

# COVID-2019 IMPACT: MARCH 19 UPDATE

March 19, 2020

By Dan Tracy, Ph.D., Jiaqi Tian and Lita Shon-Roy , TEHCET

TEHCET's Supply-Chain Impact Summary (TSIS) provides an update on the coronavirus (COVID-19) situation. Information includes trends pertaining to the spread of the virus and the impact on economic activity.

## 1. SUMMARY

The COVID-19 situation in the past week as worsened as it has spread globally. In response, governments around the world have instituted border closures, travel restrictions, and community shutdowns. It is now recognized that the global economy will experience a recession in 2020 given the restricted economic activity caused by the response to dealing with the COVID-19 virus.

Industry contacts in Shanghai report they are returning to the office to work though employees wear facemasks at work. The elderly and young are asked to stay indoors and away from crowds. No supply chain disruptions have been reported.

Lam Research issued a press release on March 17, 2020, multiple bay area counties in California issued a "shelter-in-place" order, which requires it to temporarily stop on-site work at its Fremont and Livermore locations for three weeks effective March 17, 2020. Additionally, Lam has supply chain activities in Malaysia, and on March 16, 2020, the Malaysian government issued an order to close certain business activities from March 18 through March 31, 2020.

The Lam Research announcement follows the March 16<sup>th</sup> announcement by the Malaysian government that nonessential businesses are to shutdown operations to control the spread of the COVID-19 virus. It is TEHCET's understanding the assembly & packaging facilities and fabs received an exemption to this edict.

The SIA is also preparing a statement to call on US Local and State and Federal governments to specify semiconductor industry operations as "essential infrastructure" and/or "essential business" to promote continuity in operations of an industry that underpins vital sectors of the US economy.

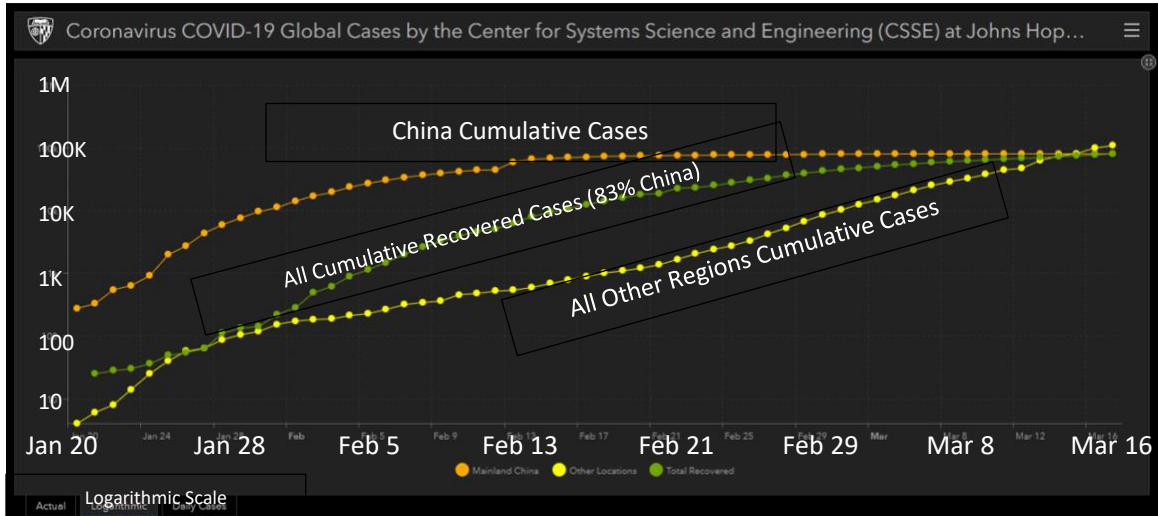
## 2. GLOBAL RATE OF INFECTION

Cumulative tracking of new cases (in and outside of China) and Total Recovered cases are one chart available. Figure 1 shows the rate of new cases within China has slowed, though the crisis is growing in Europe and the U.S. (As of March 17<sup>th</sup>, 3PM ET U.S.)

As shown in the figure, China's Covid-19 cases have largely recovered compared to the rest of the world, representing ~83% of all recovered cases currently reported. Also interesting to note is that the rate of new cases in China has slowed down dramatically, well under 100 new cases per day, as opposed to the rest of the world. TEHCET sources within China indicate that the number of new cases per day has decreased below 50. As for the

rest of the world, the rate of increase is very steep, growing > 8920 cases per day (from March 8 to March 16) according to the data.

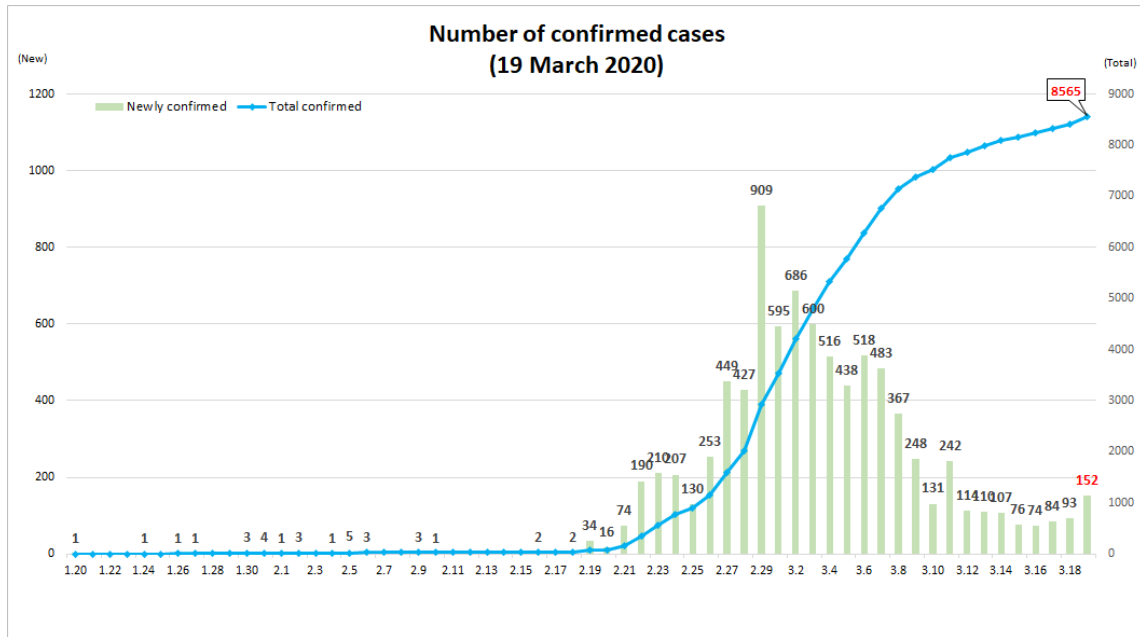
**Figure 1: Coronavirus COVID-19 Global Cases Compared to China Rate of Increase (Logarithmic Y-axis)**



Source: John Hopkins University's Center for Systems Science and Engineering (CSSE):  
<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

Another hotbed of Semiconductor activity, Korea, has been the second region to show a high rate of increase in reported cases, although it experienced a 10 day period of a significant decline in new cases before an uptick in recent days. The new cases in the past two days are primarily in in Daegu and North Gyeongsang Province, the country's two worst-affected regions. Figure 2 highlights the reported new cases by the Korean CDC.

Figure 2: Coronavirus COVID-19 Daily New Cases and Daily Reported Recovery



Source: <https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030>

As an added measure to slow the spread of the virus, the government in Korea has further delayed the start of schools. Reference: <http://www.koreaherald.com/view.php?ud=20200317000814>

*“The Korean government announced Tuesday that day care centers, kindergartens and elementary, middle and high schools in the country will remain closed until early April, amid an all-out fight against the spread of the novel coronavirus.”*

TEHCET contacts indicate that many people are working from home and are staying indoors with food being delivered directly to homes.

### 3. GLOBAL ECONOMIC INDICATORS

A typical indicator of economic trends, is the London Metals Exchange (LME) daily pricing for key metals used in manufacturing and construction. The LME is viewed as a measure of economic activity—demand for construction materials TECHCET tracks the LME Copper price, which has fallen off the US\$6300/tonne level of mid-January, following the signing of the China-U.S. Phase One Trade Agreement. Pricing as of Monday March 16<sup>th</sup> was around US\$5200/tonne. This is below the levels reported in 2019 when the China-U.S. trade disagreement was at its worst.

Figure 3: Daily LME Copper Metal Pricing Through March 16<sup>th</sup> 2020

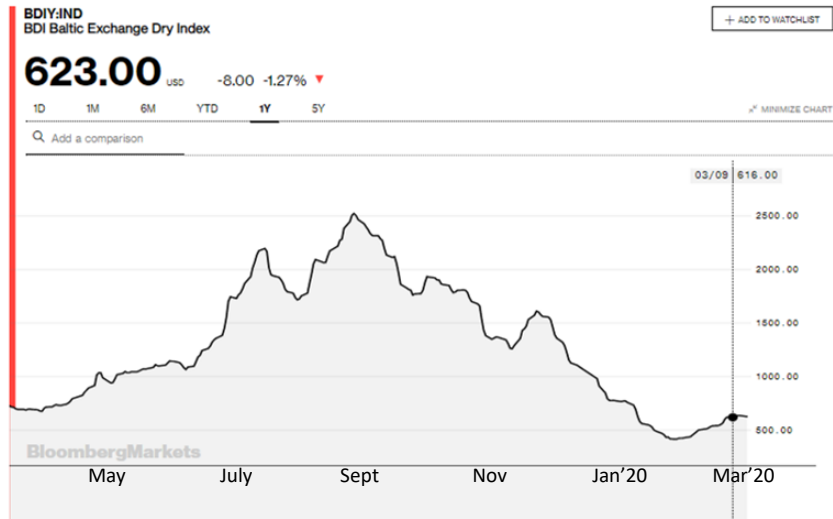


<https://www.lme.com/Metals/Non-ferrous#tabIndex=0>

The Baltic Dry Index (BDI), generated by the London-based Baltic Exchange, is reported as a daily bellwether as a worldwide metric of dry bulk shipping stocks and the general shipping market. The index measures the demand for shipping capacity versus the supply of dry bulk carriers. The demand for shipping will vary with the amount of cargo that is being traded (supply & demand) or moved in and out of various markets. In short, the BDI measures the daily demand for shipping capacity.

Hence, the BDI is an indicator of trade/economic activity. As can be shown from the figure, the BDI bottomed out in early/mid Feb and is now showing a slow recovery. TECHCET expects this index to remain low as the spread of the COVID crisis is now well underway in regions outside of China.

Figure 4: Daily Baltic Dry Index Through March 16<sup>th</sup> 2020



<https://www.bloomberg.com/quote/BDI:IND>

#### 4. CHINA FREIGHT TRANSPORT TRENDS AND METRICS

China's shipping metrics include various indexes tracked by the Ministry of Transport of the People's Republic of China and that are updated weekly. The rate of decline for indices is slowing.

##### CHINA (EXPORT) CONTAINERIZED FREIGHT INDEX (CCFI)

This index represents export containers for the ports only in China. CCFI objectively shows the container transport market between the worldwide markets.

Freight activity in China declined sharply in early February through Mid-Feb but looks to be stabilizing over the past couple of weeks as economic activity in China is recovering.

Figure 5 China Export Containerized Freight Index (CCFI) Trends Chart

Description	2020-02-28	Previous Index 2020-03-06	Current Index 2020-03-13	Weekly Growth (%)
<b>COMPOSITE INDEX</b>	905.4	904.24	898.44	-0.6%

## China Containerized Freight Index



Source: Shanghai Shipping Exchange (updated on 03/13/2020)

Link: <https://en.sse.net.cn/indices/cbfinew.jsp>

## CHINA (IMPORT) CONTAINERIZED FREIGHT INDEX (CCFI)

This index only represents import containers for Chinese ports.

Freight activity in China declined sharply in early February through Mid-Feb. Index indicates stabilizing in past couple of weeks as economic activity in China recovers.

Figure 6 China import Containerized Freight Index (CCFI)

	2020-02-26	Previous Index 2020-03-04	Current Index 2020-03-11	Compared with the previous period (%)
Comprehensive Index	790.21	792.49	791.72	-0.1

## 中国进口集装箱运价指数



Source: Shanghai Shipping Exchange (updated on 03/11/2020)

Link: <https://www.sse.net.cn/index/singleIndex?indexType=cicfi>

## CHINA COASTAL BULK FREIGHT INDEX (CBFI)

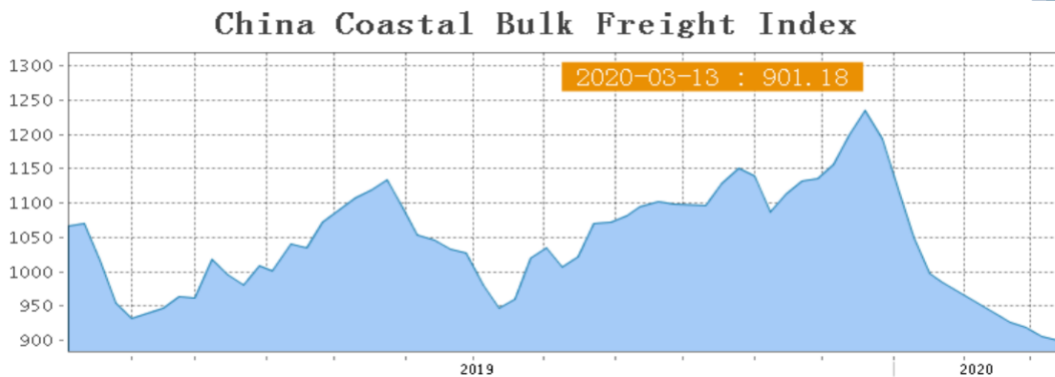
This index is a measure of the transportation of dry bulk goods between the different ports within China. The index is based on the average revenue and average price of shipping.

To fully reflect the fluctuation of the Chinese coastal transport market, SSE officially initiated China Coastal Bulk Freight Index (CBFI) on 28th November 2001 under the guidance of MOT. This new tool also better displays the market situation during the period of waterway transport pricing system reform and boost the sound development of the China Coastal Shipping market.

Rate of decline the past two weeks is lessening so this may be a possible indication of intra-China freight stabilizing.

Figure 2: China Coastal Bulk Freight Index (CBFI) Trends Chart

Description	2020-02-28	Previous Index 2020-03-06	Current Index 2020-03-13	Weekly Growth (%)
COMPOSITE INDEX	918.56	905.09	901.18	-0.4%
COASTAL DRY BULK INDEX	850.88	840.72	836.7	-0.5%



Source: Shanghai Shipping Exchange (updated on 03/13/2020)

Link: <https://en.sse.net.cn/indices/cbfinew.jsp>