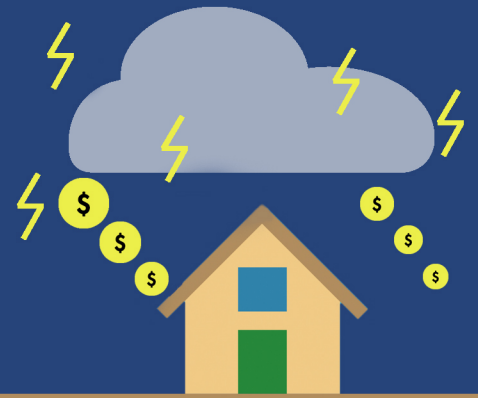


# IT'S RAINING MONEY

## THE EFFECT OF WEATHER ON THE HONG KONG STOCK MARKET

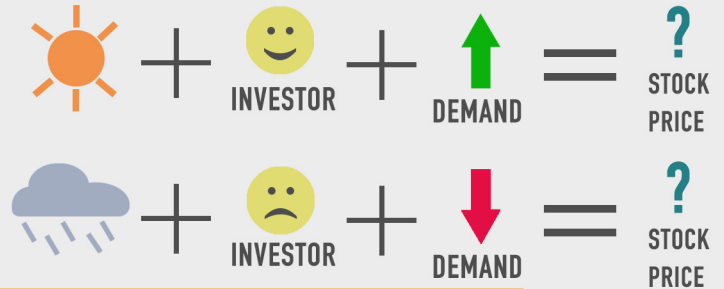


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### INTRODUCTION

In this paper, weather is considered to have a major

influence on investors, depending on the weather condition, market players are assumed to behave differently. By using regression analysis, this research hopes to identify the weather effect in the Hong Kong stock market.



### DATA DESCRIPTION

- Two main data
- Data Sorting

### WEATHER DATA

The weather data were retrieved from the Hong Kong Observatory. The daily weather data between 1/9/2009 to 31/10/2019 were retrieved.

Including:

- Mean Temperature
- Mean Relative Humidity
- Cloudiness
- Total Rainfall
- Total Bright Sunshine

### STOCK PRICE DATA

14 stocks were chosen to measure the weather effect in different industries such as agricultural, banking, estate and high-tech industry.

Including:

- HSBC HOLDINGS
- HANG SENG BANK
- WH GROUP
- CKH HOLDINGS
- TENCENT

### DATA SORTING

Weather data for the weekends and public holidays were also retrieved, using python, we were able to match the adjusted closing price with the corresponding data

### REGRESSION MODEL

$$\text{AdjClosing } P_t = \beta_1 \text{Mean Temp}_t + \beta_2 \text{Mean Humid}_t + \beta_3 \text{Mean Cloud}_t + \beta_4 \text{Total Rain}_t + \beta_5 \text{Total Sunshine}_t + \epsilon_t$$

- AdjClosing  $P_t$  = adjusted closing price of the day
- Mean Temp<sub>t</sub> = mean temperature of the day
- Mean Humid<sub>t</sub> = mean relative humidity of the day
- Mean Cloud<sub>t</sub> = mean amount of cloud of the day
- Total Rain<sub>t</sub> = total amount of rainfall that day
- Total Sunshine<sub>t</sub> = total bright sunshine hours that day

### RESULT

\*\*\*p<0.01, \*\*p<0.05, \*p<0.1

	Agriculture Stocks					Bank Stocks			Estate Stocks			High Tech Stocks		
	0288	0411	1610	2319	1387	0005	0011	0939	0001	0012	2007	0700	2018	2382
Mean Temperature	.0274132* (.0098175)	.0736467* (.0177121)	.0108163* (.0049974)	.1811012* (.027556)	- (.0223088)	-.0030272 (.0387841)	.9953494* (.1831271)	.008646* (.0048658)	.2234079* (.0743114)	.2030851* (.0368814)	.0570749* (.0173541)	2.087853* (.5826781)	.2673919* (.1598488)	.9987234* (.1978419)
Mean Relative Humidity	-.002986 (.0057952)	-.029312** (.0103835)	-.0105761* (.0029642)	-.0467463* (.0162508)	3 (.0131651)	.0801864* (.0228725)	.3794929* (.1079972)	.0118708** (.0026689)	.137231** (.0438243)	.0685591* (.0217504)	.032096** (.0102344)	.0244694* (.0065484)	.3129253* (.0942691)	.3942198* (.1166751)
Mean Amount of Cloud (%)	.0100631* (.0035418)	.0272384* (.006592)	-.0040629* (.0016898)	.0161123 (.010398)	-.0078288 (.0084232)	.0275931* (.0146348)	.2520873* (.0691012)	.0072039** (.0018357)	.0506393* (.0280406)	.0394685* (.0139168)	.0244694* (.0065484)	.8624918* (.2198191)	.2093179* (.0603173)	.2888033* (.0746537)
Total Rainfall (mm)	.0044261* (.0020272)	.0042331 (.0038649)	-.000553 (.0010179)	.0101449* (.0061618)	-.0058309 (.00499)	.0242322* (.0086726)	.0482199 (.0409494)	.0017374 (.0010878)	.0188152 (.0166169)	.0096493 (.0082471)	.0048671 (.0038806)	.1769211 (.1302674)	.0565034 (.0357441)	.056363 (.0442399)
Total Bright Sunshine (Hours)	.0698065* (.0213576)	.0866161* (.039725)	-.014803 (.010352)	.0485776 (.0624525)	.0237463 (.0506075)	.2118476* (.0878998)	.6490671 (.4150371)	.0305697** (.0110253)	.0822125 (.1684184)	.099534 (.0835875)	.0946184* (.0393311)	.3015287* (.1320273)	.8829535* (.3622795)	1.130808* (.4483867)
Constant	4.427337 (.4631694)	5.182696 (.8413105)	1.022882 (.2311382)	13.77548 (1.317319)	6.550486 (1.067652)	57.60936 (1.854082)	101.5019 (8.754433)	4.877081 (.2325635)	73.92063 (3.552472)	23.51061 (1.763123)	3.353537 (.8296162)	113.6921 (27.84937)	44.83774 (7.64161)	14.88063 (9.457879)

#### Mean Temperature

- Significant influence in estate stocks
- Positive coefficients
- Increasing in temperature leads to higher stock price in the estate sector

#### Mean Amount of Cloud

- Significant influence in all sectors
- Mixed signs of coefficients
- Ambiguous influence in the Hong Kong stock market

#### Mean Relative Humidity

- Significant influence in bank stocks
- Negative coefficients
- Increasing in relative humidity leads to stock prices to fall in the banking sector

#### Total Bright Sunshine

- Significant influence in high-tech stocks
- Positive coefficients
- Increasing in amount of sunlight leads to high-tech sector stock price increase