Philippines-China Relations at 45
During the COVID-19 Pandemic:
New Discoveries, Recent Developments,
and Continuing Concerns

Chinese Studies Journal, vol. 14
January 2021 | ISSN 0117-1933

PHILIPPINE ASSOCIATION FOR CHINESE STUDIES
菲律濱中華研究學會

Chapter 16

ECONOMIC IMPACTS OF COVID-19 PANDEMIC: A LOOK INTO CHINA, UNITED STATES, AND PHILIPPINE STOCK MARKET PERFORMANCES

Sharlene May C. Cua

Introduction

This study aims to investigate the impact of COVID-19 pandemic on the stock markets of China, United States, and the Philippines. As the pandemic situation continues to unfold, this paper uses data from online sources such as that of stock market performances from finance and business sites, global statements from international agencies websites, local and foreign news from media channels, and the Factiva database. The study looks into the stock market performances of China, US and the Philippines through the regions' stock market indices and news relating to COVID-19 pandemic, from the period November 2019 to October 2020. This paper concludes that pandemics like COVID-19 severely affect economies around the globe, presenting steep decline of the markets during the outbreak of the pandemic. The reasons contributing to the economic slowdown can be attributed primarily to the exponential rate at which the virus is spreading (announced via news media channels); government restrictions on business activities such as social distancing, quarantine and lockdown measures; and government intervention on stimulus support packages, which may have contributed to the decline in domestic consumption and the reduction in tourism revenue. A limitation of this study would be an in-depth analysis of specific sectors and industries that may have further contributed to the conclusion of the study. A further research on stock market performances in relation to government efforts for achieving gradual recovery could be carried on. Nevertheless, this study still serves its purpose of reminding the business and government sectors to continue to be vigilant and prepared for post-pandemic challenges and future economic and social uncertainties that countries may face.

Literature Review

The year 2020 is undeniably a year of shock, uncertainty, and recovery. It would be marked as the year that changed the lives of many people globally. COVID-19, since its outbreak, has brought so much tension to central governments and private citizens globally. Who would have thought that a health crisis would strike this year, a century after the Spanish flu in 1918? The statistics provided in relation to COVID-19 came to be the worst since global recession in decades. According to World Bank, current projections suggests that the COVID-19 global recession will be the deepest since the end of World War II, with the largest fraction of economies experiencing declines in per capita output since 1870. Output of emerging market and developing economies is expected to contract in 2020 for the first time in at least 60 years.

The surge of pandemic cases and the efforts to decelerate the spread of the virus has causes business disruption and affected economic growth. Forecasted contraction is slowly to surface within the year, with Philippines as one of the major economies in the East Asia and Pacific region to experience the biggest contractions. The global recession caused by the COVID-19 pandemic would continue to be a challenge in attaining reform and recovery in the long-term. Hence, recognizing the impact of COVID-19 would be valuable and this study aims to evaluate its impact on stock prices of China, US, and Philippine stock market indices.

In studying the impact of COVID-19 pandemic to the China, US, and Philippine economies, it would be helpful to look at the stock market prices of these regions. According to the efficient market theory in financial economics, asset prices reflect all available information and market prices should only react to new information (Chen, Roll, and Ross 1986, 383-403). Moreover, in the recent research studyof Ramelli and Wagner (2020), there had been a conclusion that the COVID-19 pandemic led to tremendous volatile US market reactions. Consequently, another study by Ali, Alam and Rizvic (2020) investigates the reaction of financial markets globally in terms of their decline and volatility and found that China has earlier stabilized while global markets continue to fall-off.

With these previous literatures, therefore, we anticipate the relationship between the performances of the stock market indices and news relating to COVID-19 pandemic news. Our study contributes to the literature as we explore the impact of COVID-19 on the stock prices of China, US, and Philippine stock markets.

The rest of the paper proceeds as follows: Section 2 provides an introduction and analysis on the stock markets and indices of China, US and the Philippines; Section 3 provides a review of the timeline and statistics of COVID-19 pandemic; Section 4 shows the economic indicators of the Philippines; and Section 5 shares the cocclusion, recommendation, limitation and further research of the study.

Stock Markets and Indices of China, the US, and the Philippines

Based on the report by World Federation of Exchanges as of May 2020 (WFE Statistics Team 2020), we see three stock exchanges from the Greater China region entering the top 10 list – the Shanghai Stock Exchange, Hong Kong Stock Exchange, and Shenzhen Stock Exchange – in addition to the United States' more popular New York Stock Exchange and Nasdaq. Hence, indices from these stock exchanges are used to look at the stock performances of the said regions, in relation to the Philippine Stock Exchange Composite Index.

Rank	Stock Exchange	Market Capitalization	Date of Establishment
1	New York Stock Exchange	$ 19.3 trillion	May 17, 1792
2	Nadaq	$ 13.8 trillion	February 4, 1971
3	Tokyo Stock Exchange	$ 5.7 trillion	January 1, 2003
4	Shanghai Stock Exchange	$ 4.9 trillion	November 26, 1990
5	Hong Kong Stock Exchange	$ 4.4 trillion	February 3, 1891
6	Euronext	$ 3.9 trillion	September 22, 2000
7	Shenzhen Stock Exchange	$ 3.5 trillion	December 1, 1990
8	London Stock Exchange	$ 3.2 trillion	January 23, 1571
9	Toronto Stock Exchange	$ 2.1 trillion	October 25, 1861
10	Bombay Stock Exchange	$ 1.7 trillion	July 9, 1877

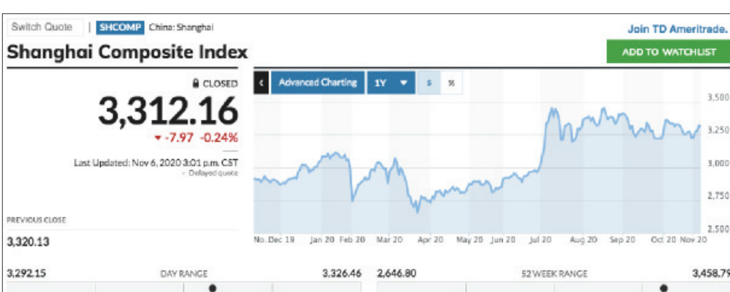
Source: Ben Winck, "Here are the 10 biggest Stock Exchanges in the World, Ranked by Market Cap," 2020.

Stock market performances from China, the US, and the Philippines' stock exchanges were extracted from MarketWatch.com from November 2019 to October 2020. Concurrently, information on Coronavirus cases were gathered from Worldometers.com and Statista.com.

A. China Market

Shanghai Stock Exchange and Shanghai Composite Index

The Shanghai Composite Index or SSE Composite Index is operated by the Shanghai Stock Exchange and the China Securities Index. It is designed to reflect to overall market performance of companies listed on Shanghai Stock Exchange. SSE Composite Index is composed of all eligible stocks and Chinese Depositary Receipts (CDRs) listed on Shanghai Stock Exchange (China Securities Index Co. Ltd. 2020). CDRs are modeled on similar financial instruments such as American Depositary Receipts (ADRs) and European Depositary Receipts (EDRs) which enable US and European investors to purchase the shares of foreign incorporated companies. CDRs are not shares, but they represent equity interests in foreign companies through an offshore custodian bank. CDRs are expected to lure international capital to the Chinese market in order to drive the economy and boost the valuation of issuing companies.



Source: Market Watch, "Shanghai Composite Index," 2020.

Many Chinese technology companies have chosen to list their shares overseas to avoid the legal and technical barriers to Initial Public Offerings (IPOs) they would encounter on the mainland, as well as to gain access to international capital. Some of these tech giants are Alibaba, Baidu, Tencent, Youku, and Sohu (Lu and Ye 2018, 529-532). The index was launched on July 15, 1991 (China Securities Index Co. Ltd. 2020).

As of October 30, 2020, the top 10 largest stocks by market value of the Shanghai Stock Exchange include: Kweichow Moutai, CNY 2.097 billion; Industrial and Commercial Bank of China CNY 1.326 billion; Agricultural Bank of China, CNY 1.005 billion; China Life, CNY 959 billion; Ping An Insurance, CNY 843 billion; China Merchants Bank, CNY 821 billion; PetroChina, CNY 670 billion; Bank of China, CNY 659 billion; Haitian Flavouring & Food, CNY 519 billion; and Hengrui Medicine, CNY 473 billion (Shanghai Stock Exchange 2020).

Hang Seng Stock Exchange and Hang Seng Composite Index

The Hang Seng Composite Index (HSCI) is currently compiled and maintained by Hang Seng Indexes Company Limited, which is a wholly owned subsidiary of Hang Seng Bank, one of the largest banks registered and listed in Hong Kong in terms of market capitalization. The HSCI offers a comprehensive Hong Kong market benchmark that covers about the top 95th percentile of the total market capitalization of companies listed on the main board of the Stock Exchange of Hong Kong (SEHK). Adopting the free float-adjusted market capitalization methodology, the HSCI can be used as a basis for index funds, mutual funds as well as performance benchmarks (Hang Seng Indexes 2020). The index was launched on October 3, 2001 (China Securities Index Co. Ltd. 2020).

The HSCI can be further divided into Hang Seng Composite Industry Indexes and Hang Seng Composite Size Indexes. The HSCI is sub-divided into 12 industry indexes in accordance with the Hang Seng Industry Classification System, reflecting the performance of different sectors of the Hong Kong stock market, namely: energy, materials, industrial goods, consumer goods, consumer services, healthcare, télécommunications, utilities, financials, properties and construction, information technology, and conglomerates. The HSCI is also sub-divided into three size indexes, namely: large-cap, mid-cap and small-cap indexes, which cover the top 80 percent, the next 15 percent and the remaining five percent, respectively, of the total market capitalization of the HSCI (China Securities Index Co. Ltd. 2020).

As of October 30, 2020, the top 10 largest stocks by market capitalization of Hang Seng Stock Exchange are: Tencent Holdings Ltd., HKD 5.530 trillion; Alibaba Group Holding Ltd., HKD 5.476 trillion; Meituan, HKD 1.687 trillion; China Construction Bank, HKD 1.476 trillion; China Mobile, HKD 1.078 trillion; AIA Group Limited, HKD 1.012 trillion; JingDong, HKD 1.010 trillion; HSBC Holdings, HKD 793.59 billion; Ping An Insurance, HKD 644.58 billion; Xiaomi Corporation, HKD 561.11 billion; and Hong Kong Exchanges and Clearing, HKD 468.33 billion (Hong Kong Exhange 2020).

Source: Market Watch, "Hang Seng Composite Index," 2020.

Shenzhen Stock Exchange and Shenzhen Composite Index

The Shenzhen Composite Index is an index of all stocks that are traded at the Shenzhen Stock Exchange (SZSE). The SZSE's Shenzhen Composite Index is an actual market-cap weighted index (no free float factor) that tracks the stock performance of all the A-share and B-share lists on Shenzhen Stock Exchange ("Shenzhen Stock Exchange," 2020). The Shenzhen A share Index was launched on October 4, 1991 and the B share Index was launched on October 6 that same year. The Base Value is 100 ("What is the Shenzhen," 2020).

As of October 30, 2020, the top 10 largest stocks by market value of the Shenzhen Stock Exchange include: Wuliangye Yibin, CNY 948 billion; Contemporary Amperex Technology, CNY 576 billion; Midea Group, CNY 547 billion; Shenzhen Mindray Biomedical Electronics, CNY 470 billion; Hangzhou Hikvision Digital Technology, CNY 420 billion; Luxshare Precision Industry, CNY 384 billion; S. F. Holding Co Ltd., CNY 377 billion; Gree Electric Appliances, CNY 351 billion; Ping An Bank, CNY 344 billion; and BYD, CNY 290 billion ("Market Data," 2020).

Source: Market Watch, "Shenzhen Composite Index," 2020.

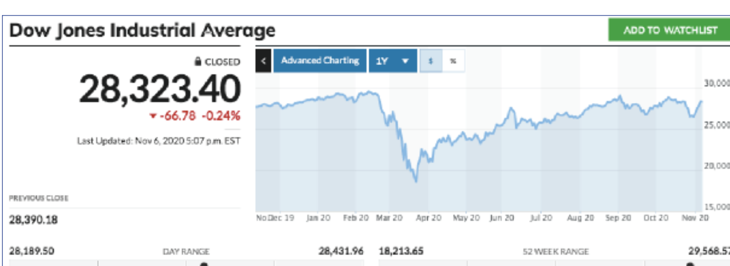
B. The US Market

Dow Jones Industrial Average

The Dow Jones Industrial Average (DJIA), also commonly referred to as the " Dow Jones" or simply "The Dow," is one of the most popular and widely recognized stock market indices. While the Dow includes a range of companies, they all largely can be described as blue-chip companies with consistently stable earnings.

Sector breakdown includes financial services, technical, aerospace, oil and gas, food and beverages, entertainment, chemical industry, retail, pharmaceuticals, apparel, consumer goods, insurance, healthcare, and telecommmunications. DHIA is one of the stock indices created by Dow & Jones Company founder and Wall Street Journal editor Charles Dow. The index was launched on May 26, 1896. The DJIA measures the daily stock market movements of 30 US publicly traded companies listed on the NASDAQ or the New York Stock Exchange (NYSE). It uses the price-weighted index, meaning that stocks with a higher share price carry a greater weight in the index than stocks with a low share price. The 30 publicly owned companies are considered leaders in the US economy. The DJIA was designed to serve as a proxy for the health of the broader US economy ("Dow Jones," 2020).

As of October 30, 2020, the top 10 constituents of the DJIA by percentage weight in the index and by market capitalization are: UnitedHealth Group, Inc., 7.94 percent/USD 289.52billion; The Home Depot, Inc., 6.19 percent/USD 287.10 billion; Salesforce.com, Inc., 5.57 percent/USD 211.37 billion; Amgen, Inc., 5.3 percent/USD 126.3 billion; Goldman Sachs Group, Inc., 4.89 percent/USD 65.04 billion; Microsoft Corp., 4.83 percent/USD 1.531 trillion; McDonalds, 4.76 percent/USD 158.71 billion; Visa A, 4.7 percent/398.24 billion; Honeywell International, 4.5 percent/USD 115.74 billion; and Boeing, 4.18 percent/USD 81.51billion ("Market Capitalization," 2020).



Source: Market Watch, "Dow Jones Industrial Average," 2020.

Standard and Poor's 500 Index (S&P 500 Index)

The Standard and Poor's 500 Index (S&P 500 Index) comprises the stocks of 500 publicly traded companies in the US with the highest values of market capitalization.

These companies are the biggest and most well established in the US that are open for public trading ("S&P 500," 2020). Sector breakdown includes information technology, health care, consumer discretionary, communication services, financials, industrials, consumer staples, utilities, materials, real estate, and energy ("S&P 500," S&P Global 2020). The S&P 500 Index is considered a good representative of the US large-cap market and is calculated using a free-float market capitalization method ("S&P US Indices Methodology," 2020). The S&P 500 is maintained by S&P Dow Jones Indices, a joint venture majority-owned by S&P Global, and a committee selects its components. The index was launched on March 04, 1957.

Source: Market Watch, "S&P 500," 2020.

As of October 30, 2020, the top 10 constituents of the S&P 500 by percentage weight in the index and by market capitalization are: Apple, Inc., 6.5 percent/USD 1.750 trillion; Microsoft Corp., 5.7 percent/USD 1.532 trillion; Amazon.com, Inc., 4.8 percent/USD 1.293 trillion; Facebook, Inc., 2.3 percent/USD 705 billion; Alphabet, Inc. Class A Shares, 1.8 percent/USD 485.6 billion; Alphabet, Inc. Class C Shares, 1.8 percent/USD 475.9

billion; Berkshire Hathaway, Inc., 1.5 percent/USD 400.2 billion; Johnson & Johnson, 1.3 percent/USD 361 billion; Procter & Gamble, 1.3 percent/USD 341.3 billion; and NVIDIA Corp., 1.1 percent/USD 309.3 billion ("S&P Dow Jones Indices," 2020).

NASDAQ Stock Market and NASDAQ Composite Index

Alongside the Dow Jones Industrial Average and the S&P 500, the NASDAQ Composite Index is one of the most followed indices in the United States, with more than 3,000 common equities listed on the NASDAQ stock market. Sector breakdown includes oil and gas, basic materials, industrials, consumer goods, health care, consumer services, telecommunications, utilities, financials, and technology. The NASDAQ Composite is calculated using a market capitalization weighting method – the largest companies listed on this exchange exert the greatest impact on the final value of the index. The index was launched in 1971, with a starting value of 100 ("NASDAQ," 2020).

Stocks listed on the NASDAQ Composite index are categorized into three market tiers, based on the listing requirements they meet. The market tiers include the capital market (small cap), global market (mid-level cap), and global select market (large cap). The capital market has the least stringent requirements of the three market tiers. It is an equity market for companies with small market capitalizations. The global market comprises companies with mid-level capitalization, and these companies must meet the liquidity and financial requirements provided by NASDAQ. The market has 1,450 stocks that are listed in the United States and on other international stock exchanges. The global select market has the most stringent requirements in terms of finance, liquidity, and corporate governance requirements. Companies that meet these requirements are mostly companies with large market capitalizations. It comprises 1,200 United States and international stocks. The NASDAQ's Listing

Qualifications Department reviews these companies every year in October to determine their eligibility for this market ("NASDAQ Composite," 2020).

As of October 30, 2020, the top 10 constituents of the Nasdaq Composite Index by market capitalization are Apple, Inc. (USD 1.851 trillion), Microsoft Corp. (USD 1.531 trillion), Amazon (USD 1.523 trillion), Alphabet Class C (USD 1.096 trillion), Alphabet Class A (USD 1.093 trillion), Facebook, Inc. (USD 749.41 billion), Tesla, Inc. (USD 367.82 billion), Nvidia Corp. (USD 328.55 billion), Paypal Holdings (USD 218.09 billion), Adobe, Inc. (USD 214.48 billion) ("Market Cap," 2020).

Source: Market Watch, "NASDAQ Composite Index," 2020.

C. Philippine Market

Philippine Stock Exchange and PSEi Index

The Philippine Stock Exchange (PSE) is the only stock exchange in the Philippines. It is one of the oldest stock exchanges in Asia, having been in continuous operation since the establishment of the Manila Stock Exchange in 1927. The Philippine Stock Exchange was formed from the country's two former stock exchanges, the Manila Stock Exchange (MSE), established on August 8, 1927, and the Makati Stock Exchange (MkSE), which was established on May 27,1963. Both bourses were separate stock exchanges for nearly 30 years until December 23,1992, when both exchanges were unified to become the present-day Philippine Stock Exchange ("About PSE," 2012).

The main index for PSE is the PSEi, which is composed of a fixed basket of 30 listed companies. This composition is reviewed and revised twice every year: in February and in August.

Along with PSEi are the All Shares Index, which complements everything and it includes all the common stocks of companies listed in the PSE, and the Sectors' Indices, which represent financials, industrial, holding firms, services, mining and oil, and property ("Index Summary," 2020). Being seen as a barometer of market sentiment and general economic conditions of the country, the PSEi, the PSEi measures the relative changes in the free float-adjusted market capitalization of the 30 largest and most active common stocks listed at the PSE. The selection of companies in the PSEi is based on a specific set of public float, liquidity and market capitalization criteria ("Index Summary," 2020).

Source: Market Watch, "PSEi Index," 2020.

As of October 30, 2020, the top 10 largest stocks by market capitalization of the Philippine Stock Exchange include: SM Investments Corporation, PhP 21.48 billion; Ayala Corporation, PhP 15.67 billion; SM Prime Holdings, Inc., PhP 15.02 billion; JG Summit Holdings, Inc., PhP 9.804 billion; Ayala Land, Inc., PhP 9.133 billion; BDO Unibank, Inc., PhP 8.01 billion; Manila Electric Company, PhP 6.582 billion; Universal Robina Corporation, PhP 6.302 billion; Bank of the Philippine Islands, PhP 5.912 billion; and Globe Telecom, Inc., PhP 5.864 billion; ("Market Capitalization," 2020).

Timeline and Statistics of COVID-19 Pandemic

In a restrospective study published in the *South China Morning Post* on March 13, 2020, the first case of COVID-19, caused by the novel coronavirus in China, can be traced back to November 17, 2019, and that Chinese authorities have identified at least 266 people who were infected towards the last months of 2019 (Ma 2020). As early as January 5, 2020, the World Health Organization (WHO) published its first *Disease Outbreak News*, which serves as a guide to the scientific and public health community and the global media on the technical/risk assessment of the outbreak.

On January 10, 2020, WHO also issued a comprehensive technical guidance online with advice to all countries on how to detect, test and manage potential cases, based on what was known about the virus at the time. This guidance was shared with WHO's regional emergency directors, cascaded country-level WHO representatives. Three days later, officials confirmed the first recorded case of COVID-19 outside of China, in Thailand. By the end of January, there were first reports of limited human-to-human transmission reported outside China. Upon the recommendation of the Emergency Committee, the Director-General declared the novel coronavirus outbreak (2019-nCoV) a Public Health Emergency of International Concern (PHEIC).

In February, WHO released the international community's Strategic Preparedness and Response Plan to help protect states with weaker health systems. The WHO also convened a research and innovation forum on COVID-19 as well as WHO-China joint mission, which brought together experts from various countries to visit cities in China (Beijing, Wuhan, and others) and witness at the ground-level the efforts done by their health officials, scientists and health workers in health facilities. On March 11, 2020, WHO made the assessment and characterized COVID-19 outbreak as a pandemic ("WHO Timeline," 2020).

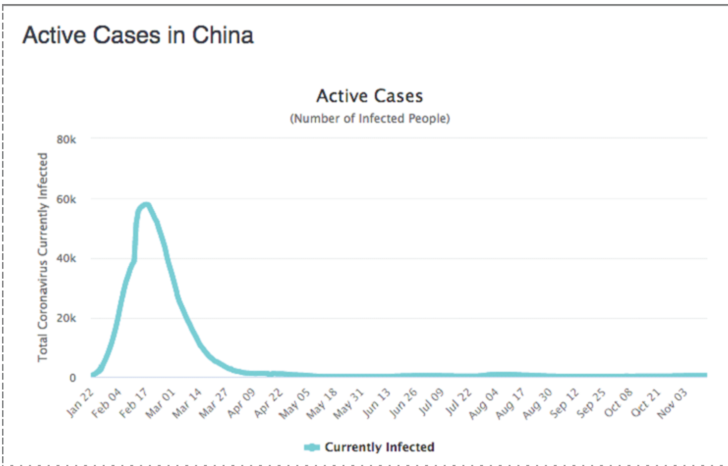
In addition to the timeline shared, statistics on COVID-19 cases in China, the US and the Philippines were looked into through Worldometer. Worldometer is a reference website that provides counters and real-time statistics for diverse topics. The website rose to popularity dye to hosting statistics relating to the COVID-19 pandemic as it manually analyzes, validates, and aggregates data from thousands of sources in real time and provides global COVID-19 live statistics for a wide audience of caring people around the world ("Worldometer COVID-19 Data," 2020). Along with the infographs gathered from the Worldometer, the stock performances of the regional indices were cross-references for further analysis.

A. China Market

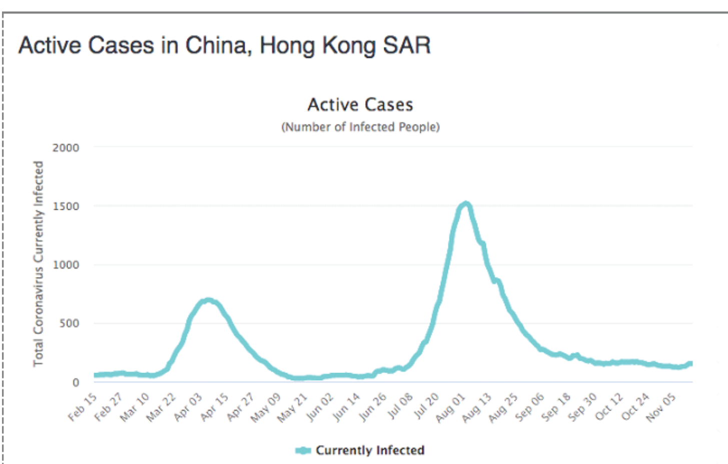
From China's COVID-19 graph shared above, we see an exponential increase in COVID-19 cases during the period from mid-January to end March 2020, entering April 2020. Cross-referencing these data with China's stock exchanges and its indices, namely Shanghai Composite Index, Hang Seng Index and Shenzhen Composite Index, we see a steep decline in the stock performances of the indices, particularly on February 3, 2020 and March 23, 2020.

In reference to the news articles collated, February 3, 2020 was the first day that financial markets reopened after the extended Lunar New Year break amid an ongoing coronavirus outbreak, with stocks recording their biggest single day fall since the July 2015 stock bubble burst. More than 3,000 stocks immediately fell by the 10 percent daily limit. The Shanghai composite fell 7.72 percent to close at about 2,746.61 while the Shenzhen component dropped 8.45 percent to end its trading day about 9,779.67.

The Shenzhen composite also declined 8.414 percent to close at around 1,609.00. The indexes all fell around nine percent in early trade during the session (Huang 2020).



Source: Worldometers, “Active Cases in China,” 2020.



Source: Worldometers, “Active Cases in China, Hong Kong SAR,” 2020.

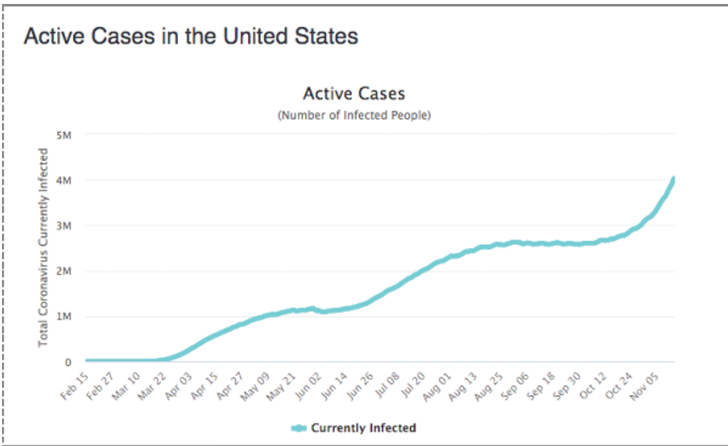
The Shanghai Composite Index opened on Monday 8.8 percent lower than its January 23 close, the last day of trading before the long holiday break, logging its worst debut to a Lunar New Year in at least two decades. The Hang Seng Index also arrested two days of declines but rose 0.35 percent, as of its final hour of trading. The yuan fell one percent to briefly weaken past the symbolic level of seven against the US dollar. The slump comes despite Beijing authorities unveiling a slew of measures to support the financial system, with the central bank announcing that it would pump CNY 1.2 trillion (USD 174 billion) of liquidity into the market on Monday in the largest one-day open-market operation since 2004 (Somasundaram 2020). The investors counted the economic impact from the spreading coronavirus outbreak.

On the other hand, March 23, 2020 marks another crash for the Hang Seng Index. On this day, the Hong Kong stock market opened and fell by 1,145 points. The Hang Seng Index dropped to 21,659 and fell below the 22,000 mark. Hong Kong's Hang Seng Index, which on March 13, 2020 fell into its first bear market (A bear market begins when stocks fall 20 per cent from a recent peak.) since 2015, shot up 5.1 percent on March 20, 2020, the most in nearly a decade. Friday's 1,000-point surge was just the latest wild swing in Hong Kong, where the market has dropped since the middle of January, when the threat of the coronavirus started to become clear (Moon and Price 2020).

B. The United States Market

From the United States' COVID-19 graph shared above, we see a continuous increase in COVID-19 cases that surged last March 23, 2020, from 15,219 cumulative cases a trading day before (March 20, 2020) to 31,573 cumulative cases on March 23, 2020, a 200 percent increase in just one day. Cross-referencing these data with the US' stock exchanges and its indices, namely the

Dow Jones Industrial Average, S&P 500 Index, and NASDAQ Composite Index, we see a steep decline in the stock performances of the indices, towards the last week of the month.



Source: Worldometers, "Active Cases in the United States," 2020.

In reference to the news articles collated, the period between March 20, 2020 up to the end of March 2020 spans a series of unprecedented news. On March 20, 2020, the US stocks were battered yet again on this Friday, as global death toll continued to mount. Investors' fears were not exactly addressed by the government's stimulus measures to support the economy, which has been taking blows because of the coronavirus outbreak. This led stocks to end sharply lower on March 20 as investors continued with their selloff, their fears pushed by uncertainty around the disease's further impact on the financial markets. The three major indices— the Dow Jones Industrial Average, S&P 500, and Nasdaq Composite — closed in the red on Friday. The Dow Jones Industrial Average closed at 19,173.98 after losing 4.6 percent, the broader S&P 500 reached 2,304.92 after declining 4.3 percent, and the tech-laden Nasdaq Composite hit 6,879.52 after decreasing 3.8 percent. Stocks marked their worst week in the week ended March 20 since the 2008 financial crisis. On the same day, President Trump announced that the federal government temporarily suspended all student loan payments, without penalty for at least the next 60 days, and perhaps longer if necessary. Apart from this, taxpayers were also offered relief of payment extension as the deadline for paying taxes was pushed from April 15 to July 15 (Zacks Equity Research, 2020). Over the weekend of March 22, 2020, Ohio, Oregon, and Michigan were the latest states to issue stay-at-home orders, effective immediately, after California issued the country's first statewide stay-at-home order.

On March 23, 2020, it was referred to as, "The Day the US Economy Did Not Crash." The US financial system came to the brink of disaster on March 23. The consequences would have been a global financial crisis that could have been worse than the crash of 2008. The crisis was averted by unprecedented – and largely unsung – action by the US Federal Reserve Board led by Fed Chariman Jerome Powell. It rushed to the rescue and probably saved thousands of companies from going into bankruptcy. The Fed's moved and poured vast sums of cash into the financial system have resulted in a stock market bonanza in the midst of the worst economic collapse since the Great Depression (Vogl 2020).

On the same day, Principal Deputy Inspector General and acting Inspector General of the United States Department of Health and Human Services Christi Grimm reported that hospitals are facing severe shortages of testing supplies, widespread shortages of PPE, difficulty maintaining adequate staff and overall shortages of critical supplies. Furthermore, during the day, US stocks sank sharply after the Senate failed for a second time to vote through the coronavirus economic relief package. By the end of March 23, 2020, the Dow finished three percent, or 583 points lower - this is below the level where it closed on November 8, 2016, the day Trump won the 2016 election over Democrat Hillary Clinton. The S&P 500 closed down 2.9 percent, which has now erased all of the gains accumulated under the Trump administration. The

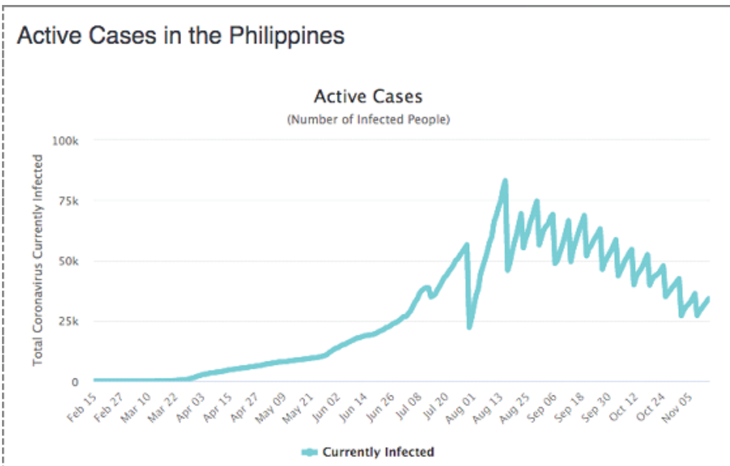
Nasdaq Composite finished 0.3 percent lower (Tappe 2020).

On March 27, 2020, President Trump signs H.R. 748, the "Coronavirus Aid, Relief, and Economic Security (CARES) Act." The USD 2 trillion-dollar stimulus bill, designed "to provide emergency assistance and health care response for individuals, families, and businesses affected by the 2020 coronavirus pandemic" is the largest stimulus package in the history of the United States. The bill provided a one-time payment of a USD 1,200 check for individuals making up to USD 75,000 per year or USD 2,400 for couples earning less than USD 150,000. It also included loans to businesses, funds unemployment insurance, bails out airlines and cargo carriers, authorizes aid to states and defers taxes, among other things. By the end of March 2020, over 6.6 million Americans apply for unemployment benefits bringing the total to over 10 million Americans.

It is important to note that despite the passing of the CARES Act, the stock performances from the DJIA, S&P 500 and NASDAQ Composite indices still presented a steep decline. This downswing matched that of the stock market reaction on China's indices after the Beijing government provided stimulus to support the financial system and save the economy. Clearly and consistently in China's and US' stock exchanges, efforts to contain COVID-19 stoke fears of a global recession. Federal and state governments have forced the closure of businesses and borders around the world, which economists warn will likely lead to significant job loss and GDP growth declines. Those fears had certainly manifested themselves in the stock market's plunge (Franck 2020).

C. Philippine Market

From the Philippines' COVID-19 graph shared above, we see a continuous increase in COVID-19 cases that surged last March 27, 2020 (Friday), with only 96 daily new cases to a 272 daily new cases on the following day, March 28, 2020 (Saturday), a 280 percent increase and wide spread of the virus. Cross-referencing these data with the Philippines' stock exchange and its index, the PSEi, we see a steep decline in the stock performance of PSEi, starting March 19, 2020, closing at 4,623.42 up to March 30, closing at 5,131.16.



Source: Worldometers, "Active Cases in the Philippines," 2020.

In reference to the news articles collated, the period between March 16 to March 28 span a series of unprecedented events. On March 16, 2020, President Duterte announced the placement of the entire island of Luzon, including its associated islands under "enhanced community quarantine" or ECQ, in effect imposing an absolute or total lockdown on Luzon until April 12, 2020.

Everyone will be subjected to strict home quarantine, no movement and no transportation, except only for frontline health workers, authorized government officials, medical or humanitarian [reasons] as well as transport of basic services and necessities (Merez, "Luzon Under Enhanced," 2020).

On March 19, 2020, Teodoro Locsin, Jr. the country's secretary of Foreign Affairs, announced the temporary suspension of visa issuance to all foreign individuals and cancellation of existing ones. Effective March 19, all Philippines Embassies and Consulates will temporarily suspend visa issuance to all foreign nationals as well as the visa-free privileges of all foreign nationals, including visa upon arrival for Chinese nationals. The government also earlier imposed travel restrictions on foreign visitors coming from China, Hong Kong, Macau, and South Korea's North Gyeongsang province due to growing concerns about the spread of COVID-19 (CNN Philippine Staff 2020).

On March 23, 2020, the House of Representatives, during a special session, approved House Bill No. 6616 or Bayanihan Act of 2020, declaring a national emergency due to COVID-19 pandemic. The policy authorized President Duterte to adopt temporary emergency measures "for a limited period and subject to restrictions, to exercise powers necessary and proper to carry out the declared national policy" in response to the COVID-19 pandemic (Mercado 2020). President Duterte also signed Administrative Order No. 26, which granted a maximum of PhP 500 daily hazard pay for government personnel who still report for work regardless of employment status during the month-long lockdown of Luzon to control the spread of COVID-19 (Merez, "Duterte Grants COVID-19," 2020).

On March 24, 2020, the Senate approved Senate Bill 1481 or Bayanihan to Heal As One Act (Domingo 2020). On March 25, President Duterte signed the Bayanihan to Heal as One Act of 2020 into law, granting him granting him special powers to respond to the COVID-19 outbreak in the country (Tomacruz 2020). Under the law, health workers who contracted the disease will receive a compensation of P100, 000. Financial aid of P1 million will also be extended to families of those who contracted the virus and died while on duty, applied retroactively from February 1, 2020. Some 18 million low-income households will receive emergency subsidy amounting to P5,000 to P8,000 for two months during the lockdown (Aguilar 2020).

On March 27, 96 daily new cases were confirmed, surpassing the 800-mark and taling 803 cases as reported by the Department of Health (Casilao 2020). On March 28, 272 daily new cases were confirmed, surpassing the 1,000-mark, the highest spike in cases in a single day so far – bringing the total number to 1,075, according to the Department of Health (Rey 2020).

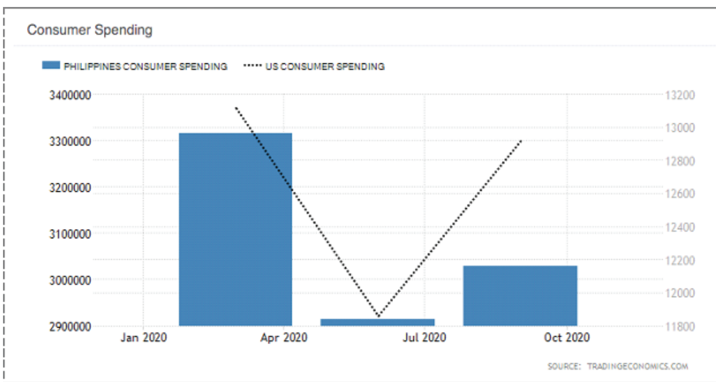
It is important to note that the PSEi had bounced back on March 24 from 44,774.27 to 5,401.58 on March 26, following the signing of the Bayanihan to Heal as Once Act into law. However, due to the continuous rising number of daily new COVID-19 cases, the PSEi dropped from March 26 all the way to March 30 closing of 5,131.16. Again, clearly and consistently with China's and U.S.' stock exchanges, the PSEi continue to be volatile amidst the country's ongoing battle with the COVID-19 pandemic.

Philippine Economic Indicators

The past months have been a near standstill for the Philippine economy. As the government imposes restrictions and lockdowns, in the hope to curb the spread of the virus, economic activities were definitely put into a slow motion. While the Philippines has begun to slowly reopen, economic data continues to struggle from the COVID-19 pandemic. Below are the movements of selected economic indicators to better gauge the economic collapse experience in the past months of 2020 for the Philippines. These indicators evidently support the statistics and news about COVID-19 in the country, as reflected in the stock market performance of PSEi. Decrease in Consumer Spending and Increase in Employment Rate as well as Reduction in Tourist Arrivals and Tourism Revenue, all contributed to the market downturn of the Philippine economy.

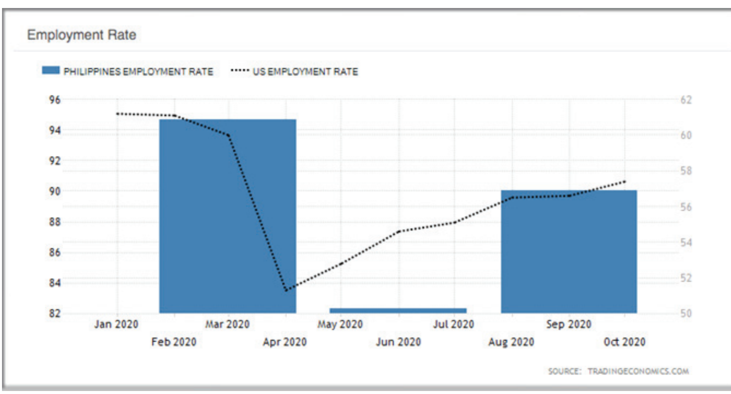
Decrease in Consumer Spending and Increase in Employment Rate

Consumer Spending in Philippines decreased to PhP 2,913,245.91 million in the second quarter of 2020 from PhP 3,314,513.21 million in the first quarter of 2020, which was also similar to the US (National Statistics Office of the Philippines, "Consumer Spending," 2020).



Employment Rate in Philippines increased to 90.04 percent in the third quarter of 2020 from 82.32 percent in the second quarter of 2020 (National Statistics Office of the Philippines, "Employment Rate," 2020).

The COVID-19 pandemic and economic uncertainty has greatly affected travel mobility, shopping and dining-out. During the first quarter of 2020, people rushed to stores and did panic buying of goods for their consumption in the next months under lockdown. In the second quarter of 2020, the Philippine Statistics Authority (PSA) reported a household consumption of -- 15.5 percent as spending in transport, restaurants and hotels, recreation and culture, clothing, alcoholic beverages and education, among others, decreased as well. Apart from the lockdown, the safety protocols imposed by the Department of Health, such as strict observation of social distancing and implementation of temperature checks, did not entice consumers to go out and spend, either. Moreover, unemployment rate, which is considered to affect consumer spending as well, soared to 17.7 percent in April, bringing the total number of unemployed to 7.25 million (Piad 2020). With the Philippines continuing the path to recovery of consumer spending, more than the easing of lockdown restrictions, would be the shift of consumer behavior to online shopping. Consumer started to activate cashless payment channels for convenience and safety. This is evident in the third quarter, where we see a slow pick-up trend for consumers to adapt to the new normal.



Reduction in Tourist Arrivals and Tourism Revenue

As earlier mentioned, the COVID-19 pandemic and economic uncertainty has affected travel mobility, shopping and dining-out. Although tourist arrivals in Philippines reached an all-time high of 776,798 in December of 2019, with composition mainly from Korea (24.08 percent or 1.99 million), China (21.1 percent or 174 million), and the US (12.89 percent or 1.06 million) ("Tourism Demand Statistics," 2020). However, this case was immediately reversed as early as January of 2020. As the COVID-19 developed into a pandemic globally, it largely contributed to the reduction in tourist arrivals, which was evident in the first few months of 2020. According to Tourism Undersecretary Benito Bengzon Jr., there were only about 1.3 million visitors from January to July of 2020, reflecting a 73 percent drop in foreign visitor arrivals, compared to the 4,852,107 international tourists in the same period of 2019. Consequently, there was only about PhP 81 billion, reflecting a 72 percent decline in tourism revenue. Along with the travel restrictions implemented by the government to curb the spread of COVID-19 in the middle of March, there was evidently a great impact on tourism industry due to the pandemic (Rocamora 2020).

Conclusion and Recommendation for Further Research

As the COVID-19 pandemic intensifies globally, many countries took measures to protect its citizens. Central governments worldwide adopted policies and local health ministries released safety health protocols on social distancing, reduced face-to-face interactions, and put in place work from home arrangements to help curb the spread of the virus. Moreover, lockdowns were imposed in many countries, causing logistics, transportation and tourism industries to suffer. In effect, goods were not delivered; labor services were not rendered, and daily business routines were disturbed. These all affected investor sentiment and, in turn, caused stock prices to fall.

For China, the announcement of the travel ban, and subsequently, the COVID-19 pandemic lockdown on January 23, 2020, just about a week before the Chinese New Year holiday, had initiated the imminent turbulence in the stock market. Expectedly, when the market resumed on February 03, 2020, after the Chinese New Year holiday, there was a steep decline on the Chinese stock market indices. The Hong Kong index showed similar drop when evidences on the pandemic situation surfaced towards the end of March.

For the US, March 23, 2020 was referred to as "The Day the US Economy Did Not Crash." The US financial system could have been the worst economic collapse since the Great Depression, had USFederal Reserve Board led by chairman Jerome Powell moved and poured vast sums of cash into the financial system. On the same day, the Senate did not reach a consensus in passing the coronavirus economic relief package. This day certainly showed a steep decline on the U.S. stock market indices.

For the Philippines, towards the end of March 2020, a series of government regulations started with the announcement of "enhanced community quarantine" on March 16, 2020; the announcement on temporary suspension of visa issuance to all foreign individuals and cancellation of existing ones on March 19, 2020; and the signing into law of the Bayanihan to Heal As One Act on March 25, 2020. Despite these, daily new cases soared high, particularly on March 28, 2020, showing the highest spike in a single day, which brought the stock market indices to a great fall.

This paper concludes that pandemics like COVID-19 severely affect economies around the globe, presenting steep decline of the markets during the outbreak of the pandemic. Interestingly, a common finding surfaced for all the indices from China, the US, and the Philippines stock markets - that towards the end of the first quarter of 2020, there were evident steep decline on China's Shanghai Composite Index and Shenzhen Composite Index; Hong Kong's Hang Seng Index; US' Dow Jones Industrial Average, S&P 500 Index, and NASDAQ Composite Index; as well as the Philippine's PSEi. The reasons contributing to the economic slowdown can be attributed to first and foremost, the exponential rate at which the virus had spread and the government restrictions on business activities, such as social distancing, quarantine and lockdown measures as well as government intervention on stimulus support packages, which were reported via news media channels and had contributed to the decline in domestic consumption and tourism revenue.

This study contributes to literature in that it examines the impact of COVID-19 pandemic on China, US, and the Philippines stock markets during the initial stages of the pandemic outbreak. A limitation of this study would be an in-depth analysis of specific sectors and industries that may have further contributed to the conclusion of the study. A further research on stock market performances in relation to government efforts in achieving gradual recovery could be carried on. As the global economies continue to battle the effects of COVID-1 pandemic, a slowdown in the recovery may also be expected. Nevertheless, this study still serves its purpose of reminding the business and government sectors to continue to be vigilant and be prepared for post-pandemic challenges and future economic and social uncertainties that countries may face.

References

"About PSE." *Philippine Stock Exchange (PSE).* Accessed November 8, 2020. https://www.pse.com.ph/corporate/home.html?tab=0

"Active Cases in China." *Worldometer.* Accessed November 8, 2020. https://www.worldometers.info/coronavirus/country/china/

"Active Cases in China, Hong Kong SAR." *Worldometer.* Accessed November 14, 2020. https://www.worldometers.info/coronavirus/country/china-hong-kong-sar

"Active Cases in the Philippines." *Worldometers*. Accessed November 14, 2020. https://www.worldometers.info/coronavirus/country/philippines/

"Active Cases in the United States." *Worldometers*. Accessed November 14, 2020. https://www.worldometers.info/coronavirus/country/us/

Aguilar, Krissy. "Duterte Signs Law on Special Powers vs COVID-19." *Philippine Daily Inquirer*, March 25, 2020. Accessed November 9, 2020. https://newsinfo.inquirer.net/1247988/duterte-signs-law-granting-him-special-powers-vs-covid-19

Ali, Mohsin, Alam, Nafis, and Syed Aun R. Rizvic. "Coronavirus (COVID-19) — An Epidemic or Pandemic for Financial Markets. *Journal of Behavioural and Experimental Finance* 27 (May 16, 2020). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7229737/

Casilao, Joahna. "Philippines Reports 803 COVID-19 Cases, 54 Deaths." *GMA Network,* March 27, 2020. Accessed November 9, 2020. https://www.gmanetwork.com/news/news/nation/731558/philippines-reports-803-covid-19-cases-54-deaths/story/

Chen Nai-Fu, Roll, Richard, and Stephen A. Ross. "Economic Forces and the Stock Market." *The Journal of Business* 59, no. 3 (July 1986): 383-403. The University of Chicago Press. https://www.jstor.org/stable/2352710

China Securities Index Co. Ltd. *China Securities Index.* Accessed November 08, 2020. http://www.csindex.com.cn/

CNN Philippine Staff. "Philippines Suspends Visa Issuance as Worldwide COVID-19 Cases Soar – Locsin." *CNN Philippines*. March 19, 2020. Accessed November 9, 2020. https://www.cnnphilippines.com/news/2020/3/19/Philippines-DFA-considering-visa-issuance-suspension-Locsin-coronavirus-COVID.html

Domingo, Katrina. "Senate Oks Bill Granting Additional Allowance for Health Workers, Poor Families During Covid-19 Crisis." *ABS-CBN News*, March 24, 2020. Accessed November 8, 2020. https://news.abs-cbn.com/news/03/24/20/senate-oks-bill-granting-additional-allowance-for-health-workers-poor-families-during-covid-19-crisis

"Dow Jones Industrial Average (DJIA)." *Corporate Finance Institute*. Accessed November 08, 2020., https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/dow-jones-industrial-average-djia/ (accessed on November 08, 2020)

"Dow Jones Industrial Average." *Market Watch.* Accessed November 8, 2020. https://www.marketwatch.com/investing/index/djia

Franck, Thomas. "Dow Briefly Wipes Out All the Gains since Trump's Eleciton." *CNBC.* March 23, 2020, Accessed November 9, 2020. https://www.cnbc.com/2020/03/23/dow-loses-all-gains-since-trumps-election-down-nearly-40percent.html

"Hang Seng Composite Indexes." *Hang Seng Composite Index Series*, October 2020. Accessed November 08, 2020. https://www.hsi.com.hk/static/uploads/contents/en/dl_centre/factsheets/hscie.pdf

Hong Kong Exchange. "Equities." *Hong Kong Exchange.* Accessed November 2020. https://www.hkex.com.hk/Market-Data/Securities-Prices/Equities?sc_lang=en

Huang, Eustance. "Chinese Stocks Plunge 7% Amid Virus Fears on First Trading Day After Lunar New Year Holiday." *CNBC.com*. February 03, 2020, Accessed November 9, 2020. https://www.cnbc.com/2020/02/03/asia-markets-china-markets-coronavirus-caixin-manufacturing-pmi-in-focus.html

"Index Summary." *PSE Electronic Disclosure Generation Technology (PSE EDGE).* Accessed November 8, 2020. https://edge.pse.com.ph/index/form.do

Lu, Lerong, and Ningyao Ye. "Chinese Depositary Receipts: What They Are, How They Work and Why This Represents a Golden Opportunity." *Butterworths Journal of Financial Banking and Financial Law* 33 (September 2018): 529-532.

Ma, Josephine. "Exclusive: Coronavirus: China's First Confirmed Covid-19 Case Traced Back to November 17." *South China Morning Post.* Accessed November 8, 2020. https://www.scmp.com/news/china/society/article/3074991/coronavirus-chinas-first-confirmed-covid-19-case-traced-back

"Market Cap." *Yahoo Finance*. Accessed November 8, 2020. https://finance.yahoo.com/quote/

"Market Capitalization." *Y Charts.* Accessed November, 08, 2020. https://ycharts.com/companies/market_cap

"Market Data – Top Counters." *Shenzhen Stock Exchange.* Accessed November 08, 2020. http://www.szse.cn/English/siteMarketData/marketStatistics/counters/index.html

Market Watch."Hang Seng Composite Index." *Market Watch*. Accessed November 08, 2020. https://www.marketwatch.com/investing/index/hsi?countrycode=hk

Market Watch. "PSEi Index." *Market Watch.* Accessed November 08, 2020. https://www.marketwatch.com/investing/index/psei?countrycode=ph

Market Watch. "Shanghai Composite Index." *Market Watch.* Accessed November 08, 2020. https://www.marketwatch.com/investing/index/shcomp?countrycode=cn

Market Watch. "Shenzhen Composite Index." *Market Watch.* Accessed November 08, 2020. https://www.marketwatch.com/investing/index/399106?countrycode=cn (accessed on November 08, 2020)

Mercado, Neil. "House OKs Bill Granting Duterte 'Necessary' Powers Due to COVID-19 Crisis." *Philippine Daily Inquirer*, March 24, 2020. Accessed November 9, 2020. https://newsinfo.inquirer.net/1246872/house-approves-bill-declaring-national-emergency-due-to-coronavirus

Merez, Arianne. "Duterte Grants COVID-19 Hazard Pay to Gov't Frontliners During Lockdown." *ABS-CBN News*, March 23, 2020. Accessed November 9, 2020. https://news.abs-cbn.com/news/03/23/20/duterte-grants-covid-19-hazard-pay-to-govt-frontliners-during-lockdown

Merez, Arianne. "Luzon Under Enhanced Community Quarantine as COVID-19 Cases Rise." *ABS-CBN News.* March 16, 2020. Accessed November 9, 2020. https://news.abs-cbn.com/news/03/16/20/duterte-places-luzon-under-enhanced-community-quarantine-to-fight-covid-19

"Methodology of SSE Composite Index." *China Securities Index Co. Ltd.* Accessed November 08, 2020.http://www.csindex.com.cn/uploads/indices/detail/files/en/1_000001_Index_Methodology_en.pdf

Moon, Louise, and Deb Price. "The Mother of All grizzly Bears is Mauling Global Stock Markets. When Will She Go Back into Hibernation?" *South China Morning Post*. March 23, 2020. Accessed November 9, 2020.https://www.scmp.com/business/markets/article/3076331/mother-all-grizzly-bears-mauling-global-stock-markets-when-will

"NASDAQ Composite." *Corporate Finance Institute*. Accessed November 8, 2020. https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/nasdaq-composite/

"NASDAQ Composite Index Methodology." *Nasdaq, Inc.* Accessed November 8, 2020. https://indexes.nasdaqomx.com/docs/methodology_COMP.pdf

"NASDAQ Composite Index." *Market Watch*. Accessed November 8, 2020. https://www.marketwatch.com/investing/index/comp

National Statistics Office of the Philippines. "Consumer Spending." *Trading Economics.* Accessed November 10, 2020. https://tradingeconomics.com/philippines/consumer-spending

National Statistics Office of the Philippines. "Employment Rate." *Trading Economics.* Accessed November 8, 2020. https://tradingeconomics.com/philippines/consumer-spending

Piad, Tyrone. "Stricter Lockdown Rules to Hurt Consumer Spending Recovery." *Business Mirror*, August 11, 2020. https://businessmirror.com.ph/2020/08/11/stricter-lockdown-rules-to-hurt-consumer-spending-recovery/

Ramelli, Stefano, and Alexander Wagner. "Feverish Stock Price Reactions to the Novel Coronavirus." *Review of Corporate Finance Studies* 20, no. 12 (June 30, 2020). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3550274

Rey, Aika. "New PH Coronavirus Cases Spike by 272, Total Now at 1,075." *Rappler*, March 28, 2020. Accessed November 9, 2020. https://www.rappler.com/nation/coronavirus-cases-philippines-march-28-2020

Rocamora, Joyce Ann L. "PH Records 73% Drop in Visitor Arrivals in First 7 Months of 2020." *Philippine News Agency*, August 11, 2020. Accessed November 10, 2020. https://www.pna.gov.ph/articles/1111917

"S&P 500." *Corporate Finance Institute*. Accessed November 8, 2020. https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/sp-500-index/

"S&P 500." *Market Watch*. Accessed November 8, 2020. https://www.marketwatch.com/investing/index/spx

"S&P 500." *S&P Global*. Accessed November 8, 2020. https://www.spglobal.com/spdji/en/indices/equity/sp-500/#data

"S&P Dow Jones Indices." *S&P Global*. Accessed November 8, 2020. https://www.spglobal.com/spdji/en/indices/equity/sp-500/#data

"S&P U.S. Indices Methodology." *S&P Global*. Accessed November 8, 2020. https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-indices.pdf

"Shenzhen Stock Exchange Indices." Shenzhen Stock Exchange. *RIMES*. Accessed November 08, 2020. https://www.rimes.com/data/shenzhen-stock-exchange/

Somasundaram, Narayanan. "Chinese Stocks Tumble Nearly 8% as Coronavirus Spreads." *Nikkei Asian Review*, February 03, 2020, Accessed November 9, 2020. https://asia.nikkei.com/Spotlight/Coronavirus/Chinese-stocks-tumble-nearly-8-as-coronavirus-spreads

Tappe, Anneken. "Stocks Close Lower." *CNN Business*. March 23, 2020, Accessed November 9, 2020. https://edition.cnn.com/business/live-news/stock-market-news-today-032320/index.html

The WFE Statistics Team. "Market Statistics – May 2020." Accessed November 08, 2020. https://focus.world-exchanges.org/issue/may-2020/market-statistics. Accessed November 08, 2020.

Tomacruz, Sofia. "Duterte Signs Law Granting Himself Special Powers to Address Coronavirus Outbreak." *Rappler*, March 24, 2020. Accessed November 9, 2020. https://www.rappler.com/nation/duterte-signs-law-granting-special-powers-coronavirus-outbreak

"Top 10 Stocks in Terms of Maket Value." *Shanghai Stock Exchange*. Accessed November 08, 2020. http://www.sse.com.cn/market/stockdata/marketvalue/

"Tourism Demand Statistics 2019." *Department of Tourism*. Accessed November 10, 2020. http://www.tourism.gov.ph/Tourism_demand/Arrivals2019.pdf

Vogl, Frank. "March 23, 2020: The Day the U.S. Economy Did Not Crash." *Globalist*, May 14, 2020. Accessed November 9, 2020. https://www.theglobalist.com/united-states-stock-market-wall-street-federal-reserve-unemployment-inequality-financial-crisis/

"What is the Shenzhen Composite Index?" *China Daily*. Accessed November 08, 2020.https://www.chinadaily.com.cn/business/2010h1results/2010-08/02/content_11079377.htm

"WHO Timeline of COVID-19." *World Health Organization*. Accessed November 8, 2020. https://www.who.int/news/item/27-04-2020-who-timeline---covid-19 (accessed on November 09, 2020)

Winck, Ben. "Here are the 10 Biggest Stock Exchanges in the World, Ranked By Market Cap." *Market Business Insider*. Accessed November, 08, 2020. https://markets.businessinsider.com/news/stocks/biggest-stock-exchanges-world-ranked-market-cap-nyse-nasdaq-trading-2020-6-1029325478.

"Worldometer COVID-19 Data." *Worldometers*. Accessed November 8, 2020. https://www.worldometers.info/coronavirus/about/

Zacks Equity Research. "Stock Market News for March 23, 2020," *Yahoo! Finance*, March 23, 2020. Accessed November 9, 2020. https://finance.yahoo.com/news/stock-market-news-mar-23-133301437.html#:~:text=The%20Dow%20Jones%20Industrial%20Average%20closed%20at%2019%2C173.98%20after%20losing,hit%206%2C879.52%20after%20decreasing%203.8%25

