



## Northwood COVID-19 Optimism Index



**1/2/2023**

**Prepared by Northwood's McNair Center for the  
Advancement of Free Enterprise and Entrepreneurship**

"Finally, history recognizes that human progress depends on freedom  
for business enterprise."

-V. Orval Watts

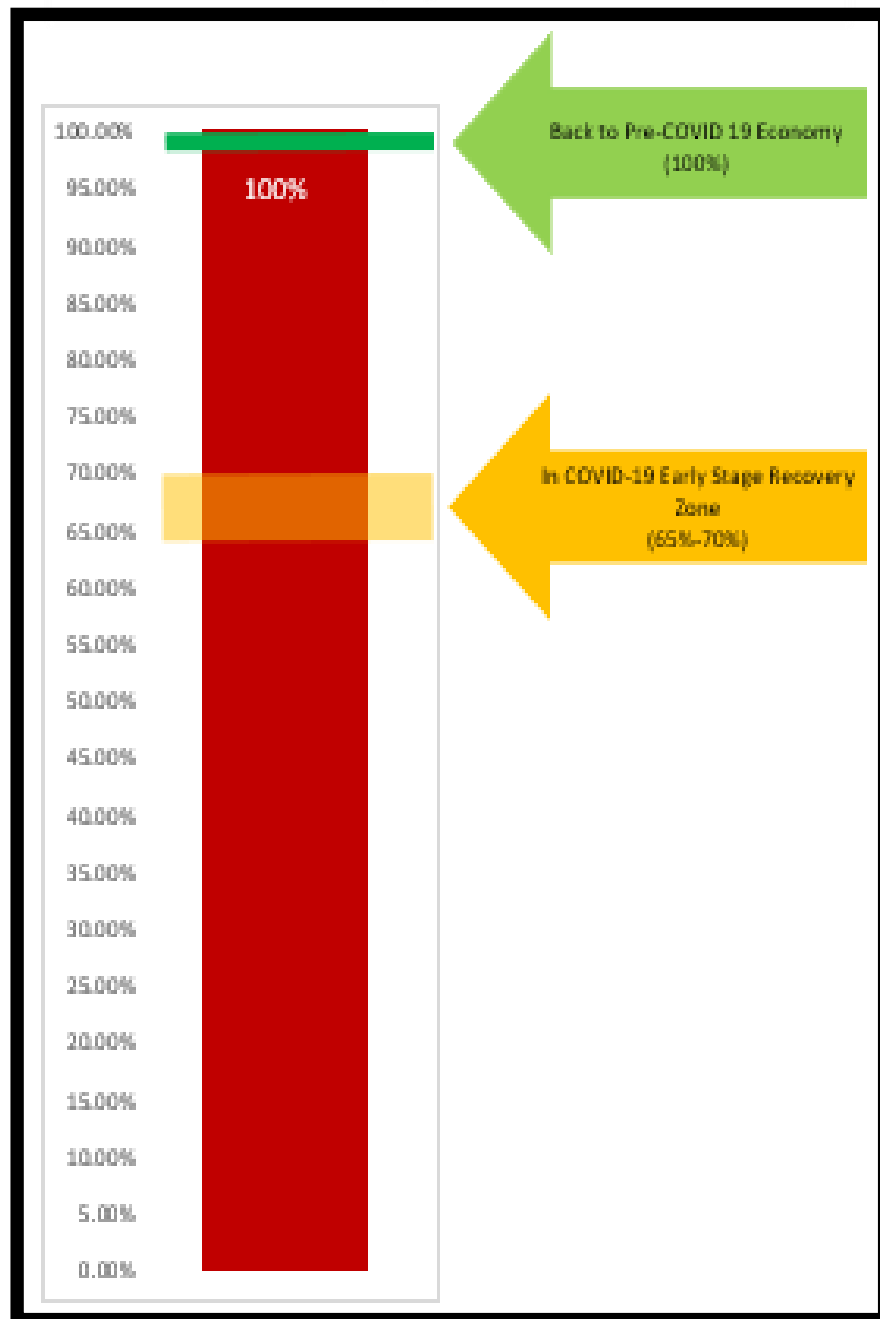
The Northwood Idea

*When We Are Free*

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# Northwood University's COVID-19 Broad-base Index 1/2/2023



**\*See Performance Breakdown on Next Page**

## Understanding the Results:

The Northwood University COVID-19 Optimism Index is prepared daily by the McNair Center for the Advancement of Free Enterprise and Entrepreneurship at Northwood University.

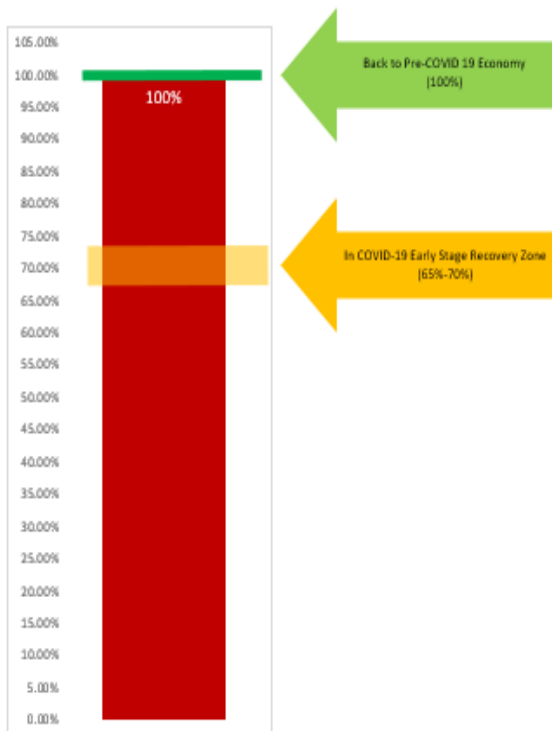
The Index follows seven variables on a daily basis. The variables are (a) Total U.S. COVID cases, (b) Total U.S. COVID-related deaths, (c) Current U.S. COVID-19 Mortality Rate, (d) Performance of the Dow Jones Industrial Average (DJIA), (e) Performance of the NASDAQ Stock Exchange, (f) Performance of the Wilshire 5000 Stock Index, and (g) Movement in the yield on the U.S. Treasury 10-year Bond (see chart on next page). The index tracks variables c, d, e, f, and g in the calculation of its Index. The Index uses variable c as a proxy for the impact of the COVID-19 virus on the economy, variables d, e, and f as a proxy for the general health of the economy, and variable g, as a proxy for the general level of confidence in the economy.

The Index measures movement from pre-COVID-19 crisis through the current COVID-19 crisis, a sustained measurement on the Index above of 65 to 70 is an indication that the economy is beginning to recover. When the Index reaches a level of 100 or 100 percent, it is a signal that the economy has or will within six months returned to conditions close to or equal to those which existed pre-COVID-19 virus.

Our McNair Center's Northwood University COVID-19 Optimism Index closed flat for the month of December 2022 at 100% with five of our variables in the red while the overall mortality rate and 10-year US Treasury Bond Yield were in the green. The overall mortality rate fell to 1.081% and the monthly mortality rate increased to 0.61%. The 7-day moving average for daily new cases, as of yesterday, was 52,767. For new hospitalizations, the 7-day average is currently 5,639, an increase of 989 from the month prior. According to CNN, China will drop the quarantine requirements for international travelers on January 8th, another step towards the country's dismantling of its zero-COVID policy. China's National Health Commission stated that travelers will be required to show proof of a negative COVID test at least 2 days before departure. The easing of COVID restrictions comes as a response to nationwide protests that took place in late November/early December. CNN continued, saying the sudden change in policy caused widespread shortages of cold and fever medicine leaving Chinese hospitals scrambling to handle an unprecedented surge of infections. According to the CDC, out of the 939.127 million vaccine doses distributed in the U.S., 663.82 million or 71.12% have been administered, up from last month's level of 70.68%. In addition, 229.135 million Americans or 69% of the US population are fully vaccinated with 236.989 million or 91.8% of Americans 18 and older having received at least 1 vaccine dose.

***We especially encourage you to pay close attention to charts 10, 11 and 12 (in the report) as they are showing key COVID-19 data, increasing at a decreasing rate or the flattening of overall COVID-19 conditions which means that we DO expect the number of new cases to be declining in the next 1-2 weeks.***

*\*for more information, or questions, on the above, contact Dr. Timothy G. Nash at 1(989) 837-4129 or at [tgnash@northwood.edu](mailto:tgnash@northwood.edu)*



### Northwood University COVID 19 Optimism Index Key of Ranges For Broad-Base Model

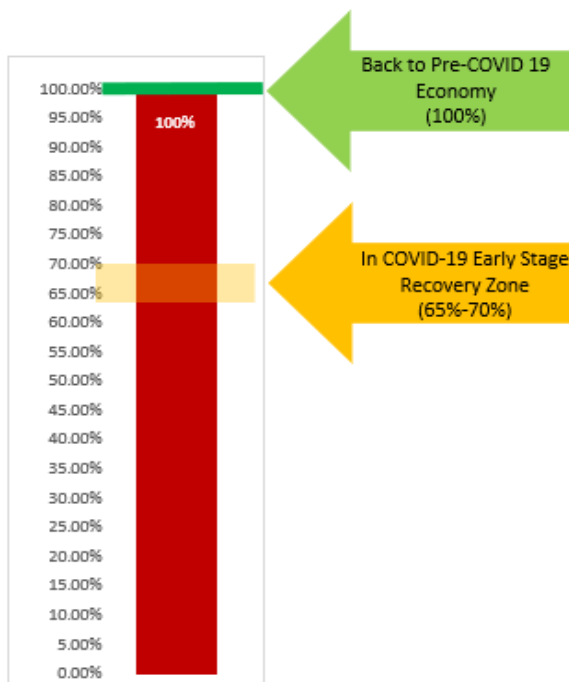
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**\*Round up if greater than index**

	-1	1	2	3	4	5	6
<b>Mortality Rate = 3/7</b>	>9.00	9.00-6.00	6.00-4.00	4.00-2.00	2.00-1.00	1.00-0.66	<0.66
<b>Dow = 1/7 index</b>	<14,000	14000-18000	18000-21000	21000-24000	24000-27000	27000-29600	>29600
<b>Nasdaq = 1/7 index</b>	<4650	4650-6000	6000-6985	6985-7979	7980-8970	8970-9840	>9840
<b>Wilshire 500 = 1/7 index</b>	<16300	16300-21100	21100-24600	24600-28000	28000-31600	31600-34600	>34600
<b>Treasury = 1/7 index</b>	<0	0-0.5	0.5-1	1-1.5	1.50-2	2-2.6	>2.6

### Broad Base Model Key Explained

The Broad base model is calculated on a 7-point scale. To date, all U.S. activity has been within the 1-5 range. A -1 would signal dire economic and social conditions, while a 6 would signal the defeat of the COVID-19 virus and new record highs for the major stock indices and exchange listed in our model. The index tracks five categories: 1. the change in daily U.S. COVID mortality rates, 2. change in daily performance of the Dow Jones Industrial Average, 3. change in daily performance of the NASDAQ Stock Exchange 4. change in daily performance of the Wilshire 5000 Stock Index 5. change in the daily yield on 10-year treasury bonds. We have ranked the performance in each of the five categories based on worst case conditions that could or did exist early in our current crisis (ranking of 1) to conditions that would exist when the economy returns to economic and health conditions close to or at pre-COVID 19 conditions (ranking of 5). Performance and or conditions by category improves as one moves from a ranking of 1 to 2 to 3 to 4 to 5. If a ranking of 6 is achieved in any category it suggests that conditions are superior to what they were pre-COVID 19 virus. Category 1 (Mortality Rate) is weighted 3/7th of the final with the other 4 categories each receiving a 1/7<sup>th</sup> weight. Once the results are determined based on the following weights, it is converted to a 100-point scale, where 100 represents a return to prosperous economic times pre-COVID-19 virus.



### Northwood University COVID 19 Optimism Index Key of Ranges For Technical Model

Produced by Northwood's McNair Center for the Advancement of Free Enterprise and Entrepreneurship

**\*Round up if greater than index**

	-1	Greater than 0 to 1	Greater than 1 to 2	Greater than 2 to 3	Greater than 3 to 4	Greater than 4 to 5	Greater than 5 to 6
<b>Mortality Rate = 3/7</b>	>9.00	9.00-6.00	6.00-4.00	4.00-2.00	2.00-1.00	1.00-0.66	<0.66
<b>Dow = 1/7 index</b>	<14,000	14000-18000	18000-21000	21000-24000	24000-27000	27000-29600	>29600
<b>Nasdaq = 1/7 index</b>	<4650	4650-6000	6000-6985	6985-7979	7980-8970	8970-9840	>9840
<b>Wilshire 500 = 1/7 index</b>	<16300	16300-21120	21120-24580	24580-28075	28075-31570	31570-34620	>34620
<b>Treasury = 1/7 index</b>	<0	0-0.5	0.5-1	1-1.5	1.50-2	2-2.6	>2.6




### Technical Model Key Explained

The Technical model, like the Broad Base Model, is calculated on a 7-point scale. To date, all U.S. activity has been within the 1-5 range. A -1 would signal dire economic and social conditions, while a 6 would signal the defeat of the COVID-19 virus and new record highs for the major stock indices, and a new low mortality rate, both listed in our model. The index tracks five categories: 1. the change in daily U.S. COVID mortality rates, 2. change in daily performance of the Dow Jones Industrial Average, 3. change in daily performance of the NASDAQ Stock Exchange 4. Change in daily performance of the Wilshire 5000 Stock Index 5. Change in the daily yield on 10-year treasury bonds. We have ranked the performance in each of the five categories based on worst case conditions that could or did exist early in our current crisis (ranking of 1) to conditions that would exist when the economy returns to economic and health conditions close to or at pre-COVID 19 conditions (ranking of 5). Performance and or conditions by category improves as one moves from a ranking of 1 to 2 to 3 to 4 to 5. If a ranking of 6 is achieved in any category it suggests that conditions are superior to what they were pre-COVID 19 virus. Where the Technical Model differs from the Broad Base Model is that it divides each category into tenths and so with the Broad Base model, you have five categories in essence. So, with the technical model, you have 10 sub- categories per ranking (10 within 1, 10 within 2, 10 within 3, 10 within 4, 10 within 5 for a total of 50 ranking points). By dividing each category into tenths, this allows the model to be more sensitive to changes in the data. This model will pick up on changes in the trend before the Broad Base model will. For example, you may receive a 4.1 or 4.5 in a technical model, whereas you can only receive a 5 in the broad base model. The broad base model gives us a general overview. The technical model gives us a more in-depth ranking. Category 1 (Mortality rate) is weighted 3/7th of the final, with the other 4 categories each receiving a 1/7<sup>th</sup> weight. Once the results are determined based on the following weights, it is converted to a 100-point scale, where 100 representing a return to prosperous economic times pre-COVID-19 virus.

# The Northwood University/McNair COVID-19 Optimism Index




Day 1,023: Monday, January 2<sup>nd</sup>, 2023, 4PM ET

## 1. Measurements of the Impact of COVID-19 on the U.S. Population


- a. U.S. COVID-19 deaths: 1,077,303 to 1,088,481 (up 1.04%) 
- b. U.S. Cases of COVID-19 increased from 98,777,220 to 100,622,056 (up 1.87%) 
- c. U.S. COVID-19 Mortality Rate equals 1.081% (down 1.37%) 

To determine the current U.S. COVID-19 Mortality Rate take 1,088,481 U.S. Deaths from COVID-19 divided by 100,622,056 total U.S. cases of COVID-19 = 1.081%

## 2. Major U.S. Stock Indices

- a. Today the Dow Jones Industrial Average was 33,147.25 (down 3.73%) 
- b. Today the **NASDAQ** was 10,466.48 (down 8.68%) 
- c. Today the **Wilshire 5000** was 38,073.94 (down 6.00%) 

## 3. The 10-year U.S. Treasury Bond Yield

- a. Today the yield was 3.88 (up 11.05%) 

### Understanding the Results

Our McNair Center's Northwood University COVID-19 Optimism Index closed flat for the month of December 2022 at 100% with five of our variables in the red while the overall mortality rate and 10-year US Treasury Bond Yield were in the green. The overall mortality rate fell to 1.081% and the monthly mortality rate increased to 0.61%. The 7-day moving average for daily new cases, as of yesterday, was 52,767. For new hospitalizations, the 7-day average is currently 5,639, an increase of 989 from the month prior. According to CNN, China will drop the quarantine requirements for international travelers on January 8th, another step towards the country's dismantling of its zero-COVID policy. China's National Health Commission stated that travelers will be required to show proof of a negative COVID test at least 2 days before departure. The easing of COVID restrictions comes as a response to nationwide protests that took place in late November/early December. CNN continued, saying the sudden change in policy caused widespread shortages of cold and fever medicine leaving Chinese hospitals scrambling to handle an unprecedented surge of infections. According to the CDC, out of the 939.127 million vaccine doses distributed in the U.S., 663.82 million or 71.12% have been administered, up from last month's level of 70.68%. In addition, 229.135 million Americans or 69% of the US population are fully vaccinated with 236.989 million or 91.8% of Americans 18 and older having received at least 1 vaccine dose.

This Index is published daily by the McNair Center for the Advancement of Free Enterprise and Entrepreneurship. Any questions regarding the index can be addressed by contacting Dr. Timothy G. Nash at 1(989) 837-4129 or [tgnash@northwood.edu](mailto:tgnash@northwood.edu). **Index definitions to follow.**

# How the Northwood University COVID-19 Optimism Index is constructed and functions

The Northwood University COVID-19 Optimism Index reports on changes in daily optimism each day in a given week. We report on our three major factors that indicate whether or not the American economy is making progress with the COVID-19 virus and recovering. The three categories are: 1. Measurements of the impact of COVID-19 on the US Population. 2. The performance of the three major U.S. Stock indices (The Dow Jones Industrial Average, the NASDAQ and The Wilshire 5000) and 3. The interest rate or yield on 10-year treasury bonds.

## **Measurements of the Impact of COVID-19 on the US Population**

As the US COVID-19 mortality rate declines, that will be a sign that the percentage of American's who have contracted the COVID-19 virus and have died, is declining. If the mortality rate is declining, there will be a downward green arrow to the right of the index. If the mortality rate is increasing, there will be an upward red arrow to the right of the mortality index. The lower the mortality rate, the greater the reason for optimism and the realization that as a country we are effectively fighting the COVID-19 virus and reducing its negative impact on the economy. Equally important we are tracking daily increases or decreases in the number of COVID-19 cases in the US as well as daily increases in US deaths from COVID-19. Red and green arrows will be applied in the exact same fashion for COVID-19 cases and deaths as explained above with the Mortality Rate.

## **Tracking Stock Market Performance**

By tracking our three major US stock indices, we will be following one of the best broad-based indicators as to how the American economy is performing. In general terms, daily, weekly, and monthly increases in our three major stock indices is a broad-based signal that generally the U.S. economy is improving. Prolonged and especially sharp declines in the three indices is a sign that the general economy is underperforming. Long and or sharp declines in these indices forecast bad economic times exist or may be on the horizon for the US economy. When a stock market index is growing, the arrow to the right will be upward pointing and green. When a stock market declines, the arrow will be downward pointing and red.

### **US Stock Market Indices**

- a. The Dow Jones Industrial Average is an index that tracks 30 large publicly-owned blue chip companies trading to the New York Stock Exchange (NYSE) and the NASDAQ.
- b. NASDAQ is a global electronic marketplace for buying and selling securities. It is the second largest stock market in the world by market capitalization and is the home for most major technology stocks.
- c. The Wilshire 5000 Total Market Index or Wilshire 5000 is intended to measure the performance of most publicly traded companies headquartered in the



United States. It is generally believed to be the broadest measurement of US stock performances as it has collectively measured the performance of roughly 3,500 companies annually over the last five years.

### **U.S. Treasury Yield**

The 10-year US treasury bond yield is a certificate representing a loan to the federal government and matures in more than 10 years. Since they are backed by the US government, they are seen as a safe investment, particularly relative to stocks and other securities. Treasury bond prices and yields move in opposite directions, falling bond prices boost yields and rising bond prices lower yields. The 10-year yield is used as a proxy for mortgage interest rates and is also seen as a sign of investor sentiment regarding the state of the economy. A rising yield indicates falling rates and falling demand for treasury bonds, which means investors would rather put their money in higher risk, higher reward investments (like the stock market); a falling yield suggests the opposite. When the 10-year US treasury bond yield is increasing, the arrow will be green and pointing upward as this is a sign investor confidence in stock market is increasing. When US 10-year treasury bond yields are decreasing, the arrow will point downward and it will be red. This is a sign that investors are willing to take lower returns on government securities because they are worried about the economy and do not want to hold stocks.

Sources: Johns Hopkins University, WorldOMeter, MarketWatch, Wall Street Journal, Yahoo Finance, World Health Organization, U.S. CDC, Investors Daily, and Investopedia.

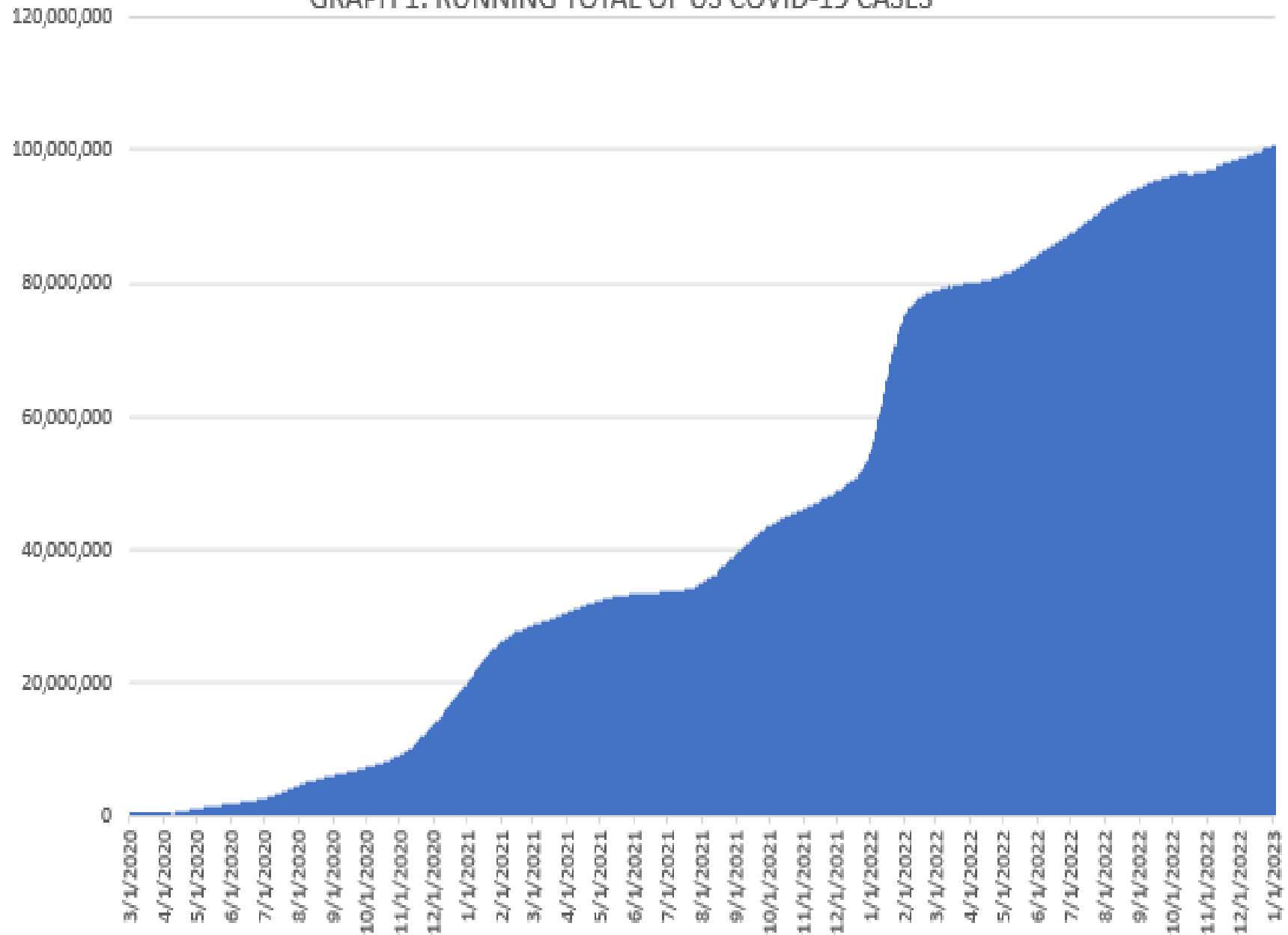
The Northwood University COVID-19 Optimism Index is produced five times a week by the McNair Center for the Advancement of Public Policy and Entrepreneurship at Northwood University.

Each daily report will have a brief summation of what the Northwood University Optimism Index was signaling about the US economy and its battle with the COVID-19 virus.

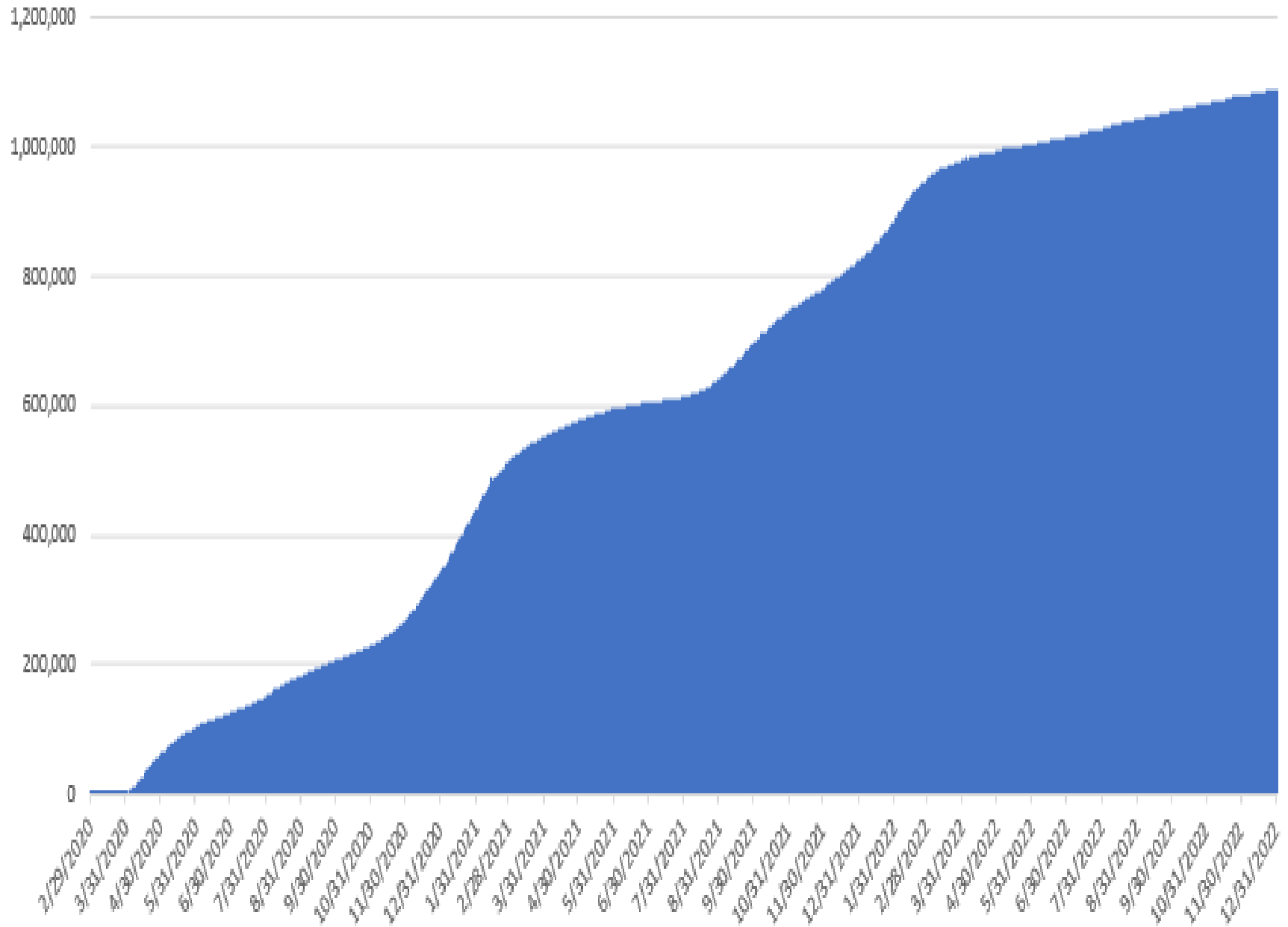
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Graph Number	Definition	Graph Number	Definition
<b>1</b>	This is a graph of the total number of confirmed US COVID-19 cases since February 28 <sup>th</sup> .	<b>7</b>	This is a graph showing the daily yield on the 10 year treasury bond. In other words, this is the annual rate of return you could get for loaning the US government money for 10 years.
<b>2</b>	This is a graph of the total number of confirmed US COVID-19 related deaths since February 28 <sup>th</sup> .	<b>8</b>	This is a bar graph showing the daily level of the Northwood University COVID-19 technical optimism Index. See pages 4-5 for more information.
<b>3</b>	This is a graph showing the percentage of people who have died after getting COVID-19 in the US. It's calculated by dividing total number of deaths by total number of cases.	<b>9</b>	This is a bar graph showing the daily level of the Northwood University COVID-19 broad-base optimism Index. See pages 4-5 for more information.
<b>4</b>	This is a graph showing the daily closing price of the Dow Jones Industrial Index since February 28 <sup>th</sup> . This Index contains 30 Blue chip companies.	<b>10</b>	This is a graph that shows the percent change in the total number of cases per day. Its calculated by dividing today's total number of cases by yesterday's then measured in percent.
<b>5</b>	This is a graph showing the daily closing price of the NASDAQ Composite Index since February 28 <sup>th</sup> . This Index Contains 100 mostly Tech companies.	<b>11</b>	This is a graph that shows the percent change in the total number of deaths per day. Its calculated by dividing today's total number of deaths by yesterday's then measured in percent.
<b>6</b>	This is a graph showing the daily closing price of the Wilshire 5000 Index since February 28 <sup>th</sup> . This Index Contains about 3500 smaller US companies.	<b>12</b>	This is a graph that shows the percent change in the mortality rate per day. Its calculated by dividing today's mortality rate yesterday's then measured in percent.

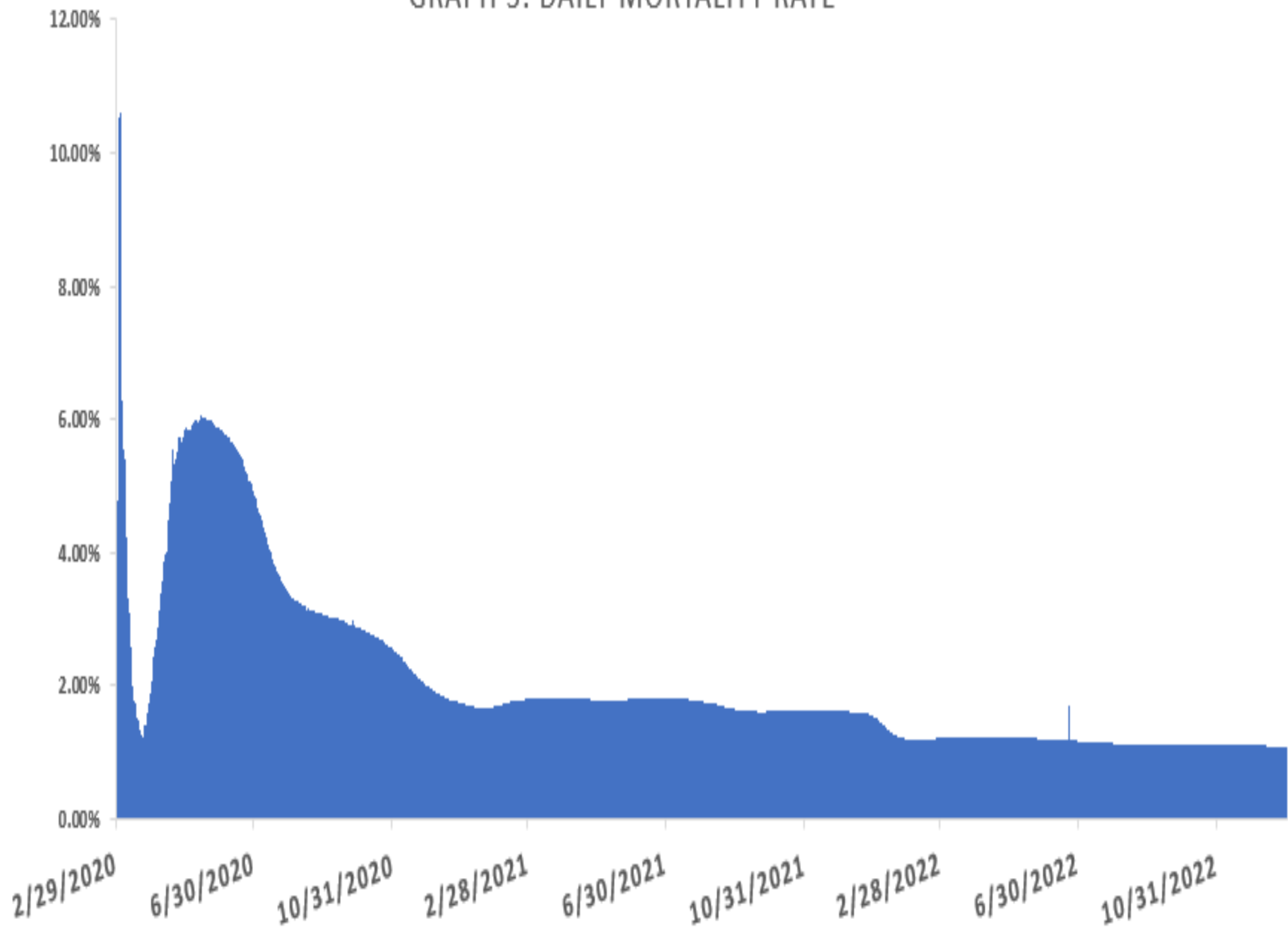
GRAPH 1: RUNNING TOTAL OF US COVID-19 CASES



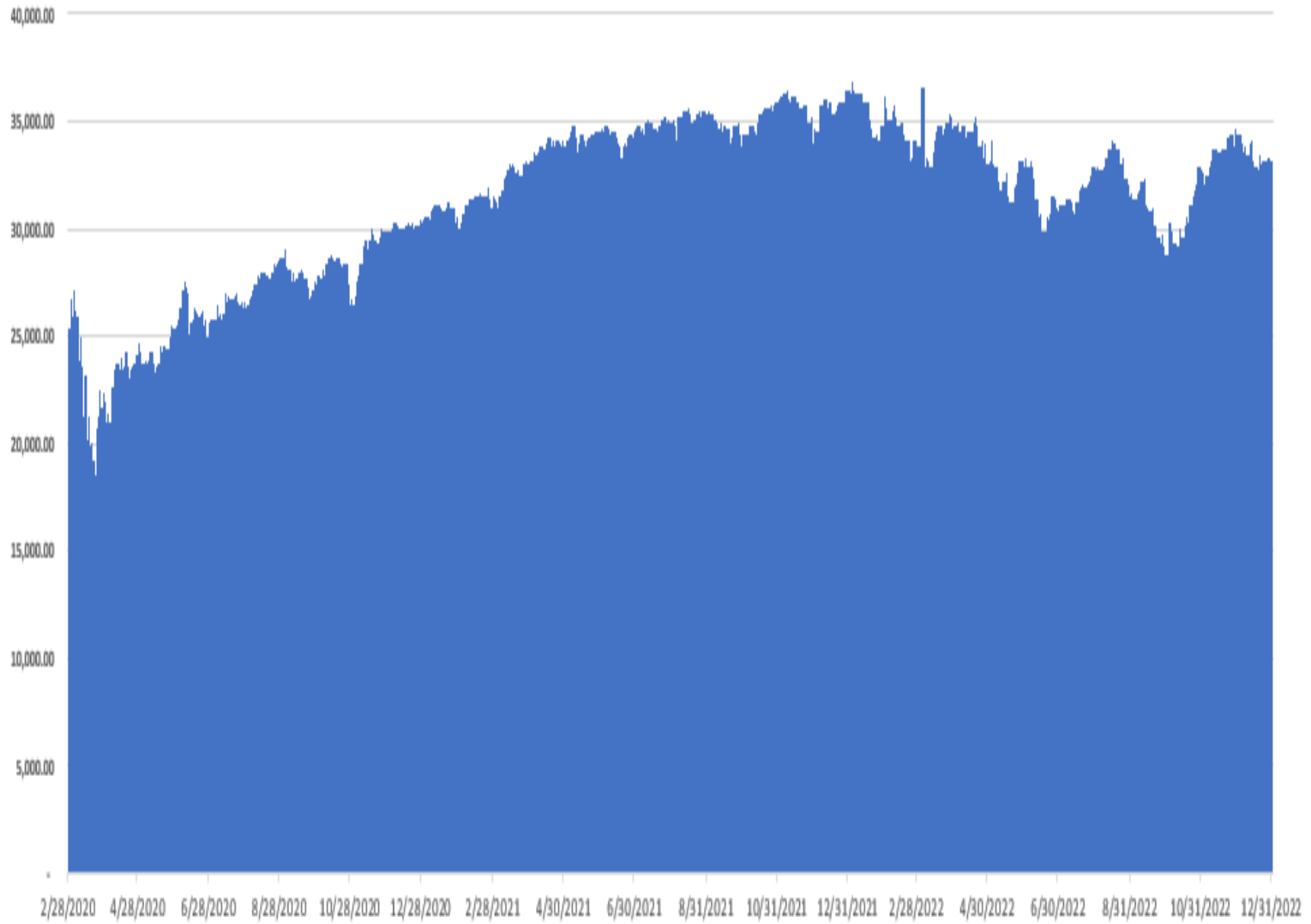
GRAPH 2: RUNNING TOTAL OF US COVID-19 DEATHS



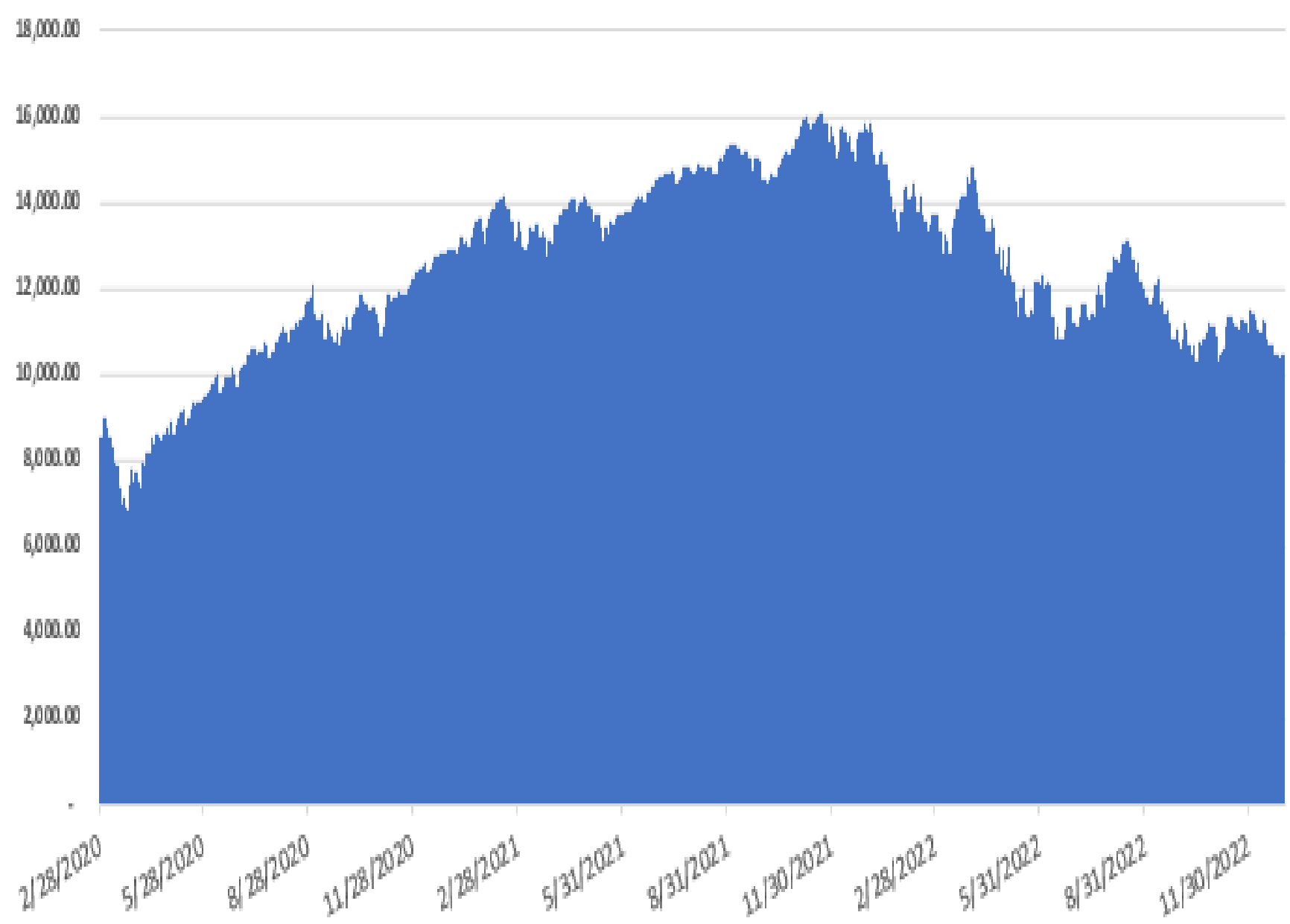
GRAPH 3: DAILY MORTALITY RATE



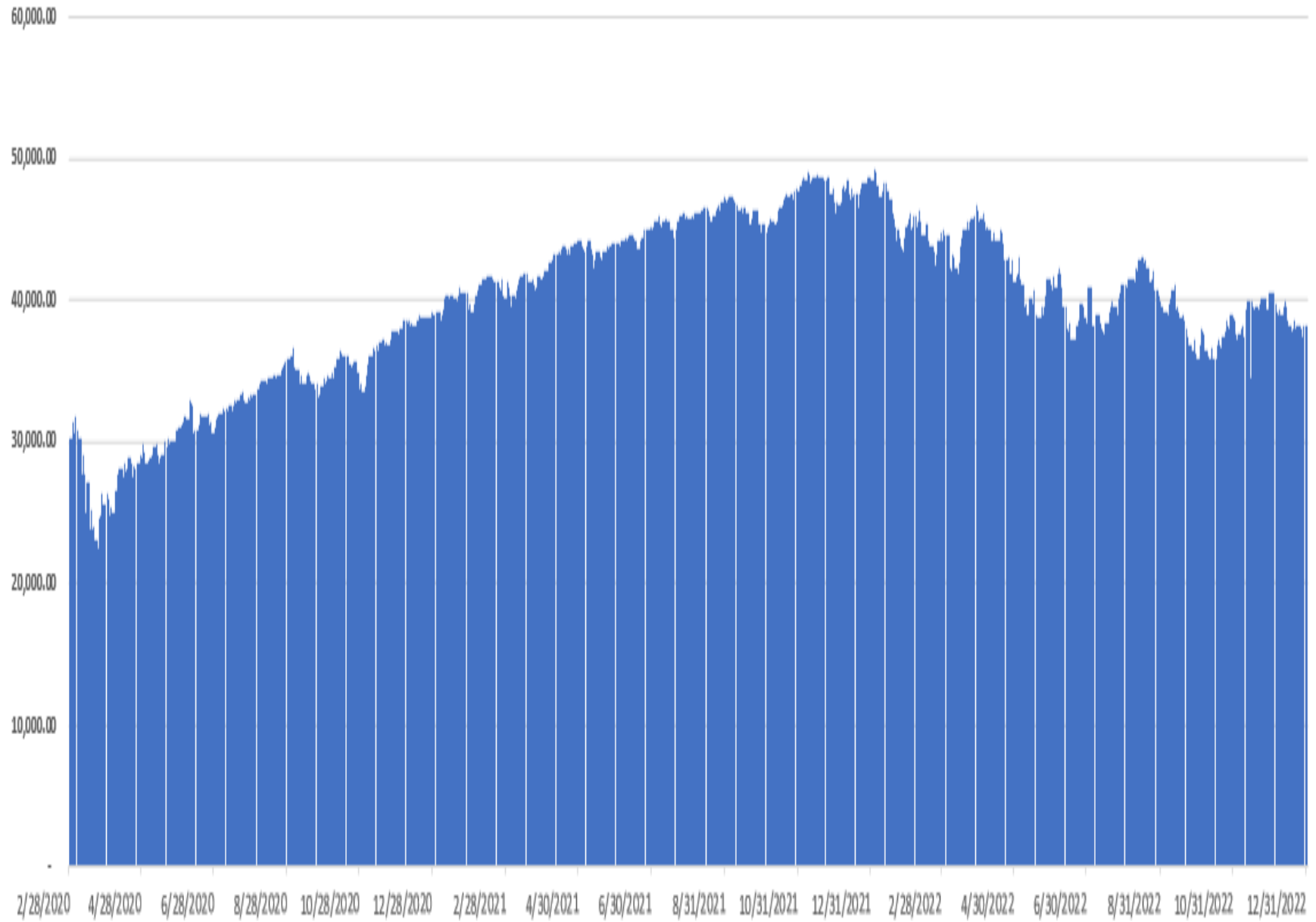
GRAPH 4: DOW JONES DAILY CLOSING PRICE



GRAPH 5: NASDAQ DAILY CLOSING PRICE

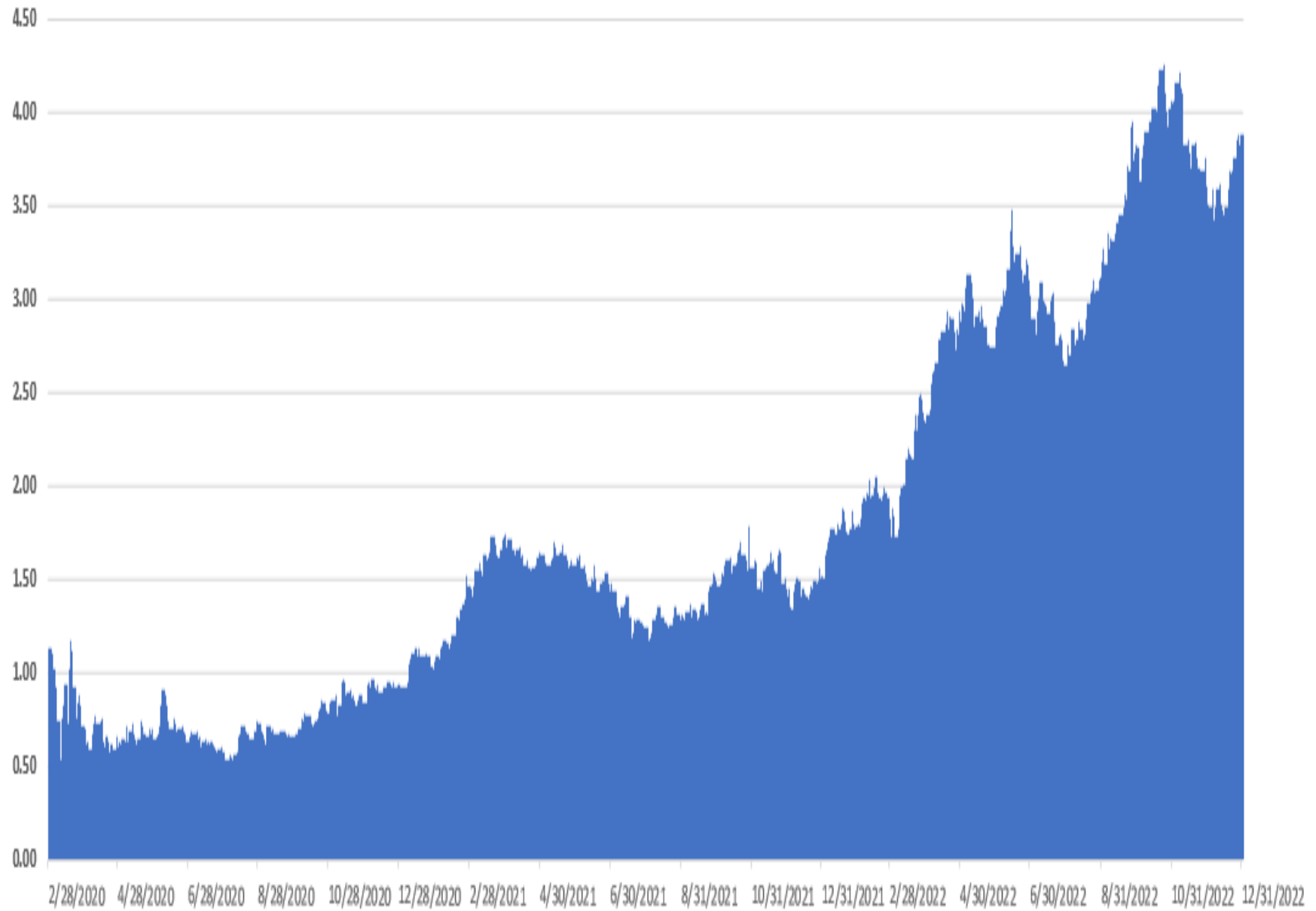


GRAPH 6: WILSHIRE 5000 DAILY CLOSING PRICE



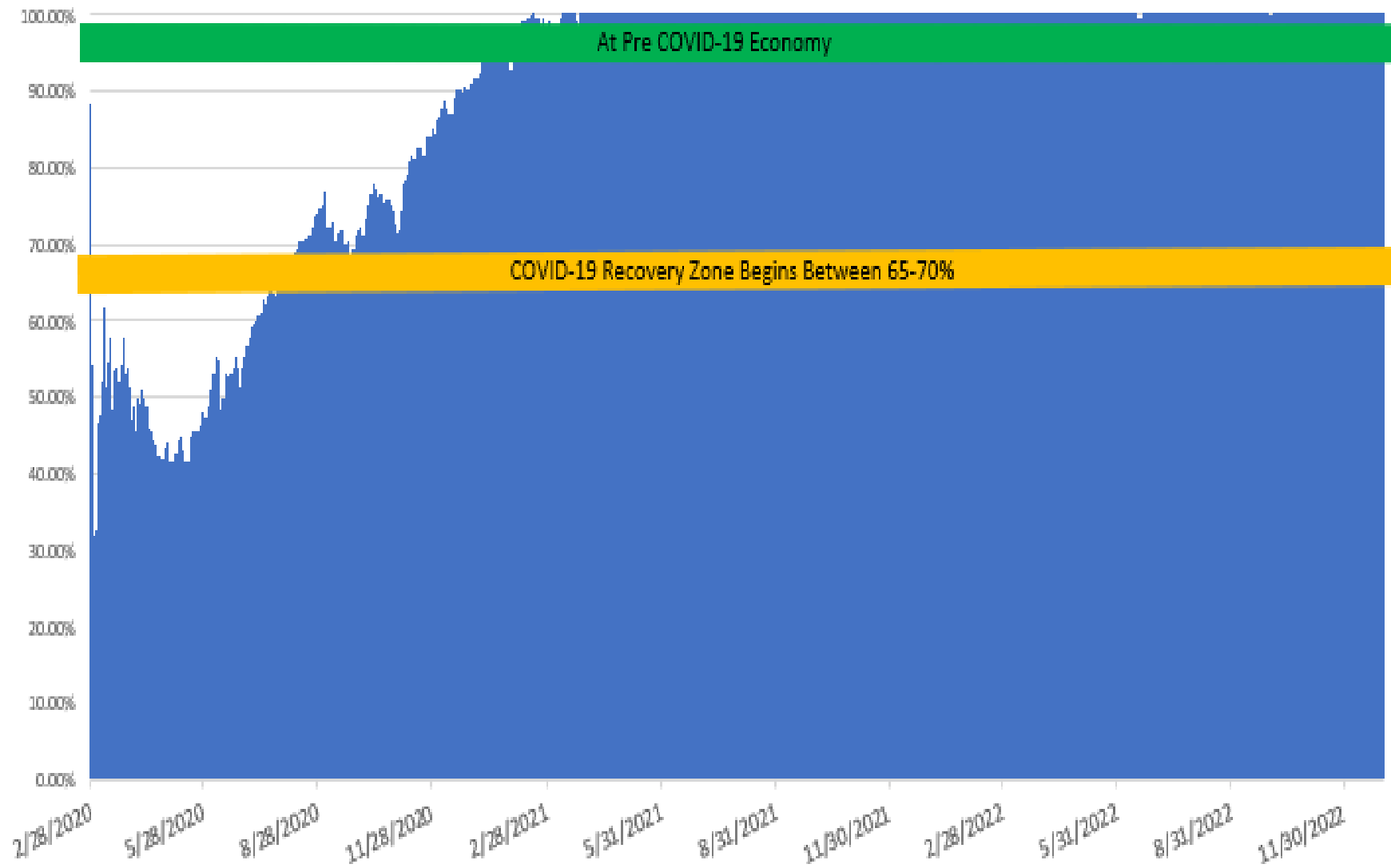


GRAPH 7: DAILY CHANGE US 10 YR YIELD



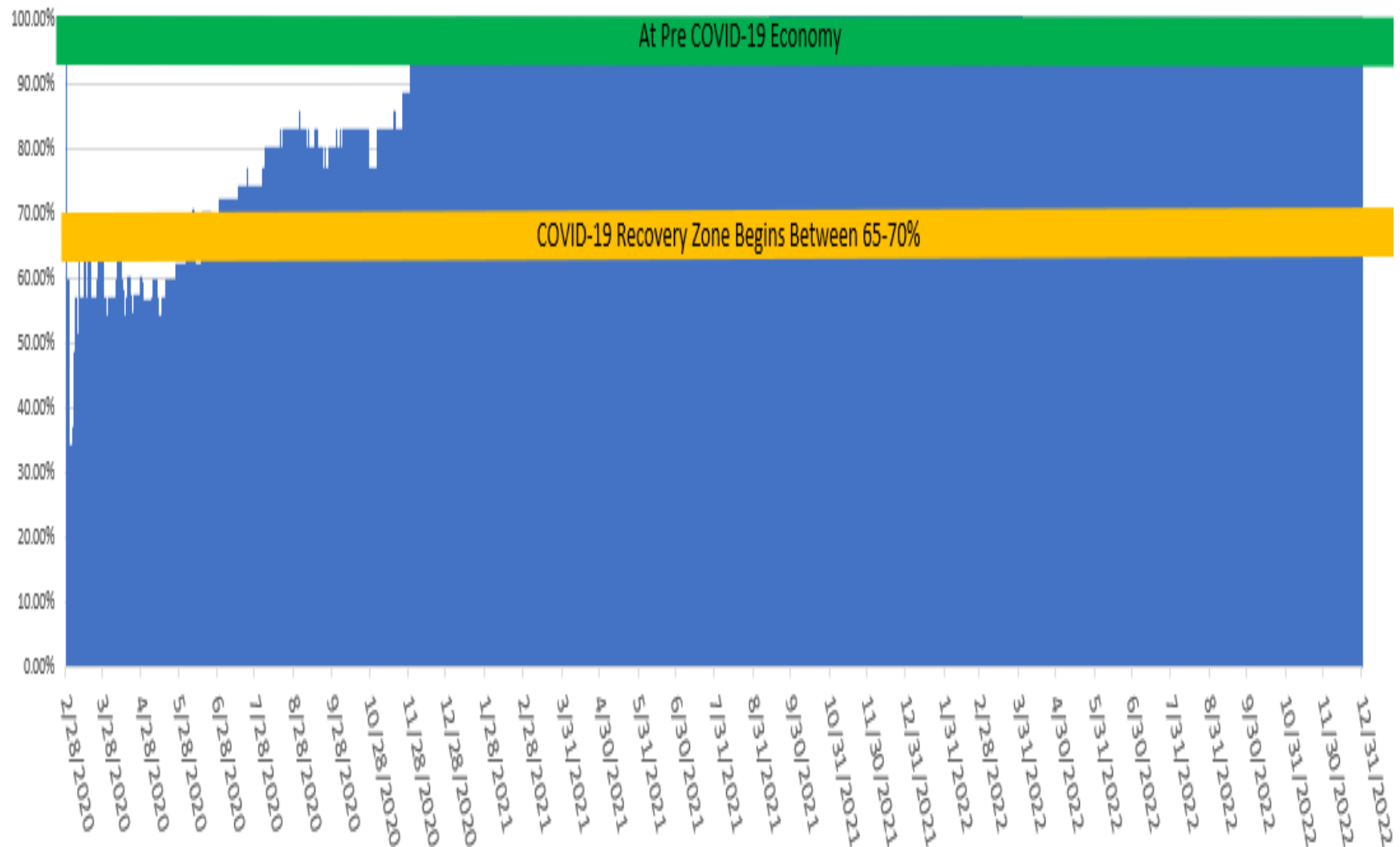
Graph 8: Northwood University COVID Technical Optimism Bar Index (Out of 100%)

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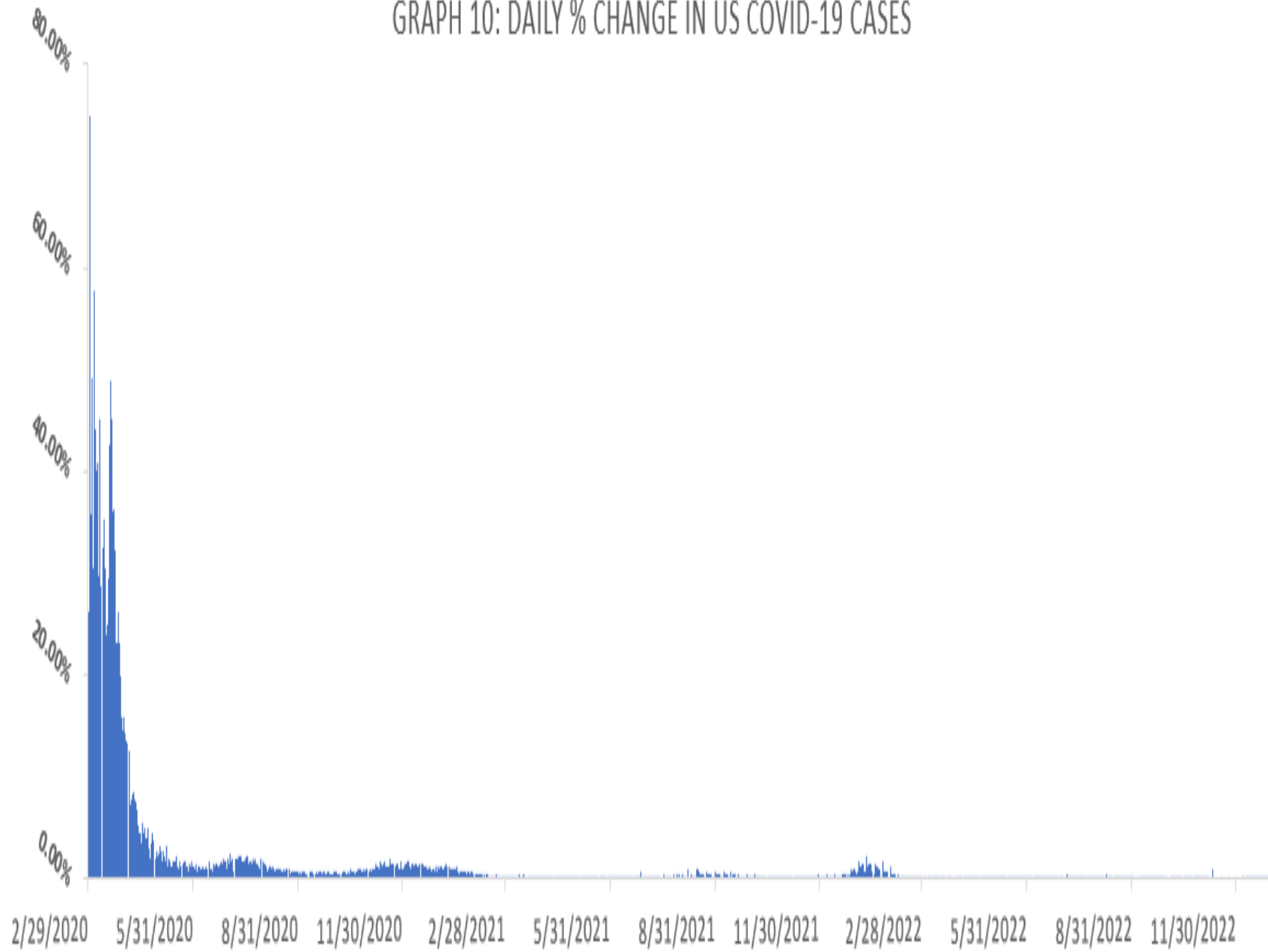
To read definition of Technical Index see page 5

Graph 9: Northwood University COVID Broad-Base Optimism Bar Index (Out of 100%)  
 Produced by Northwood's McNair Center for the Advancement of Free Enterprise and Entrepreneurship

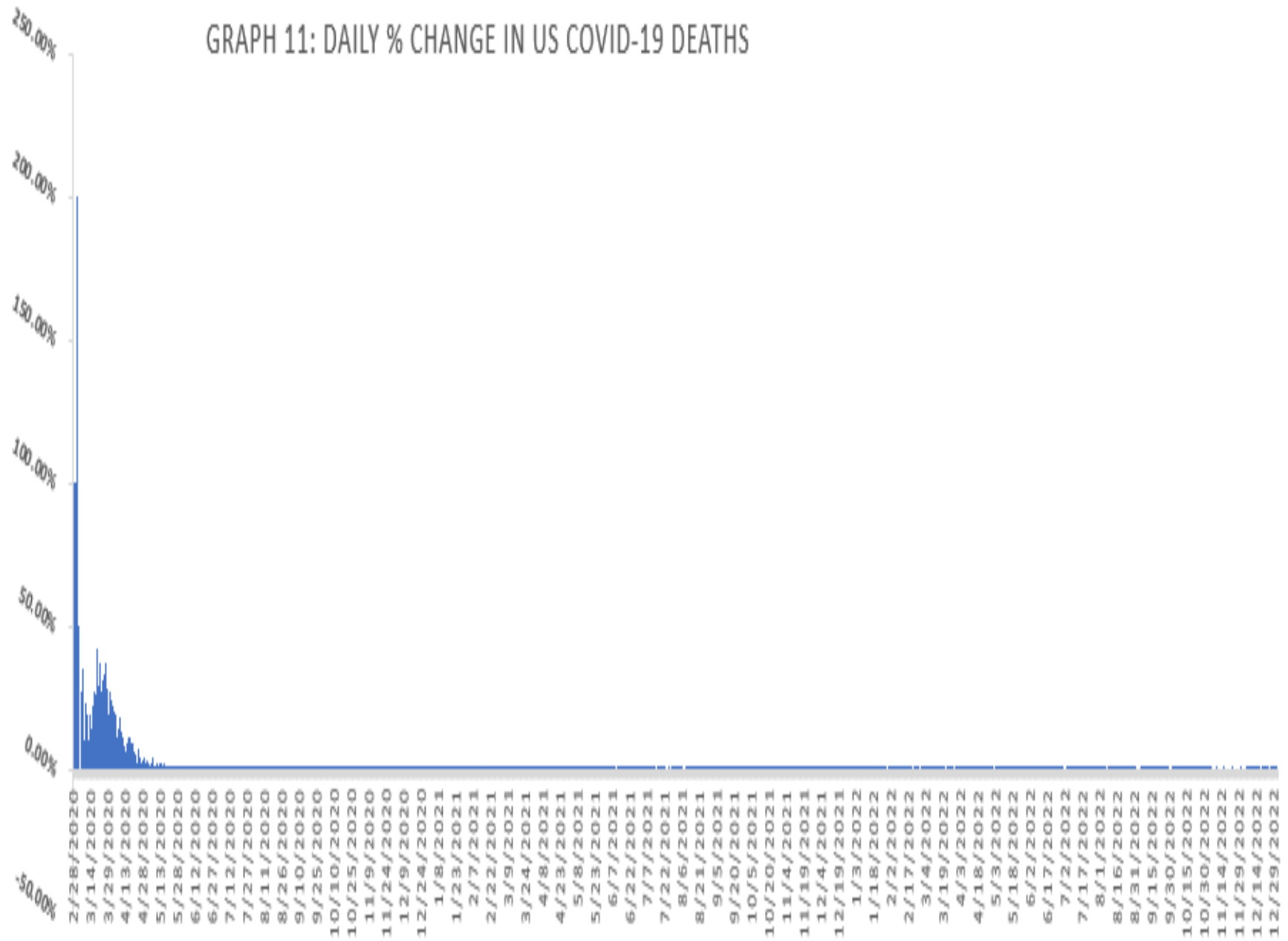


To read definition of Broad-Base Index see page 4

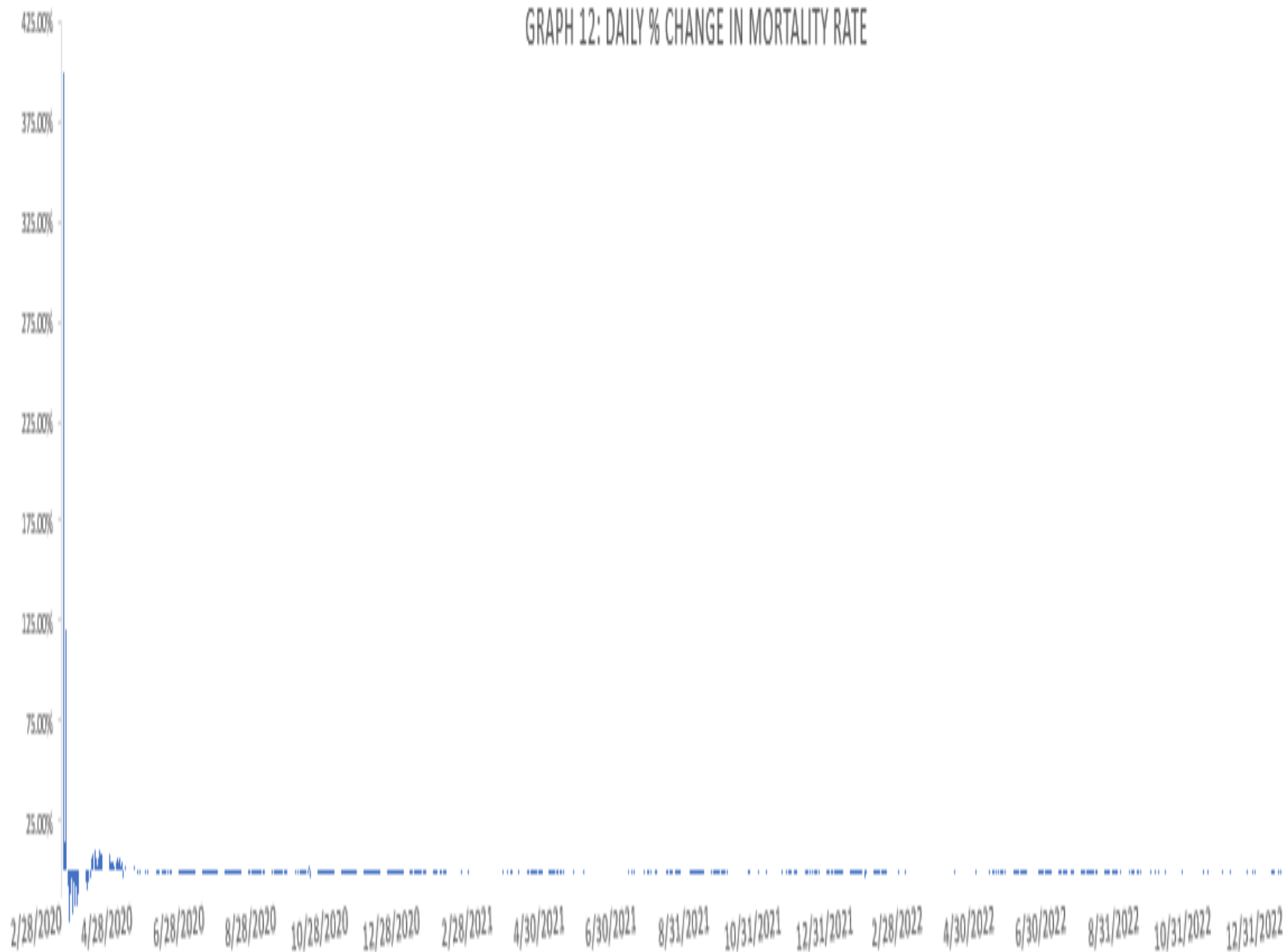
GRAPH 10: DAILY % CHANGE IN US COVID-19 CASES



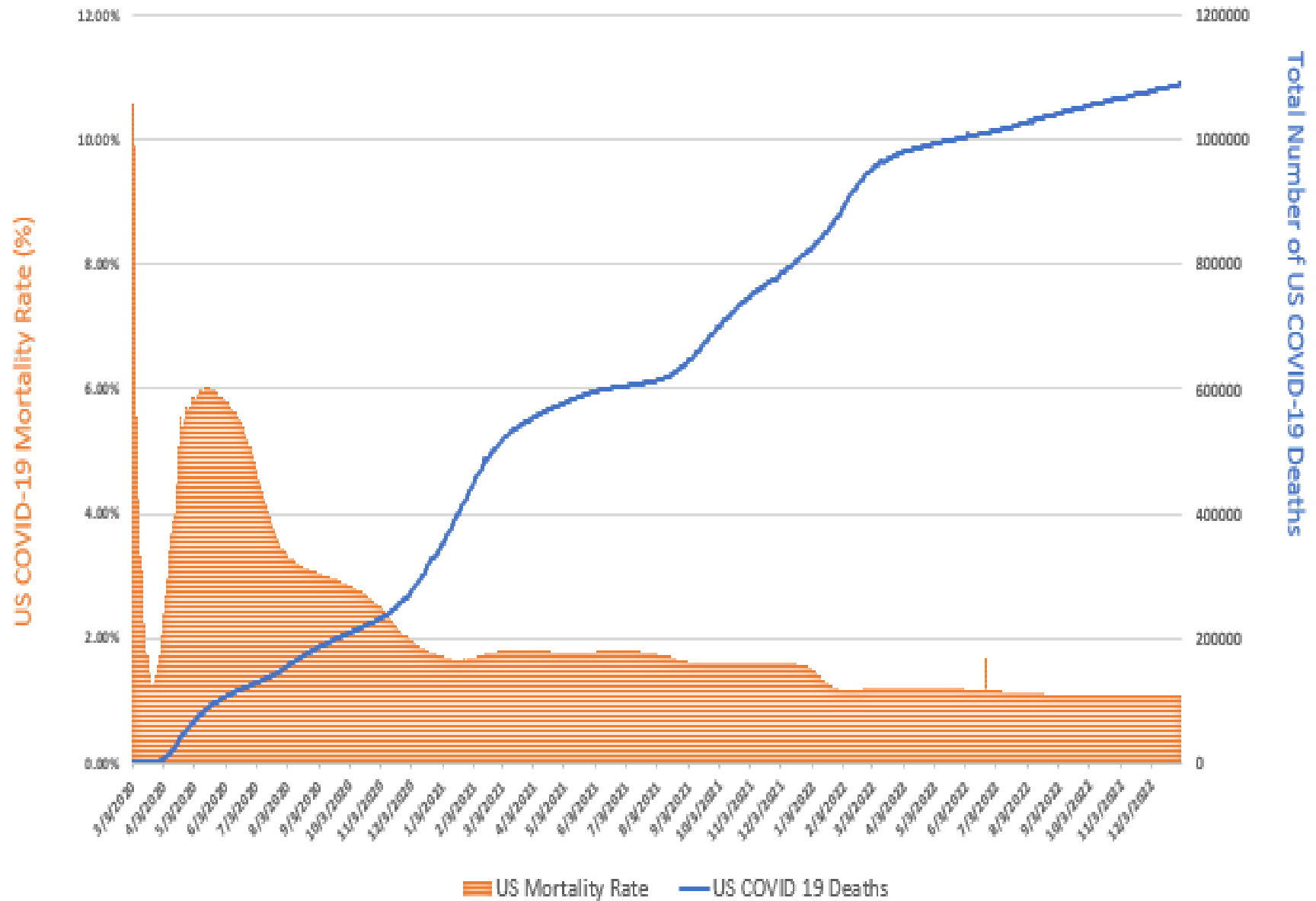
GRAPH 11: DAILY % CHANGE IN US COVID-19 DEATHS



GRAPH 12: DAILY % CHANGE IN MORTALITY RATE

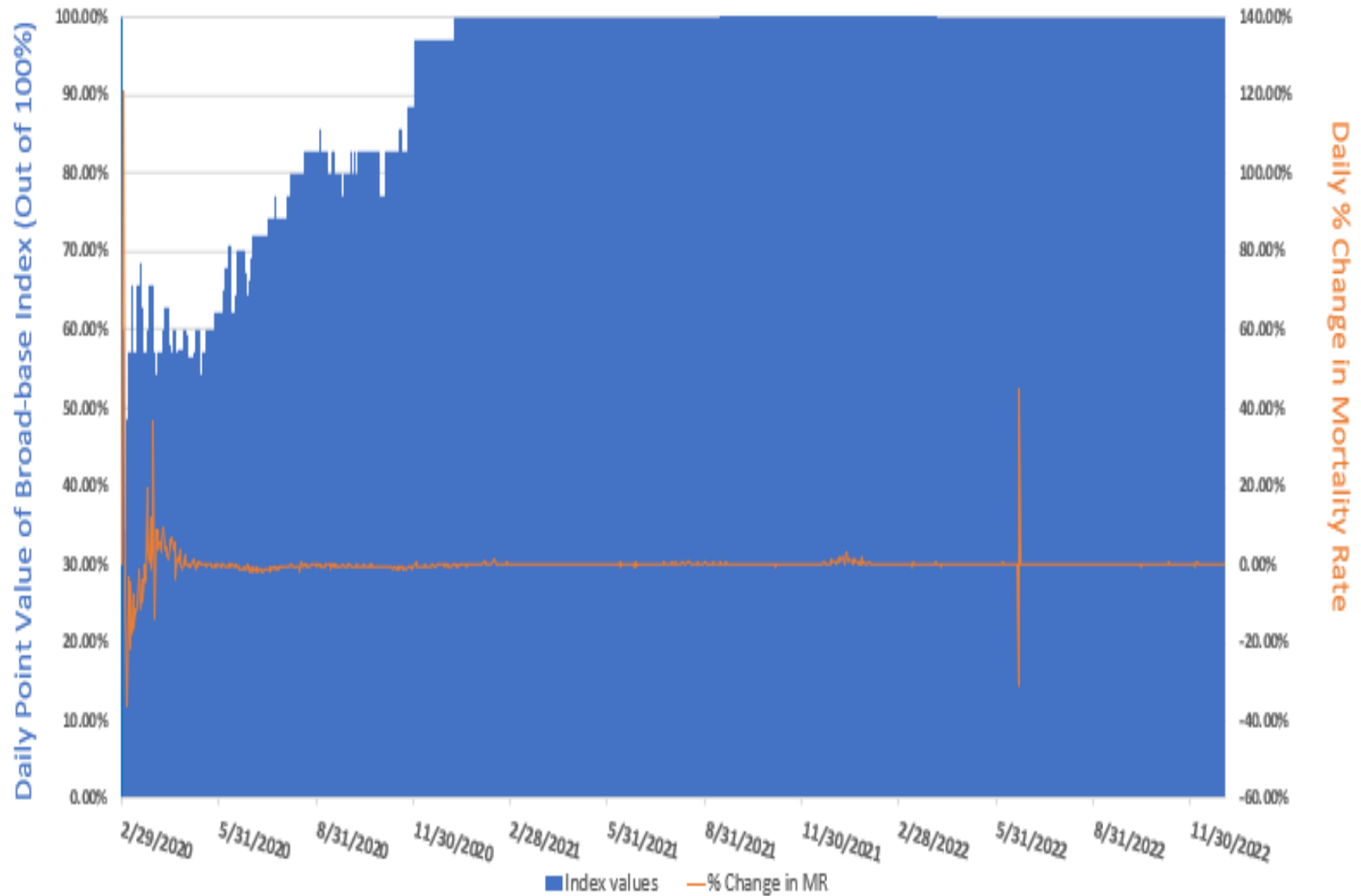


GRAPH 13: US COVID-19 MORTALITY RATE COMPARED TO NUMBER OF DEATHS

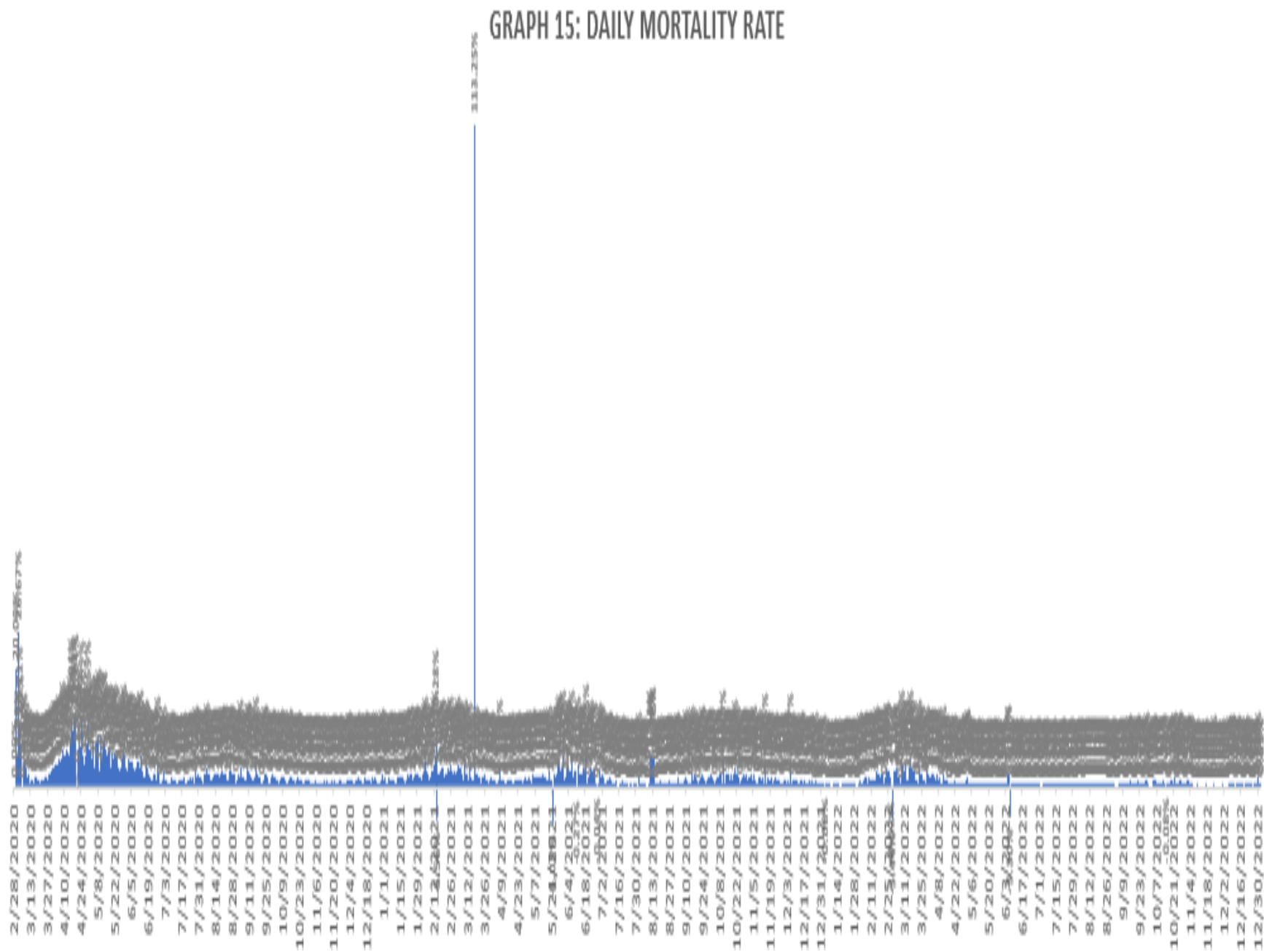


Graph 14: Northwood University COVID Broad-Base Optimism Bar Index (Out of 100) Compared to Daily % change In Mortality Rate

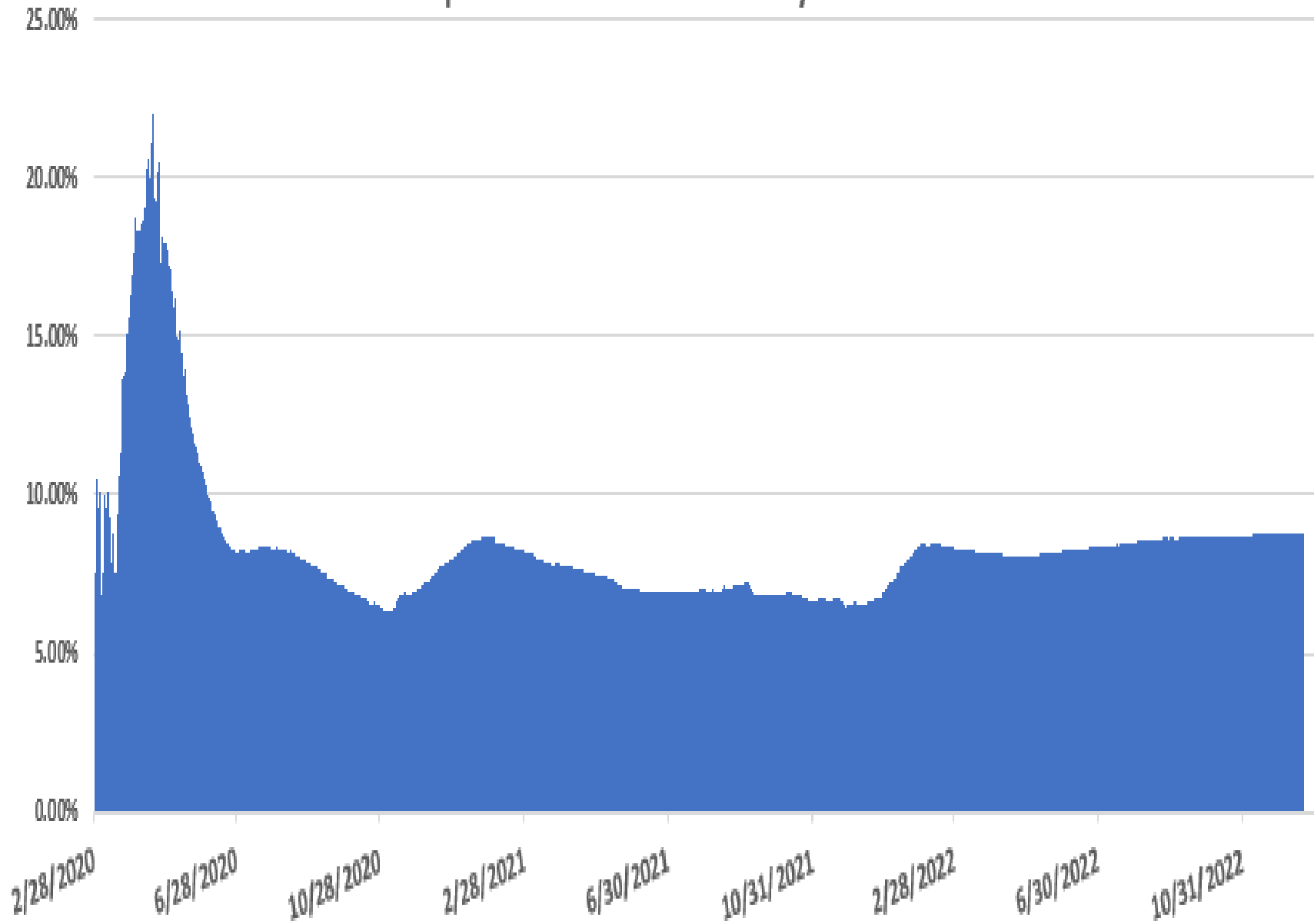
Produced by Northwood's McNair Center for the Advancement of Free Enterprise and Entrepreneurship







Graph 16: US COVID-19 Positivity Rate



This Report Was Prepared by the Following Authors:

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**About Northwood University:** Northwood University is committed to developing leaders of a global free-enterprise society and prepares students for success in their careers and communities. Rooted in the Northwood Idea, the university promotes critical thinking skills, personal effectiveness, and the importance of free enterprise, ethics, individual freedom and responsibility. Private, nonprofit, and accredited, Northwood University specializes in managerial and entrepreneurial education at a full-service, residential campus located in Midland, Michigan. The Adult Degree Program is delivered in multiple states and online for students with transfer credits and work experience who are looking to complete their undergraduate degree. The DeVos Graduate School of Management offers MBA and Master of Science degrees in Finance, Business Analytics, and Organizational Leadership with day and evening, and online delivery options. The Doctor of Business Administration (DBA) program is delivered online, with a differentiated focus on leadership and business analytics using both qualitative and quantitative methodologies. The Michigan-based Alden B. Dow Center for Creativity and Enterprise provides system-wide expertise in family enterprise, entrepreneurship, creativity and innovation, and new business development. International education is offered through study abroad and at International Program Centers in Switzerland, China (Changchun and Wuxi), and Sri Lanka.

**About The McNair Center:** The McNair Center for the Advancement of Free Enterprise and Entrepreneurship at Northwood University is a leading University think-tank generating information focused on the study, advocacy and expansion of the market-process and the creation and cultivation of entrepreneurs.