

# How Does Stock Market Change in 2020?

2020 continues to surprise. A pandemic, the shutdown of the global economy, the deepest recession since the 1930s, a global equity market collapse and now, record highs for the U.S. equity market. We're still in the early recovery phase of the cycle following the COVID-19 recession. This implies an extended period of low-inflation, low-interest-rate growth—an environment that usually favors equities over bonds.

**How is going with global equity market?**

**Are there still investment opportunities?**

**Come on! Let's figure it out together!**

We gathered the price history of 62 general equity market indices from 43 countries. The chosen indices are recognized as an efficient measurement of the real equity market and be able to help investors establish an overview of national market performance. You may find the price change rate of the national stock index in the map below. Don't forget to move your mouse over the map to explore more!

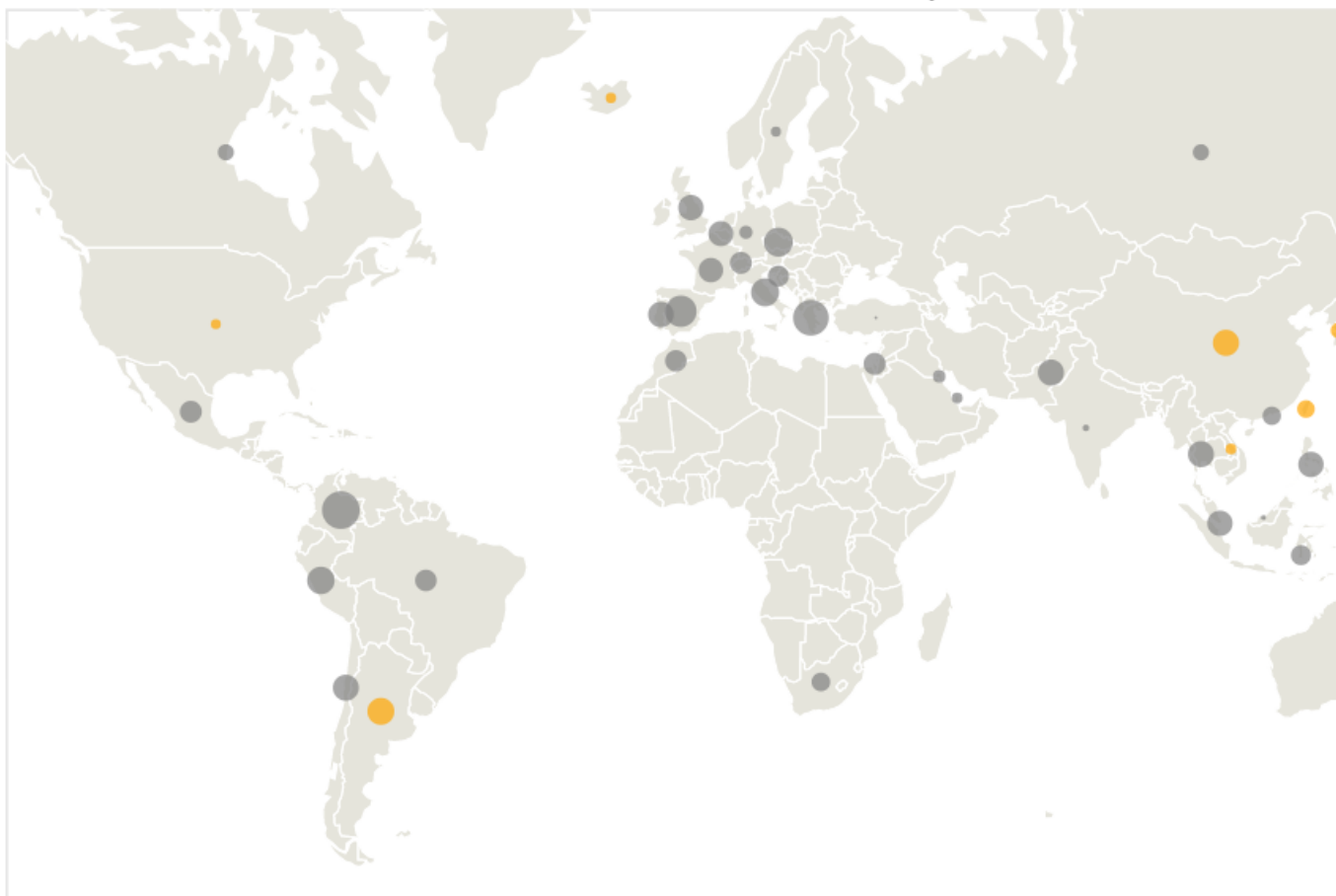
**Orange = EARNING**

**Grey = LOSING.**

**SIZE = Change rate to the price on 19 Feb., when COVID-19 was announced as a global pandemic and led to the equity market collapse. We calculated it with this fomular:**

$$\frac{Price(14.Oct.) - Price(19.Feb.)}{Price(19.Feb.)}$$

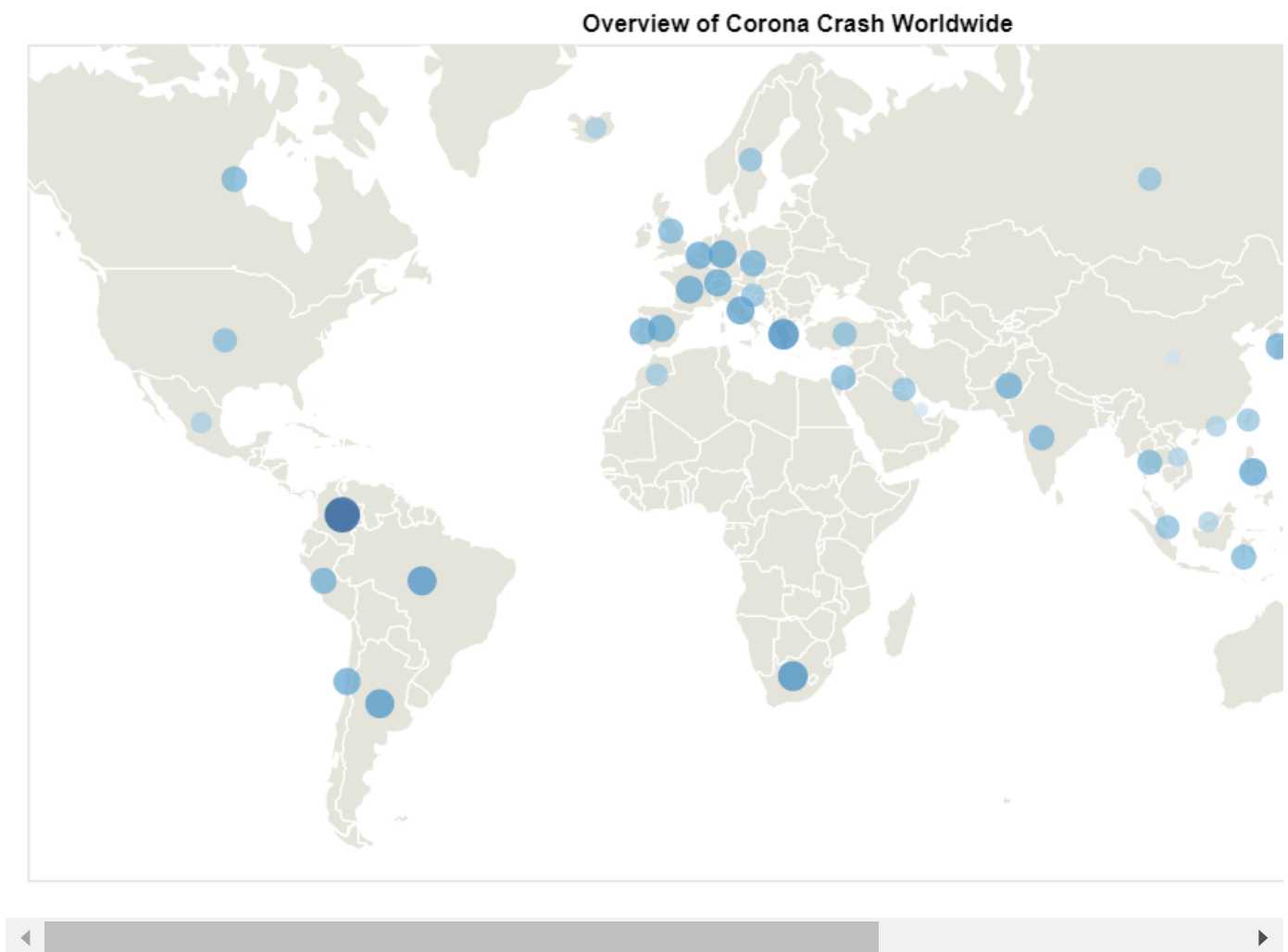
## Overview of Stock Markets Development Worldwide



From this chart we can see, only a few countries have recovered from the Covid-19 Crash and most of winners come from Asia. But don't be sad! Have you seen the big orange dots in **US, Argentina, New Zealand** and **Iceland**? Some of them are out of surprise, aren't they? Especially the performance of Argentina has benefited its investors with 23% return rate. What a breaking news!

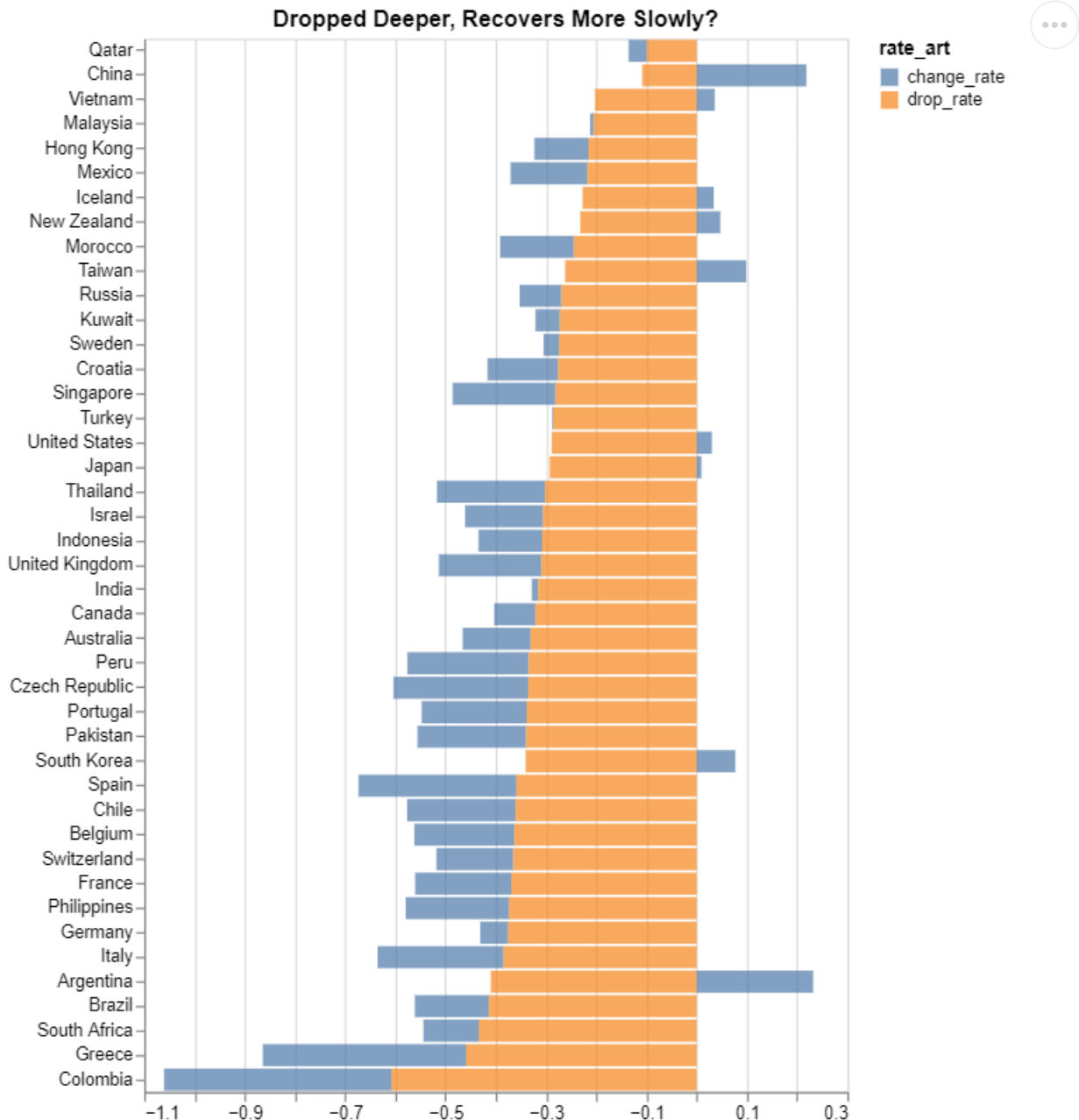
Besides being shocked by these new discoveries, have you ever raised a question: Why do some countries recover so fast? Maybe they dropped less at the very beginning? The crash map below shows the maximal drop rate since 19 Feb.

**Size & Color = Maximal drop rate (19 Feb.-19 Mar.)**



You may have found, that all countries reacted with a great drop to WHO's announcement. Colombia's equity market value was even cut off by 60%. And China, which was firstly and seriously hurt by Corona only dropped by 10%. What a difference!

**Question 1: Are there any correlation between max. drop rate and final change rate?**

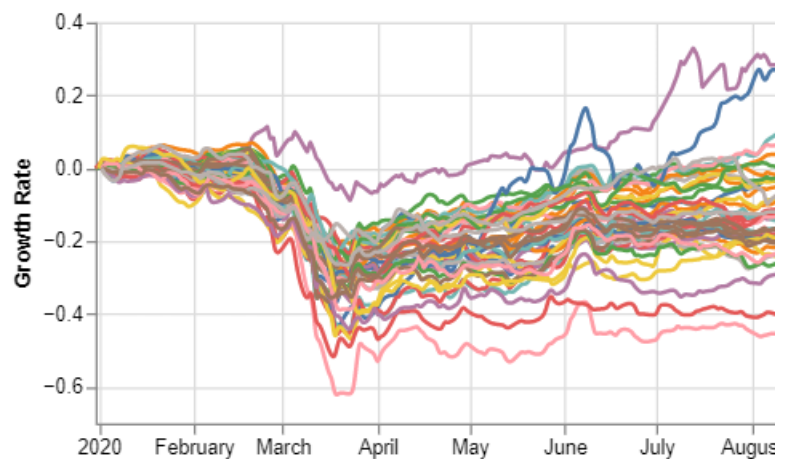
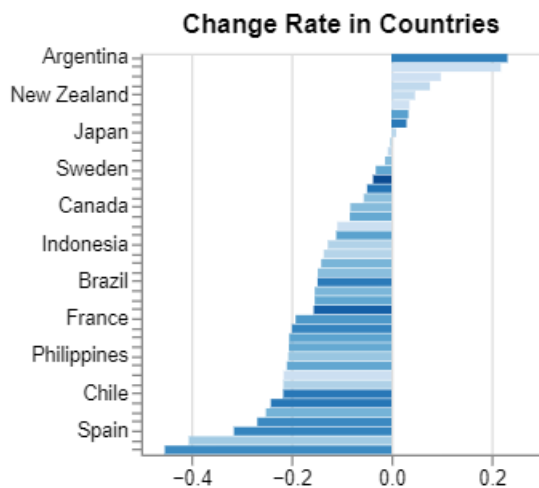
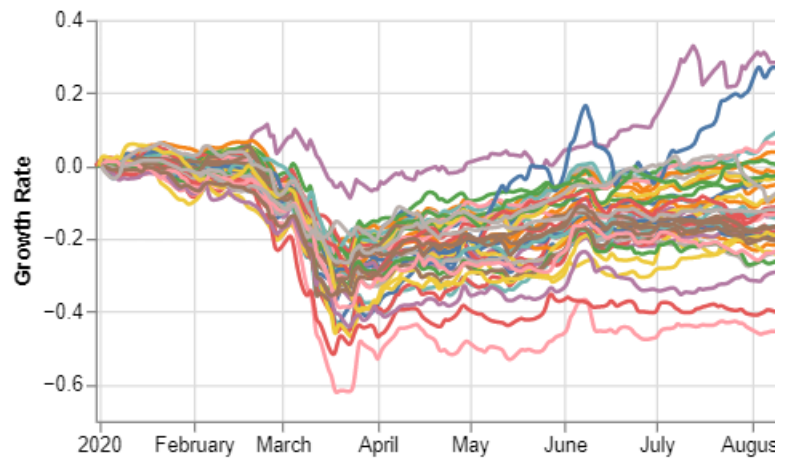
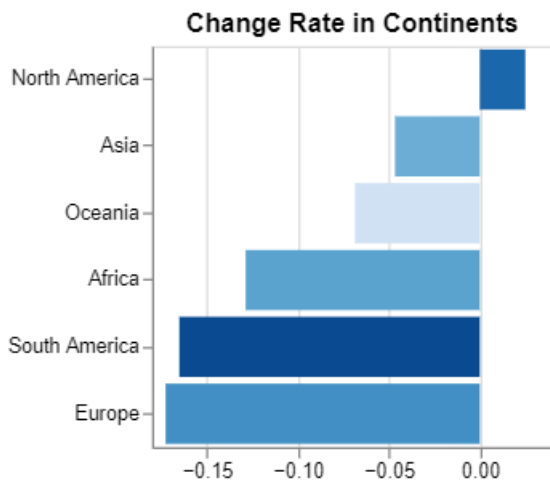


## Answer: YES!

This chart is sorted by descending drop rate. For most of countries, dropped more means recovers more slowly. One outlier is Argentina. It sits 5th from the bottom, dropped most also recovered most. Also for many asian countries, e.g. South Korea, Japan..., they recovers fast even though they were more seriously attacked. Here, we created a wonderful interactive panel for you to discovery:

- the difference among continents
- the difference among countries in one continent
- the whole development of the price line

Click to select and hover the mouse to see the date. To clarify the comparison, the price on 01 Jan. was set as benchmark price, and the growth rate of others day was calculated accordingly.

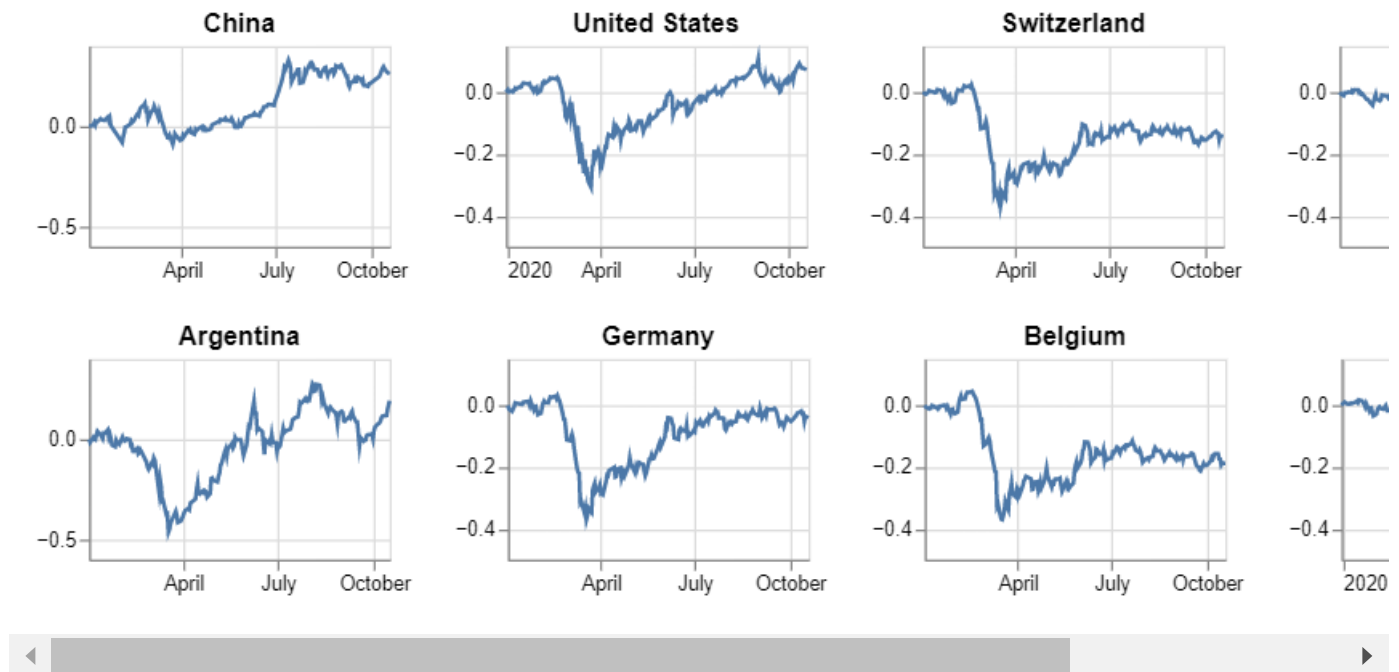


After looking at the development of general equity market indices from 43 countries, you may find some lines similar. Some lay on the ground while some have a sharp decline right after a rapid rebound. Economists classify these recessions patterns into 4 types:

- **V-shaped:** a sharp but brief period of decline followed by a strong recovery
- **U-shaped:** a longer, less-clearly defined trough, and slowly return to trend growth
- **W-shaped:** the economy falls into recession, recovers with a short period of growth, then falls back into recession before finally recovering, giving a "down up down up" pattern resembling the letter W
- **L-shaped:** a severe recession and does not return to trend line growth for a long period

#### 4 Recession Shapes in Global Stock Market

Shape      W-Shape      L-Shape      V-Shape      U-



The behavior of a country's equity market as a whole follows the four patterns above. Some economist created a term, **K-shaped**, to describe the market after COVID-19 Crash. K-shaped Recession is one where recession is quick like a V-shaped recession for the socially advantaged, but slow and L-shaped for the socially disadvantaged. To learn more, let's continue!

Why does the performance of stock markets vary so much from country to country? How does COVID-19 affect global stock markets? We will explore the reasons based on three layers: **country layer**, **sector layer** and **stock of company**. We believe that after analyzing these three aspects, we can get the answer to our question.

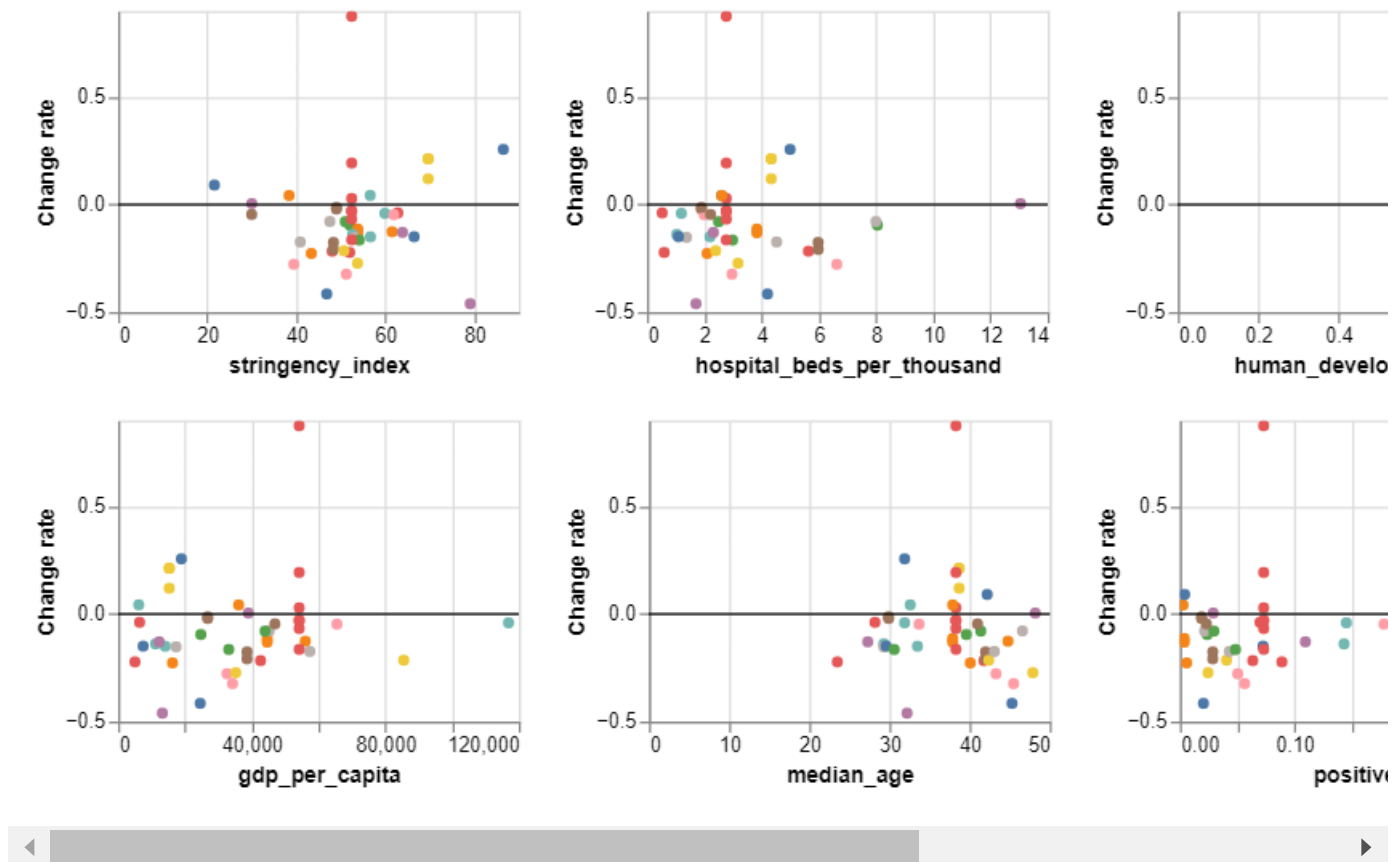
## Country Layer : Situation under COVID-19

In the face of COVID-19, **stringent policies** of government may reduce infection rates, but they also limit the economy. A shortage of **medical resources** can lead to an increase in patient mortality. Higher **infection rates** may lead to panic among investors. The **human development and GDP** represent the country's economy. **Aging demographics** may make the situation more difficult. Will these factors directly or indirectly affect the stock market? Let's verify our guesses!

we used the price history of 62 general equity market indices from 43 countries and get the stock change rate since 19 February 2020. We Combine the six factors in the [owid-covid \(https://github.com/owid/covid-19-data/blob/master/public/data/owid-covid-codebook.csv\)](https://github.com/owid/covid-19-data/blob/master/public/data/owid-covid-codebook.csv) dataset that may affect the COVID-19 situation and draw a scatter plot to explore the correlation between them.

## COVID-19 factors V.S. stock market change rate of countries

*zoom in to see the overview*

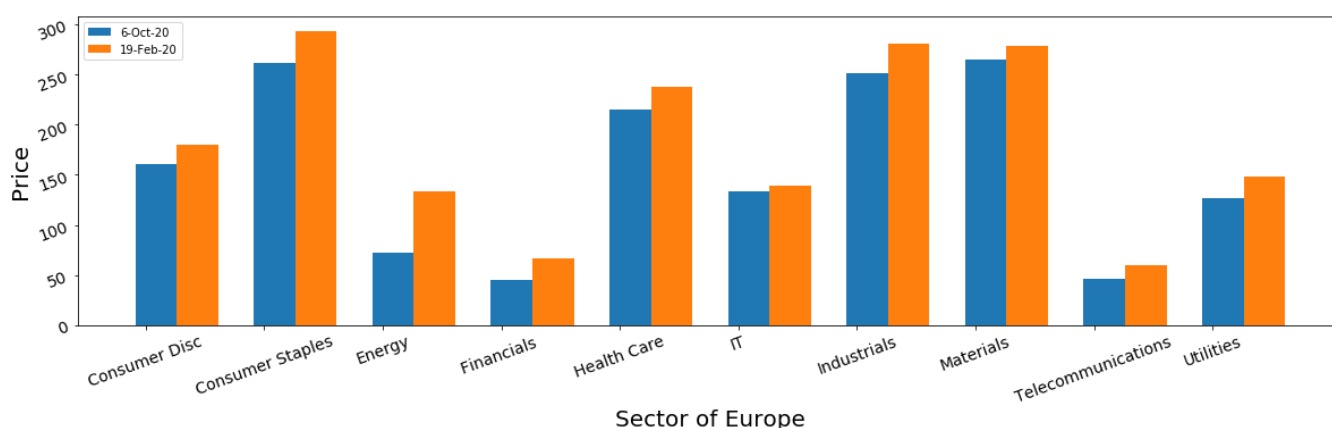
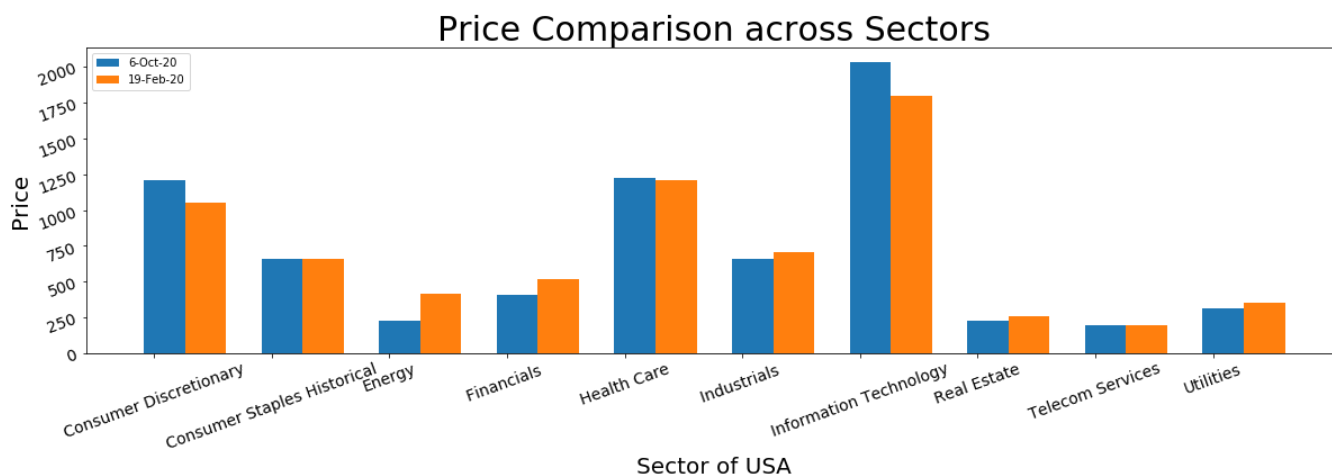


It seems like there is no correlation between these factors and stock market change rate. all of our guesses are **FALSE!** But don't be discouraged, at least this chart gives some advice to layman investors(like me): don't try to focus on the surface to find a good investment. **We assume that stock markets will do well where the virus infection rate is low, but that's not ture.** let's go on exploring the stock market sector layer, maybe we wil find the answer!

## Sector layer: Invest the right sector!

Maybe you have noticed that from the above scatter plot, the U.S. is a outlier which keeps earning money in its stock market while most of the others are lossing. Why is the U.S. so special, as if its stock market was completely unaffected by COVID-19? But the fact is that the epidemic in the United States is quite severe. In other words, should investors be putting their money into U.S. stocks, or is the boom just an illusion?

We use the S&P500 index to explore the price changes of 11 sectors of U.S. stocks since February 19, 2020. As a comparison we introduce the MSCI index. Because Europe and the U.S. have lots of similarities, including the severity of the epidemic, economic levels, etc.



As bar charts show, all sectors of the EU stock market are losing money. In fact we foresaw this result (almost all the stock market of European countries are losing money). bad news!

But the situation is very different in the sectors of US stock market. First of all, several sectors (Consumer Discretionary, Health Care, IT) are growing, which has a large share of the market. IT, in particular, was not only the most price-representative sector, but also the one with the largest growth. However, other sectors did not fare as well, such as energy and financials, which were down considerably, but due to the small percentage share, they had less of an impact on the overall US stock market.

Now we can explain why US stocks are doing well: **the IT sector is driving the growth!** So we can go buy stocks in the IT sector of the U.S.! But wait, which company's stock shall we buy? Read on down the page!

**stock of company : make your choise!**



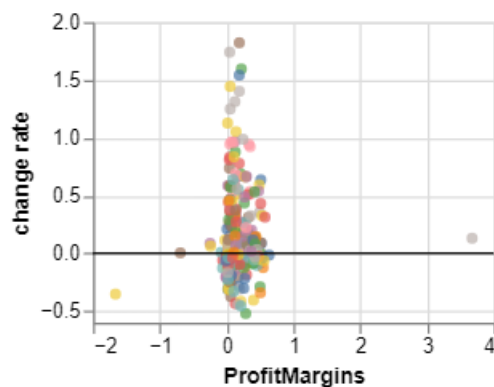
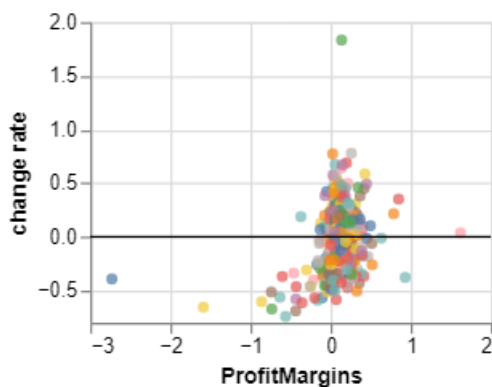
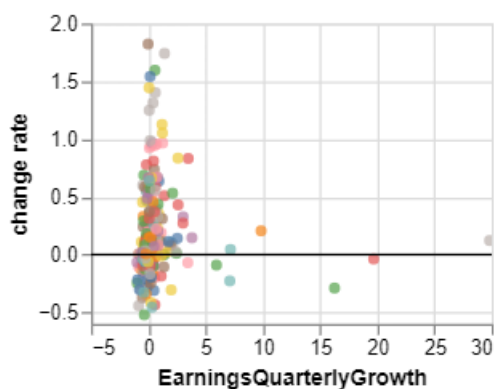
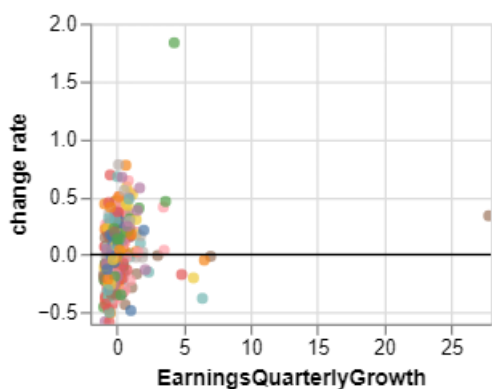
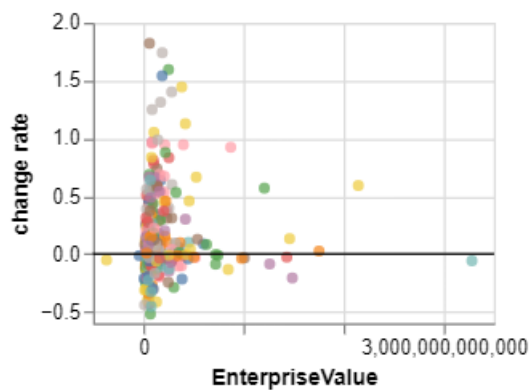
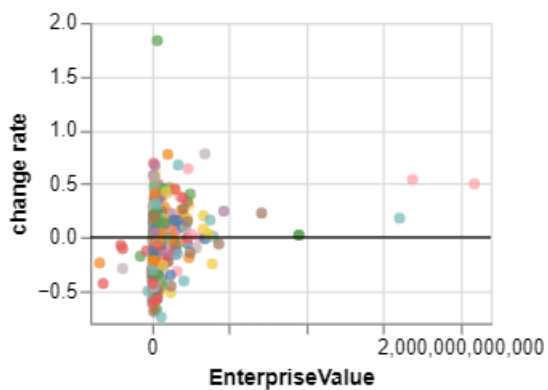
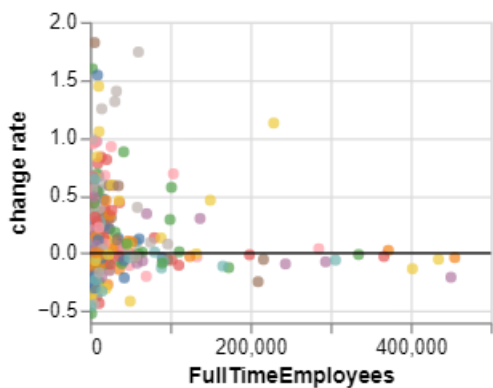
Here we use the 500 american companies in the S&P500 index. For comparison, we have selected 300 Chinese companies from the CSI 300 index. We look at four indicators of company to get the differences between companies:

1. number of employees
2. enterprise value
3. quarterly growth
4. profit margins (which reflects the earning power of the company).

### **Company Factors V.S. Stock change rate**

**China**      ***the U.S.***





- company**
- 360 Security Techno
  - 3M Company
  - A. O. Smith Corpora
  - AMETEK, Inc.
  - ANSYS, Inc.
  - AT&T Inc.
  - AVIC AIRCRAFT Co
  - AVIC Capital Co.,Ltd
  - AVIC Jonhon Optron
  - AVIC Shenyang Airc
  - AbbVie Inc.
  - Abbott Laboratories
  - Abiomed, Inc.
  - Accenture plc
  - Activision Blizzard, I



The scatter chart didn't disappoint us in the end: horizontally, the scatter of U.S. companies forms a triangle. It is almost equally divided between profitable and losing companies. On the other hand, Chinese companies are scattered in an L-shape, with the vast majority of them above the 0-growth reference line. Completely different distribution, isn't it? It tells us that **the growth of China's stock market is not driven by large companies, but by many small companies which have contributed their share of the growth.**

Vertically, the chart of company market capitalization caught our attention. While the vast majority of company stocks are still uncertain in terms of profit or loss, several large companies have grown. And most of these companies are also in the IT sector: **apple, Microsoft, Amazon, Facebook, etc. We believe the stocks of these big IT companies will stay strong.**

## Some investment advice

Through three layers of analysis, we have drawn many surprising conclusions:

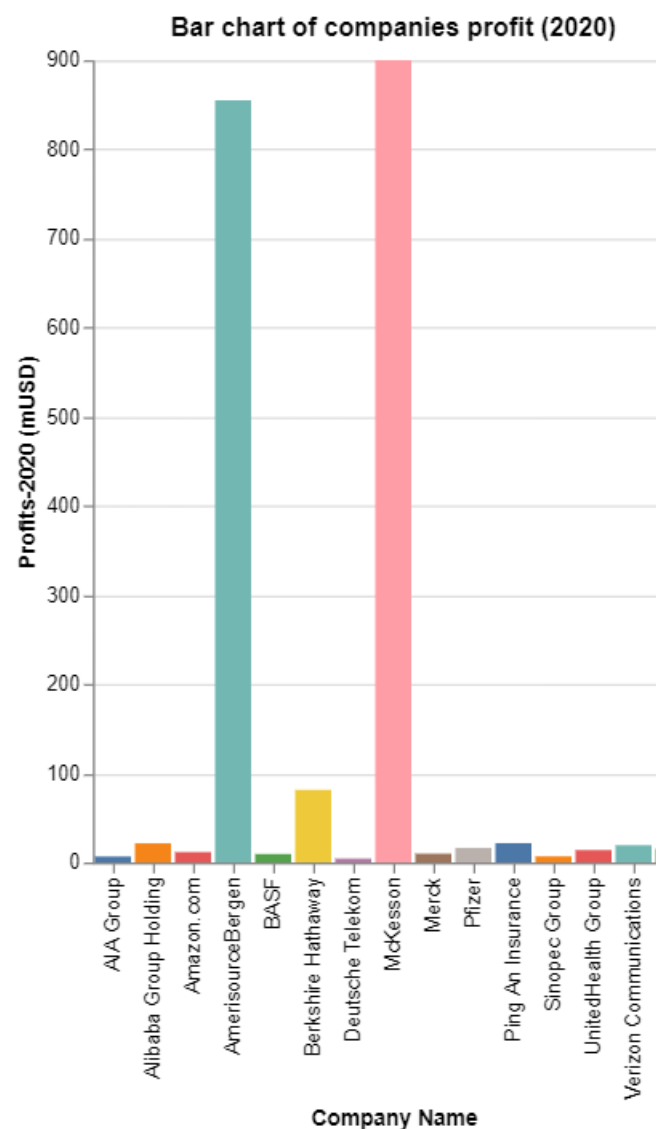
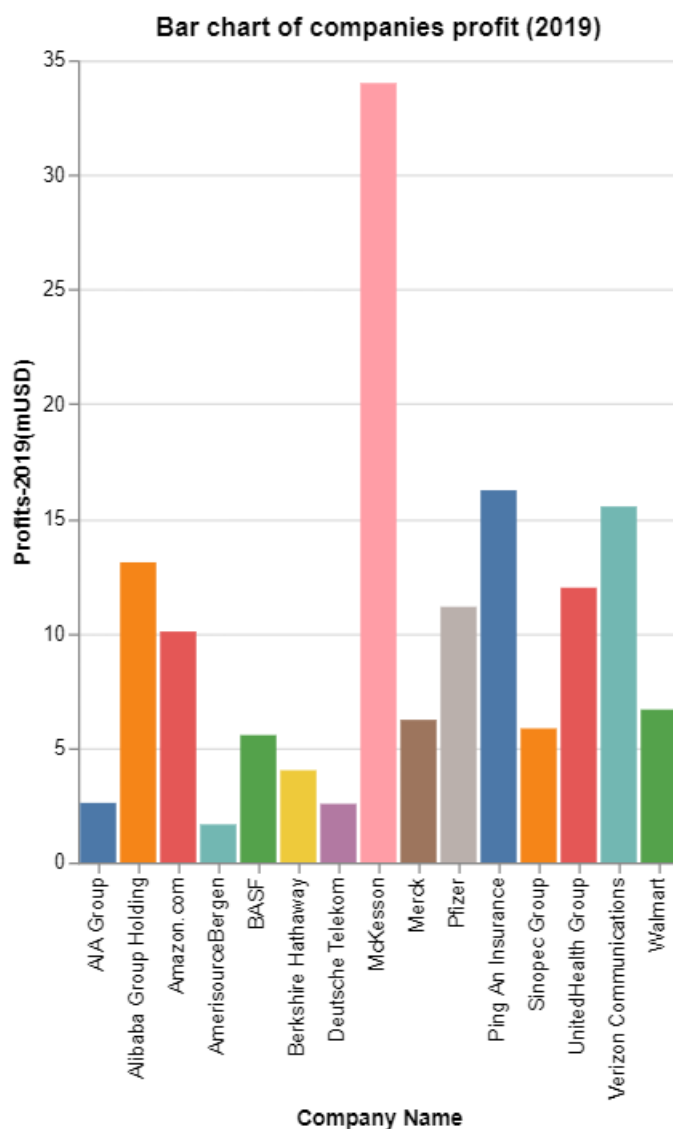
1. The impact of the epidemic on the stock market is temporary. It is unwise to guide investment based on the epidemic situation.
2. The rapid rebound of US stocks relies on large companies and technology sectors. Traditional industries are still seriously lagging behind.
3. Small and medium companies in the Chinese stock market have great vitality.
4. Most European stock markets lose money so investment is not recommended.

The instability caused by the COVID-19 pandemic has made investors hesitant. The turmoil in the stock market will eventually pass. What we need to overcome is just the panic when we face the unknown.

## Don't leave! We have easter egg!

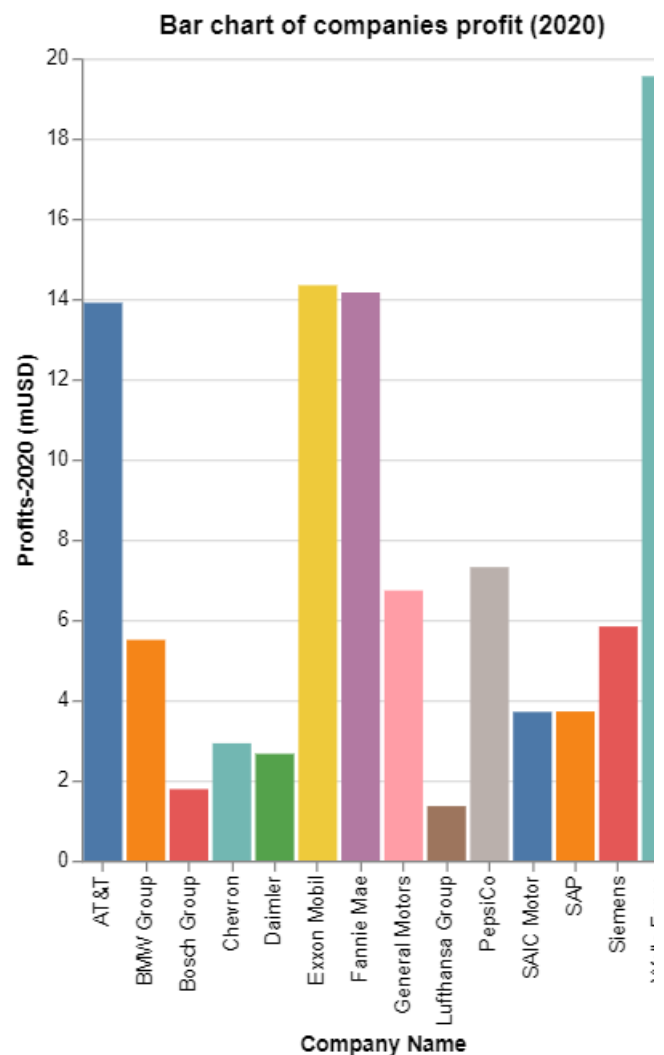
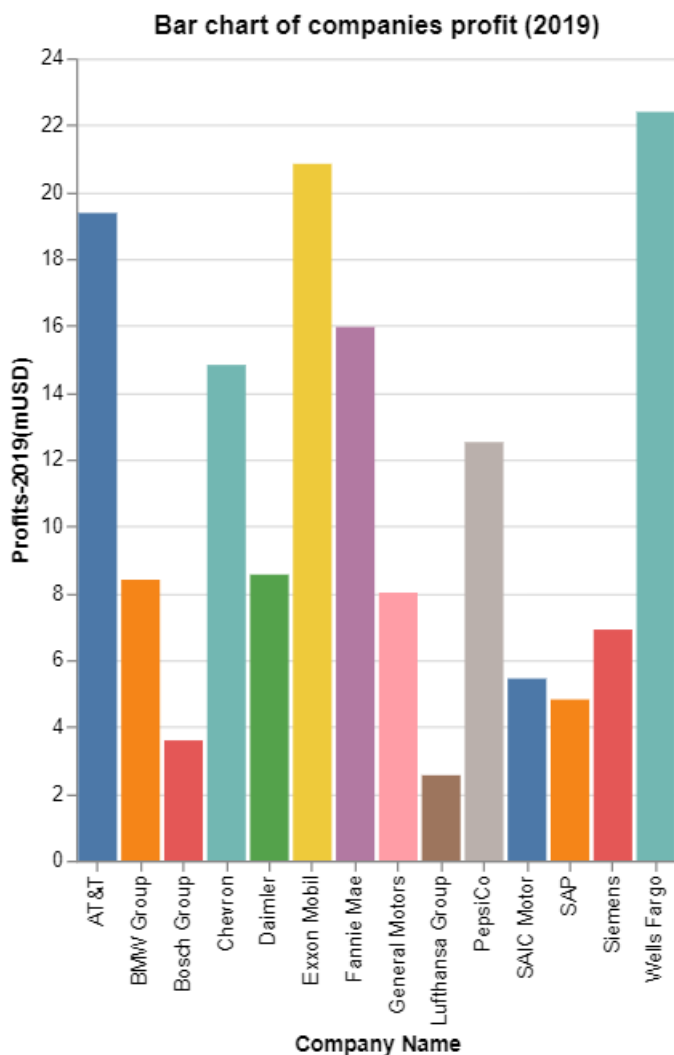
Here we provide you with some profitable companies and losing companies, maybe you can find your favorite investment. Come find it!

### Profit Gainer Companies of 2020



Amazon - Technology company based on e-commerce, US  
 Amerisource Bergen - Drug wholesale company, US  
 BASF - chemical Corporation, German  
 Berkshire Hathaway - Casualty insurance company, US  
 Deutsche Telekom - Telecommunications company, German  
 McKesson Corporation - Pharmaceuticals and medical supplies distributing company, US  
 Sinopec Group - Petroleum & Chemical Corporation, China  
 UnitedHealth Group - Health care company, US  
 Verizon - Communication technology companies, US  
 Walmart - Retail corporation, US  
 Ping An Insurance - Insurance Company, China  
 Alibaba Group Holding - E-commerce, retail, Internet, and technology company, China  
 Pfizer - Pharmaceutical corporation, US  
 Merck - Pharmaceutical drugs and vaccines manufacturer, US  
 AIA Group - Insurance and finance corporation, China

## Profit Loser Companies of 2020



BMW Group - Vehicles manufacturing company, German  
Bosch Group - Engineering and technology company, German  
Daimler - Automotive corporation, German  
Exon Mobil - Oil and gas corporation, US  
Lufthansa Group - Airline, German  
SAIC Motor - Automotive design and manufacturing company, China  
SAP - Software corporation, German  
Siemens - Industrial manufacturing company, German  
Fannie Mae - National Mortgage Association, US  
Chevron - Oil & Gas company, US  
General Motors - Vehicles manufacturer and distributor, US  
Wells Fargo - Financial services company, US  
PepsiCo - Food, snack and beverage corporation, US