**Introduction**

More than 1 year after its outbreak, the coronavirus pandemic continues to wreak havoc on the world’s economy. This black swan event has not only affected the quality of life of people all around the world, but it may have long-term consequences. Such consequences cannot be analysed at the current time, but there is plenty of literature around the short-term effects of covid-19 on different areas of the economy. Although investigating the impact of covid-19 on the health of the overall economy is an important topic, I will leave that for other researchers to investigate. Hence, the purpose of this investigative research is to determine the short-term impact of different announcements on stock market returns.

The S&P 500 index has grown by 24.63% since the US encountered the first coronavirus case in its own borders, on January 21st, 2020 (Google, 2021). It is clear that the index fluctuations can be explained in part by the different unexpected announcements, and in part by insider information. This paper aims to identify whether there were significant cumulative abnormal returns (CARs) around vaccine distribution approval announcements during the pandemic using an event study methodology. The CARs of each industry will be calculated and compared. CARs of small cap and large cap companies will be calculated around the event dates. This paper will also determine which industry-specific factors affect CARs around the event dates. Hence, the following research question is put forward:

*What is the effect of covid-19 vaccine approval announcements on equity market returns per industry?*

**Literature review and hypothesis**

He, Sun and Zhang (2020) start their paper stating that 2020 will be recorded in history because of an extraordinary turn of events. They study the impact of covid-19 on stock prices through an event-study methodology. The event day of the Covid-19 outbreak is January 23rd, 2020. Their regression shows that the Shanghai and Shenzhen A-shares showed no significant cumulative abnormal returns (CAR) on the day of the outbreak. However, starting with the 15th day after the outbreak, both stock exchanges’ shares significantly dropped. They find that the CARs were negative for the Shanghai stock exchange (SE) and positive for the Shenzhen SE. This discrepancy is explained by differences in industry characteristics of the companies listed on each exchange. In particular, the Shanghai SE listed companies are mostly traditional industries, whereas the Shenzhen SE includes companies which are highly technological. Hence, the following sub-question:

*What is the effect of industry characteristics on the market reaction around the time of the vaccine approval announcements?*

He, Sun and Zhang (2020) further break the impact of covid-19 on each industry with different event windows. 30 days after the event day, the sectors which showed the largest negative CARs are agriculture (CAR ~ -1.12%), electric&heating (CAR~ -0.59%), transportation (CAR ~ -0.33%), environment (CAR~-0.73%) and information technology (CAR~ -0.65%). These are significant at the 1% confidence level. Lastly, He, Zun and Zhang (2020) investigate how covid-19 impacted companies with different equity properties, and argue they have different capabilities to deal with external shocks. They find that the state-owned, traditional enterprises showed significant negative CARs on all event windows chosen. In contrast, non-state-owned, mainly technological companies showed significant positive CARs on all event windows.

“Our paper verifies that firm-specific characteristics indeed influence market reaction to the COVID-19 outbreak, adding to the existing literature. Third, a branch of studies in accounting and finance stress the role of institutional investors in China (Jiang and Kim [2015](https://www-tandfonline-com.eur.idm.oclc.org/doi/full/10.1080/1540496X.2020.1787151?scroll=top&needAccess=true)). Our study shows that institutional investors have significantly negative impact on market reaction to the COVID-19 outbreak, providing additional support to the evidence that institutional investors in China are buy-and-sell speculators and not buy-and-hold investors.” – Xiong, Wu, Hou, Zhang, 2020

H1: Companies with a higher level of institutional investors exhibit larger negative cumulative abnormal returns or lower positive cumulative abnormal returns during a vaccine approval announcement.

H2: The vaccine approval announcements had no impact on stock prices, per industry.

This research examined the effect of the SARS outbreak on Taiwanese hotel stock performance. Seven publicly traded hotel companies had significant declines in their earnings and stock prices during the SARS period. Such a finding indicated that hotel stocks, on average, were exposed to above-market-average risk during the SARS outbreak period, which is consistent with the common perception that the hotel industry is most vulnerable to a decrease in the number of tourists. It suggests that investors expect hotel stock prices to react negatively to a future epidemic and ask for a higher return to compensate for higher risk. – Chen, Jang, Kim, 2020

Methodology and data

This paper will use an event study approach. The data on stock prices will be collected from Compustat – CRSP and the data on company and industry fundamentals will be taken from the Thomson (T1) database. The events to be researched are selected from the American Journal of Managed Care (AJMC). The AJMC provides a timeline of all important covid-19 announcements. The events are as follows:

**December 11 —** **FDA Agrees to EUA for COVID-19 Vaccine From Pfizer, BioNTech**

**December 18 — FDA Signs Off on EUA for Moderna's COVID-19 Vaccine**

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