

Measuring Sentiments during the COVID-19 Outbreak

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April 2020

The coronavirus, or COVID-19, continues to make headlines every day, since the World Health Organization China Country Office received a series of pneumonia cases of unknown cause in late December 2019¹. As of the end of March 2020, there were over 700,000 confirmed cases of coronavirus across more than 200 countries, which has resulted in over thirty-five thousand deaths. While the outbreak develops, corporates from different sectors and regions exhibit different level of concerns about the situation.

In this paper, we utilize the S&P Global Market Intelligence Transcripts data package and Estimates data package to help us find the answers to the following questions:

- a) How can we identify companies that might be more impacted by the COVID-19 outbreak?
- b) Does this group of companies exhibit a change in sentiment since the outbreak and how does it compare to its peers in the same country and sector?
- c) Is there an alignment in sentiment between sell-side analysts and senior executives from this group of companies?

¹Source: World Health Organization, [Coronavirus disease \(COVID-19\) Pandemic](#)

Measuring the Sentiments of Companies

Frank Zhao, Senior Director, Quantitative Research, S&P Global Market Intelligence (2017, 2018) outlined how natural language processing can be used to extract sentiment from a company's earnings call transcripts¹. Zhao documented a significant correlation between sentiment scores and the forward stock returns. We use the following sentiment signals for our analysis adopting the same methodology used for preprocessing the transcripts and the definition of positive and negative words from the paper.

Table 1: Definition of Net Positivity Score

Sentiment Signal	Definition
Net Positivity Score	$\frac{\text{Positive Word Count} - \text{Negative Word Count}}{\text{Total Word Count in Transcript}}$

Source: S&P Global Market Intelligence, [Natural Language Processing – Part I](#), September 2017

Constructing the List of Companies Impacted by the COVID-19 Outbreak

As the first step, we would like to identify companies whose businesses are more likely to be impacted by the outbreak. Since the first case of COVID-19 was reported in late December 2019, our analysis focuses on earnings calls that were held in the first two months of 2020, which we define as the outbreak period for APAC. As of February 29, 2020, 914 APAC companies held their earnings calls in English and we use these companies as our Analysis Universe. Using the S&P Global Market Intelligence Transcripts data package, we classify the companies into two groups using the following definitions:

Table 2: Definitions of APAC Analysis Universe

Group Name	Definition	Number of Companies in APAC
COVID-19 Unwary	Companies that did not mention the term “coronavirus” or “COVID” in their earnings calls	601
COVID-19 Wary	Companies that mentioned the term “coronavirus” or “COVID” in their earnings calls	313

Source: S&P Global Market Intelligence

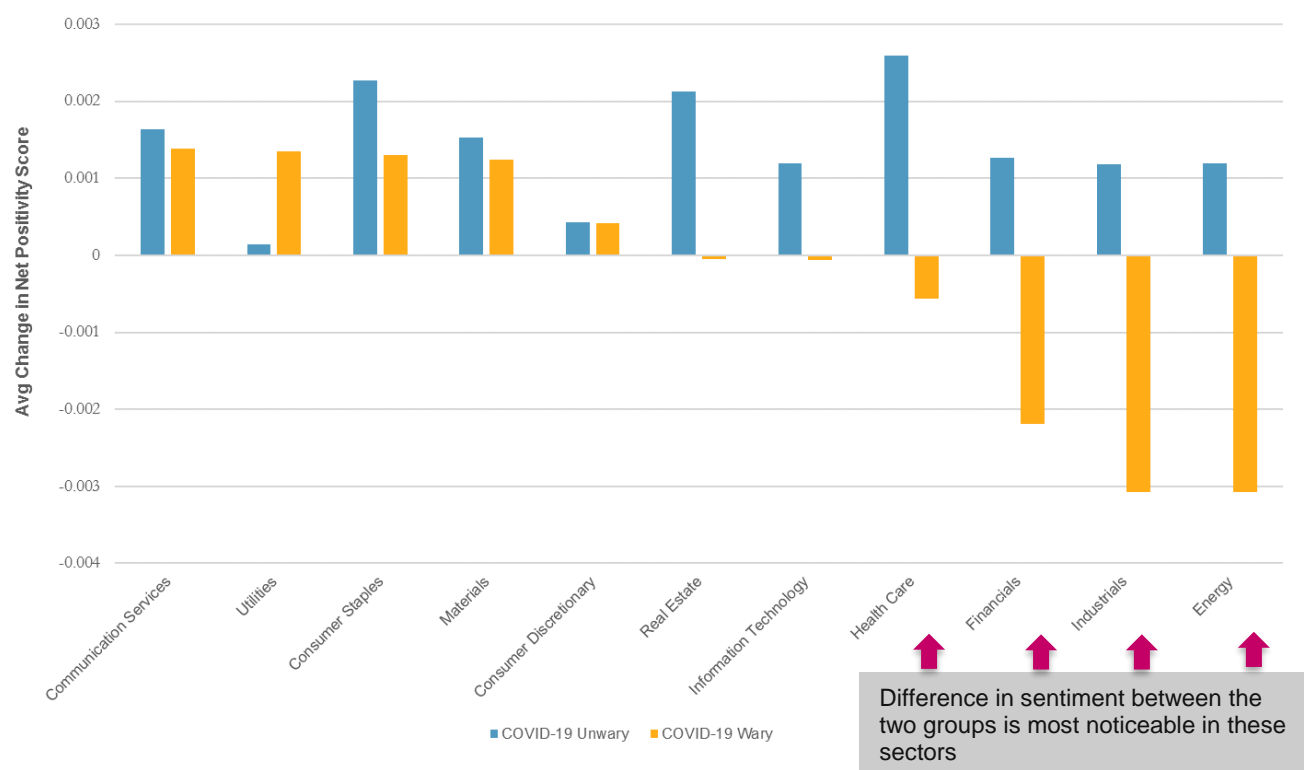
Our result shows that 313 companies in the Analysis Universe mentioned the term “coronavirus” or “COVID” during the call, while the remaining 601 companies did not. With this classification, we were able to determine the Net Positivity Score for companies within these respective groups. Then, we calculate the quarter-over-quarter (QoQ) difference in Net Positivity Score in order to compare the change in their sentiment in the first two months of 2020.

¹Source: S&P Global Market Intelligence, [Natural Language Processing – Part I](#), September 2017

Sentiment of APAC Companies in Different Sectors

Figure 1 depicts the QoQ change in the average Net Positivity Score for COVID-19 Unwary and COVID-19 Wary companies respectively at the sector level. The contrast between these two groups is quite apparent. According to our analysis, within APAC there is a positive QoQ change across all sectors for companies in the COVID-19 Unwary group. On the other hand, when the same study is applied to companies within the COVID-19 Wary group, 6 out of 11 sectors had a negative change in their average Net Positivity scores. We observe the greatest negative change in executive sentiment in the Health Care, Financial, Industrials, and Energy sectors. The differences in Net Positivity Scores between the COVID-19 Wary and Unwary Groups are also largest in these four sectors.

Figure 1: Quarter-over-Quarter change in Average Net Positivity Score for APAC Sectors



Source: S&P Global Market Intelligence as of February 29th, 2020. Charts are for illustrative purposes only.

APAC Sectors Sentiment vs. U.S. Sector Sentiment

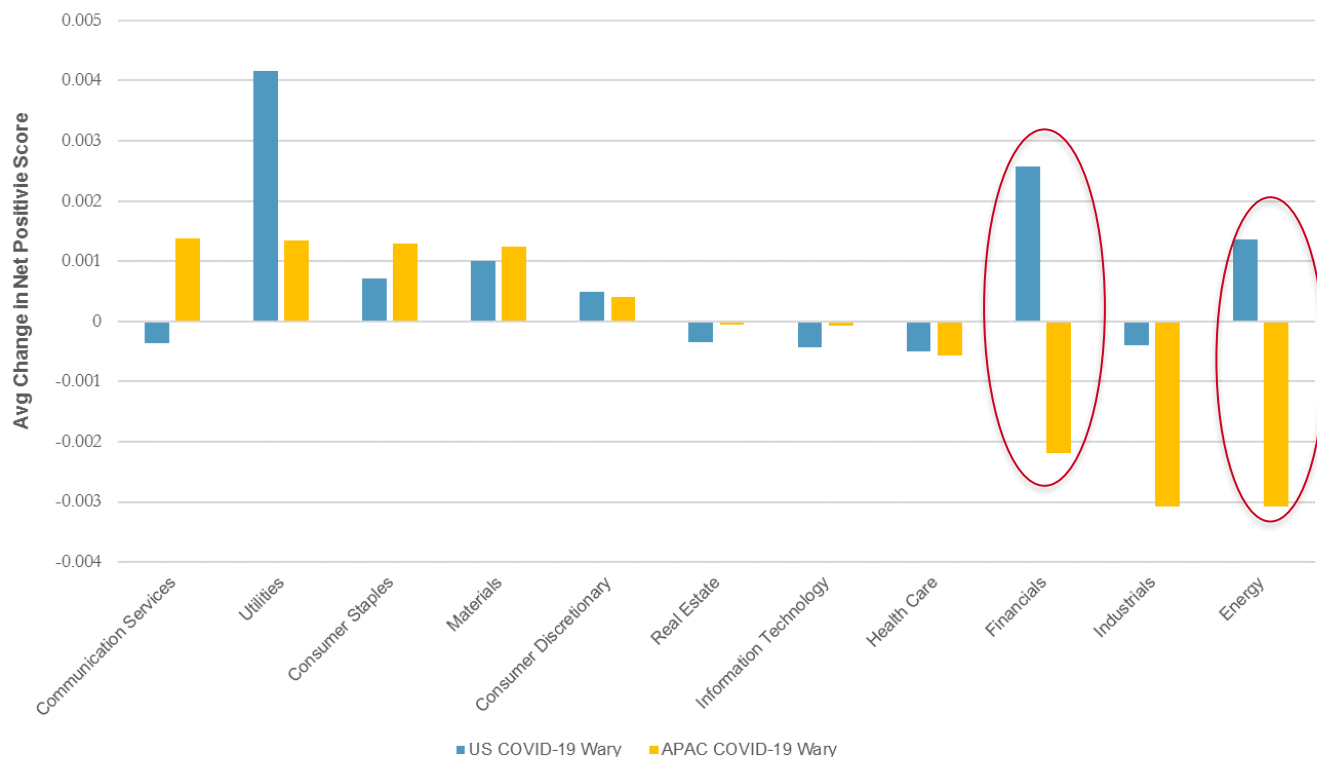
Given the fact that China reported a large number of infections in the first two months of 2020, we also study the effect of the outbreak on one of its top trading partners – The United States of America². During this period, 576 U.S. companies mentioned “coronavirus” or “COVID” in the earnings call. We did a similar sector sentiment analysis on US companies that belong to the COVID-19 Wary group and provided a side-by-side comparison of their changes in executive sentiment in Figure 2.

²Source: United States Census Bureau, [Top Trading Partners - January 2020](#)

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Our results show that 8 out of 11 sectors from both regions exhibited a change in sentiment in the same direction. Similar to the APAC COVID-19 Wary Group, there is a significant positive change in sentiment within the Utilities sector. However, interestingly, although APAC companies from the Financials and Energy sectors had a substantial negative change in sentiment, these two U.S. sectors exhibited a positive sentiment change over the same period.

Figure 2: Quarter-over-Quarter change in Average Net Positivity score for US Sectors in COVID-19 Wary Group



Source: S&P Global Market Intelligence as of February 29th, 2020. Charts are for illustrative purposes only.

Sell-Side Analysts Reaction to the COVID-19 Outbreak

In this section, we continue to focus on the APAC COVID-19 Wary companies and compare their sentiment with the sell-side analyst sentiment using data provided in the S&P Capital IQ Estimates Consensus package. Since we are mostly interested in finding out whether analyst sentiments are aligned with corporate sentiments instead of the sentiment measures themselves, we have applied the following standardization methodology to the QoQ change in earnings estimates to make the two datasets more comparable.

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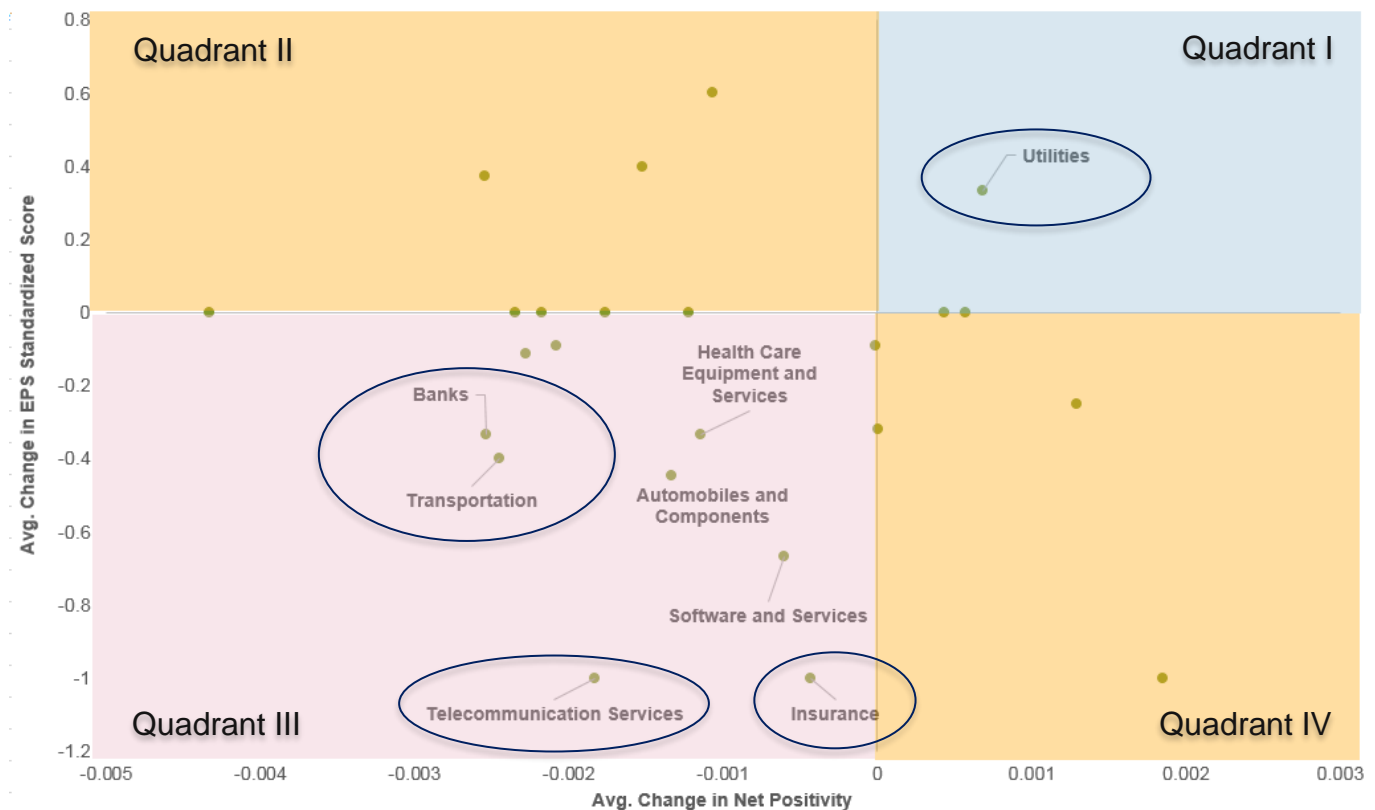
Table 3: Standardization Methodology for Changes in Sell-side Analyst Consensus Estimates

QoQ EPS Change Direction	EPS Standardized Score
Positive	1
No Change	0
Negative	-1

Source: S&P Global Market Intelligence

Then, we calculate the average Net Positivity Score and EPS Standardized Scores at the GICS Industry Group level, which provides a finer classification of companies than GICS Sectors. To better visualize the correlation between these two metrics, the data is presented as a scatter plot as shown in Figure 3.

Figure 3: EPS Standardized Score vs Net Positivity Score Quadrant Chart for APAC COVID-19 Wary Group



Source: S&P Global Market Intelligence as of February 29th, 2020. Charts are for illustrative purposes only.

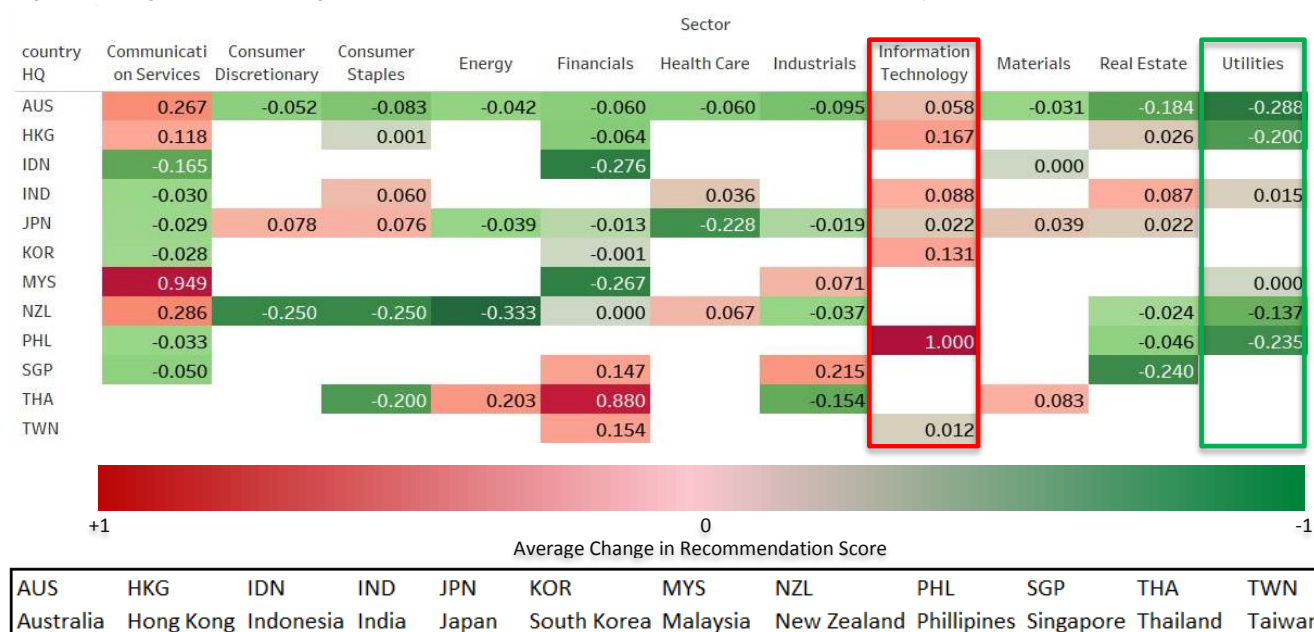
In our analysis, the Industry Groups located in Quadrant I and Quadrant III indicate a relatively strong correlation between the sentiments of the company executives and sell-side analysts, in either the positive or negative direction. The further away an Industry Group is from the origin, the stronger the agreement is. For example, in Quadrant I, both the executives and analysts share a fairly positive view towards the Utilities Industry Group when they talk about coronavirus or COVID-19. In the same manner, in Quadrant III, the executives and analysts both exhibit a rather negative view towards the Banks, Transportation, Telecommunication Services, and Insurance Industry Groups.

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Change in Recommendation Scores of APAC Analysis Universe

Finally, we look at the change in the average Brokers Recommendations within the APAC Analysis Universe across different countries and sectors. The S&P CIQ Estimates Recommendations are based on a 5 point scale where a score of 1 indicates a strong buy, 3 a hold, and 5 a strong sell recommendation. In Figure 4, the numbers shown in each country-sector pair indicates the change in the average recommendation score (as of February 29, 2020). The color of each cell indicates whether these average scores were moving toward the buy or sell direction when compared to the average recommendations captured at the start of the year. A red cell indicates that the recommendations have moved towards the sell direction and a green cell indicates that the recommendations have moved towards the buy direction. Our observation is that brokers generally recommend Utilities companies regardless of their countries of origin; whereas Information Technology companies are to be avoided in their opinion.

Figure 4: Magnitude of Change in Recommendations for All APAC Companies in Analysis Universe



Note 1: Numbers in each cell indicate the change in the Equal weighted average brokers recommendation score. A negative change indicates the recommendation is moving toward the buy direction; a positive change indicates the recommendation is moving toward the sell direction.
 Note 2: Hue of color in each cell indicates whether the QoQ change in average scores were moving toward the buy (green) or sell (red) direction.
 Source: S&P Global Market Intelligence as of February 29, 2020. Charts are for illustrative purposes only.

Summary

In this article, we illustrate one method of closely tracking companies using the earnings call transcripts that can help investment managers to identify themes in an unprecedented environment. First, we wanted to find out which companies are COVID-19 conscious by dividing all APAC companies that held earnings call in English between January to February 2020 into two groups – companies that have mentioned the term “coronavirus” or “COVID” and companies that did not mention these two terms. We then looked at the change in sentiments in their earnings calls and aggregated the change of Net Positivity Scores by sectors and found negative change in the Financials, Industrials and Energy sectors.

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We then compared the APAC COVID-19 Wary group with the US counterparts and found APAC companies exhibited a distinct negative sentiment in Financials and Energy while we saw a positive change in the average sentiment of these two sectors in the U.S.

Subsequently, we took the APAC COVID-19 Wary group and calculated the average EPS changes by sell-side analysts before and after these earnings calls. We identified Utilities, Banks, Transportations, Telecommunication Services, and Insurance where analyst sentiments agreed with the executive sentiments

Finally, we looked at the change in recommendations during the outbreak period for APAC Analysis Universe by country.

With S&P Global Market Intelligence Transcripts and Estimates data package, investment managers can analyze and monitor the sentiments of executives and sell-side analysts across various countries and sectors, discover investment themes, and navigate any turbulent times of increased volatility, such as the current coronavirus outbreak.

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Appendix:

Appendix 1: Count of APAC Companies that did not mention “coronavirus” or “COVID” within each Country-Sector Pair

country HQ	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
AUS	12	21	2	8	25	16	16	17	25	22	5
CHN	1							1			
HKG	2	1	2					1		2	
IDN	2				1						
IND	23	36	24	3	58	18	63	39	39	15	10
JPN	9	5	4	2	4	7	7	5	4	2	
KOR	3	1			3			1			
MYS	2										1
NZL	2	1		1		1	1			1	5
PHL	1									1	
SGP					1					3	
THA	2			1	1		1				
TWN	2				1			5			

AUS	HKG	IDN	IND	JPN	KOR	MYS	NZL	PHL	SGP	THA	TWN
Australia	Hong Kong	Indonesia	India	Japan	South Korea	Malaysia	New Zealand	Philippines	Singapore	Thailand	Taiwan

Appendix 2: Count of APAC Companies that mentioned “coronavirus” or “COVID” within each Country-Sector Pair

country HQ	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
AUS	3	19	8	4	10	5	9	6	9	6	
CHN					1			1			
HKG	1				1			1		1	1
IDN		1			2				1		
IND	1	40	4	5		16	19	4	40		2
JPN	6	8	2	2	2	5	13	3	4	1	
KOR								4			
MYS					1		1				
NZL	1	1	4		1	2	2		1	2	
PHL								1		1	1
SGP	2				3		6	1		3	
THA			1	1					1		
TWN								5			

References:

- Zhao, F. (2017, September). Natural Language Processing - Part I: Primer: Unveiling the Hidden Information in Earnings Calls
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