



## U.S. Equity Strategy

# Management Sentiment NLP Model 3Q Update: Capex Headwind Persists

**With 3Q19 earning season almost behind us, we update our management sentiment natural language processing (NLP) model, which implies that capex growth is likely to remain subdued, as indicated by management discussions during earnings calls and softening economic indicators.**

- We laid out a framework that forecasts capex growth using an NLP model of management sentiment toward capital expenditure expressed during earnings calls (see *Management Sentiment NLP Model Implies Subdued Capex Growth*, 24 September 2019).
- We constructed a robust NLP indicator that holistically detects the management outlook for companies' capital spending, which broadly tracks the economic cycle and capex growth.
- We combine our NLP signals with leading economic indicators to build a robust capex forecasting model. We show that both indicators offer complementary explanatory power for capex growth over the next four quarters.

Looking at 3Q19, our NLP model suggests that management sentiment is increasingly negative about the outlook for capital expenditures, which lends credence to the view that trade tensions and the broader non-U.S. economic slowdown continue to weigh on U.S. corporate sentiment, slowing down corporates' investment activities. **We expect zero capex growth for the next three quarters with only a mild uptick going into 3Q20.**

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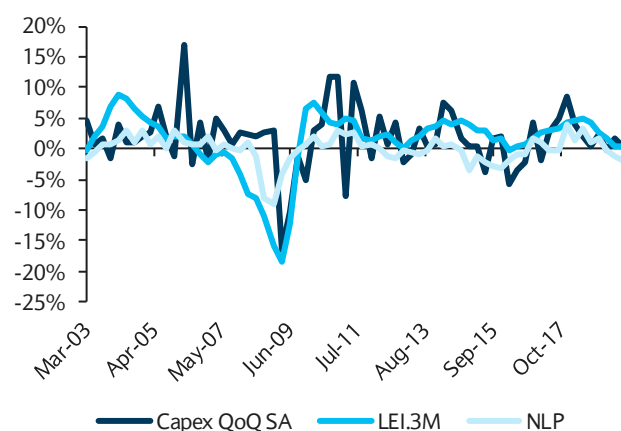
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## 3Q19 NLP Signal Suggests that Capex Headwind Persists

- In a recent note, we laid out a framework that forecasts capex growth using a natural language processing (NLP) model of management sentiment toward capital expenditure expressed during earnings calls (see *Management Sentiment NLP Model Implies Subdued Capex Growth*, 24 September 2019).
- The details of the methodology employed to construct the NLP model, as well as the discussions of our general framework for event detection in transcripts, are elaborated in *Natural Language Processing: Grammar Rules for Event Detection in Corporate Transcripts*, 2 October 2019.
- We construct the NLP sentiment indicator to capture the holistic U.S. management outlook for companies' capital spending. Figure 1 plots the time series of Leading Economic Indicator (LEI, 3M), NLP sentiment indicator and the capex growth for S&P 1500 ex-FIN, which shows that the NLP indicator broadly tracks the economic cycle and capex growth.
- We combine our NLP sentiment indicator with leading economic indicators to build a robust capex forecasting model. Figure 2 summarizes the capex growth model, and it is clear that the NLP signal remains statistically significant after accounting for economic indicators.

FIGURE 1  
NLP signal broadly tracks LEI (3M) and the capex growth



Source: Barclays Research, Haver, Refinitiv

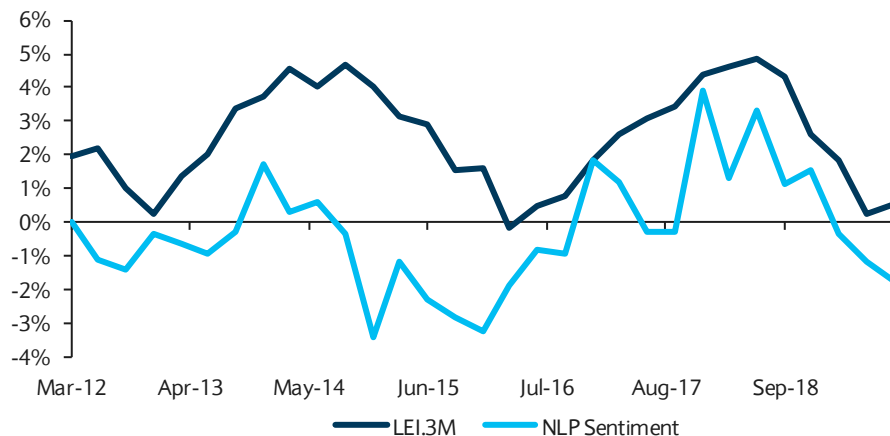
FIGURE 2  
The combined capex growth model summary statistics

Final	Intercept	NLP	LEI	Capex QoQ SA
	Coefficients			
1	0.01	0.61	0.30	-0.09
2	0.03	1.78	0.42	-0.22
3	0.05	2.46	0.59	-0.23
4	0.07	2.29	0.96	-0.42
R <sup>2</sup>	T-stat			
26%	2.90	2.14	2.14	-0.76
53%	3.26	4.91	1.60	-1.67
64%	3.87	4.50	1.98	-1.95
57%	4.13	2.58	2.18	-2.37

Source: Barclays Research, Haver, Refinitiv

- As 3Q19 earning season is almost behind us, we update our NLP signal for S&P 1500 ex-FIN. Figure 3 plots the NLP signal and leading economic indicators. The management sentiment for companies' future capex spending slides further into negative territory, accompanied by softening economic indicators. This lends credence to the view that trade tensions and the broader non-U.S. economic slowdown are weighing on U.S. corporate sentiment.

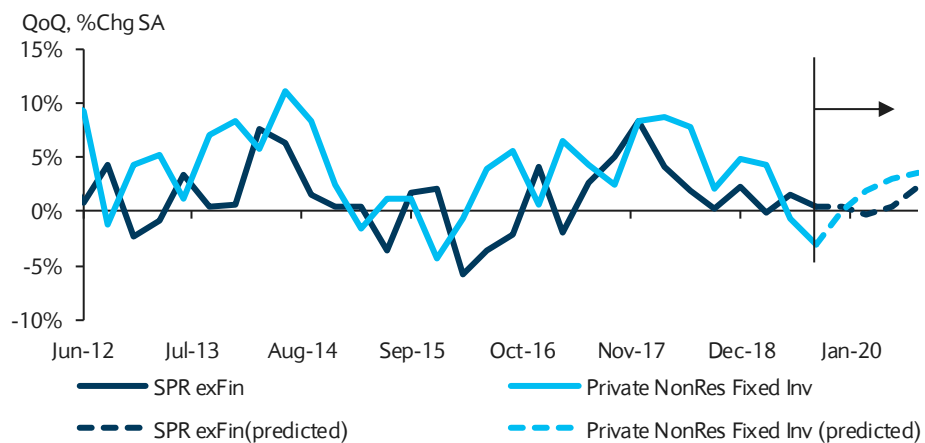
FIGURE 3

**The 3Q19 management sentiment for capex growth worsens**

Source: Barclays Research, Haver, Refinitiv

- In Figure 4, we plot our forecasts for the next four quarters of capex growth for SPR exFIN. Based on the latest NLP and LEI signals, our model predicts stronger headwinds for capex than previously estimated, with almost no capex growth for the next three quarters, and a modest rebound in 3Q20. This is generally consistent with the Barclays Economics Research view on private non-residential investment, which is also on the path to a slow recovery (*US Country Snapshot*, 15 November 2019).

FIGURE 4

**We predict capex growth to remain subdued before a slow recovery**

Source: Barclays Research, Haver, Refinitiv

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