We proudly present

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*

Group 2:



NgocLTH


AnhNTP


ThanhMD


LinhTTT


HangNT


QS STARS RATED FOR EXCELLENCE 2012

Fpt University

ĐẠI HỌC FPT

# PRESENTATION OUTLINE

1. INTRODUCTION
2. LITERATURE REVIEW
3. METHODOLOGY
4. ANALYSIS & FINDINGS
5. LIMITATIONS & RECOMMENDATIONS

# “1. INTRODUCTION”

# “ MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market* ”



## WHY WE CHOOSE THIS TOPIC?

- ✓ Focusing on technical and fundamental analysis → lack of anomalies analysis
- ✓ Much researches have done about “Seasonality” in the world

| JANUARY EFFECT | SELL IN MAY & GO AWAY | HOLIDAY EFFECT |
|---|---|---|
| U.K; Germany | United State | Malaysia; China |

- ✓ Conducting interview in Hanoi. The result is


QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University
ĐẠI HỌC FPT

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*



## RESEARCH OBJECTIVE

1. Investigating the impacts of seasonality on Stock Market
2. Explaining the relationship between special month and firm sizes
3. Suggestions for the individual investors based on the results

# “MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*”



## RESEARCH QUESTIONS

1. Does the monthly effects impact on Vietnamese stock market? If have, how did it affect?
2. What model can be appropriated to examine this effect?
3. What recommendations can be suggested from thesis result?

# "2.LITERATURE REVIEW"

# SEASONALITY

Seasonality is the changes which taking repeated in time series data within a year

## THEORY REVIEW

*“ Past, present and even discounted future events are reflected in market price but often show no apparent relation to price changes”*

**Louis Bachelier , 1900**

## THEORY REVIEW

> *" A market in which prices always fully reflect all available information is called efficiency "*

**Fama, 1965**

## MARKET EFFICIENCY FORM

### WEAK FORM

all of historical market data

### SEMI - STRONG

- all historical records
- fundamental facts

### STRONG

- all publicly information
- all private information

# “ MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market* ”



## EMPIRICAL REVIEW

### JANUARY EFFECT

- Officer (1975)
- Rozeff and Kinney (1976)
- Lewis (1989)
- Barone (1990)

### SELL IN MAY & GO AWAY

- Bouman & Jacobsen (2002)

### HOLIDAY EFFECT

- Tian Yuan & Rakesh Gupta (2014)

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*



## COMPARING MODELS

| PROPERTY | ARIMA | GARCH | OLS |
|---|---|---|---|
| Condition Mean | Non constant | 0 | 0 |
| Condition Variance | Constant | Non-constant | Constant |
| Con. Distribution | Normal | Normal | Normal |
| Marginal Mean & Variance | Constant | Constant | Constant |
| Marginal Distribution | Normal | Heavy-tailed | Normal |

## COMPARING THE MODELS

### T-TEST

#### STRENGTHS

- The easiest methods in statistic
- Calculating manually

#### WEAKNESSES

Meet data requirements:

- Follow normal distribution
- Completely dependent two groups
- Equal variance
- Random Sample

## COMPARING THE MODELS

### OLS

#### STRENGTHS

Easy to calculate

Widely accepted

#### WEAKNESSES

- Not reflect the time series
- Request εt = 0, the variance of εt is unchanged and no autocorrelation
- The results would be artificially if the dependent variable is not stationary

## COMPARING THE MODELS

### ARIMA

#### STRENGTHS

- Fit to time series data
- Using for forecasting

#### WEAKNESSES

- Have mean and variance of linear
- Required εt must be stationary

## COMPARING THE MODELS

### GARCH

#### STRENGTHS

- high potential application for forecasting & risk analysis
- Overcome the weaknesses from previous model

#### WEAKNESSES

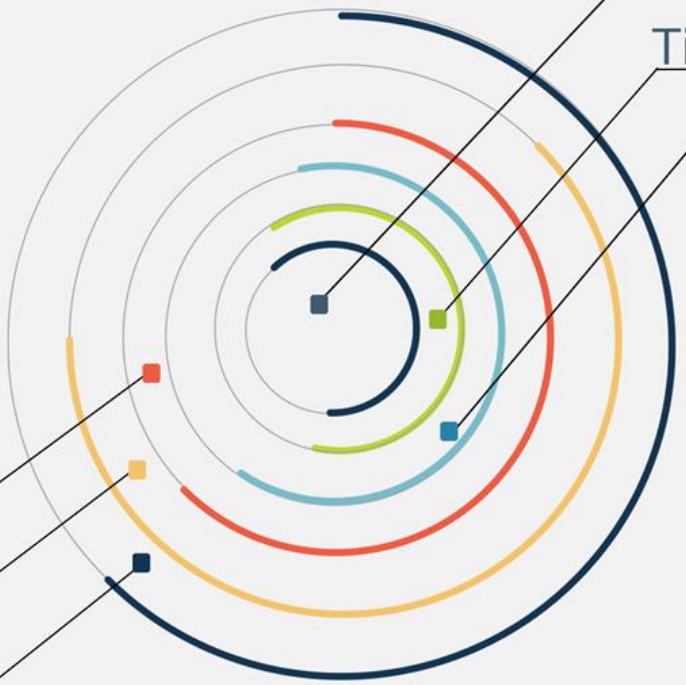
- q can led to model conditional .variance without limits

# “3. METHODOLOGY”

# “MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*”



## RESEARCH ONION



Data Collection & Data Analysis

Time Horizons: Longitudinal

Research Strategy: Archival

Method Choices: Mixed-Method

Approach: Deductive

Philosophy: Positivism

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University

ĐẠI HỌC FPT

# “ MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market* ”



## PRIMARY DATA

### METHOD

Focus group

Personal interview

### PLACES

- Saigon Securities Incorporation (SSI)
- An Thanh Securities Joint Stock Company (ATSC)
- FPT Securities Joint Stock Company (FPTS)

### PARTICIPANTS

> 30 investors

- 23 people in personal interview
- 7 people in focus group

# “MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*”



## SECONDARY DATA

### SAMPLING TECNIQUE

Non-probability

- Judgement
- Convenience

### SCOPE

**HOSE**

Divide into 3 porfolios

**30- 40- 30**

### SAMPLE CHARACTERISTIC

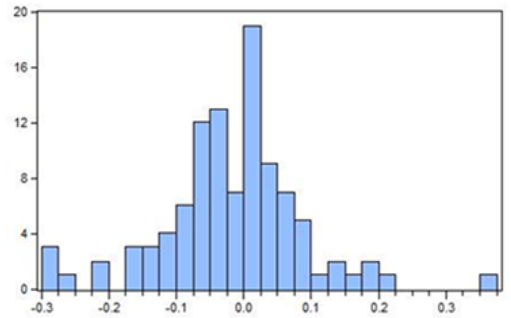
Monthly data

Time series

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*

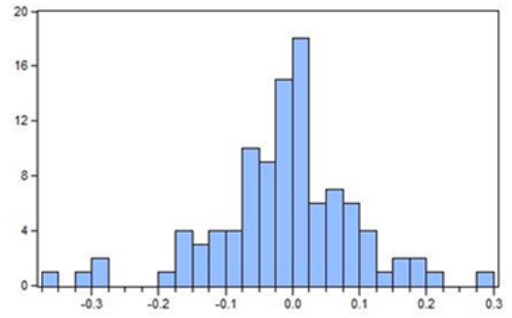


## DESCRIPTIVE STATISTIC



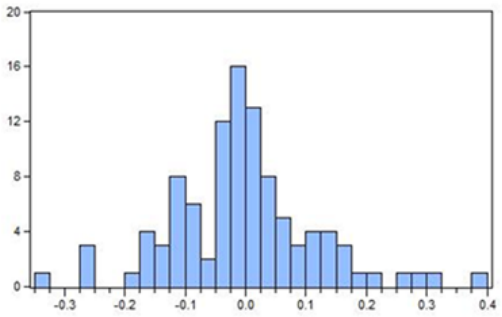
Series: RETURN PORFOLIO 1
Sample 2007/01 to 2015/06
Observations 102

| | |
|---|---|
| Mean | -0.017013 |
| Median | -0.010300 |
| Maximum | 0.353285 |
| Minimum | -0.291947 |
| Std. Dev. | 0.102916 |
| Skewness | 0.005151 |
| Kurtosis | 4.774531 |
| Jarque-Bera | 13.38353 |
| Probability | 0.001241 |



Series: RETURN PORFOLIO 2
Sample 2007/01 to 2015/06
Observations 102

| | |
|---|---|
| Mean | -0.012497 |
| Median | -0.003250 |
| Maximum | 0.278832 |
| Minimum | -0.359812 |
| Std. Dev. | 0.104997 |
| Skewness | -0.450687 |
| Kurtosis | 4.587990 |
| Jarque-Bera | 14.17029 |
| Probability | 0.000837 |



Series: RETURN PORFOLIO 3
Sample 2007/01 to 2015/06
Observations 102

| | |
|---|---|
| Mean | -0.002932 |
| Median | -0.002080 |
| Maximum | 0.378207 |
| Minimum | -0.328372 |
| Std. Dev. | 0.118166 |
| Skewness | 0.258301 |
| Kurtosis | 4.070706 |
| Jarque-Bera | 6.006487 |
| Probability | 0.049626 |

## MODEL SPECIFICATION

- GARCH have been proven to be coincidence for model of time series data
- Model

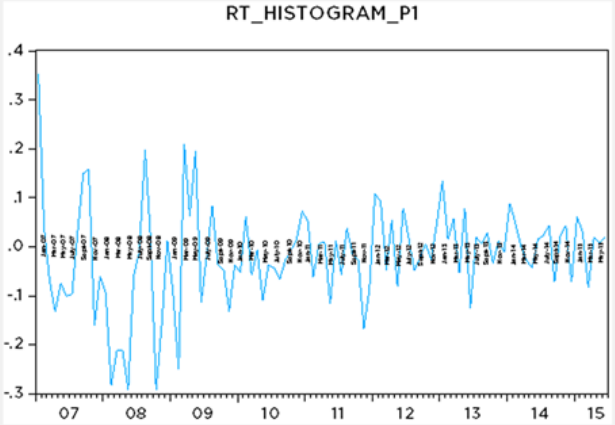
$$R = \alpha_1 + \alpha_2 D_{Feb} + \alpha_3 D_{Mar} + \alpha_4 D_{Apr} + \alpha_5 D_{May} + \alpha_6 D_{Jun} + \alpha_7 D_{Jul}$$
$$+ \alpha_8 D_{Aug} + \alpha_9 D_{Sept} + \alpha_{10} D_{Oct} + \alpha_{11} D_{Nov} + \alpha_{12} D_{Dec} + \varepsilon_t$$

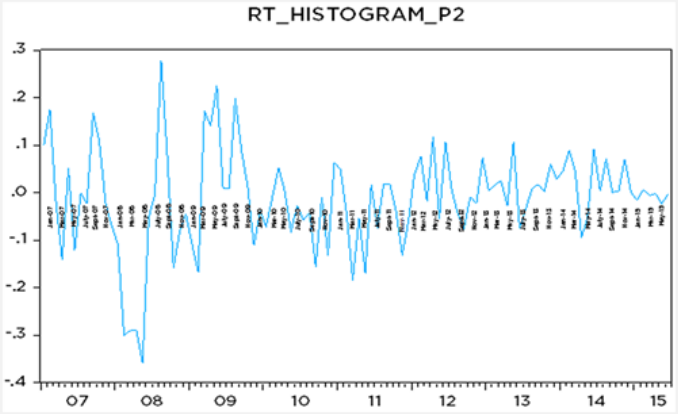
# "4. ANALYSIS & FINDINGS"

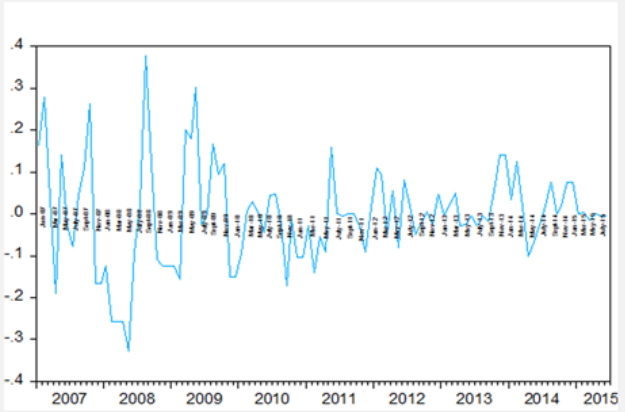
# “ MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market* ”



## MONTHLY RETURNS VOLATILITY




**PORFOLIO 1** | **PORFOLIO 2** | **PORFOLIO 3**

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University

ĐẠI HỌC FPT

## TESTING ARCH EFFECT

| | PORFOLIO 1 | PORFOLIO 2 | PORFOLIO 3 |
|---|---|---|---|
| F-STATISTIC | 0.147210 | 0.775632 | 1.081237 |
| OBS*R-SQUARED | 0.302692 | 1.574303 | 2.180925 |
| PROB.F(2,96) | 0.0486 | 0.0463 | 0.0343 |
| PROB.CHI-SQUARED(2) | 0.0486 | 0.0455 | 0.0336 |

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*



## MEAN & VARIANCE

Dependent Variable: RETURN
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 07/28/15 Time: 04:39
Sample (adjusted): 2 102
Included observations: 101 after adjustments
Convergence achieved after 26 iterations
Presample variance: backcast (parameter = 0.7)
GARCH = C(14) + C(15)*RESID(-1)^2 + C(16)*GARCH(-1)

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.069821 | 0.025776 | 2.708774 | 0.0068 |
| FEBR | -0.054339 | 0.032256 | -1.684600 | 0.0921 |
| MAR | -0.089188 | 0.031550 | -2.826829 | 0.0047 |
| APR | -0.082770 | 0.036435 | -2.271734 | 0.0231 |
| MAY | -0.111683 | 0.030310 | -3.684713 | 0.0002 |
| JUNE | -0.075312 | 0.036437 | -2.066878 | 0.0387 |
| JULY | -0.074361 | 0.042648 | -1.743628 | 0.0812 |
| AUG | -0.078200 | 0.034459 | -2.269352 | 0.0232 |
| SEPT | -0.082292 | 0.035709 | -2.304479 | 0.0212 |
| OCT | -0.079151 | 0.042945 | -1.843065 | 0.0653 |
| NOV | -0.108010 | 0.029656 | -3.642026 | 0.0003 |
| DEC | -0.073438 | 0.030960 | -2.371999 | 0.0177 |
| AR(1) | 0.097264 | 0.135918 | 0.715610 | 0.0474 |
| **Variance Equation** | | | | |
| C | 0.000374 | 0.000444 | 0.843243 | 0.0399 |
| RESID(-1)^2 | 0.301053 | 0.192873 | 1.560892 | 0.0119 |
| GARCH(-1) | 0.657481 | 0.183600 | 3.581046 | 0.0003 |

| | | | |
|---|---|---|---|
| R-squared | 0.042121 | Mean dependent var | -0.020679 |
| Adjusted R-squared | -0.088499 | S.D. dependent var | 0.096503 |
| S.E. of regression | 0.100683 | Akaike info criterion | -2.004657 |
| Sum squared resid | 0.892057 | Schwarz criterion | -1.590381 |
| Log likelihood | 117.2352 | Hannan-Quinn criter. | -1.836946 |
| Durbin-Watson stat | 1.647547 | | |

| | |
|---|---|
| Inverted AR Roots | .10 |

**PORFOLIO 1**

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University
ĐẠI HỌC FPT

# “MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*”



## MEAN & VARIANCE

Dependent Variable: MONTHLY_RETURN
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 07/28/15 Time: 11:06
Sample (adjusted): 2 102
Included observations: 101 after adjustments
Convergence achieved after 36 iterations
Presample variance: backcast (parameter = 0.7)
GARCH = C(14) + C(15)*RESID(-1)^2 + C(16)*GARCH(-1)

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.005814 | 0.037779 | -0.153895 | 0.0588 |
| FEBR | 0.012495 | 0.031161 | 0.400972 | 0.6884 |
| MAR | 0.001593 | 0.045793 | 0.034777 | 0.9723 |
| APR | -0.011058 | 0.040921 | -0.270216 | 0.7870 |
| MAY | -0.017706 | 0.043265 | -0.409242 | 0.0468 |
| JUNE | 0.006380 | 0.039035 | 0.163455 | 0.8702 |
| JULY | -0.018185 | 0.107012 | -0.169930 | 0.8651 |
| AUG | 0.050162 | 0.058222 | 0.861564 | 0.0389 |
| SEPT | 0.000319 | 0.053498 | 0.005968 | 0.0995 |
| OCT | -0.006576 | 0.067507 | -0.097406 | 0.9224 |
| NOV | 0.023386 | 0.042341 | 0.552332 | 0.5807 |
| DEC | 0.010215 | 0.043791 | 0.233273 | 0.8155 |
| AR(1) | 0.305478 | 0.099611 | 3.066711 | 0.0022 |
| **Variance Equation** | | | | |
| C | -0.000147 | 4.46E-05 | -3.287018 | 0.0010 |
| RESID(-1)^2 | 0.059687 | 0.059819 | 0.997797 | 0.0318 |
| GARCH(-1) | 0.938955 | 0.054415 | 17.25537 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.182760 | Mean dependent var | -0.013610 |
| Adjusted R-squared | 0.071319 | S.D. dependent var | 0.104914 |
| S.E. of regression | 0.101104 | Akaike info criterion | -1.949209 |
| Sum squared resid | 0.899531 | Schwarz criterion | -1.534932 |
| Log likelihood | 114.4350 | Hannan-Quinn criter. | -1.781497 |
| Durbin-Watson stat | 1.774310 | | |

**PORFOLIO 2**

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University
ĐẠI HỌC FPT

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*



## MEAN & VARIANCE

Dependent Variable: RETURN
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 07/28/15 Time: 13:40
Sample (adjusted): 2 102
Included observations: 101 after adjustments
Convergence achieved after 25 iterations
Presample variance: backcast (parameter = 0.7)
GARCH = C(14) + C(15)*RESID(-1)^2 + C(16)*GARCH(-1)

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.072699 | 0.035756 | 0.203320 | 0.0484 |
| FEBR | 0.015917 | 0.024561 | 0.648060 | 0.5169 |
| MAR | -0.012491 | 0.045869 | -0.272320 | 0.7854 |
| APR | -0.022517 | 0.037496 | -0.600525 | 0.5482 |
| MAY | -0.019096 | 0.045225 | -0.422234 | 0.0467 |
| JUNE | -0.013364 | 0.037616 | -0.355280 | 0.7224 |
| JULY | 0.000991 | 0.058338 | 0.016991 | 0.9864 |
| AUG | 0.040313 | 0.047103 | 0.855847 | 0.0392 |
| SEPT | -0.014654 | 0.069133 | -0.211973 | 0.0483 |
| OCT | 0.013182 | 0.054919 | 0.240028 | 0.8103 |
| NOV | 0.035682 | 0.040366 | 0.883973 | 0.3767 |
| DEC | 0.052387 | 0.039616 | 1.322364 | 0.1860 |
| AR(1) | 0.395506 | 0.107489 | 3.679488 | 0.0002 |
| Variance Equation | | | | |
| C | -9.14E-05 | 3.21E-05 | -2.843110 | 0.0045 |
| RESID(-1)^2 | 0.052501 | 0.065709 | 0.798993 | 0.0424 |
| GARCH(-1) | 0.930693 | 0.060345 | 15.42284 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.167031 | Mean dependent var | -0.004582 |
| Adjusted R-squared | 0.053445 | S.D. dependent var | 0.117569 |
| S.E. of regression | 0.114384 | Akaike info criterion | -1.945387 |
| Sum squared resid | 1.151374 | Schwarz criterion | -1.531110 |
| Log likelihood | 114.2420 | Hannan-Quinn criter. | -1.777676 |
| Durbin-Watson stat | 1.802390 | | |

Inverted AR Roots .40

**PORFOLIO 3**

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University
ĐẠI HỌC FPT

**FINDING 1**

# MONTHLY SEASONAL EFFECTS

**JANUARY EFECT** → **Higher returns on the specific month**

**Coefficient**

Portfolio 1: 6.98%

Portfolio 3: 7.27%

- Investors have a certain number of idle capitals
- Corporation and company launched the business strategy for the year
- **Reject “Tax-loss selling”** theory on Vietnam stock market

# “MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*”



**FINDING 1**

## MONTHLY SEASONAL EFFECTS

**MAY EFECT** → **Lowest returns for all three portfolios**

**Coefficient**

Portfolio 1: (11.16%)
Portfolio 2: (1.8%)
Portfolio 3: (1.9%)

May in the period of price adjustments

Announcing Economic information & financial statements

**Investors**

- Evaluating
- Restructing portfolio
- Removing securities

FINDING 1

# MONTHLY SEASONAL EFFECTS

**EXTRAORDINARY**

**August returns**

Coefficient
Portfolio 1: (7.8%)
Portfolio 2: 5%
Portfolio 3: 4%

August effect which existed in portfolio 1 maybe related Lunar July's behavioural finance

In portfolio 2 and 3, it did not exist, investors pay more attention to performance of market or economic .situation rather than belief

FINDING 1

# MONTHLY SEASONAL EFFECTS

## EXTRAORDINARY

**Nov returns**

Coefficient

Portfolio 1: (10.8%)

→ The release of corporate financial statement of third quarter or the restructure portfolio of stock fund

FINDING 2

# GARCH MODEL

Owing to the characteristic of time series data: fat-tailed

**GARCH MODEL SUCCESSFULLY ACCEPTED**

# 5. LIMITATIONS & RECOMMENDATIONS

# LIMITATIONS

## LACK OF COMPARISON

- numerous international articles about monthly seasonality
- limited articles in Vietnam

## LIMITED OBSERVATION

- limited of listed company
- monthly returns not daily returns

## ONLY CAPITAL GAIN

- not include cash & stock dividend

## DATA COLLECTION

- ignoring HNX

## FOR RESEARCHERS

- Regarding as a valuable reference source



- Investigating other interesting threads of securities market

price fluctuation

investor's behaviour

dividend

# MONTHLY SEASONAL EFFECTS ON *Vietnam Stock Market*



## FOR INVESTORS

### JANUARY

- portfolio 1 & portfolio 3: upward trend → consider more investment in year-end

### May

- All portfolios: downward trend
  - ↗ stop buying shares in May
  - → selling shares in April
  - ↘ waiting until June to sell

### August & September *(July lunar in Viet Nam)*

- portfolio 1: downward trend ↘ stop buying large-cap stocks
- portfolio 1 & portfolio 3: upward trend ↗ consider to buy mid-cap stocks & small-cap stocks in June lunar month

QS STARS RATED FOR EXCELLENCE 2012

FPT Fpt University

ĐẠI HỌC FPT

# FURTHER SUGGESTIONS

1. CHOOSING DIFFERENT INDUSTRIES
2. INVESTIGATING OTHER SEASONAL EFFECTS
3. SCOPE EXPANSION

“THANKS FOR LISTENING”