STERN IAG

Board of Advisors Meeting

October 28th 2019

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Letter from Portfolio Managers

Dear Board of Advisors,

As the semester progresses, we continue to refine our investment philosophy and investment tracking process. We believe that we've lacked on the investment monitoring in the past and more in-depth coverage on the best and worst performers is necessary moving forward. Our idea generation process went from internal meeting to Oversight and this process has proven to be too rigid. As such, we've added the bench component to account for the ideas we believe are fundamentally great operators, but not at the best price at the time. As discussed at the previous meeting, we've added the following:

- **Portfolio KPI Metrics (Beta, Volatility and Sharpe)**
- **Pitch Log for the Semester**
- **Bench**
- **In-Depth Notes on Best and Worst Performers**

Please feel free to reach out if there's any aspect of the packet that should be included, but is missing at the moment. The bench model allows the organization to have a more gradual idea generation process as opposed to going straight from internal meetings to oversight. We also believe that this process allows for more transparency in our idea generation process. In addition, we're more than happy to add to the dialogue with these names at the meetings if any of the committee members have any comments on the companies we have looked at.

On performance, we have delivered 609 bps under the market return on an LTM basis as of 10/23/2019. We continue to focus on downside protection moving forward with our idea generation. With that in mind, we'd like to present the following three businesses that we believe exemplify our investment philosophy.

- **First Energy (NYSE: FE) –** A utilities company trading at a discount to the regulated sector despite a successful transition from the merchant model to a regulated model **(page 22)**
- **XPO Logistics (NYSE: XPO) –** A main player in the less than truckload (LTL) and freight brokerage market **(page 31)**
- **Recro Pharma (NASDAQ: REPH) –** A contract development and manufacturing organization (CDMO) with a non-performing acute care segment **(page 39)**

We look forward to the remainder of the semester and we'd be more than happy to take feedback or suggestions at any given time. Thank you for your continued support.

Best,

Mateo Panjol-Tuflija & Steve Woo

Portfolio Managers

II. Portfolio Team Overview

2019 - 2020 Team Roster

Portfolio Managers
Mateo Panjol-Tuflija
Steve Woo

Senior Analysts
Sruthi Boddu
Michael Giese
Nived Gopakumar
Oliver Jiang
Mark Sun
Larry Wang

Junior Analysts
Srikar Alluri
Liam Coohill
Cody Fang
Nisha Honnaya
Simran Korpal
Caleb Nuttle
Moeez Tariq
Jaro Van Diepen
Chen Zhou

New Analysts
Ian Chen
Nicole Dai
Sonali Mohani
Aashka Sanghvi
Achyut Seth
Anthony Wang
Catherine Wang

III. Performance Analysis

Holdings Summary *(as of October 22nd, 2019)*

Current Holdings									
Company Name	**Ticker**	**Analyst**	**Share Count**	**Date of Purchase**	**Share Price At Purchase**	**Current Price**	**Current Return**	**Morningstar Industry**	**Holding Type**
Advansix	ASIX	Mateo Panjol-Tuflija	67	3/14/19	$31.09	$22.77	**(26.8%)**	Chemicals	**Oppt.**
Blackberry	BB	Nived Gopakumar	290	12/4/18	$8.18	$5.15	**(37.0%)**	TMT	**Oppt.**
BorgWarner	BWA	Chen Zhou	55	3/14/19	$38.34	$39.74	**3.7%**	Consumer	**Core**
Brixmor	BRX	Cody Fang	140	12/4/18	$16.00	$21.15	**32.2%**	Real Estate	**Oppt.**
CVS Health Corp	CVS	Michael Giese	20	12/6/16	$77.28	$66.56	**(13.9%)**	Healthcare	**Core**
DaVita	DVA	Mark Sun	33	10/3/18	$72.15	$59.21	**(17.9%)**	Healthcare	**Oppt.**
EZCorp	EZPW	Nisha Honnaya	260	12/4/18	$9.00	$5.65	**(37.2%)**	Financials	**Oppt.**
Gilead	GILD	Simran Korpal	25	11/13/17	$73.77	$65.86	**(10.7%)**	Healthcare	**Oppt.**
Green Brick Partners	GRBK	Srikar Alluri	162	12/3/17	$11.39	$10.70	**(6.1%)**	Real Estate	**Oppt.**
HCA	HCA	Srikar Alluri	19	9/26/19	$119.20	$125.23	**5.1%**	Healthcare	**Core**
LyondellBasell	LYB	Oliver Jiang	25	4/18/19	$91.55	$87.97	**(3.9%)**	Chemicals	**Oppt.**
Nutanix	NTNX	Jaro van Diepen	60	4/18/19	42.85	$27.26	**(36.4%)**	TMT	**Oppt.**
Stanley Black & Decker	SWK	Moeez Tariq	14	5/3/18	$139.53	$151.36	**8.5%**	Industrials	**Core**
United Rentals	URI	Caleb Nuttle	17	3/14/19	$122.97	$132.40	**7.7%**	Industrials	**Core**
Western Digital Corp	WDC	Mateo Panjol-Tuflija	42	10/3/18	$56.45	$58.86	**4.3%**	TMT	**Oppt.**
ZTO Express	ZTO	Mark Sun	100	3/14/19	$19.28	$21.45	**11.3%**	Industrials	**Core**
SPDR S&P 500 ETF	SPY		8			$299.01			
Total						**$33,893.08**			

Portfolio KPIs	
Indicator	**Number**
Daily Sharpe Ratio	0.01
Annualized Sharpe Ratio	0.09
Portfolio Beta (Top-Down)	0.89
Daily Volatility	0.87

Assumption: Given that the Google Finance interface pulls numbers on a daily basis and we don't have multiyear data on portfolio performance, **we annualize daily beta to get the year end number**. We do realize this is a significant assumption.

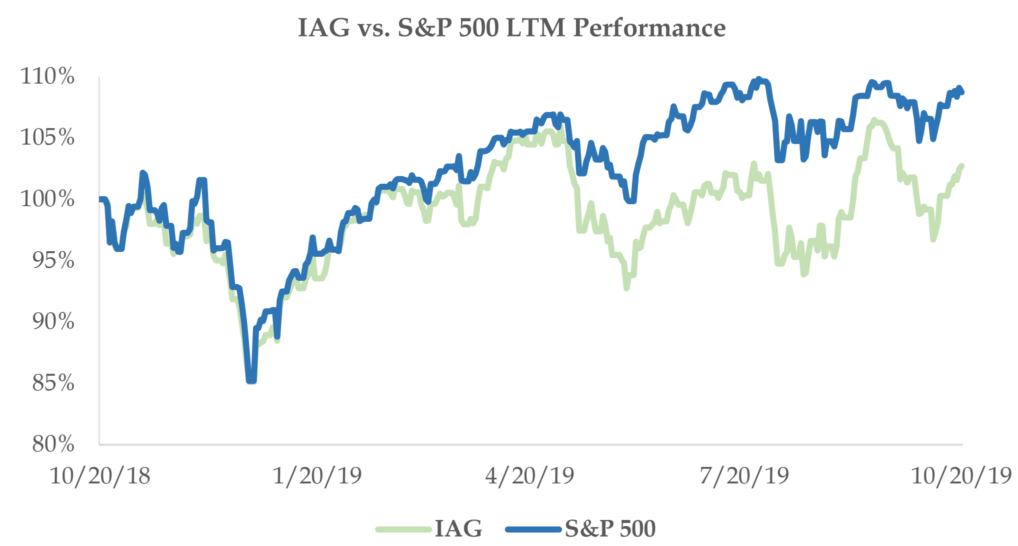
Bench *(as of October 22nd, 2019)*

Pitch Log							
	Pitch	**Ticker**	**Date**	**Analyst**	**Price Then**	**Price Now**	**Difference**
1	**HCA**	**HCA**	9/4/19	Srikar A.	$121.31	$125.23	**3.2%**
2	**Americold**	**COLD**	9/4/19	Simran K.	$37.33	$38.27	**2.5%**
3	**Skyworks**	**SWKS**	9/4/19	Nisha H.	$76.02	$88.96	**17.0%**
4	**IBM**	**IBM**	9/4/19	Moeez T.	$136.32	$133.96	**(1.7%)**
5	**Brinks**	**BCO**	9/4/19	Michael G.	$73.26	$86.66	**18.3%**
6	**ServiceNow**	**NOW**	9/4/19	Liam C.	$268.52	$228.34	**(15.0%)**
7	**EPC**	**EPC**	9/4/19	Larry W.	$28.23	$34.18	**21.1%**
8	**Ciner**	**CINR**	9/4/19	Jaro V.	$15.08	$17.67	**17.2%**
9	**Chemours**	**CC**	9/4/19	Cody F.	$13.48	$16.07	**19.2%**
10	**XPO**	**XPO**	9/4/19	Chen Z.	$68.46	$77.42	**13.1%**
11	**Intel**	**INTC**	9/4/19	Caleb N.	$48.92	$52.01	**6.3%**
12	**IAA**	**IAA**	9/11/19	Nived G.	$45.74	$37.86	**(17.2%)**
13	**Six Flags**	**SIX**	9/11/19	Caleb N.	$57.59	$51.23	**(11.0%)**
14	**Sinclair**	**SBGI**	9/11/19	Cody F.	$44.54	$42.20	**(5.3%)**
15	**Transdigm**	**TDG**	9/18/19	Mark S.	$530.38	$510.93	**(3.7%)**
16	**Brinker International**	**EAT**	9/18/19	Moeez T.	$44.20	$42.00	**(5.0%)**
17	**Sallie Mae**	**SLM**	9/25/19	Caleb N.	$9.44	$9.05	**(4.1%)**
18	**Lear**	**LEA**	9/25/19	Jaro V.	$118.00	$125.00	**5.9%**
19	**Restoration Hardware**	**RH**	10/2/19	Sruthi B.	$164.95	$184.99	**12.1%**
20	**Recro Pharma**	**REPH**	10/2/19	Mark S.	$10.97	$12.59	**14.8%**
21	**Duke/PPL**	**DUK**	10/2/19	Oliver J.	$94.71	$95.32	**0.6%**
22	**Hollysys**	**HOLI**	10/9/19	Cody F.	$13.90	$14.21	**2.2%**
23	**First Energy**	**FE**	10/9/19	Oliver J,	$47.82	$48.36	**1.1%**

Bench						
	Company	**Ticker**	**Date Benched**	**Bench Price**	**Price Now**	**Difference**
1	**Interactive Brokers**	**IBKR**	10/6/18	$55.82	$45.92	**(17.7%)**
2	**Transdigm Group**	**TDG**	10/9/19	$509.15	$510.93	**0.3%**
3	**Restoration Hardware**	**RH**	10/9/19	$174.13	$184.99	**6.2%**

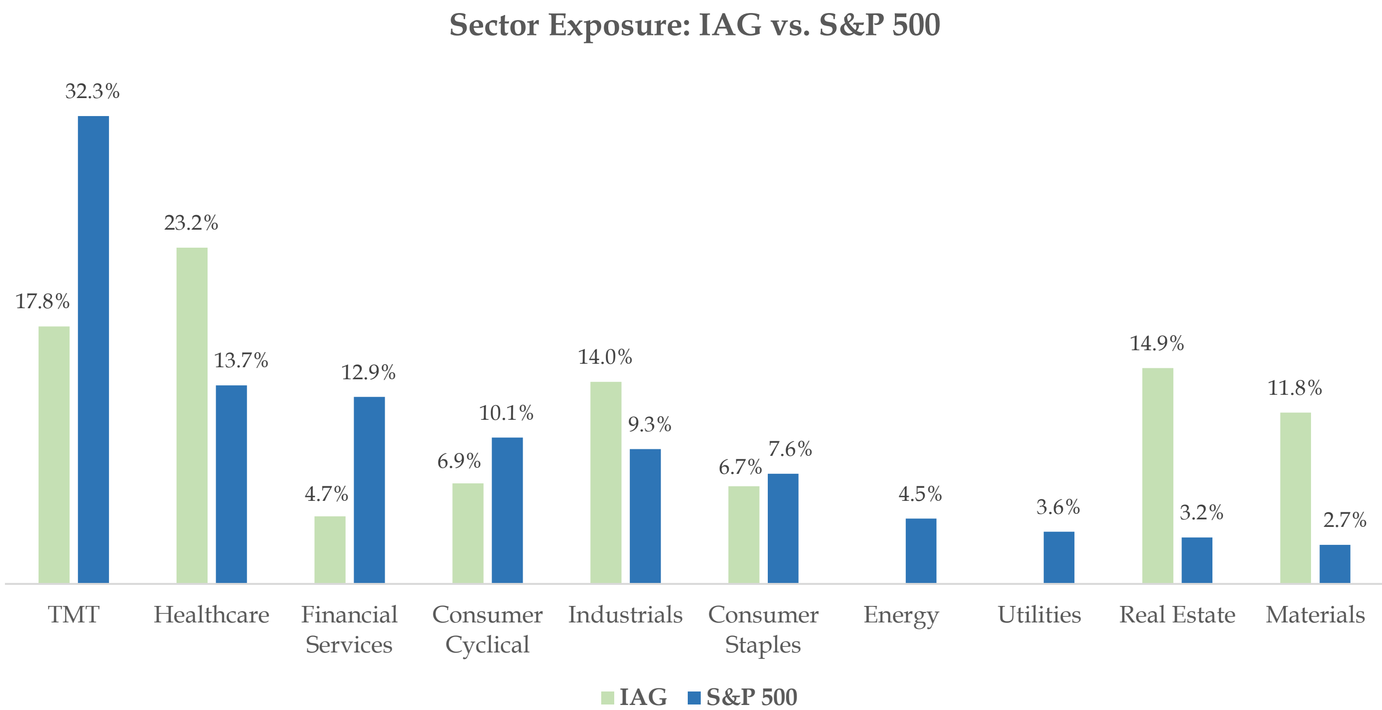
Portfolio Performance vs. Benchmark

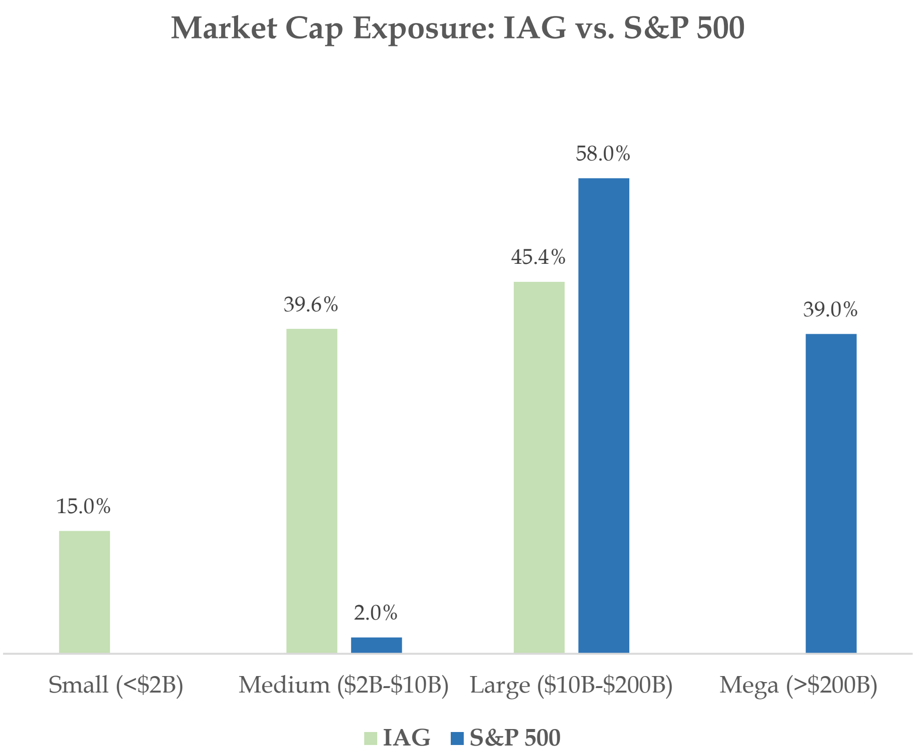
Recent weeks have been good for US equities as US-China trade talks have made progress with the first-phase deal. There is still the looming fears of a recession, but the recent earnings season has been the focus over the past few weeks. **The spread between the S&P 500 and IAG has been driven down to some extent to -609 bps down from a high of -817 bps in May.**



These figures are exclusive of the dividends our portfolio earns and track raw performance of holdings rather than cash balance. We believe a significant part of our underperformance is due to large losses (30%+) concentrated in a few positions that aren't quite balanced out by gains in the other direction. **We do recognize this is problematic given our beta is close to 1.**

Portfolio Exposure vs. Benchmark





IAG continues to target the S&P 500 benchmark specified in the fund mandate. As of October 2019, **IAG is most overexposed in materials (chemicals) and real estate.** Although, underexposed to the energy and utilities space, we've made progress in developing knowledge in the space. We aim to diversify into less cyclical industries in the next year while maintaining our investment philosophy.

IAG continues to be underexposed to large- and mega-cap positions, an issue which continues to persist given the hardship of identifying value plays in such areas.

IV. Key Holdings Update

Portfolio Updates Since Sept 2019 Meeting

Company	Ticker	Update
Advansix	**ASIX**	We recommend not exiting our position in Advansix. Given that the spreads have seen constant pressure, due to weaker demand trends across several key end markets including auto, electronics, carpet and construction as well as a relatively bad planting season for corn in the US. Exiting the position would realize our losses amid a down cycle, cutting off any potential for a recovery in the spreads. The main spread—BNZ-CPL—is on track to average $1,250/MT which is the base case scenario described in our thesis, however aforementioned pressure on other drivers, mainly acetone and nitrate have absorbed any potential upside. The outlook for F2020 is definitely more positive than the current situation with nitrogen fertilizer pricing on track to rebound in 2019, lifting the price of ammonium sulfate and management indicating $40 mm in share buybacks.
Blackberry	**BB**	**Hold note in packet.**
BorgWarner	**BWA**	We would like to propose holding our stake in BorgWarner at $40.00 per share, up 4.3% since inception in March 2019. BWA reported an overall solid Q2 result in an environment of market volatility and soft industry production. The company made new progresses in expanding its electric propulsion technology portfolio, with estimated pricing nearly matching ICE products. On the downside, we saw modest erosion in margins due to supply chain challenges and recent supplier bankruptcies in Europe. We believe current margins instability remains a short-term challenge, rather than a change in business fundamentals.
Brixmor	**BRX**	**Hold note in packet.**
CVS Health Corp	**CVS**	The company gave more clarity on its HealthHUB concept. The company began its pilot program with three locations in Houston and has seen positive feedback from customers and plans to rollout the design to 1,500 stores by 2021. The locations focus on boosting available health services for its customers and entering the DME (Direct Medical Equipment) space. The company has said that their available services are in line with 80% of the services that a primary care office provides. The DME market is a high margin product area and the goal is to build locations with a hub and spoke model in key geographies. The process to upgrade a store takes only 11 weeks, and management believes the realignment will lead to higher margin operations at these locations.
DaVita	**DVA**	We would like to propose holding our stake in DaVita at $58.4 per share, representing an 18.8% downside since our inception. Since the last update, we are seeing increasing chatter regarding the AKF operations and changing industry dynamics of the dialysis industry, especially, after famous short-seller Jim Chanos argued that DaVita would face huge litigation risks and have announced his short-selling position. Since then, we haven't seen significant movement in the stock price. However, we are fully aware of the potential ongoing risks for this position especially related to the recent regulations and margin trends. Thus, we wish to hold this position for another oversight cycle to fully analyze its Q3 earning after announcing a shift in business and capital allocation strategies and decide if we wish to liquidate this position. We reiterate that we believe the short-term downside risks would be limited but we are closely observing the new earning to make our judgment on this position further.
EZCorp	**EZPW**	**Hold note in packet.**
Gilead	**GILD**	We would like to propose holding our stake of Gilead Sciences at $66.00. While the HCV segment of Gilead continues to decline we are hopeful about both the acquisition on Kite Pharma and the partnership with Galapagos. Gilead is to develop Filgotinib for rheumatoid arthritis, Crohn's disease and ulcerative colitis patients which has a TAM of approximately 4.2m in the U.S. alone. This joint collaboration provides a strong pipeline. In May of 2019, Filgotinib demonstrated clinical efficacy. In addition to the partnership with Galapagos, the HIV segment has been doing very well with the release of several HIV Prep drugs. While we do not believe the HIV segment will push the stock price significantly it will be a consistent segment for Gilead.

Portfolio Updates Since Sept 2019 Meeting

Company	Ticker	Update
Green Brick	**GRBK**	Green Brick Partners has capitalized on a booming real estate market in the United States. This has been seen especially in their core markets of Dallas, Vero Beach, Colorado Springs, and Atlanta. Margins are on the rise as they are cutting back incentives for buyers. They continue to hold a large amount of A class land in all these regions. The value of the backlog continues to grow. Trophy Signature Homes and the Florida market have been recent bright spots for the company. We recommend a hold on this position as the company still trades at a 15-20% discount compared to peers.
HCA	**HCA**	Since the addition of the position three weeks ago, nothing materially has changed with the company. The hospital chain has continued its acquisition strategy with its acquisition of Vidalia hospital in Georgia. Management has been keen on acquiring more outpatient facilities and looks to be making more of these small acquisitions as 2019 closes. They expect about 80% of hospitals to have EBITDA growth for 2019.
LyondellBasell	**LYB**	LYB announces earnings October 29. Our model (PT: $108) assumed 2019 EBITDA to be lower in all segments versus consensus except Americas O&P. O&P feedstock (natural gas and NGLs) remain low and beneficial for margins. Ethylene prices are recovering but offset by lower Polyethylene prices. Styrene and acetyl markets, while a smaller portion of revenue, remain weak. We expect the PEMEX turnaround to fully play out in the upcoming months. Share prices have traded sideways as the company rides out the bottom of the cycle. Upcoming planned maintenance will reduce capacity going into 4Q19, so expect less pressure on polyethylene spreads for the rest of the year.
Nutanix	**NTNX**	**Sell note in packet.**
Stanley Black and Decker	**SWK**	**Hold note in packet.**
United Rentals	**URI**	The company has recently reported Q3 earnings for 2019 and has beaten earnings estimates by 5.3%. We believe this beat on earnings is a result of the continued cost-savings from the company's synergistic acquisitions. The company has begun to see share appreciation following the positive earnings guidance. Since March 8th , when we opened the position at $122.97 per share, we have realized a moderate 7.7% return on the investment. The company currently Trades at $132.40 per share. The company also continues to trade at a discount to Caterpillar on P/E, but has recently begun trading at a premium to Caterpillar based on this quarter's positive earnings tailwinds. The company has kept a disciplined approach to acquisitions since we opened our position. The company has not acquired any additional companies and has not highlighted any additional acquisition targets in earning calls. The company currently has FY 2019 2.7x Debt/EBITDA, which is lower than its FY 2018 Debt/EBITDA of 2.8x – the target range moving forward is 2.0x-3.0x.
Western Digital Corp	**WDC**	We would suggest holding our position in WDC as the thesis laid out in March of 2018 is starting to play out. Since the last oversight meeting WDC has seen a rally in its valuation as it surged north of 75% from the low in June. Although the timing of our investment is indeed unfortunate, this rally is indication that the NAND market is normalizing. In fact, the normalization seems to be playing out quicker than anticipated, as Toshiba Memory and Western Digital disclosed in late June that a 13-minute power outage at their joint NAND fab in Yokkaichi province in Japan on June 15, 2019 significantly disrupted operations and impacted wafer production. As a consequence of the power outage Western Digital said that Q3 NAND flash wafer supply will be reduced by about half of the company's quarterly supply of NAND flash. The outage will tighten the supply of 2D NAND in the short run as NAND Flash suppliers are now holding lower inventories of 2D NAND products than before.
ZTO Express	**ZTO**	**Hold note in packet.**

V. Best Performers

Update Note: Brixmor Property Group (NYSE: BRX)

Dear Board of Advisors,

We would like to hold our position on **Brixmor Property Group (NYSE: BRX)**, currently representing a **31.5%** upside. Our core thesis is still being realized and there is still significant upside.

Current Earnings Recap:

BRX reported Q2 earnings on 7/28/19. Same property NOI grew 1.8% YoY with $0.48 FFO in the quarter. ABR PSF Increased 4.8% YoY putting ABR PSF at $11.87 for anchor tenants and $14.39 for the company as a whole. Guidance for 2019 was reiterated at 2.75% to 3.25% Same-Property NOI growth with $1.86 - $1.94 FFO. New lease spreads continue to remain strong at 33.7% compared to 33.3% in Q1.

Thesis Point 1: Under-developed during ownership by Blackstone: [In Progress]

So far, the company has completed $300 million consisting of 39 reinvestment projects at ~11% incremental returns and has $415 million consisting of 61 reinvestment projects underway at a ~10% incremental return. Moving forward, the company has over $1 billion in the pipeline and expects to conduct $150 to $200 million in reinvestment per year. Additionally, the company has reiterated the goal of reinvesting or redeveloping 30% of the original portfolio. Since Q3 2018, ABR PSF has increased from $13.89 to $14.39 representing a 3.5% increase and new lease spreads have remained ~34%.

Thesis Point 2: Open air shopping centers provide an inherent defense against e-commerce: [In Progress]

The company has emerged from the Sears / K-mart bankruptcy unscathed. Approximately 70% of centers continue to be grocery-anchored and the company continues to have high-quality tenants such as TJ-Maxx, Dollar Tree, Burlington, LA Fitness, and Ross. Furthermore, the company has begun to target "local anchors," focus on specialty centers such as fitness and entertainment, and working with grocers that are investing in buy-online-pick-up-in-store.

Thesis Point 3: Management strategy of shaving off non-core assets is right for current CRE valuations: [In Progress]

In the later half of 2018, management aggressively shaved off non-core assets with $1.5 billion worth of assets sold since 2016. YTD management has conducted ~$100 million worth of asset dispositions at a ~7% cap rate. Moving forward, the company has explicitly stated that the rate of dispositions stands to materially increase in the latter half of 2019 moving into 2020.

Conclusion:

On top of the fact that BRX still lags behind its peers on a P/FFO basis with its closest peer KIMCO trading at 14.7x P/FFO, the core thesis is still intact and the fund has an incredibly attractive 7% dividend yield locked in. We continue to think that the stock still has considerable upside given a myriad of factors.

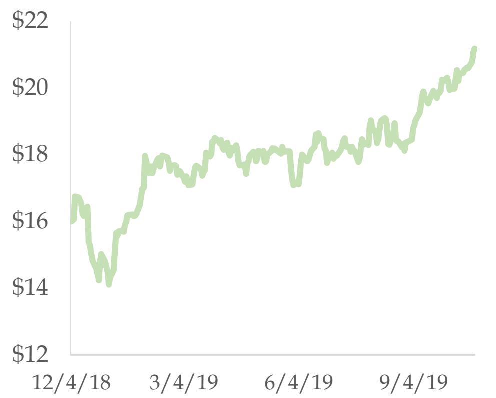
Best,

Cody Fang

Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$16.00	$21.18
ABR PSF:	$14.10	$14.39
GLA (MM):	77	73
Properties:	439	421
P/FFO:	7.89x	11.7x
Div. Yield:	6.9%	5.3%

Performance Since Purchase on 12/4/18



ABR PSF Trajectory

Update Note: ZTO Express (NYSE: ZTO)

Dear Board of Advisors,

We would like to hold our position on **ZTO Express (NYSE: ZTO)**, currently representing a **11.3%** upside and raise our PT to $26.24.

Thesis Point 1: Chinese parcel delivery sector is at its inflection point. As the industry leader, ZTO is best situated to continuously capture market share, gaining bigger pricing power and pursuing further consolidations [Actualizing]:

In our original pitch, we believed there are several tailwinds in the Chinese parcel delivery market, including increasing consolidation, price/margin improvement, and consistent volume increases, which will help ZTO to solidify its industry leadership further. The competition of the Chinese parcel delivery market continues to intensify, and some second-tier operators that are unable to meet break-even points are forced to exit the market. Meanwhile, some of its competitors, such as YTO, failed to further capture its market shares due to its missteps to expand to a high-tier market gave ZTO the opportunities to further capture market share. In the last quarter, ZTO increased its market share by 200 bps to around 19.7%, ahead against other industry competitors. We believe such a trend will continue to affect the parcel delivery onward and benefit ZTO's leadership. Due to increasing costs and consolidations, we argued in our original thesis that the price war of the parcel delivery market would calm, and eventually, players with significant market share would raise the price. We also see such trends happened. In the upcoming Double 11 shopping season, ZTO, YTO, and other major delivery companies are starting to raise the price, which we believe would increase its margin. ZTO currently raises 1RMB per waybill, which would help the company to navigate through the high-volume season. We believe this would be the start of price stabilization, which will help ZTO.

Thesis Point 2: ZTO has a better business model with solid operating leverage, enabling a pathway for further profitability [In Progress]:

In our original pitch, we argued that ZTO's business model is more suitable for the expansion of E-commerce in the second and third tiers cities as ZTO could quickly roll out its networks and dynamics allocations its outlets without significant capital expenditures. We further argued that ZTO would continue to maintain its high margin despite industry headwind. We are seeing that the only direct player – SF Express is beginning to roll out its own version of network partners; expansion plans to increase its market share in the rural markets, further validating our arguments that the network partners model fits more in the rural markets. Also, the margin of ZTO express has not been significantly decreased as we predicted, adding additional comforts for future performance.

Thesis Point 3: The noise over trade tensions and concerns of China economic slowdown [In Progress]:

The trade war has gradually improved, and certainly, Chinese stocks are recovered from its low in May. However, we still believe that the stocks are still being affected by the negative sentiment over Chinese stocks and further de-escalation of trade tension will continue to support the stock to approach to our price target.

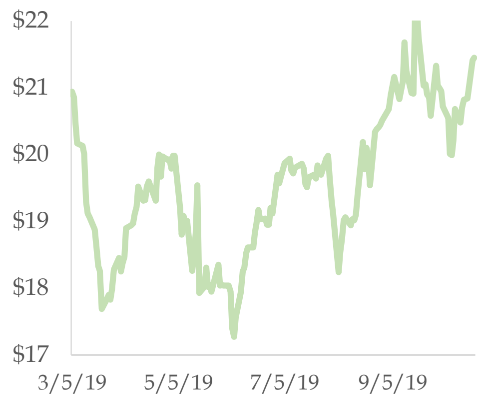
Best,

Mark Sun

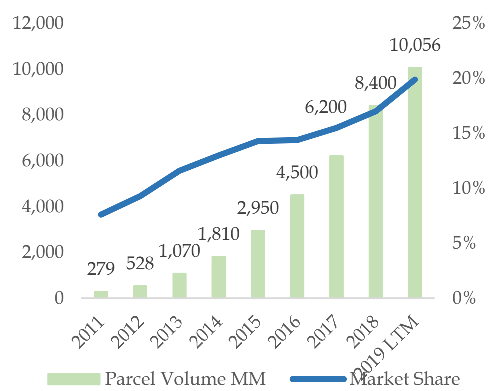
Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$19.28	$21.45
EV/EBITDA:	17.9x	17.5x
P/E:	23.0x	26.8x
Op. CF ($m)	$605.4	$777.6
EBITDA:	$736.4	$813.4

Performance Since Purchase on 3/14/19



Parcel Volume and Market Share



Update Note: Stanley Black & Decker (NYSE: SWK)

Dear Board of Advisors,

We would like to hold our position on **Stanley Black & Decker (NYSE: SWK)**, currently representing a **8.5%** upside.

Thesis Point 1: Black Ops Team – Innovation Continues to Be a Key Differentiation [In Progress]:

This point centered around management investing heavily in R&D and M&A to strengthen SWK's portfolio. The pitch was done in April 2018, but in September of that year SWK management invested around 250 million dollars in MTD products, which allows them to tap into the lawn and garden market. Right now, the revenue breakdown for SWK is 70% for tools/storage and roughly 15% each for security and industrials. By 2022, SWK management hopes the breakdown comes out to 50-60% for tools, 15-20% each for industrial and lawn/garden, and 10% for security. This innovation is a hallmark for the company, and something they pride themselves on. We don't see this changing anytime soon given management's stability and history.

Thesis Point 2: Strong Capital Allocators + Great Management [In Progress]:

Strong management alone isn't normally a thesis point, but it makes sense for a company that spends a significant portion of money on R&D and M&A. While half of capital goes to shareholders, the other half is for M&A. SWK's management has been able to acquire businesses and integrate them successfully, not having any major misses since the original pitch. Since the original pitch, there's been no change in the management, so no indication that SWK's strategy will suffer. The key point for this- SWK's brand relies on innovating and acquiring the top of the line products in the market, so management's ability to execute is extremely important.

Thesis Point 3: Craftsman Acquisition Integration [In Progress]:

Management has been happy with how Craftsman has performed for the company. Craftsman products are still being rolled out, and the biggest sales won't be seen until 2019 Q4, but Craftsman has still given credit for the boost in North American sales. Worth noting, SWK is shifting towards producing most Craftsman products in America and has currently driven the % up to around 40%. They're hopeful to make around 70% in the U.S. soon. SWK suffers from macro trends, so producing in house should limit their exposure somewhat.

Thesis Point 4: Margin Expansion [In Progress]:

Margins haven't significantly improved up to this point, and revenue numbers are still being hit by macro trends such as unfavorable currency. However, management has talked about implementing multi-year plans to cut costs by 300 million. As the products themselves keep performing and costs go down, margins should increase as long as macro trends don't negatively impact the company even more than they currently are.

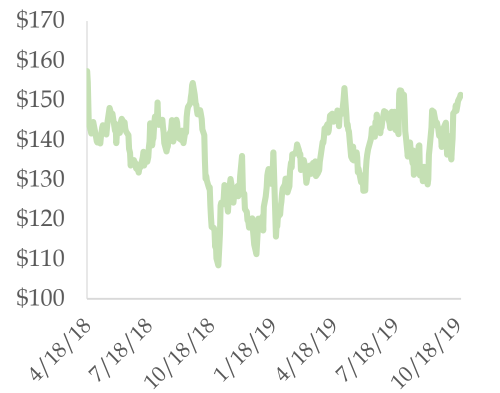
Best,

Moeez Tariq

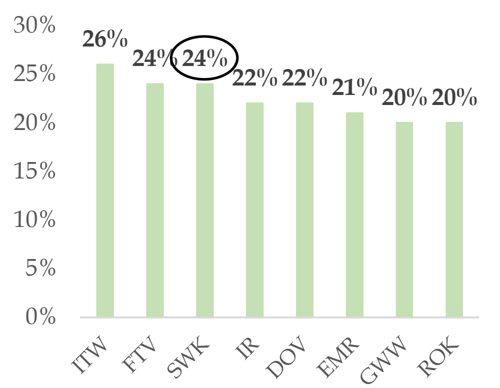
Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$139.53	$147.17
EV/EBITDA:	13.2x	12.8x
P/E:	17.0x	18.2x
Op. CF ($m)	1,261	1,482
EBITDA:	2,199	2,319
Net Debt:	3.907	5,055

Performance Since Purchase on 4/18/19



ROIC by Competitor



VI. Worst Performers

Update Note: EZCorp (NASDAQ: EZPW)

Dear Board of Advisors,

We would like to continue holding our stake in **EZCorp (NASDAQ: EZPW), currently down 36**% since purchase.

Current Earnings Recap and Reflection on Thesis Points:

Thesis Point 1: Latin America Expansion Opportunity & Favorable Industry Dynamics [Not Actualized]:

In Q'3, EZCorp began slowing down its initiatives in expanding into Latin American stores. EZCorp also saw declining margins in the previously acquired Mexico stores, attributing this decrease to vendor pricing issues and refined location-based strategy. In analyzing EZPW's performance alongside its most direct competitor in LatAm, First Cash has been seeing a much higher rate of inorganic growth via store acquisition on a quarterly basis (23 de novo stores in Latin America last quarter, for example). Although, EZPW did acquire 7 stores in Nevada this quarter, its slowed expansion overall lends further credence to EZPW's inability to expand at a competitive rate in similar industry dynamics to that of its competitors. While the current lending environment in LatAm makes it challenging to continue aggressive expansion, it is challenging to ascertain how much of EZPW's recent performance can be attributed to industry tailwinds or worsening overall fundamentals.

Thesis Point 2: Strengthened Corporate Governance [Not Actualized]:

This quarter, management has continued in their efforts to reduce EZPW's debt profile (2.15x to 1.1x YoY Net Debt/EBITDA) through the retirement of convertible notes, using $195 million cash on hand. However despite this positive development, on September 18, 2019, EZPW announced the appointment of leading shareholder Phillip E Cohen as a member of both of the Board of Directors and Executive Chairman. Cohen has been previously embroiled in issues regarding unfair compensation through "Cohen Commissions", and although Cohen's leadership in EZPW is aligned with the stock's appreciation, his recent appointment reflects poorly on overall management and corporate governance and could negatively affect future financing opportunities.

Thesis Point 3: Transformed Customer Experience [Not Actualized]:

EZPW still remains on trajectory in improving customer experience, both through the integration of their POS systems (meant to further consolidate their supply chain and reduce price discrepancies of inventory on hand) and the build-out of Evergreen technology with BCG (set to pilot this fall). EZPW has recently suffered operational issues that have not only affected their performance in Q3 but have continued to trickle into this quarter, including system-wide POS outages and the write-down of assets by cash converters in Australia.

Conclusion:

HOLD: We would like to use EZPW's next earnings cycle as a means of gauging how EZPW's fundamentals have changed and contributed to their stock depreciation. Currently, it is difficult to decipher how much of the decline is attributable to overall industry downturn or EZPW's business at large.

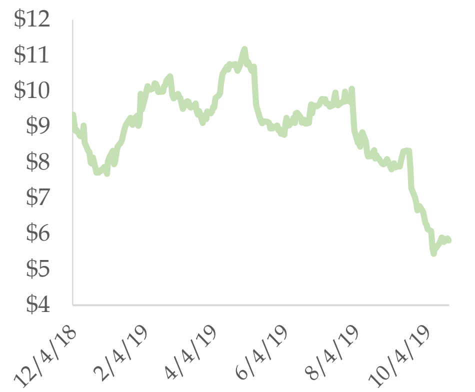
Best regards,

Nisha Honnaya

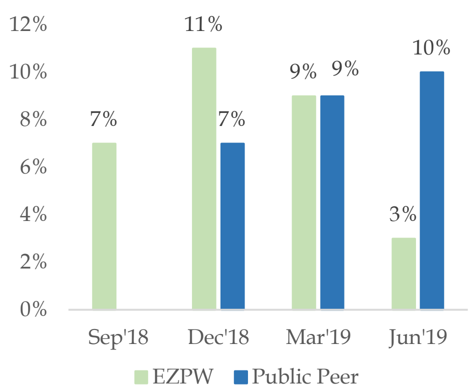
Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$9.00	$5.37
Market Cap:	520M	$313M
EBIT:	69.6M	63.2M
Net Debt:	131M	100.7M
EV/EBITDA:	7.2x	4.4x

Performance Since Purchase on 12/4/18



LatAm Same Store Sales PLO YoY Growth



Update Note: Blackberry (NASDAQ: BB)

Dear Board of Advisors,

We would like to provide an update on **Blackberry (NASDAQ: BB), which is down 37%** since it made the portfolio. Blackberry's stock dropped after the company missed on revenues for the quarter and issued down on guidance for FY. Earnings were in line.

Management's key message is that is does not have gaping holes in their technology, is in the right markets that are large and growing with the right products and has a platform and portfolio that is aligned with where the market is headed. The goal is to create a single, unified platform (creating a single, unified platform that spans mobile and IoT post-Cylance acquisition) appears well positioned to address the emerging cybersecurity challenge across IoT endpoints. While the strategy is sound and the opportunity is large, the market is early and LT visibility is really low. Management acknowledged that it most recently had missteps in execution, though changes are underway to address these issues and drive growth.

<u>ESS Business</u>

Management attributed the shortfall in ESS revenue YD (Q1 flat Y/Y, down mid-teens Y/Y) to sales mis-execution, as new customer wins took longer to close, government deployments were delayed and existing customer renewals weren't managed properly. Blackberry's confidence in stronger ESS revenue growth in 2H stems from the maturity of its sales pipeline and relationships with large customers. Management was forthright about the UEM market, recognizing the market is largely commoditized with competition in the market, but believes market growth and better Secusmart sales execution implementation will allow the business to grow at mid-to high-single digits.

<u>IoT Business: QNX & Cylance</u>

Management must do a better job explaining the Cylance acquisition if it's going to be a real catalyst for the business – it isn't really to sell product but to integrate into the platform. Investors were worried at ARR declines $2m sequentially, but there was double-digit growth in new customers, which is the metric to look at here. The BTS business continues to boom but must grow faster (management guided F20 to 16% growth y/y and the QNX business has won 26 design wins) to achieve the revenue run-rate that makes this acquisition feasible. We think this might be possible given that management has identified the GEM market as a growth opportunity for QNX and a market BB has not really chased down in the past.

<u>Conclusion</u>

We still believe in this business' ability in 5 years to dominate the IoT endpoint security market, but we must see more from management to illustrate that they're moving in the right direction. The pricing is favorable here but we are on wait and see mode as we watch management and hope it can turn around some of the execution issues they've been facing recently.

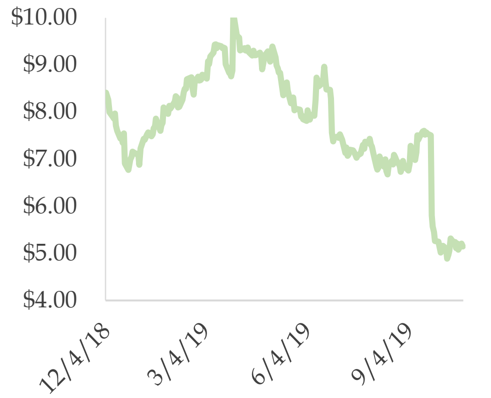
Best,

Nived Gopakumar

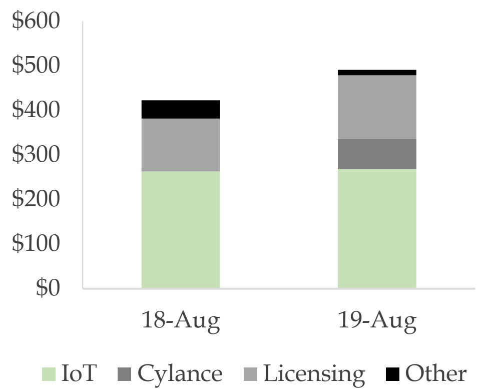
Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$8.18	$5.21
Revenue:	$840	$916
GM (%)	76%	*78%*
Net Debt:	-$2,300	-$251
EV/Rev:	2.9x	2.1x

Performance Since Purchase On 12/4/18



Revenue Mix (6 Months Ending)



Sell Note: Nutanix Inc. (NASDAQ: NTNX)

Dear Board of Advisors,

We would like to sell our position on **Nutanix (NASDAQ: NTNX)**, representing a **36.4% downside**. Our initial Investment Thesis was as follows:

Thesis Point 1: NTNX controls an important and defensible step in the value chain that lends itself well to an as-a-Service business model: In the past two quarters, NTNX has made progress shifting towards a SaaS model, as seen by the progress in % of revenue from subscription. Retention and monetization rates have hovered around the 97% and $1.2mm respectively. We anticipated that the revenue growth would come from two sources: increasing monetization and customer acquisition. However, while NTNX has consistently added customers, they are likely at a very low price point and therefore now driving up the ARPU (NTNX's reports ARPU above $500k).

Thesis Point 2: The market is highly focused on revenue growth and therefore unjustifiably punished value creation: NTNX's stock price took a 35% hit when management lowered its revenue guidance from $350mm to $300mm for 19Q3. This occurred because in 19Q1, management allocated the budget towards R&D and underspent on sales and marketing. We anticipated that once management re-allocated the budget towards sales and marketing, they would be able to boost their topline, the metric which historically, the market focused on the most. However, sales execution has been a persistent problem suggesting that NTNX might have penetrated its "core TAM" already.

Thesis Point 3: NTNX is trading in line with pure play data storage companies even though it controls an important aspect of the value chain: NTNX has historically traded in line with pure-play data storage and hardware-oriented companies due to its "one product company" label. We anticipated that as NTNX diversifies its revenues towards

We would like to sell for the following reasons:

- **Underappreciated the competitive dynamics of the IT infrastructure space:** Upon reflection, we didn't spend enough time examining the competitive dynamics in the IT infrastructure space. While NTNX has a strong product, their pricing power is limited by the competitive dynamics in the space. In the due diligence process, we focused purely on the dynamics between HCI companies and didn't research other substitutes in-depth which are also having a substantial impact on NTNX's price power.

- **Over-extrapolated past cases:** Another area where we went wrong was the over-extrapolation of past cases such as ADBE. NTNX's CEO serves on ADBE's board and we anticipated that NTNX would be able to experience a similar transition as ADBE. However, there wasn't enough focus on the differences between to ADBE and NTNX, perhaps due to confirmation bias.

- **Shifting investor sentiment:** Since WDAY earnings and the fall of WeWork, investor sentiment is shifting its focus from revenue growth based on the management's promise that the company will eventually become profitable in the future and SaaS in general has seen a reduction in investor confidence and have performed below market average.

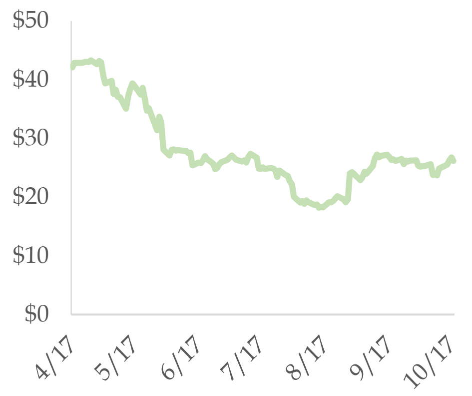
Best,

Jaro van Diepen

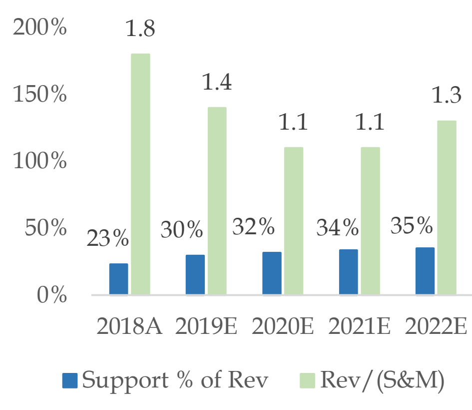
Stock Overview (LTM Figures)

	At Purchase:	Current:
Share Price:	$42.85	$27.88
G. Margin:	74%	80%
Retention:	97.0%	97.0%
ARPU:	$1.2	$1.2
EV/Rev:	5.6x	3.9x

Performance Since Purchase on 4/17/19



Projected Growth



VII. New Position Proposals

FirstEnergy Corp. (NYSE: FE)

Undervalued, low-beta business completing transition from diversified to regulated utility.

Oliver Jiang
Senior Analyst
oliver.jiang@stern.nyu.edu

Price Target: $ 56.40 - $57.70 Oct. 28th, 2019

Business Description:

FirstEnergy, through its subsidiaries, generates, transmits and distributes electricity in the United States. It owns and operates coal-fired and hydroelectric power generating facilities having divested their nuclear and natural gas facilities. FirstEnergy operates 24,506 circuit miles of overhead and underground transmission lines and more than 277,284 miles of overhead pole and conduit distribution systems. The company serves approximately six million customers in Ohio, Pennsylvania, West Virginia, Maryland, New Jersey and New York. FirstEnergy was founded in 1996 and is headquartered in Akron, Ohio.

Investment Thesis:

- **FirstEnergy is being unfairly punished by its headline risks regarding FES (bankrupt nuclear subsidiary; bailed out by state).** Due to unfavorable economics in the nuclear generating business, parent FE had spun off nuclear assets and liabilities to daughter FE Solutions (FES) in 2016. Shortly after FES declared bankruptcy and tried and failed to obtain a bailout from the Trump administration. Under the restructuring plan, FE will relinquish ownership of FES and provide the unit with roughly $1.1bn in cash and debt while waiving roughly $2bn in claims. Seen as an overall win for parent FE as they were transferring the nuclear cleanup liabilities to creditors, the restructuring plan hit a speed bump in June as presiding judge Alan M. Koschik initially denied the chapter 11 plan. Earlier this month (15/10), Koschik confirmed daughter FES' restructuring plan and cleared parent FE's potential liabilities in the nuclear cleanup and shutdown (now subsidized by $150m annual subsidy from Ohio's Republican-controlled legislature). Share prices had been trading slightly downward in the two weeks prior to the announcement but has largely recovered since then.
- **FirstEnergy is still undervalued compared to S&P 500 Utilities sector.** We see no operational reason as to why parent FE's latest PE (21.6x) is still four turns lower than the entire sector (25.3x). FE's (all figures LTM) ROA of 3.6% is significantly higher than industry's 2.8%, and its closest (in terms of market cap) competitor Eversource's (ES) 2.9%. FE's net debt/EBITDA and EBIT margins are typical of utilities (5.7x vs 5.3x, 20.8% vs 19.4%). We expect post-EBIT costs to decline over the next two years. Net income has been depressed due to write-downs, restructuring costs and interest expense. Following thesis point 1, extraordinary costs as a % of revenue should shrink and interest expense should decrease with the lower coupon bonds that management has planned to issue in 2020 and 2021. Most regulated utilities have at least an A- credit rating; S&P's current rating on FE debt is only a BBB. Expect credit rating improvements to lower future interest expense as the company completes its transition from diversified to regulated utility.
- **An improving business that is negatively correlated with our portfolio.** For example, while sell-side analysts are concerned with heavy capital deployment into Transmission, we believe management is executing the correct capital allocation strategy here. Transmission remains a high margin business (48.9% vs 18.1% Regulated Distribution EBIT) and remains the best avenue for lowering variable costs that come with earnings stability. Dividends, after being cut in 2014, look to increase 5% CAGR over the next three years, making the utility more attractive to fixed income investors. As management continues to unlock value for shareholders, we are opportunistically entering into a regulated utility that is low-beta and less exposed to commodities and the stock market.

Key Ratios and Statistics:

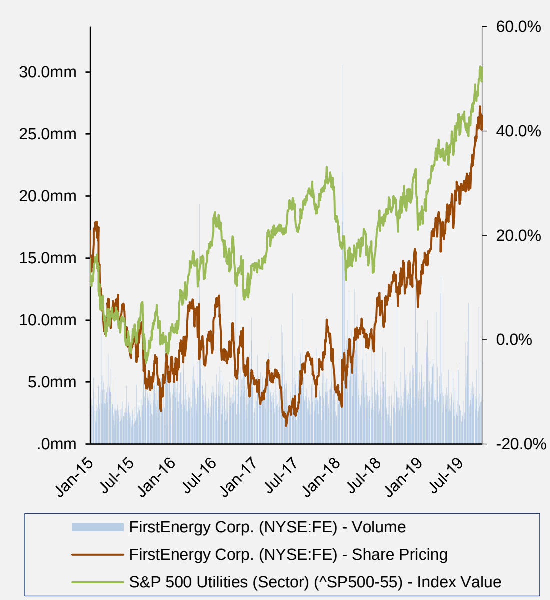
Price Target	**56.40 - 57.70**
Upside	16-19%
Share Price (3/08/19)	$48.38
Market Cap	$26.1 b
LTM P/E	21.6x
'21 Forward P/E	19.3x
Average Daily Volume	2.84 m
52-Week Low	$35.33
52-Week High	$49.07

FE metrics vs. Industry Comps

LTM metric	FE	S&P Utilities
P/E	21.6	25.3
ROA%	3.6%	2.8%
ROE%	16.4%	8.8%
Payout Ratio	77.0%	79.4%

FY - EPS	**2019E**	**2020E**	**2021E**
Distribution	2.33	2.38	2.48
Transmission	0.81	0.88	0.95
Corporate/Other	-0.50	-0.52	-0.55
Diluted EPS	2.64	2.74	2.87
Payout ratio	*58%*	*62%*	*62%*

Figure 1 – Share prices



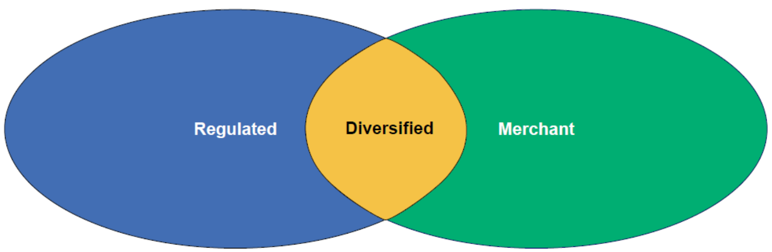
0. Industry Overview

FirstEnergy is moving away from merchant generation into the regulated utility business

Regulated vs. Merchant

The delivery of electricity can be divided into 3 broad aspects: generation, transmission and distribution. A **traditional, regulated, vertically integrated** business that is responsible for all 3 aspects of the delivery system is called a utility.

The alternative, **merchant** business model is to generate electricity as a tradable commodity that can is sold to the grid.



REGULATED
Widow and Orphan Stocks

- Rate of returns on investment set by regulators
- High Dividend Yield
- Modest EPS Growth
- Anemic Cash Yields

DIVERSIFIED
Bits of both worlds

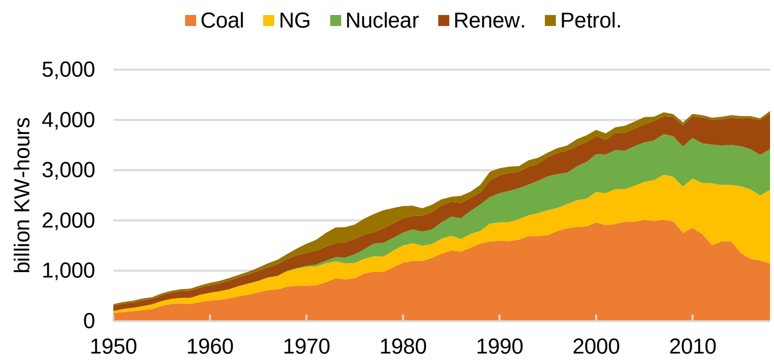
Regulated T&D + Merchant Generation

- Lower Dividend Yields
- Earnings Cyclicality
- Better Cash Yields

MERCHANT GENERATORS
Harvesting the spread between power and fuel costs

- Commodity exposure
- Typically do not pay dividends
- Earnings cyclicality

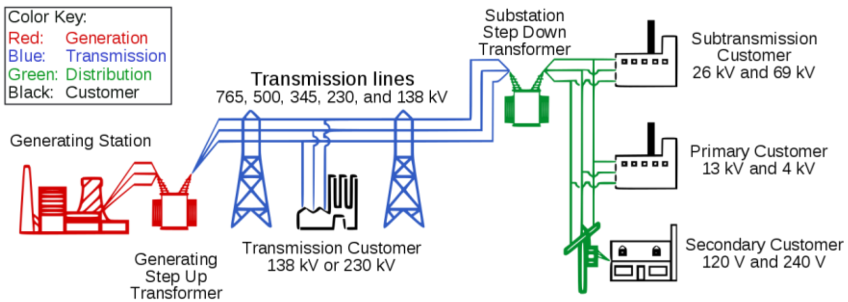
Electricity fuel by type (rise in NG share)



Electricity fuel by type (rise in NG share)

The bankruptcy of many **merchant businesses** has demonstrated record unprofitability in the generation business. By nature, the business is price-competitive and depends heavily on fuel commodity prices.

Transmission and distribution, while regulated, provide FE and other utilities with higher margins and predictable return on investment



Source: Morgan Stanley, EIA

0. Business model overview

How do regulated utilities make money?

Utilities' ROI is set by back-and-forth process with regulatory agencies

Retail markets for utilities fall under the jurisdiction of states. Agencies - such as Public Utility Commissions (PUCs) and Public Service Commissions (PSCs) - regulate a **regulated utility's** costs and rate of return. Municipal, co-op and non-profit utilities work differently; they are not public and for the purposes of an equity fund do not matter.

Utilities are allowed (by regulators) to earn a **"fair and reasonable" return on its "used and useful"** capital investments, i.e. **rate base**. Rate base = amount invested by utility in the electric system.

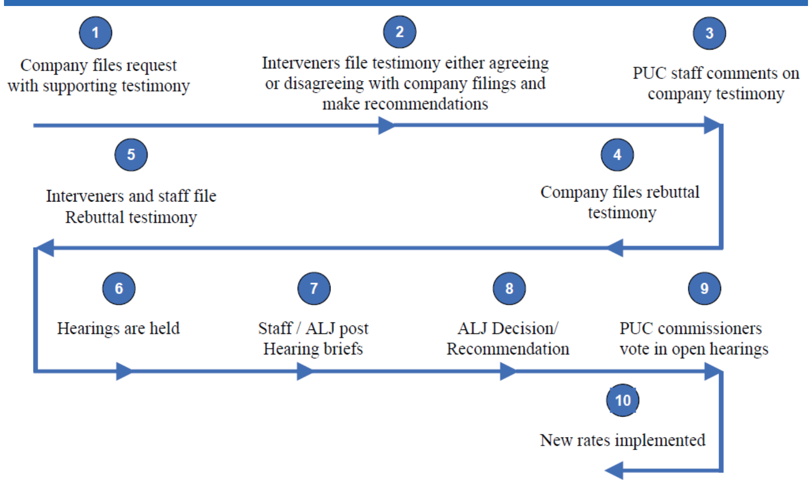
Regulators **will usually only approve increases in prices with a growing rate base**, so utilities almost always have capex > depreciation.

Capex > Depreciation -> Rate Base Growth

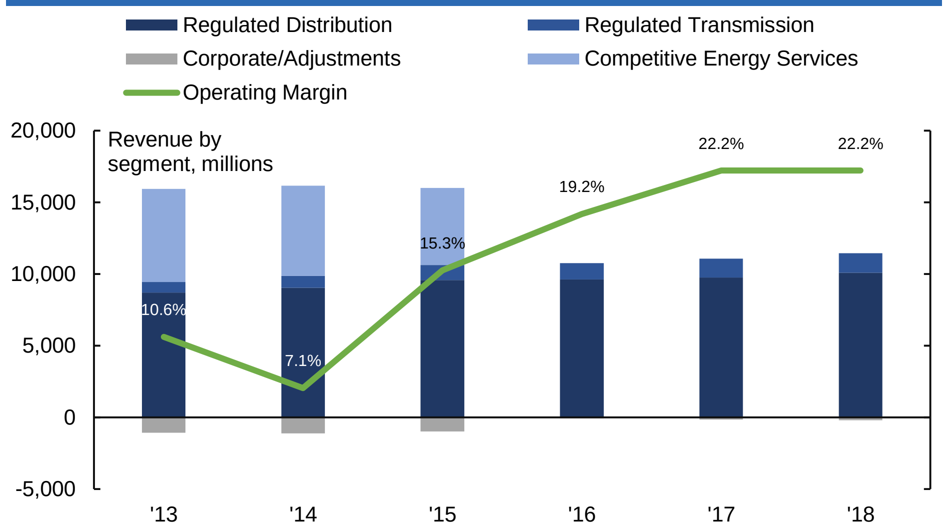
Capex < Depreciation -> Declining Rate Base

Net Income = Rate Base * Allowed ROE * Allowed Equity Ratio

Rate case typical timeline



FE '13-'18 revenue breakdown & operating margin %



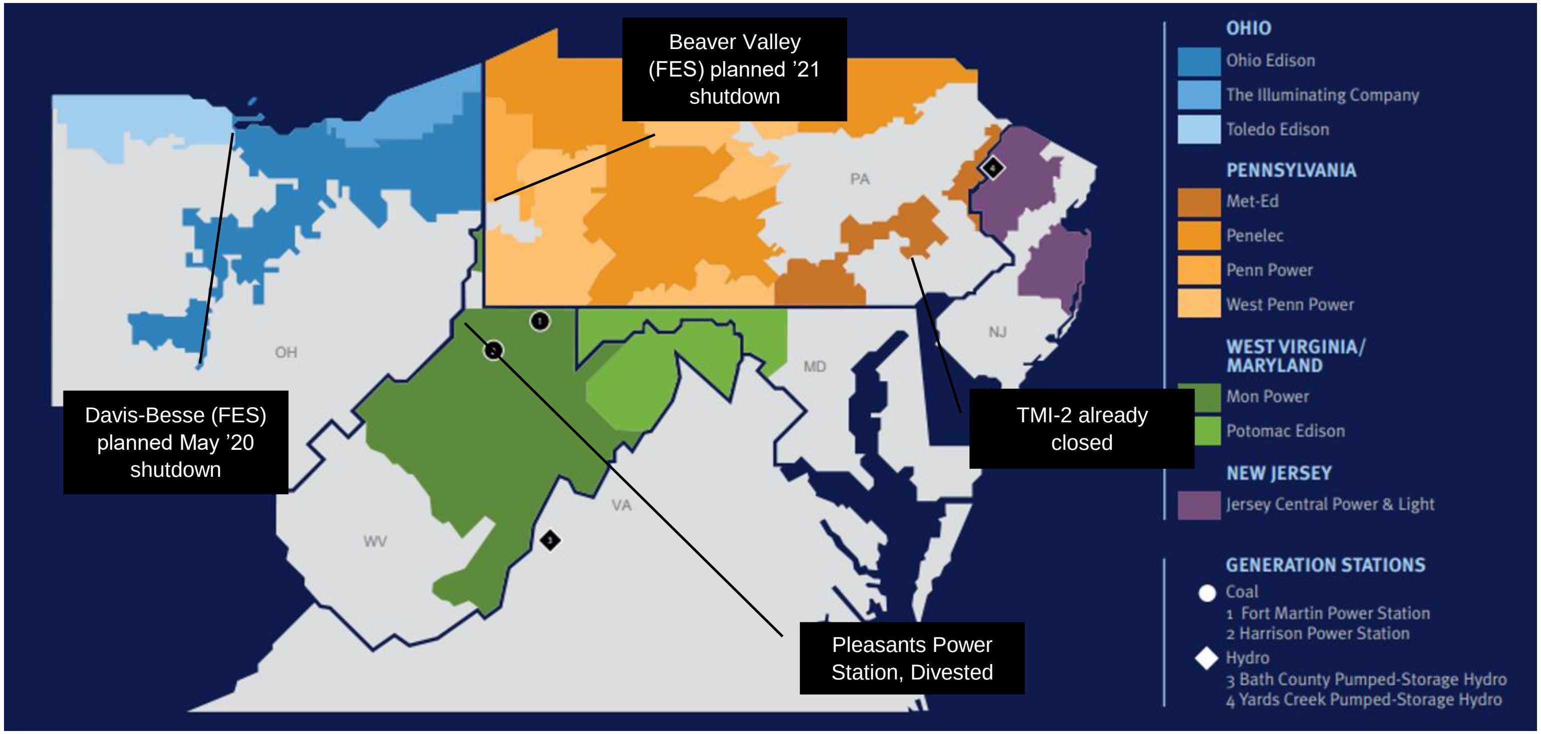
Source: Morgan Stanley, Capital IQ

I. Company overview

FirstEnergy Corp. (holding company) owns the following subsidiaries (operating companies)

FirstEnergy

- FE Transm.
  - ATSI
  - TrAIL Co.
  - MAIT
- Ohio Edison
  - Penn Power
- Cleveland Electric
- Toledo Edison
- Metropolitan Edison
- Penn. Electric
- West Penn Power
- Jersey Central P&L
- Monongahela Power
  - Allegheny Generating
- Potomac Edison



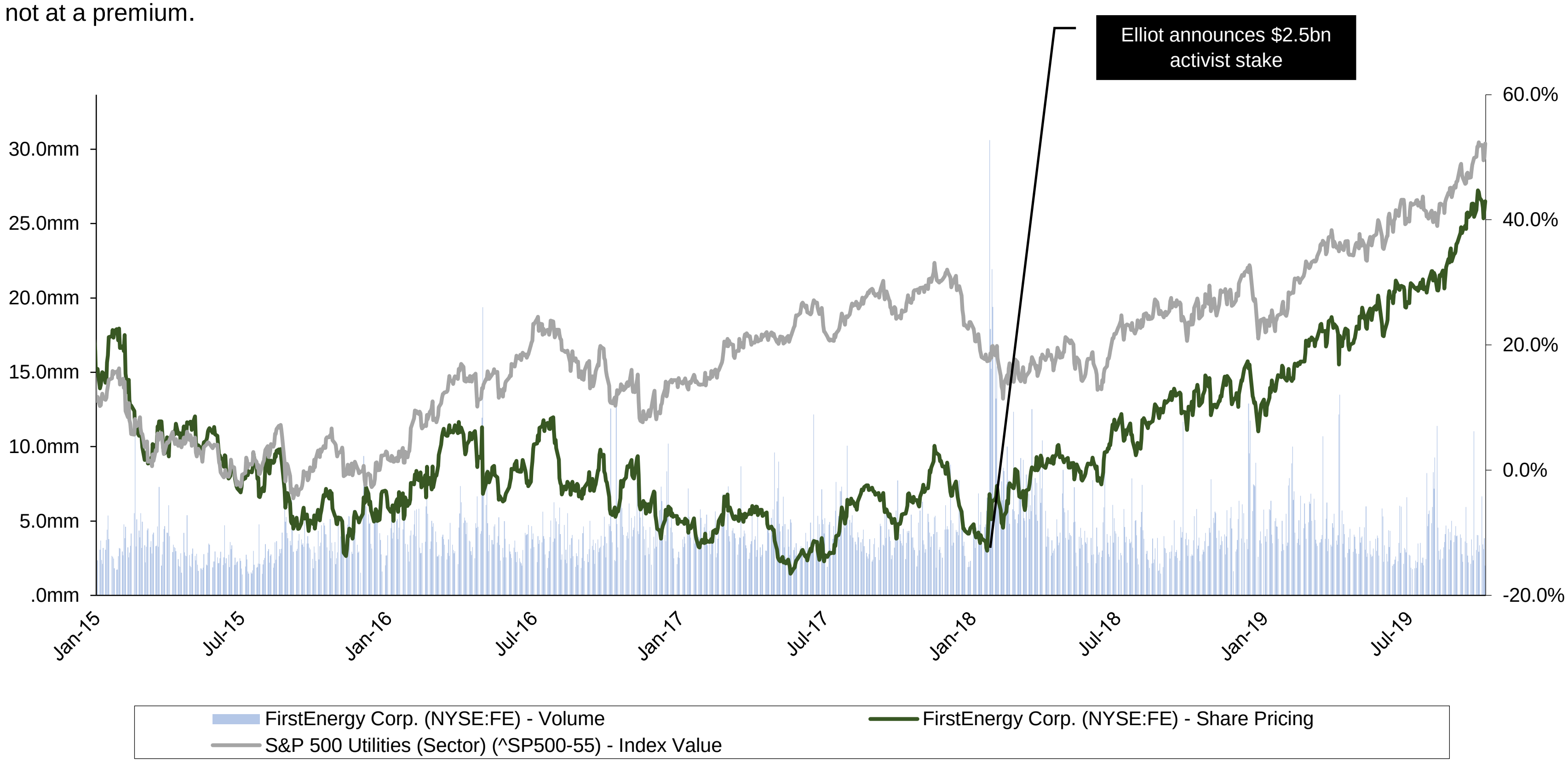
Source: Investor Factbook, July 24, 2019

II. Price note

FirstEnergy should be trading at least on par with the regulated sector, if not at a premium

Price Chart vs. S&P 500 Utilities Sector

On market price, shares are up ~40% over the last five years. Up 60% since Elliot Management's $2.5bn (1.6bn pref. + 850m common) equity investment in the company (1/22/18). The consortium led by Elliot includes (1) Bluescape, a value-oriented investment firm, (2) GIC, Singapore's sovereign wealth fund and (3) Zimmer Partners, L.P., a NY-based investment advisory firm. While discount vs sector has narrowed, we believe (1) the rally in utilities will continue as the economy stutters towards more rate cuts and (2) FirstEnergy should be trading at least on par with the sector, if not at a premium.

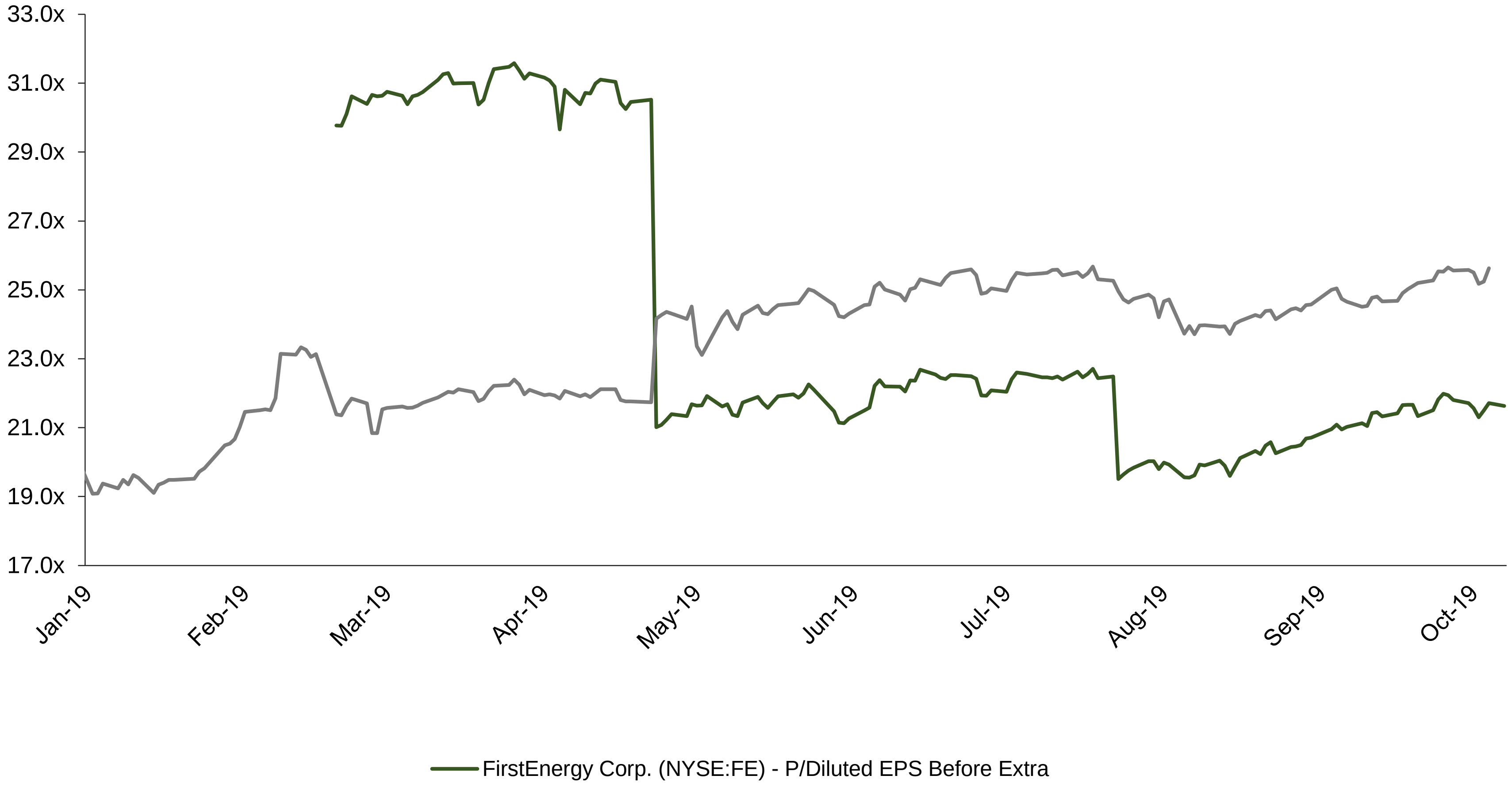


Source: Capital IQ

II. Relative value note

Despite price catchup, FE is still unfairly undervalued vs. sector on P/E and EV/EBITDA basis

P/E chart vs. sector, year-to-date



Source: Capital IQ

III. Intrinsic valuation (DDM): 19.3% upside

FirstEnergy - Operating Build	3/31/2018	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
	1Q18A	2Q18A	3Q18A	4Q18A	1Q19A	2Q19A	3Q19E	4Q19E	2017A	2018A	2019E	2020E	2021E
Aggergate rate bases													
Distribution										14,345	15,085	15,680	16,435
Transmission										6,030	6,745	7,500	8,135
Total rate base										20,375	21,830	23,180	24,570
dist. % growth											*5.2%*	*3.9%*	*4.8%*
trans. % growth											*11.9%*	*11.2%*	*8.5%*
agg. % growth											*7.1%*	*6.2%*	*6.0%*
Net income													
Distribution										1,200	1,253	1,297	1,349
Transmission										392	435	481	519
Corporate/other										-250	-268	-284	-301
Total net income							360	382		1,342	1,421	1,493	1,567
Diluted EPS													
Distribution										2.43	2.33	2.38	2.48
Transmission										0.79	0.81	0.88	0.95
Corporate/other										-0.51	-0.50	-0.52	-0.55
Consensus Ohio DMR										0.11			
Total diluted EPS										2.83	2.64	2.74	2.87
Growth											-6.76%	3.97%	4.92%
EBT	378	373	484	277	448	422	455	483	1,426	1,512			
Taxes from continued operations	233	101	133	23	93	81	96	101	522	490			
Tax rate, %	*62%*	*27%*	*27%*	*8%*	*21%*	*19%*	*21%*	*21%*	*37%*	*32%*			
Adj. net income	145.0	272.0	351.0	254.0	355.0	341.0	359.7	381.5	904.0	1,022.0	1,420.5	1,493.3	1,566.8
WA diluted shares out.	478	479	505	514	533	533	545	545	444	494	539	545	545
Adj. diluted EPS	**0.30**	**0.57**	**0.70**	**0.49**	**0.67**	**0.64**	**0.66**	**0.70**	**2.04**	**2.07**	**2.64**	**2.74**	**2.87**
Dividends per share	0.36	0.36	0.36	0.36	0.38	0.38	0.38	0.38	1.44	1.44	1.52	1.70	1.78
Payout ratio, %	*119%*	*63%*	*52%*	*73%*	*57%*	*59%*	*58%*	*54%*	*71%*	*70%*	*58%*	*62%*	*62%*

Gordon's Growth Model	3/31/2018	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
	1Q18A	2Q18A	3Q18A	4Q18A	1Q19A	2Q19A	3Q19E	4Q19E	2017A	2018A	2019E	2020E	2021E
Net income													
Distribution										1,200.2	1,253.4	1,296.5	1,349.2
Transmission										391.8	435.0	481.2	519.1
Corporate/other										-250.0	-267.9	-284.4	-301.5
Total net income							359.7	381.5		1,342.0	1,420.5	1,493.3	1,566.8
Year							0.25	0.50				1.25	2.25
Discount factor							0.99 x	0.98 x				0.95 x	0.91 x
PV of dividends							0.38	0.37				1.62	1.63

Sum of PV dividends	3.99
Terminal value	58.75
PV of terminal value	53.71
Intrinsic value	57.71
Current share price	48.38
Upside	19.3%

Historical correlation to commodities			
Company	Crude	NG	10-yr
HEI	0.61	-0.19	-0.83
DUKE	0.60	-0.30	-0.83
D	0.62	-0.22	-0.84
ED	0.59	-0.29	-0.84
NEE	0.48	-0.26	-0.71
EXC	0.81	0.38	-0.80
PEG	0.65	-0.10	-0.82
FE	0.72	0.25	-0.64
FE (Last 3 Years)		-0.32	

5-year Beta	
Covariance to S&P	0.000150
Variance	0.000335
FE 5-yr Beta	0.45
FE 1-yr Beta	0.42

Cost of equity	
Beta	0.45
10-yr treasury yield	1.73%
Equity risk premium	5.20%
Cost of equity	4.06%
Perp. Growth	1.00%

Valuation Method

2019, 20 and 21 estimated diluted EPS based on rate base growth and low-end range of rate case results. Slightly lower than management's expectations of 6-8% CAGR for next 3 years.

Div payout assumed at 62% for 2020E and 21E. 5-yr beta measured from historical price data and perp. Growth assumed to be 1%.

Equity risk premium obtained from internal sources.

FirstEnergy

IV. Relative value (EPS/share): 16.6% upside

FirstEnergy Corp. (Comparable Companies) [10/15/19]			Cap Structure				P/E				P/BV	Dividends	
Name	Ticker	Price	Shares out.	Mkt. cap	LTM net debt	D/E	LTM	NTM	2020E	2021E	LTM	Div yield	Payout ratio
NextEra Energy	NEE	229.54	479.1	109,973	40,698	37%	33.0 x	27.7 x	27.4 x	25.3 x	3.2 x	2.2%	67%
Eversource Energy	ES	85.57	323.6	27,690	15,198	55%	31.6 x	24.0 x	24.8 x	23.5 x	2.3 x	2.5%	75%
Xcel Energy	XEL	63.33	524.4	33,210	19,695	59%	25.9 x	23.4 x	24.2 x	22.7 x	2.6 x	2.6%	60%
Sempra Energy	SRE	145.49	274.6	39,952	26,284	66%	20.5 x	22.8 x	24.1 x	20.6 x	2.6 x	2.7%	52%
American Electric Power	AEP	92.34	493.8	45,597	28,656	63%	23.1 x	21.9 x	22.3 x	20.9 x	2.4 x	2.9%	66%
Entergy	ETR	117.23	198.8	23,305	18,653	80%	23.0 x	20.3 x	22.3 x	21.0 x	2.4 x	3.1%	70%
Con Edison	ED	92.22	332.1	30,626	20,676	68%	22.0 x	20.7 x	21.2 x	20.2 x	1.7 x	3.2%	65%
DTE Energy	DTE	129.89	183.3	23,809	15,144	64%	21.4 x	19.9 x	20.8 x	19.8 x	2.3 x	2.9%	59%
Southern Co.	SO	61.52	1,045.0	64,288	44,775	70%	14.5 x	20.2 x	20.2 x	19.5 x	2.4 x	4.0%	57%
Dominion Energy	DTE	81.90	821.9	67,314	42,197	63%	68.5 x	18.6 x	19.6 x	18.7 x	2.5 x	4.5%	295%
Duke Energy	DUK	95.97	728.6	69,924	62,212	89%	21.4 x	20.1 x	19.3 x	18.6 x	1.6 x	3.9%	79%
FirstEnergy Corp.	FE	47.89	540.0	25,861	20,489	79%	21.6 x	20.0 x	19.3 x	19.3 x	3.5 x	3.2%	255%
Public Service Enterprise	PEG	62.35	505.6	31,524	15,953	51%	21.6 x	18.2 x	19.2 x	18.2 x	2.1 x	3.0%	64%
Exelon Corp.	EXC	47.51	971.6	46,161	38,002	82%	20.3 x	15.0 x	15.2 x	15.4 x	1.5 x	3.1%	60%
Edison Int'l	EIX	71.33	358.1	25,543	18,060	71%	NM	15.7 x	15.1 x	15.7 x	2.2 x	3.4%	NM
PPL Corp.	PPL	31.43	722.2	22,699	22,514	99%	12.9 x	12.9 x	12.9 x	12.5 x	1.9 x	5.2%	66%
PG&E	PCG	8.02	529.2	4,244	23,164	546%	NM	2.1 x	2.1 x	2.1 x	0.4 x	0.0%	NM
Median				32,367	22,839	67%	21.8 x	20.2 x	20.5 x	19.6 x	2.3 x	3.1%	66%
Median (ex. EIX, PCG, PPL)				39,952	26,284	64%	22.0 x	20.3 x	21.2 x	20.2 x	2.4 x	3.0%	65%

Valuation Method

Estimated EPS in 2021 = Generation ($2.48) + Transmission ($0.95) – Corporate/Reconciliation ($0.55) = $2.87. FY '21 valuation of $56.43 based on median EPS multiple of 19.6x (including worst performing utilities) and FY'21 EPS estimate of $2.87.

FirstEnergy Corp. (Relative valuation)	
FY '21 EPS	$ 2.87
FY '21 median P/E	19.6 x
Implied share price	$ 56.43
Upside	16.6%

XPO Logistics (NYSE: XPO)

A Collection of High-Quality Assets Valued at a Discount

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Price Target: $91.3 (18% upside)

October 28th, 2019

Business Description:

XPO is a global provider of transportation and logistics services. Its transportation business comprises less-than-truckload (LTL), freight brokerage, European truckload (TL), global forwarding, last mile, and managed transportation segments. Its logistics business provides supply chain and contract logistics solutions. Founded in 1996 and based in Greenwich, Connecticut, XPO operates in North America, France, the United Kingdom, and internationally.

Investment Thesis:

- **High-Quality Collection of Assets Valued at a Discount:** XPO has a collection of assets from prior acquisitions that overall trade at 7.0x EV/2020E EBITDA. The Less-Than-Truckload (LTL) segment, for example, is particularly underappreciated. We believe that LTL is one of XPO's best assets as demonstrated by its superior 80% operating ratio profile relative to the peer average of around 89%. The LTL segment contributes $800mm (53%) to XPO's EBITDA. XPO also enjoys the margin of safety from its contract logistics business segment. Although the company is currently levered at 3.1x net debt/EBITDA, the recurring and re-occurring cash flow from its resilient contract logistics segment will well cover interest payment in Macro fluctuations.
- **Impact of Technology Investment and Superior Labor Profile Underestimated:** Short sellers, represented by Spruce Point, underestimate the impact of technology investments in the transportation and logistics industry and underappreciate XPO's superior labor profile. These two elements are critical in transportation and especially in LTL, where customers select contractors based on service quality characterized by high expediency and low loss rate. On the technology front, higher technology investment as a percentage of revenue corresponds to lower, improving operating ratio and delivery loss rate, directly impacting operating results and revenue generation. On the labor relations front, XPO has a non-unionized labor force, resulting in a considerably higher margin than its unionized peers. The indirect impact of a non-unionized labor force comes in the form of lack of labor antagonism, the prevalence of which will impact execution speed and therefore margins.
- **Ample Runway to Deploy Capital Leading to Additional Upside from M&A:** XPO's capital allocation capability is misunderstood. Critics accuse XPO of its "misaligned" $2.4 billion acquisition of Con-Way Freight, as it deviated from XPO's initial asset-light strategy. However, we think XPO's acquisition of Con-Way at 4.8x TTM EV/EBITDA is a demonstration of XPO's capital allocation capabilities, as LTL is intrinsically an even better industry than asset-light segments such as the fragmented freight brokerage industry, due to high barriers to entry and scale advantages. Given XPO's capital allocation expertise and strategy, the successful delivery of future acquisitions serves as another out-of-the-money call option.

Key Ratios and Statistics:

Price Target	$91.3
Upside	18%
Share Price (10/23/19)	$77.42
Market Cap	$7.21B
52-Week Low	41.05$
52-Week High	91.47$
Cash	497$M
Debt	5474$M
Avg. Daily Volume (90 day)	0.99M

USD: MM	2017A	2018A	2019E	2020E
Revenue	15,381	17,279	17,150	18,040
EBITDA	624	797	1,739	1,858
NI	340	422	448	483

Figure 1 – Share Price

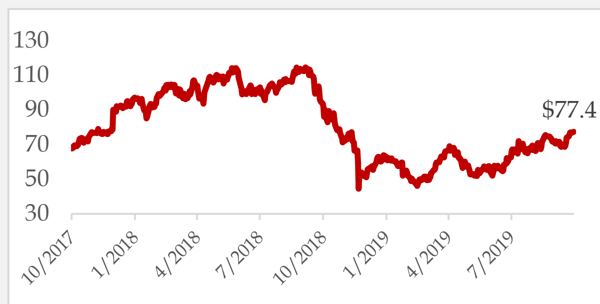
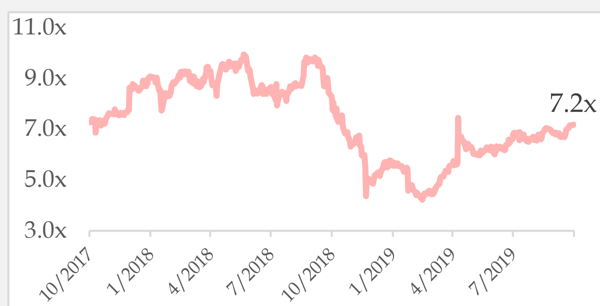


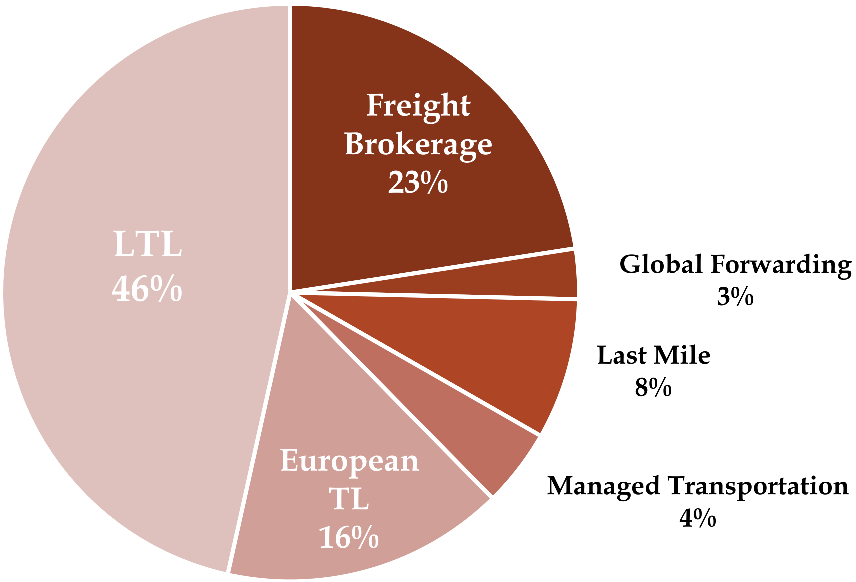
Figure 2 – NTM EV/EBITDA



XPO Overview

XPO is a combination of a variety of acquired businesses in the global logistics and transportation space.

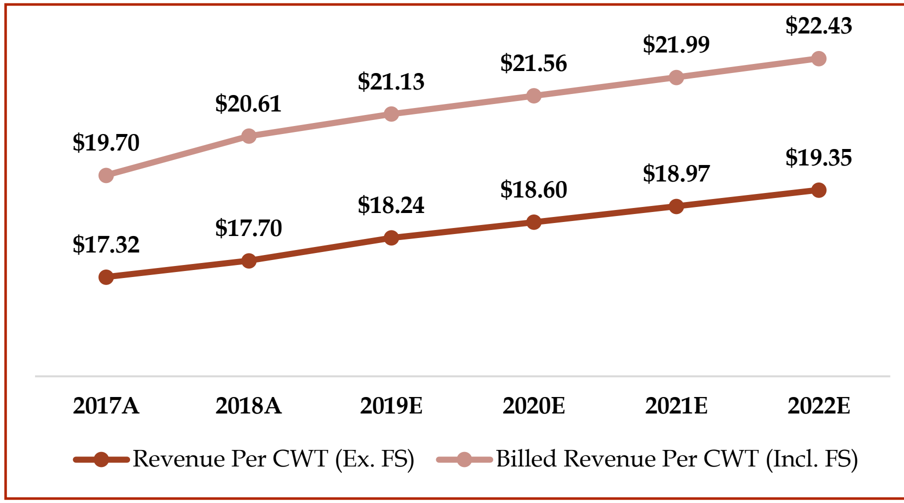
2020E Revenue Breakdown: Asset Heavy vs. Asset Light

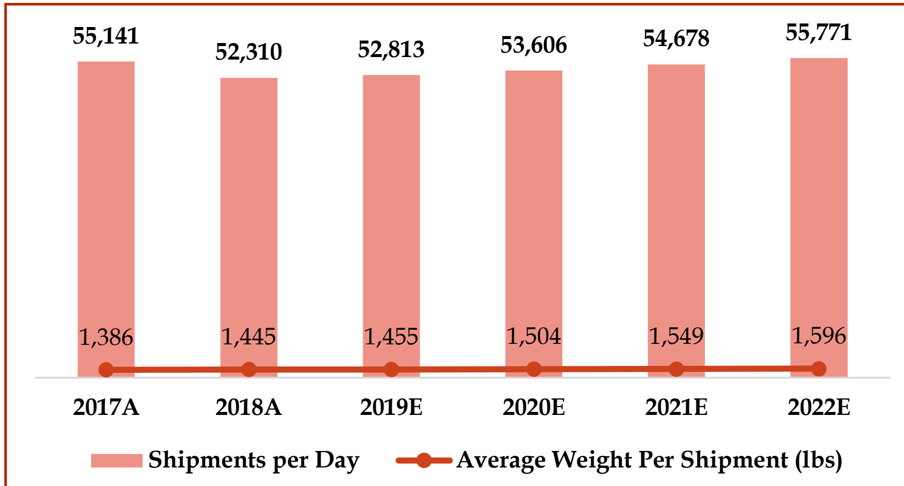


Asset Light (38%)
- Freight Brokerage (Truck Brokerage, IM, Expedite)
- Global Forwarding
- Last Mile
- Managed Transportation

Asset Heavy (62%)
- European TL
- LTL (NA + Europe)

Growing Unit Economics Operating Metrics





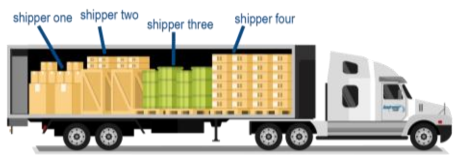
LTL Segment: A Leading Player in an Attractive Industry

XPO acquired Con-Way in 2015, one of the best players in the LTL space. I believe that LTL is an intrinsically more attractive industry than TL or even freight brokerage

What is LTL

Truckload (TL)

- Goods from the one shipper, one-stop
- Low barriers to entry, competitive



Less-than-Truckload (LTL)

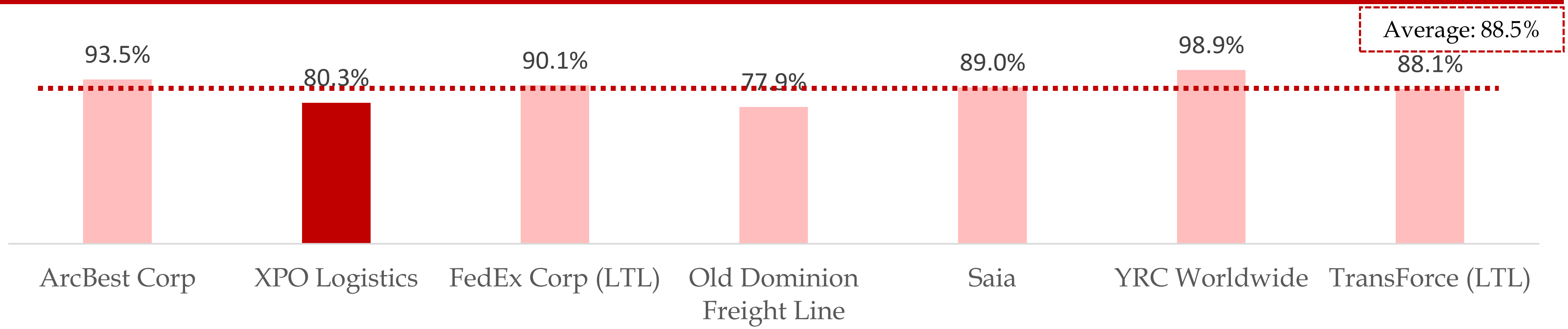
- Goods from more than one shippers, multiple pickups and stops; routed through network of service centers
- High barriers to entry, service center required

LTL is Highly Consolidated – Market Share

Rank	Description	2018A Revenue
1	FedEx Freight	15%
2	YRC Worldwide*	10%
3	Old Dominion Freight Line	8%
4	XPO Logistics	8%
5	UPS Freight*	6%
6	Estes Express Lines	6%
7	ArcBest Corp*	4%
8	R+L carriers	3%
9	Saia	3%
10	Southeastern Freight Lines	2%
	Total Market Share of the Top 10 Players	67%

** Represents Unionized Players*

Benchmarking LTL Operating Ratio (As of 2Q 2019)



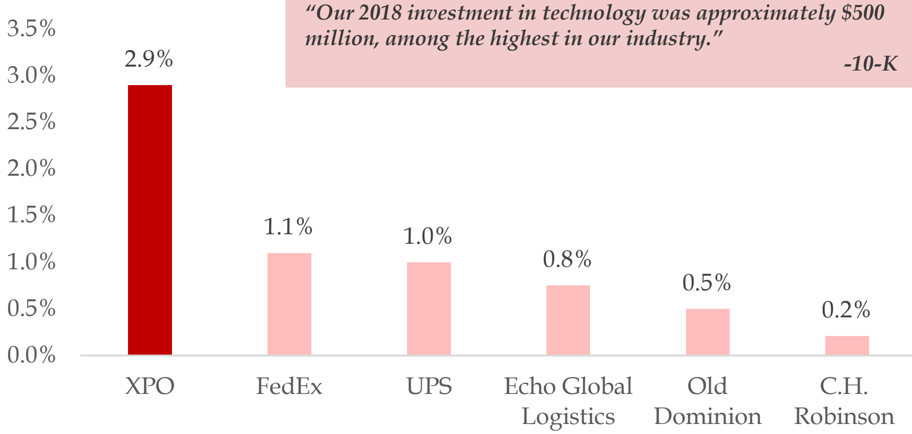
Source: Bloomberg, Company Information

Significant Technology Investment Creates a Long-Term Edge

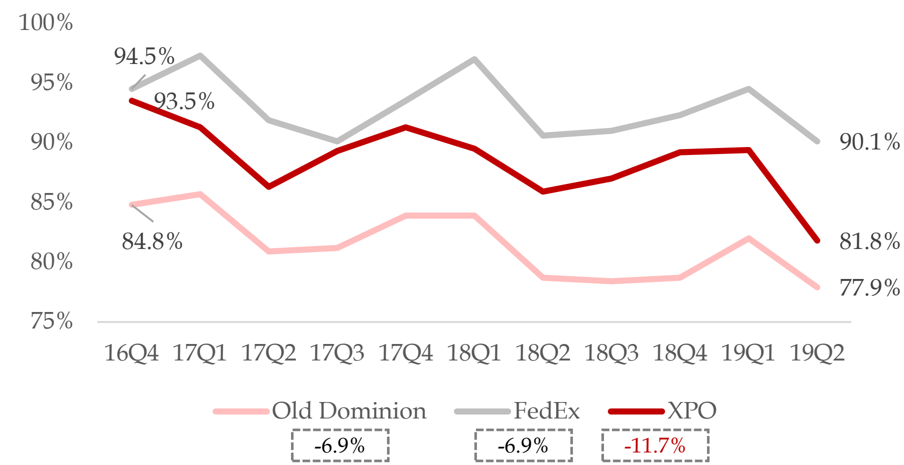
Technology investment creates results in direct operating ratio improvement that lasts

Technology Spend as % of Revenue

"Our 2018 investment in technology was approximately $500 million, among the highest in our industry."
-10-K



Operating Ratio Improvement



<u>**XPO Technology Investment Focus:**</u>

- Global team of approximately 1,700 technology professionals deploying proprietary software very rapidly on the **cloud-based platform**
  - New **pricing algorithm** technology in both LTL and Logistics, supported by 100+ data scientists.
  - Dynamic **route optimization** (lowers pickup and delivery costs, improves service), and intelligent **load building** (maximizing trailer utilization; reducing number of stops per truck).
  - **XPO Smart** (a workforce planning tool) implemented across the 290 terminal network
- Robots and robotic arms within its warehouses to perform difficult tasks and improve efficiency
- XPO Direct: shared distribution network to offer customers the ability to rent warehouse space that is closer to the end consumer in order to meet 1-2 day delivery windows - without the need to enter multi-year logistics contract. This results in lower transportation costs owing to shorter delivery distances.

Source: Credit Suisse Equity Research, Company Information, Bloomberg, FedEx data is based on FY19 instead of CY18

XPOLogistics

Where XPO Stands in Macro Ups and Downs

XPO captures the secular tailwinds in E-commerce primarily through its contract logistics and last mile segments. In the face of a recession, XPO's cash flow from contract logistics provides a protection due to the recurring nature.

XPO End Markets

Industry Served	% of Sales
Retail/E-Commerce	29%
Food and Beverage	16%
Consumer Goods	11%
Industrial/Manufacturing	9%
Automotive	9%
Agriculture/Chemicals	7%
Technology/Telecom	5%
Logistics/Transportation	4%
Home Furnishing/Business Materials	4%
Aerospace/Defense	4%
Business/Professional Services	1%
Energy/Oil & Gas	1%

Three Pillars – How XPO Should Be Understood

LTL

- Cyclical characteristics, but high operating margin (part of which is sustainable if our assumptions about tech investments are correct) relative to peers provide a cushion

Other Trans

- Truck brokerage, freight forwarding, and intermodal transport.
- Subject to Macro Impact, but some segments enjoy counter-cyclical characteristics, including rising margins during recessionary periods,

Contract Logistics

- Highly stable segment that enjoys predictable cash flows due to long-term contracts (5-7 years), high renewal rates (95%+), significant customer switching costs, and limited ongoing capital expenditure requirements.
- EBITDA covers interest payment and is likely resilient to Macro headwinds

"We only have about $200 million, $225 million of maintenance CapEx. Everything else is growth CapEx. So we have the ability to cut that back. And of course, as business slows, in a slowing environment, we get a benefit from working capital. So business unit wise, I would say, in a downturn, contract logistics, freight brokerage, some positive things in that in terms of margin. LTL, last mile, you see a negative effect from there. And overall, we'll see a benefit in the downturn from outsourcing trends."

-Bradley Jacobs, CEO

Source: SunTrust Robinson, Orbis Investment Management, Earnings Call 2018 Q3

XPO Logistics

Comparable Companies by Group

10/24/2019	Mkt Cap (USDmn)	EV (USDmn)	EV/EBITDA				P/E				18-21 CAGR			EBITDA Margin			Net Margin		
			2018A	2019E	2020E	2021E	2018A	2019E	2020E	2021E	Revenue	EBITDA	NI	2018A	2019E	2020E	2018A	2019E	2020E
XPO Logistics, Inc.	7,209	12,489	8.3x	7.5x	7.0x	6.4x	17.1x	17.9x	15.8x	13.2x	2%	9%	9%	9%	10%	10%	2%	2%	3%
Non-Unionized LTL Operators																			
Old Dominion Freight Line, Inc.	14,640	14,524	13.9x	13.1x	12.3x	11.8x	24.17	23.1x	21.7x	20.5x	5%	6%	6%	26%	27%	27%	15%	15%	15%
Saia, Inc.	2,532	2,784	11.4x	9.9x	8.9x	8.4x	24.12	20.6x	18.1x	16.4x	9%	11%	14%	15%	16%	16%	6%	7%	7%
Average			**12.7x**	**11.5x**	**10.6x**	**10.1x**	**24.1x**	**21.9x**	**19.9x**	**18.5x**	**7%**	**8%**	**10%**	**20%**	**21%**	**22%**	**11%**	**11%**	**11%**
Unionized LTL Operators																			
YRC Worldwide Inc.	165	1,258	4.7x	6.3x	4.7x	4.3x	8.17	NA	NA	6.3x	2%	3%	9%	5%	4%	5%	0%	(1%)	(0%)
ArcBest Corporation	776	832	3.6x	4.1x	3.9x	3.7x	11.54	10.9x	10.7x	9.0x	1%	(1%)	9%	8%	7%	7%	2%	2%	2%
Average			**4.1x**	**5.2x**	**4.3x**	**4.0x**	**9.9x**	**10.9x**	**10.7x**	**7.6x**	**1%**	**1%**	**9%**	**6%**	**5%**	**6%**	**1%**	**1%**	**1%**
Freight Brokerage Operators																			
C.H. Robinson Worldwide, Inc.	12,054	13,223	13.3x	13.2x	13.1x	12.7x	18.1x	18.5x	18.4x	17.6x	1%	1%	1%	6%	6%	6%	4%	4%	4%
Landstar System, Inc.	4,550	4,416	11.8x	12.2x	11.9x	11.9x	17.8x	19.1x	18.6x	18.7x	(2%)	(0%)	(2%)	8%	9%	9%	5%	6%	6%
Echo Global Logistics, Inc.	639	816	10.7x	9.4x	9.1x	8.1x	22.3x	15.9x	15.5x	14.0x	(0%)	10%	17%	3%	4%	4%	1%	2%	2%
Average			**11.9x**	**11.6x**	**11.4x**	**10.9x**	**19.4x**	**17.8x**	**17.5x**	**16.8x**	**(1%)**	**NA**	**5%**	**6%**	**6%**	**6%**	**4%**	**4%**	**4%**
Median			**11.8x**	**12.2x**	**11.9x**	**11.9x**	**18.1x**	**18.5x**	**18.4x**	**17.6x**	**(0%)**	**NA**	**1%**	**6%**	**6%**	**6%**	**4%**	**4%**	**4%**
Truckload Operators																			
Werner Enterprises, Inc.	2,610	2,962	6.7x	6.2x	6.2x	6.1x	15.5x	15.5x	16.4x	16.5x	2%	3%	(2%)	18%	19%	19%	7%	7%	6%
J.B. Hunt Transport Services, Inc.	12,456	13,674	12.2x	10.4x	9.8x	9.2x	25.4x	21.3x	19.8x	18.1x	6%	10%	12%	13%	14%	14%	6%	6%	6%
Knight-Swift Transportation Holdings Inc.	6,421	7,501	7.8x	7.9x	7.9x	7.3x	15.3x	16.6x	17.2x	15.2x	(2%)	2%	0%	18%	19%	19%	8%	8%	7%
Schneider National, Inc.	4,100	4,180	6.2x	6.7x	6.5x	6.1x	15.2x	17.5x	16.8x	15.2x	1%	1%	0%	14%	13%	13%	5%	5%	5%
Average			**8.2x**	**7.8x**	**7.6x**	**7.2x**	**17.9x**	**17.7x**	**17.5x**	**16.3x**	**2%**	**NA**	**3%**	**16%**	**16%**	**16%**	**6%**	**6%**	**6%**
Median			**7.2x**	**7.3x**	**7.2x**	**6.7x**	**15.4x**	**17.0x**	**17.0x**	**15.8x**	**2%**	**NA**	**0%**	**16%**	**17%**	**17%**	**6%**	**7%**	**6%**
Global Forwarding, Last Mile, or Managed Transportation Operators																			
Expeditors International of Washington, Inc.	12,799	12,095	14.2x	14.1x	13.3x	12.8x	20.7x	20.9x	20.1x	19.2x	5%	3%	2%	11%	10%	10%	8%	7%	7%
Kuehne + Nagel International AG	19,530	21,385	18.1x	12.0x	11.6x	11.0x	25.0x	24.6x	22.8x	21.3x	3%	18%	5%	6%	8%	8%	4%	4%	4%
Average			**16.1x**	**13.0x**	**12.5x**	**11.9x**	**22.8x**	**22.7x**	**21.5x**	**20.3x**	**4%**	**NA**	**4%**	**8%**	**9%**	**9%**	**6%**	**5%**	**6%**
Median			**16.1x**	**13.0x**	**12.5x**	**11.9x**	**22.8x**	**22.7x**	**21.5x**	**20.3x**	**4%**	**NA**	**4%**	**8%**	**9%**	**9%**	**6%**	**5%**	**6%**
Contract Logistics Operators																			
Deutsche Post AG (DHL)	43,791	60,696	11.9x	7.1x	6.4x	6.1x	18.8x	14.7x	12.8x	12.1x	4%	25%	16%	7%	12%	13%	3%	4%	5%
FedEx Corporation	40,697	71,102	8.2x	8.7x	9.0x	8.0x	8.2x	11.1x	12.1x	10.7x	3%	1%	(8%)	13%	12%	11%	7%	5%	5%
Panalpina Welttransport (Holding) AG	5,334	5,456	36.1x	18.6x	16.7x	15.3x	67.2x	NA	NA	NA	NA	33%	NA	2%	NA	NA	1%	NA	NA
DSV Panalpina A/S	21,899	24,117	27.4x	15.8x	13.1x	11.7x	36.8x	32.2x	26.6x	22.2x	18%	33%	18%	8%	11%	10%	5%	5%	5%
Average			**20.9x**	**12.5x**	**11.3x**	**10.3x**	**32.8x**	**19.4x**	**17.2x**	**15.0x**	**9%**	**NA**	**9%**	**8%**	**11%**	**11%**	**4%**	**5%**	**5%**
Median			**19.7x**	**12.2x**	**11.0x**	**9.9x**	**27.8x**	**14.7x**	**12.8x**	**12.1x**	**4%**	**NA**	**16%**	**7%**	**12%**	**11%**	**4%**	**5%**	**5%**
Global Delivery Providers																			
United Parcel Service, Inc.	98,813	116,015	15.1x	11.0x	10.2x	9.6x	20.6x	15.1x	14.1x	13.2x	4%	16%	16%	11%	14%	15%	7%	9%	9%
FedEx Corporation	40,697	71,102	8.2x	8.7x	9.0x	8.0x	8.2x	11.1x	12.1x	10.7x	3%	1%	(8%)	13%	12%	11%	7%	5%	5%
Average			**11.7x**	**9.8x**	**9.6x**	**8.8x**	**14.4x**	**13.1x**	**13.1x**	**11.9x**	**4%**	**NA**	**4%**	**12%**	**13%**	**13%**	**7%**	**7%**	**7%**
Global Average			**12.5x**	**10.2x**	**9.5x**	**8.9x**	**21.0x**	**18.1x**	**17.2x**	**15.3x**	**3%**	**9%**	**6%**	**11%**	**12%**	**12%**	**5%**	**5%**	**5%**
Global Median			**11.6x**	**9.7x**	**9.0x**	**8.3x**	**18.5x**	**17.7x**	**17.0x**	**15.2x**	**3%**	**5%**	**6%**	**10%**	**12%**	**11%**	**5%**	**5%**	**5%**

DCF Valuation

Discounted Cash Flow Output	Historicals			Projected				
USD: millions	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Gross Revenue	$14,619	$15,381	$17,279	$17,150	$18,099	$19,198	$20,098	$21,042
% change Y/Y	*91.8%*	*5.2%*	*12.3%*	*(0.7%)*	*5.5%*	*6.1%*	*4.7%*	*4.7%*
Adj. EBIT	$586	$647	$759	$957	$1,009	$1,128	$1,219	$1,276
D&A	$649	$658	$716	$733	$810	$850	$890	$905
Adj. EBITDA	$1,235	$1,306	$1,475	$1,690	$1,819	$1,978	$2,109	$2,181
(-) Cash taxes	$0	$0	$152	$191	$202	$226	$244	$255
(-) Net Change in working capital / other	$103	$86	$59	$146	$99	($41)	$152	$159
(-) Net Capex	$415	$386	$408	$421	$463	$496	$539	$563
Unlevered free cash flow	**$718**	**$834**	**$857**	**$932**	**$1,055**	**$1,298**	**$1,174**	**$1,203**
NPV Calculations				**4Q19E**	**2020E**	**2021E**	**2022E**	**2023E**
Present Value of Free Cash Flows				$228	$942	$1,058	$874	$818

Perpetuity Growth Method	
PV of FCF	$3,920
Perpetual growth rate	2.0%
Terminal Value	**$16,365**
NPV of terminal value	$11,128
Enterprise value	**$15,047**
(-) Debt	$6,012
(+) Cash	$1,139
(-) Minority Interest	$407
Equity value	**$9,767**
DSO	116
Target Price	**$88**
Share Price (10/23/19)	$77
Implied Upside	+14%

Exit Multiple Method	
PV of FCF	$3,920
Target Multiple	7.8x
Terminal Value	**$16,904**
NPV of terminal value	$11,494
Enterprise value	**$15,414**
(-) Debt	$6,012
(+) Cash	$1,139
(-) Minority Interest	$407
Equity value	**$10,134**
DSO	116
Target Price	**$91**
Share Price (10/23/19)	$77
Implied Upside	+18%

Perpetual Growth \ Cost of Capital	8.5%	9.0%	9.5%	10.0%	10.5%
1.00%	19%	7%	-3%	-12%	-19%
1.50%	29%	16%	5%	-5%	-14%
2.00%	41%	26%	14%	3%	-7%
2.50%	54%	38%	24%	11%	0%
3.00%	71%	51%	35%	21%	9%

Exit Multiple \ Cost of Capital	8.5%	9.0%	9.5%	10.0%	10.5%
6.5x	2%	-1%	-4%	-6%	-9%
7.0x	11%	8%	5%	2%	-1%
7.8x	24%	21%	18%	15%	12%
8.0x	29%	25%	22%	19%	16%
8.5x	38%	34%	31%	28%	24%

Source: IAG Forecast, IAG Analysis, Bloomberg

Sum of the Parts Valuation: What the Market Missed

The market incorrectly value XPO using a 7.0x EV/2020 EBITDA[1] multiple. Taking unionized players out of the comparable group, we reach a 9.0x 2020E EV/EBITDA multiple for LTL, representing slight discount to asset-light EBITDA stream to reflect the superior nature of the segment.

Asset-Light	Asset Heavy

	2020E Forecasted EBITDA	% of Total	2020E EV/EBITDA	Discount	2020E EV/EBITDA to Apply	Segment EV	Rationale
LTL	$989	48%	10.6x	15%	9.0x	$8,930	Average of Non-Unionionized Players with 15% Discount
European TL	$139	7%	7.2x	15%	6.1x	$852	Median of Major TL Providers
Freight Brokerage (Truck Brokerage, IM, Expedite)	$197	10%	11.9x	15%	10.1x	$1,998	Median of Major Freight Brokerage Providers
Global Forwarding, Last Mile, and Managed Transportation	$132	6%	12.5x	15%	10.6x	$1,399	Median of the Comparable Group
Logistics	$587	29%	11.0x	15%	9.4x	$5,501	Median of Major Logistics Providers
Total/Weighted Average	$2,044	100%	10.7x		9.1x	$18,679	

WACC Calculation	
Risk Free Rate	2.2%
Beta (Three-Year, Raw)	1.4x
Market Risk Premium	5.3%
Cost of Equity	9.6%
Cost of Debt	5.0%
Marginal Tax-Rate	20.0%
Long-Term Debt / Total Cap.	25.0%
WACC	**7.6%**
WACC Used	**9.5%**

Current Valuation	
Current EV	**$12,489**
Implied Current EV / 2020E EBITDA	**6.7x**

Multples Method	
Implied Enterprise value	**$18,679**
(-) Debt	$6,012
(+) Cash	$1,139
(-) Minority Interest	$407
Equity value	**$13,399**
DSO	116
Target Price	**$115**
Share Price (10/23/19)	$77
Implied Upside	+49%

Source: Company Information, IAG Forecast, Bloomberg

1. *EBITDA figure here is the consensus EBITDA estimate to avoid discrepancy in results stemmed from our operating model assumptions, which implies a 6.7x multiple.*

XPO Logistics

Recro Pharma, Inc. (NASDAQ: REPH)

An Ongoing Spinoff of Clinical Stage Drug Developer with Severely Mispriced CDMO Asset

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Srikar Alluri
Junior Analyst
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Price Target: $20.00 (59% Upside)

October 28th, 2019

Business Description:
Recro Pharma (NASDAQ: REPH) is a revenue-generating specialty pharmaceutical company developing multiple non-opioid therapeutics for the treatment of acute postoperative pain. The company currently operates two business segments – the acute care segment and CDMO businesses.

For its acute care business, the company is currently developing IV/IM Meloxicam, a proprietary, Phase III-ready, rapid-onset, long-acting preferential COX-2 inhibitor, and Dex-IN, a proprietary intranasal formulation of dexmedetomidine in Phase II, both for the treatment of acute postoperative pain. Both drugs are promising non-opioid class of drugs which could avoid potential side effects associated with commonly prescribed opioid therapeutics such as addiction, constipation, and respiratory distress while maintaining the analgesic effect.

For its CDMO business, the company currently operates 97,000 + sq. ft. cGMP DEA licensed solid oral dosage manufacturing with 24,000 sq. ft. development services facility and high potency product facility. The revenue includes commercial product sales, royalties and profit-sharing development services revenues. That segment has a high EBITDA margin with stable and predictable cash flow

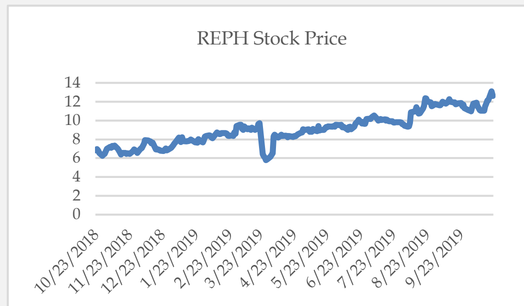
Company Business Analysis: CDMO Segment

- *CDMO is an attractive business*
  - CDMO is a business with secular growth amid industry tailwind that major pharma is trying to reduce cost during its R&D
  - Its contracts are mostly long-term contracts with significant switching cost, making drug manufacturer stay on the contracts
  - CDMO business is a high margin (top CDMO is around 20% margin). Also, CDMO's track record is critical as it could literally break an R&D project for a major pharma company. Therefore, they tend to work with the same or reputable CDMO to ensure the quality of its production
  - CDMO is a preferred target for PE as it could easily lever up with stable cash flow and good upside potentials
- *REPH CDMO is good asset*
  - The majority of its contracts are long-term contracts with major drug developers such as Novartis and Teva. Its underlying drugs are great in the markets (ADHD and Cardiovascular drugs), giving REPH great upside potential with ongoing royalty and profit-sharing agreement
  - Highly focused on complex production of extended-release, solid oral pills. REPH also held DEA licenses that allow them to produce control of substance drugs
  - The company has good bargain powers against its customers as REPH are holding either some forms of patents or NDA applications of its customers' drugs and production methods
  - Due to its royalty agreement, REPH CDMO segment has higher EBITDA compared to its peers in the small molecule spaces (30+% vs. 20%)
  - Significant under-utilized capacity at both Gainesville-area facilities. Roughly 70% of one shift (two total) at the older 97K sq ft facility, and only 10-20% of the newer 24K sq ft facility, are presently being used

Key Ratios and Statistics:

Share Price (10/24/19)	$13.06
Market Cap ($mm)	$282.36
Enterprise Value	$370.4
52-Week Low	$5.53
52-Week High	$13.47
Revenue (LTM)	$92.4
EBITDA (LTM)	($20.4)

Figure 1 – REPH Stock



<u>Company Drug Development Units Status</u>

- Historically, REPH focused on developing drugs under its Acute Care segment while basically using its CDMO segment as a source of funding. For context, REPH (a < $250mm market cap company) burned > $100mm from 2015 to 2018 funding intravenous meloxicam ("IVM"). IVM's drug application was rejected for a second time by the FDA this March, so REPH is now transitioning into a standalone CDMO.
- The company expected to continue to perform a multi-stage appeal to try to get their drug approved. The company had subsequently performed a restructuring on this segment by laying off 50 people and retained only essential employees for further appeals. Thus, significantly reduce the cash burn for the Acute Care Segment

<u>Opportunity for Us – Pending Spin-off of Acute Care and CDMO Business</u>

- After the company announced plans to eliminate all expenses not tied to seeking an FDA approval & monetization of IVM, the company further announced that it would spinoff the Acute Care segment (including IVM) by 4Q19. As a result, REPH will become a standalone CDMO. Historically, REPH has allocated corporate overhead to Acute Care. Though the CDMO has its own management team, REPH management has indicated the CDMO would have $3-5mm of public company costs post-spin off

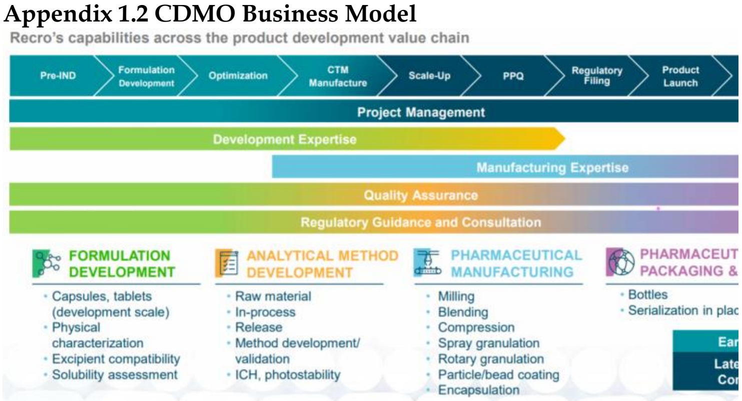
<u>Investment Thesis and Valuation</u>

- **This is not a regular Bet on the FDA approval or traditional "Pharma" pitch.**
- **We believe the spin-off would unlock significant values to its CDMO segment that are severely mispriced at the current valuation. Potential taxable spin-off provides a strong indication for the potential sale of CDMO businesses that could further substantiate its valuation**
  - Assuming the whole acute care segment worth absolutely nothing, on the current EV/EBITDA basis, it makes the CDMO business traded on an 8.5x (using $44mm 2019 EBITDA guidance). However, if you carefully look at comps and especially the M&A transactions, you will find that the company currently trade around at least a 40% discount to the comps as well as the M&A transaction multiples (14-16x EV-EBITDA)
  - The company is currently pursuing a taxable spin-off, which is essentially telling the market that they are up for sale. It will provide them clean carve-out financials with no issues with the future M&A transactions and no acute care business, which could be interested in most of the sponsors and pure-play CDMO.
  - I would argue that some players had approached them to say if they are interested in an M&A transaction. The current shareholder (Engine Capital and Vitallife Partners), based on its investment profiles and styles, would likely to interested in sales – Engine Capital is an activist, and Vitallife is a VC that invested in the company for a decade.
  - The Cambrex Acquisition and the recent sales BiovVectra to the respective PE firms show a strong appetite for the financial buyers on CDMO assets. To date, 2019 has seen several purchases (e.g., Brammer Bio, Cambrex, Paragon Bioservices, Vibalogics), and Cambrex itself had acquired Halo and Avista in 2018. This latest example is consistent with ~16x EBITDA multiples paid for contract development and manufacturing organizations in recent years.

Appendix 1.1 Existing CDMO Contract

Ritalin LA®	• Once daily ADHD treatment marketed by Novartis*
Focalin XR®	• ADHD treatment marketed by Novartis*
Verapamil/Verelan	• CV/high blood pressure treatment marketed by Teva** and Lannett
Zohydro ER®	• Extended release hydrocodone marketed by Currax (Previously Pernix)

Appendix 1.2 CDMO Business Model



Appendix 1.3 CDMO Business Performance

CDMO Segment ($millions)	2017 (unaudited)	2018 (unaudited)	Q2 YTD 2019 (unaudited)	2019 Estimate
Revenues	$71.8	$77.3	$56.3	$91 - $94
Operating Income	$25.4	$24.9	$24.6	$35 - $39
Operating Income, as Adjusted*	$25.4	$23.5	$21.6	$34 - $36
EBITDA, as Adjusted*	$33.8	$32.2	$26.6	$44 - $46