YIP Wing Kwong 1155095152
KONG Lam Tung 1155094901
WONG Yiu Kuen 1155093327

香港中文大學
The Chinese University of Hong Kong

WEATHER AND THE PRICE OF STOCK MARKET: CASE OF HONG KONG

INTRODUCTION

- The fluctuation of temperature, cloud coverage and humidity is huge in Hong Kong
- Saunders wanted to find out the relationship between stock price and wall street weather in 1993.
- Literature review: **weather affects people's emotions and behaviors**
- Purpose: to **predict the price movement** of stock market

METHODOLOGY: REGRESSION EMPIRICAL MODEL

- $P = \beta_0 + \beta_1 T + \beta_2 C + \beta_3 H + \beta_4 D + \varepsilon$

Where:
P= % change of daily price of Hang Seng index
T= % change of daily temperature
C= % change of daily cloud coverage
H= % change of daily humidity
D= A day dummy (with Monday omitted)

WEATHER & TRADING RULES MACD MODEL

- $N\text{-day EMA} = (1 - SF) \times EMA_{t-1} + SF \times C$

Where SF = Smoothing Factor = 2/(N+1)
Where Ct = Temperature or the Price of Hang Seng Index
MACD = 12-day EMA – 26-day EMA
Signal Line = 9-day EMA of MACD
The Trading Rule:
Buy: MACD line passed through the signal line from below to above.
Sell: MACD line passed through the signal line form above to below.

RESULTS

Equation: $P = \beta_0 + \beta_1 T + \beta_2 C + \beta_3 H + \beta_4 D + \varepsilon$					
Independent variable	Intercept	Temperature	Cloud cover	Humidity	Dummy variable (Monday)
Coefficients	4.00****	0.3126****	0.1102****	-0.3946****	0.0080
P-Value	4.8695E-127	1.5854E-10	2.5151E-7	7.62943E-5	5.2302E-1
R Square			0.0064422		
Degree of Freedom			10082		

	MACD (Price indicator)	MACD (Temperature indicator)	Buy and Hold
Profit return	148.26% per year	8.825% per year	10.49% per year

DATA

- > **10,000** data used
- Sources: Bloomberg and HK Observatory
- From January 1, 1979 to October 31, 2019 (daily data in 40 years)
- Price of Hong Kong Hang Seng Index
- Weather information: **temperature, cloud coverage** and **humidity**

CONCLUSION

•The temperature (+), cloud coverage (+) and humidity (-) are related to the price of Hang Seng Index by affecting human emotions and mood to bring impacts to their financial behavior and decision.

•However, the relationship between the weather and the stock market is not as stronger as Saunders (1993) did in his article and it is more likely as the finding of Trombley (1997)