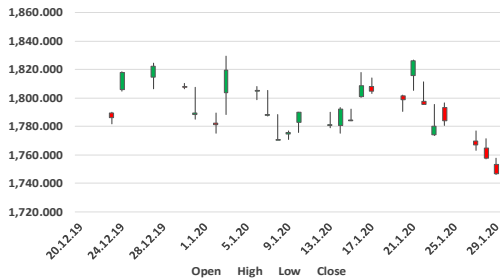


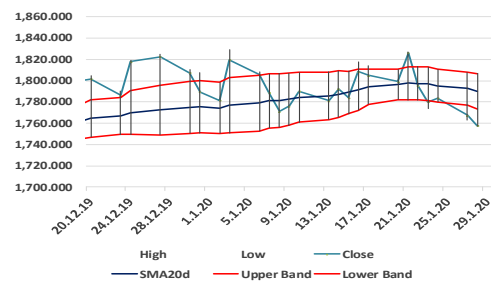
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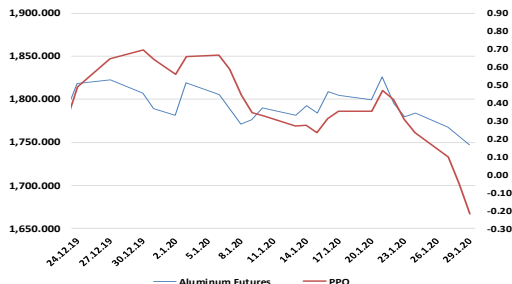
Graph 2: **Candle Chart** (December 20, 2019 – January 29, 2020)



Graph 3: **Bollinger Bands** (December 20, 2019 – January 29, 2020)



Graph 4: **PPO** (December 24, 2019 – January 29, 2020)



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## ALUMINUM Futures: 1,746.25

[Bloomberg Ticker: LMAHDS03:COM] US Dollars per Tonne

### Graph Analysis

According to Graph 1, during the 6-month period August 2019 – January 2020 there has been no clear sign of a bullish or bearish market for the Aluminum Futures. During the examined period, 4 secondary movements emerged. Aluminum followed an upward trend until September 11<sup>th</sup>, 2019. The second movement was a downward trend which lasted until October 2<sup>nd</sup>, hitting the lowest point of the examined period, at 1,690. Then, an upward trend followed until November 5<sup>th</sup>, hitting the highest point of the examined period, followed by many fluctuations until January 21<sup>st</sup>, 2020. Thereafter, a downward trend emerged until the end of January 2020. Regarding the support levels, they seemed to be formed broadly at 1,689.75, while the resistance levels were formed at around 1,827.75. Looking at the candle sticks in Graph 2, there were many day-to-day fluctuations, with mainly negative candle bars being formed in the second half of January. On January 23<sup>rd</sup>, aluminum passed below the 10-day and 20-day moving averages, indicating a potential sell signal, further supported by PPO, Graph 4, which later moved into negative territory. In contrast, the price crossed below the lower band of Bollinger Bands, Graph 3, during the last trading sessions of January providing a potential oversold signal.

Graph 1: **Aluminum Futures (LMAHDS03:COM) Commodities** (August 02, 2019 – January 29, 2020)



### Fundamental Analysis

In the first five days of August 2019, aluminum's and other base metals' prices fell after the announcement of U.S. President Donald Trump, that he would apply a 10% tariff on the remaining \$300 million of Chinese imports. Also, the Chinese data showed a decrease in factory activity, which caused fears of weak consumption of the metal. The next few days, aluminum's price recovered due to supply disruptions, but the last days of the month, it fell again because of the escalation of the Sino-U.S. trade war and China's economic slowdown. | The metal's price followed an upward trend during the first half of September 2019 because of expectations that the U.S.-China trade war's tensions would ease and that Indonesia would expand its nickel export to other minerals. The rest of the month, the trend reversed due to the low demand, the fall of alumina prices and the weak manufacturing and economic indicators. | In October 2019, there were many fluctuations with no clear trend because of changes in demand and supply of the metal. The last trading sessions of the month, the metal's price rose after the last round of US-China trade talks and the announcement of Rio Tinto Ltd over a possible pullback of New Zealand's Aluminium Smelter. | During the first days of November, aluminum's price rose due to the supply shortage caused by the reduction in the metal's inventories. After that, a downward movement emerged until November 14<sup>th</sup>, because of President Trump's comments about raising tariffs on Chinese goods if a deal fails to be agreed. On November 15<sup>th</sup>, aluminum gained ground, based on the rising hopes about an interim U.S.-China trade deal that would increase demand for industrial metals. However, in the next two trading sessions, the base metal lost its gains after large aluminum inflows into LME registered warehouses. | An upward movement emerged until December 2<sup>nd</sup>, after U.S. and Chinese officials' optimism on reaching a trade agreement and strong manufacturing data from both nations. In the next few trading sessions, aluminum slipped due to President Trump's warning over an increase in the tariffs on aluminum imports from Argentina and Brazil. On December 18<sup>th</sup>, aluminum rebounded as the expected realization of a U.S.-China trade deal sparked optimism about the metal's demand. In the last days of the month, aluminum prices dropped after Norsk Hydro restarted its bauxite production in Brazil, due to a power outage earlier during the month. | In early January 2020, the rising U.S. currency led to a reduction in the base metal's price. However, aluminum bounced back during that month after the signing of the Phase One trade deal agreement between China and the U.S. rose expectations for an increase in the metal's demand, further supported by the decrease in the metal's stocks and the weakening of the U.S. dollar. In the remaining days of January, aluminum's price decline could be attributed to the coronavirus outbreak in China, which raised concerns about the impact on the global economy.

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Examined Period	January 29, 2019 – January 29, 2020
Standard Deviation	179.18
Average	1,795.84
Range	-153.50
Range (%)	-8.080%
Max	1,935.50
Min	1,689.75
Max Daily Range	52.50
Min Daily Range	0.50

Examined Period	November 28, 2016 – January 29, 2020
Standard Deviation	168.18
Average	1,958.76
Range	-127.25
Range (%)	-6.792%
Max	2,548.00
Min	1,689.75
Max Daily Range	73.88
Min Daily Range	0.03

**Important Note:**

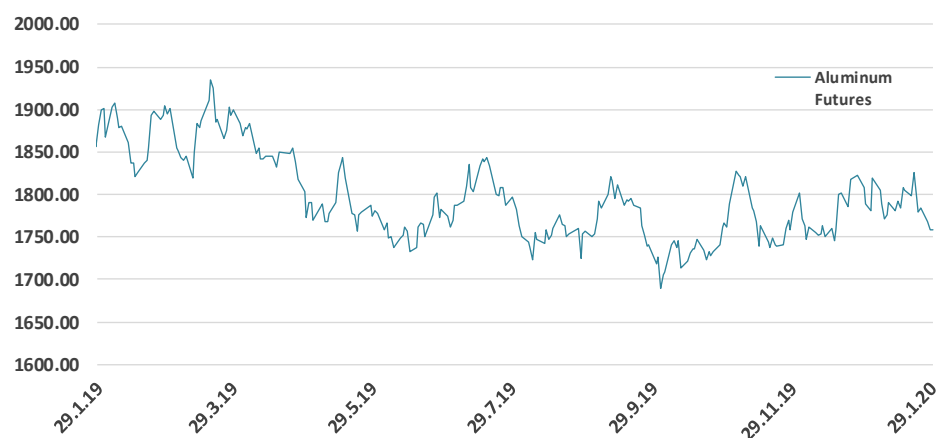
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## ALUMINUM Futures: 1,746.25

[Bloomberg Ticker: LMAHDS03:COM] US Dollars per Tonne

### Graph Analysis

Graph 5: Aluminum Futures (LMAHDS03:COM)  
Commodities (January 29, 2019 – January 29, 2020)



Graph 6: Aluminum Futures (LMAHDS03:COM)  
Commodities (November 28, 2016 – January 29, 2020)



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Covered Security	Bloomberg	Rate	Date	Disclosure
ALUMINUM Commodity Futures	LMAHDS03:COM	USD 1,746.25 per Tonne	January 29, 2020	----

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3. VRS has changed the contents of the initially sent report, with respect to: factual changes have been made.
4. VRS has received compensation from the covered company for the preparation of this research report.
5. VRS produces research reports for this company on systematic basis.
6. VRS produces research reports for this company on demand basis.
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