



# Does COVID improve the Taiwan bio industry development?

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## How to quantify the development?

To quantify the development, I will use the stock performance as their measurement standard.



## Stock?

A stock is a type of investment that represents an ownership share in a company. Investors buy stocks that they think will go up in value over time.



# Stock?

The Investors value a company by buying stock.





## Data

From the website of the Taiwan Stock Exchange Corporation (TWSE)

[https://www.twse.com.tw/en/page/trading/exchange/MI\\_INDEX.html](https://www.twse.com.tw/en/page/trading/exchange/MI_INDEX.html)

From 2018/01/01 - 2022/05/24

2022/05/24 Daily Quotes(Biotechnology and Medical Care Industry)															
(NT\$,share)										(NT\$,Trading Unit)					
Security Code	Trade Volume	Transaction	Trade Value	Opening Price	Highest Price	Lowest Price	Closing Price	Dir(+/-)	Change	Last Best Bid Price	Last Best Bid Volume	Last Best Ask Price	Last Best Ask Volume	Price-Earning ratio	
	1598	135,150	120	5,719,147	42.90	42.90	41.85	42.35	-	0.20	42.35	12	42.40	5	40.72
	1701	839,978	437	19,052,704	22.80	22.80	22.50	22.50	-	0.25	22.50	55	22.60	7	13.98
	1707	158,323	234	22,165,344	141.00	141.00	139.50	139.50	-	1.50	139.50	9	140.50	14	15.85
	1720	174,606	142	7,442,336	42.75	42.75	42.55	42.60	-	0.10	42.55	22	42.65	3	11.33
	1731	244,583	135	4,729,277	19.40	19.55	19.25	19.30	-	0.15	19.25	8	19.30	1	15.32
	1733	199,097	128	5,193,879	26.20	26.25	26.00	26.00	-	0.10	26.00	52	26.05	9	12.15
	1734	981,559	505	27,438,321	28.25	28.25	27.75	28.20	+	0.20	28.20	25	28.25	14	313.33
	1736	62,100	48	3,252,379	52.40	52.70	52.10	52.10	-	0.70	52.10	2	52.50	2	306.47
	1752	13,040	17	471,158	36.30	36.30	36.05	36.20	-	0.20	36.15	1	36.20	2	19.05
	1760	6,352,719	4,037	663,405,244	106.50	108.00	101.50	102.00	-	6.00	102.00	149	102.50	9	51.78
	1762	1,603,308	949	96,876,889	60.20	61.30	58.90	59.30	-	0.80	59.30	1	59.40	2	10.68
	1783	73,183	61	2,723,234	37.70	37.70	36.80	37.10	-	0.35	36.95	1	37.20	1	33.12
	1786	30,877	40	1,316,224	42.80	42.80	42.30	42.40	-	0.20	42.35	1	42.40	1	27.01
	1789	468,927	315	10,628,842	22.80	23.00	22.50	22.55	-	0.25	22.55	26	22.60	3	77.76
	1795	6,541,149	4,119	842,407,964	129.50	130.50	127.00	127.50	-	3.00	127.50	30	128.00	27	23.88
	3164	19,146	15	474,470	24.85	24.95	24.55	24.95	+	0.05	24.85	2	24.95	1	20.28
	3705	163,155	112	6,918,277	42.50	42.55	42.25	42.25	-	0.30	42.25	16	42.45	8	14.13
	4104	236,638	272	15,697,391	66.70	66.90	65.90	66.30	-	0.40	66.20	1	66.30	6	14.51
	4106	1,211,149	860	33,304,570	28.00	28.45	27.05	27.10	-	0.95	27.10	20	27.15	6	26.31
	4108	318,500	332	6,370,328	20.00	20.30	19.75	19.80	-	0.05	19.75	29	19.80	7	
	4119	83,263	88	6,853,007	82.20	83.00	82.00	82.10		0.00	82.10	21	82.30	6	141.55
	4133	5,314,955	3,040	247,628,593	47.75	48.10	45.50	45.50	-	2.25	45.50	19	45.65	2	77.12
	4137	131,091	160	24,587,579	189.00	190.00	185.00	185.00	-	3.00	185.00	3	185.50	4	10.91
	4142	1,598,702	1,005	56,376,509	35.65	35.80	34.90	35.00	-	0.50	34.95	6	35.05	10	250.00
	4148	965,889	763	64,257,782	68.00	69.40	64.10	64.60	-	2.40	64.50	11	64.90	4	17.27
	4155	53,479	94	1,237,224	23.20	23.25	23.05	23.05	-	0.05	23.00	13	23.05	3	34.92
	4164	302,624	242	11,645,473	38.55	38.80	38.15	38.15	-	0.40	38.15	1	38.20	2	18.25
	4190	8,000	8	503,500	63.40	63.40	62.60	63.20	-	0.20	62.80	1	63.30	2	16.72
	4737	23,009	18	1,644,639	70.50	71.60	70.50	71.50	+	0.10	71.20	5	71.60	5	48.64
	4746	562,285	440	27,417,305	49.20	49.35	48.25	48.30	-	0.75	48.25	4	48.30	4	
	6491	261,962	306	102,268,375	404.50	404.50	384.50	385.00	-	11.50	385.00	16	389.00	1	19.47
	6541	558,822	428	29,624,614	53.30	53.90	52.50	52.50	-	0.70	52.50	9	52.60	1	
	6598	1,217,857	833	42,306,231	35.35	35.85	34.05	34.05	-	1.65	34.05	5	34.10	3	
	6666	5,181	16	268,237	51.40	52.10	51.40	52.10	+	0.50	51.20	1	51.70	1	34.68



# Data

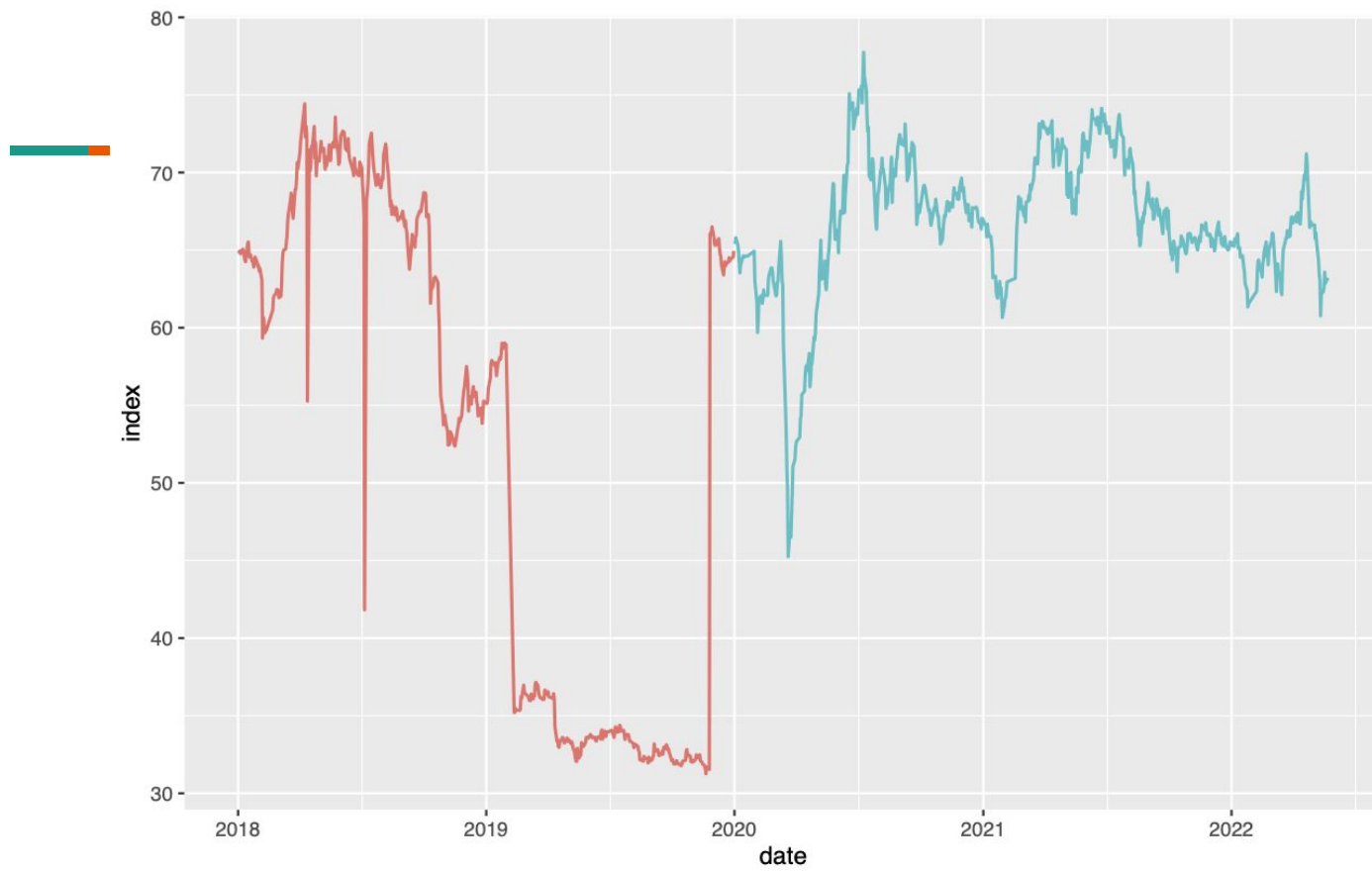
2022/05/24 Daily Quotes(Biotechnology and Medical Care Industry)	
(NT\$,share)	
Security Code	Closing Price
1598	42.35
1701	22.50
1707	139.50
1720	42.60
1731	19.30



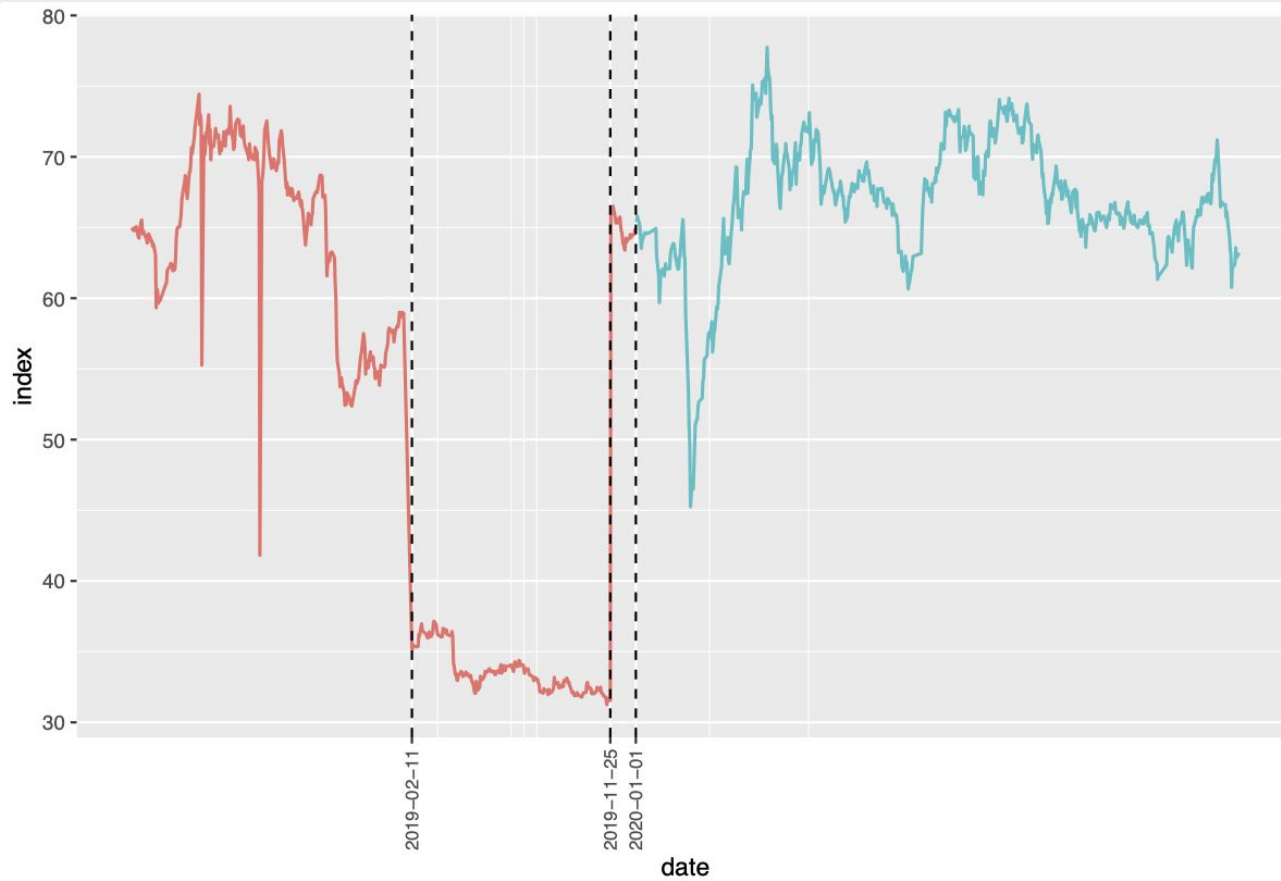
# Data

2022/05/24 TWSE Indices				
Index	Closing Index	Dir(+/-)	Change	Change(%)
Biotechnology and Medical Care	62.24	-	0.97	-1.53



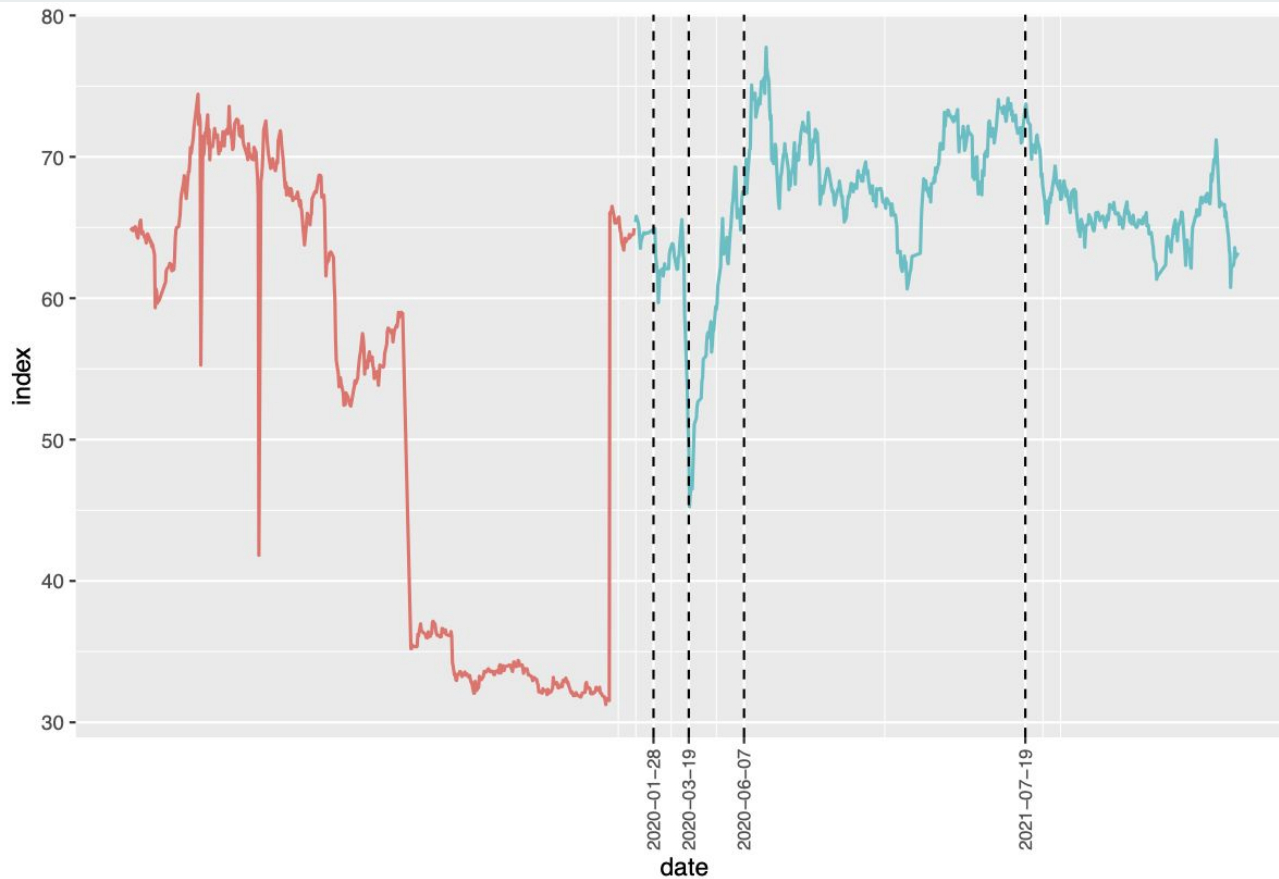


Before and After pandemic — before\_2020 — after\_2020



Before and After pandemic — before\_2020 — after\_2020

2020-01-01:  
First confirmed  
COVID case in world  
2020/12/01



Before and After pandemic

before\_2020

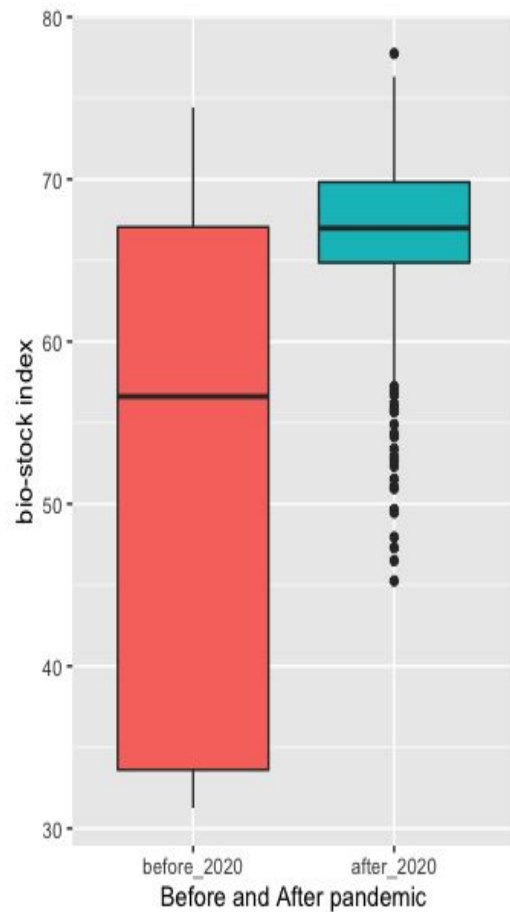
after\_2020

2020-01-28:  
Taiwan first case

2020-03-19:  
Taiwan bans foreigners  
enter

2020-06-07:  
Government loosen  
pandemic policy

2021-07-19:  
Tawianese brand  
Vaccine manufacturing



	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
<i>After_COVID</i>	45.25	64.86	66.99	66.8259930915371	69.825	77.75
<i>Before_COVID</i>	31.26	33.61	56.615	52.2009465020576	67.0575	74.43

*\*Interpret box plot*



## Conclusion

The linear plot and box plot show that COVID doesn't cause a huge impact in bio-industry development. However, the stock performance becomes more stable than before.



## Limitation

1. I should also investigate how many percentage do the bio-industry occupy the whole stock market and see how the percentage change.
2. Taiwan is a country that focus on the electrical industry. Especailly during the pandemic, Taiwanese electrical industry earns lots of money. The bio-industry may be ingored. Therefore, maybe Taiwan isn't a good model to look whether the COVID will impact the bio-industry.



# Thanks for your attention!

