3%	2.661	-22.8%	2.95	-30.3%
US Generic Govt 30YT Yield	2.589	2.573	0.6%	2.982	-13.2%	3.08	-15.9%
US 10YR & 2YR Spread	24	23	1	16	8	31	-8

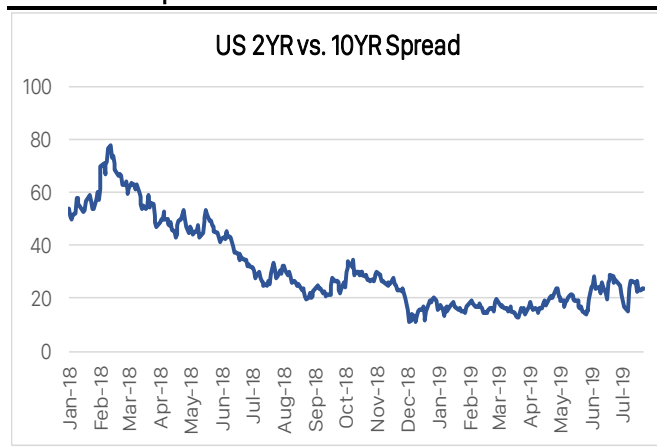
Source: Thomson Reuters, Grandation Research

Figure 22: The US Treasury Actives was in line with 7/17/19



Source: Thomson Reuters, Grandation Research

Figure 23: The 10YR vs. 2YR has increased by 1bps WoW to 24bps.



Source: Thomson Reuters, Grandation Research



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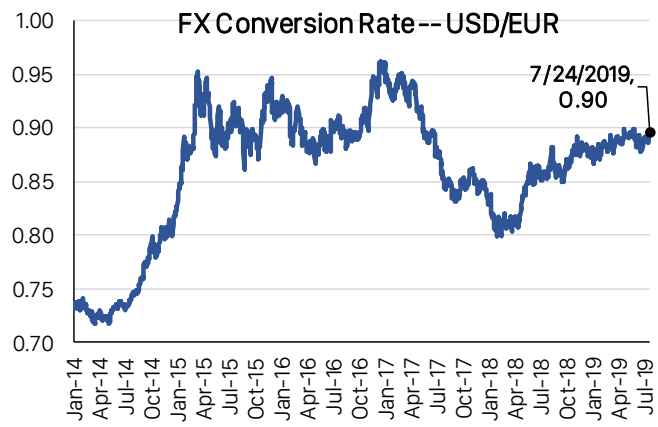
# Currency Tracker

**Figure 24: Currency tracker**—YTD, the USD has appreciated against the EUR, CNY, and GBP and depreciated against JPY, CAD and INR.

Currency	7/24/19	7/17/19	WoW Δ	1/2/19	YTD Δ	7/25/18	YoY Δ
USD/EUR	0.898	0.891	0.7%	0.882	1.8%	0.85	5.3%
USD/JPY	108.140	107.940	0.2%	108.870	-0.7%	110.97	-2.6%
USD/CNY	6.872	6.873	0.0%	6.860	0.2%	6.77	1.6%
USD/GBP	0.800	0.804	-0.5%	0.793	0.9%	0.76	5.5%
USD/CAD	1.314	1.305	0.7%	1.358	-3.2%	1.30	0.7%
USD/INR	68.931	68.830	0.1%	69.98	-1.5%	68.73	0.3%

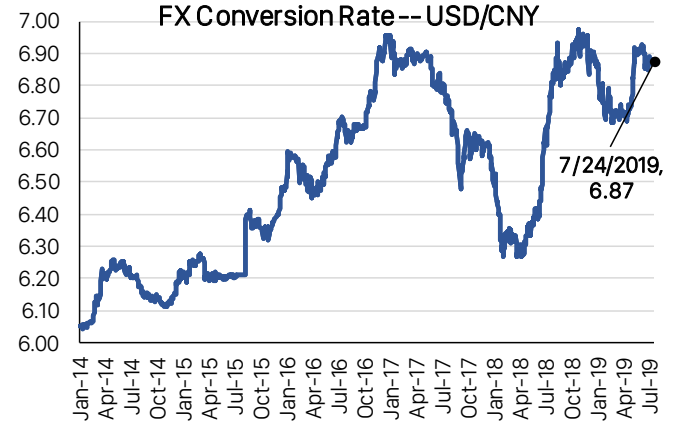
Source: Thomson Reuters, Grandation Research

**Figure 25: USD/EUR appreciated 1.8% to 0.90.**



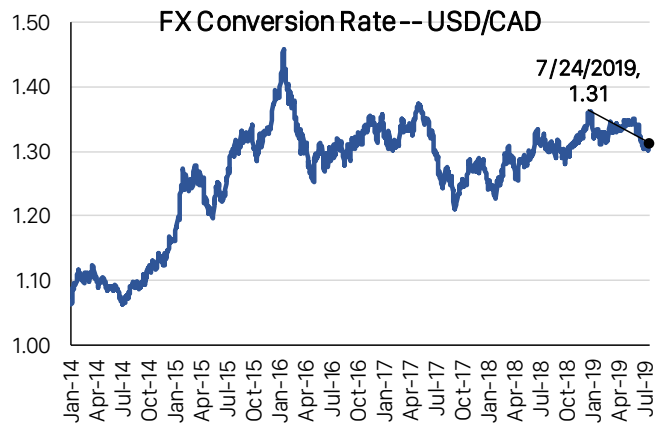
Source: Thomson Reuters, Grandation Research

**Figure 26: USD/CNY appreciated 0.2% to 6.87.**



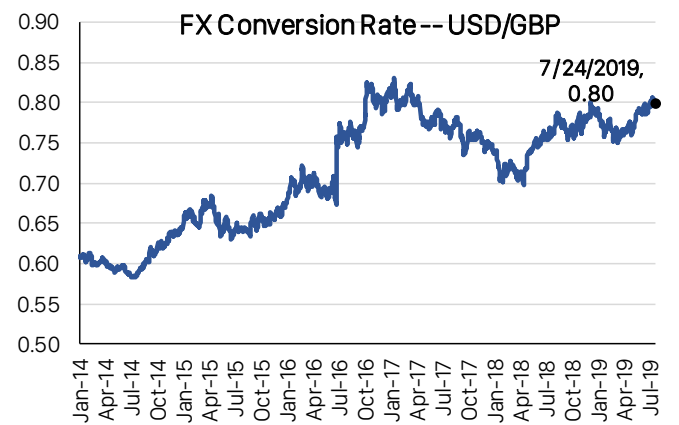
Source: Thomson Reuters, Grandation Research

**Figure 27: USD/CAD depreciated 3.2% to 1.31**



Source: Thomson Reuters, Grandation Research

**Figure 28: USD/GBP appreciated 0.9% to 0.80.**



Source: Thomson Reuters, Grandation Research



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Our rating system attempts to incorporate industry, company and/or overall market risks and volatilities; therefore, our investment recommendations on based on the security's 12-month price target from the date this report is issued.

- **STRONG BUY:** A rating, which at the time it is instituted and or reiterated, that indicates an expected return exceeding 25% over the next 12-month period.
- **BUY:** A rating, which at the time it is instituted and or reiterated, that indicates an expected return between 10% to 25% over the next 12-month period.
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