科技部補助專題研究計畫成果報告
期末報告

性別與年齡對台灣衍生性金融商品交易行為的影響（A02）

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中 文 摘 要 ： 男性因過多的交易造成投資的損失或較少的獲利,其實是一種過度自信所引發的結果,過度自信是將獲利歸功為自己的能力的心理偏差,這種現象在市場狀況不佳時是否會有風險趨避或節制的現象產生?當市場狀況佳時是否會更傾向過度自信或增強較早賣掉賺錢的投資、保留賠錢的投資 (disposition effect)的現象?另外,過度自信會造成那些後續反應?例如願意承擔較大的風險(槓桿效應)?或下單時較激進沒有耐性,以市價而非限價下單,造成投資損失?此外,本研究雖無直接資料顯示交易者是否正處於更年期,但依據調查資料顯示女性在更年期期間心理較不穩定,因此在更年期發生的年齡的交易者是否會較其他年齡的交易者有鴕鳥效應(Ostrich effect)增強的傾向,且男性與女性效果不同?

中 文 關 鍵 詞 ： 過度自信, 女性更年期, 交易的積極性，熊市, 牛市

英 文 摘 要 ： Our data make it possible to explore whether overconfidence exists in Taiwan derivative market, and trading aggressiveness of individual traders for different age regimes and sex over bull and bear markets are different. We find female individuals who are in menopausal age-regime more likely to display trading aggressiveness behavior and incur more loss than those in other regimes. Also, individuals lose more loss than local organizations and tend to be more aggressive than local organizations.

英 文 關 鍵 詞 ： Trading aggressiveness, overconfident, menopause, bear market, bull
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The effects of sex and age on trading behavior in Taiwan derivatives market (A02)

Abstract

Our data make it possible to explore whether overconfidence exists in Taiwan derivative market, and trading aggressiveness of individual traders for different age regimes and sex over bull and bear markets are different. We find female individuals who are in menopausal age-regime more likely to display trading aggressiveness behavior and incur more loss than those in other regimes. Also, individuals lose more loss than local organizations and tend to be more aggressive than local organizations.

Keywords: Trading aggressiveness, overconfident, menopause, bear market, bull market

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Introduction

As the behavioral finance literature becomes more complex and interwoven, it promises to remain an extremely vibrant and fertile filed for exploration, as long as researchers continue to apply equal amounts of discipline to building, testing, and refining new theories and datasets. This study mainly explores how gender and age affect trading behavior of traders in derivatives market of Taiwan. Depart from the prior literature by using survey for socio-economic information and trading performance data, the analysis in this study draws on unique real demographic data and per-trade transaction records obtained for traders trading in Taiwan derivatives market.

Because the physiological symptoms or psychological attribute of traders might be important for mispricing or anomaly in a financial market, underscoring the importance of physiological symptom or psychological attribute as a common factor for explaining trading performance, especially for a certain trader class or gender, might have important consequences for over-/under-reaction to past market return. The results in this study can have potentially implications for understanding behavior bias and sexual difference in trading decisions.

Literature Review

Regarding to age and gender findings, Barber and Odean (2001) shows that younger respondents and male respondents trade more actively than their older and female counterparts. Lo, Repin, and Steenbarger (2005) find older subjects tend to perform worse, or at least more of them report mostly or consistently unprofitable trading. Barber and Odean (2001) use gender as a proxy for overconfidence, but Dorn and Huberman (2002) claim that it is not significantly related to portfolio turnover once controlling for the investor's self-reported risk tolerance. Barber and Odean (2001) document overconfidence leads to too much trading and can explain high trading levels and the resulting poor performance of individual investors. Daniel, Hirshleifer, and Subrahmanyam (1998) and Gervais and Odean (2001) explore the implications of overconfidence and the self-attribution bias for asset prices and investor behavior. In these papers, overconfidence refers to the tendency to overestimate the precision of one's knowledge; the self-attribution bias refers to the

tendency to attribute successes to self or skill and failures to others or bad luck. Gervais and Odean (2001) further claim overconfidence diminishes with greater experience. Glaser and Weber (2007) provide evidence that overconfidence relates to trading volume.

Dorn and Huberman (2005) use stated perceptions and self-assessments to develop measures for unobservable psychological attribute, such as risk aversion and overconfidence, are central to the traditional theory of investor behavior as well as to the behavioral approach. Dorn and Sengmueller (2009) report "trading as entertainment" offer a straightforward explanation of the "excessive trading puzzle" by controlling for gender and proxies for overconfidence constructed from survey responses. Galai and Sade (2006) find investors are more willing to hold illiquid assets and attribute this opposite preference for illiquid assets over equally risky liquid assets to the avoidance of potentially negative or painful information. Karlsson, Loewenstein and Seppi (2009) find that investors are more likely to monitor their retirement portfolios following market upswings and conclude investors avoid unpleasant information by reducing portfolio monitoring in response to news of negative market movement when facing bad market conditions, rather like (apocryphal) ostriches sticking their heads in the sand. Borrowing from Galai and Sade (2006), Karlsson et al. (2009) term this pattern of information monitoring the ostrich effect.

Consistent with the view that the ostrich effect has a psychological bais, Sicherman, Loewenstein, Seppi and Utkus (2013) find that ostrich behavior is a relatively stable personal characteristic over time. Gherzi, Egan, Stewart, Haisley, and Ayton (2014) report that investors increase portfolio monitoring following both positive and negative market returns and investors' personality interacts with daily market returns, that is, neurotic investors monitor their portfolios less frequently, possibly as an anxiety controlling mechanism, but during extreme negative market changes, they increase monitoring their portfolios more than non-neurotic investors.

Related studies for menopause and andropause

A survey done by Bureau of Health Promotion in 2005 interviewed more than 6000 people find that women from 55 to 65 years of age experience the most serious menopausal symptoms, around 35.48% of all subjects. The mean age at menopause for Taiwanese women is about 49.4 ranging from 48 to 52 and the menstrual cycle of 90% women remains irregular for 4 to 8 years before menopause. 陳惠玲 (1996) claims that clinically concentration of FSH and Estrogen in blood is used for examining whether menopause starts. If FSH concentration in blood higher than

100mlU/ml or EH concentration in blood lower than 30pg/ml, menopause is defined. Lock (1998) regards menopause as a bio-social and bio-cultural procedure. Definition of menopause should include age, menstrual status, important life events, changing role, menopausal symptoms and so on. Taylor (2002) finds that 90% women would undergo cycle disturbance before menstruation is stopped completely. 張鈺 (1993) reports mean age at menopause for Taiwanese women is about 49.4 which is similar to the age as defined in Chinese Ancient Medicine book 醫宗金鑑. 張鈺 et al. (2000) find women at different menopausal stage show different symptoms. Based on a health survey in 2004 to Taiwanese women by Bureau of Health Promotion, 張鈺 et al. (2004) report 93.5% women consider menopause as a natural physiological phenomenon, 74.9% of them disagree with menopause as a disease, and 45% participants agree women during menopausal period tend to be mentally unstable.

Refer to Pan, Wu, Hsu, Yao, Huang (2002), Huang, Xu, NasriI, and Jaisamrarn (2010) and Sievert, Murphy, Morrison, Reza, and Brown (2013), this study defines menopausal regime for women ranging from 45 to 55 years old. Clapauch, Braga, Marinheiro, Buksman, and Schrank (2008) find that aging men with low androgen levels may experience decreased libido, with or without sexual dysfunction, as well as low muscle strength, psychological changes, mainly depression and increased risk of osteoporosis. This array of psycho-somatic-sexual symptoms is referred to by many names, such as Late-onset Hypo-gonadism (LOH) or Andropause. Following Clapauch, Braga, Marinheiro, Buksman, and Schrank (2008), this study will define andropause from 55 to 65 years old. The information above provides a rough benchmark distribution for the general population that is matched by age and gender to compare with the distribution in our sample of traders.

Data

The options dataset used in this study is obtained from the Taiwan Futures Exchange (TAIFEX). Upon opening an account, investors provide their birth date, gender, and postal address. The data set hence consists of all TAIEX options transaction records and demographic data obtained for traders in Taiwan derivatives market including the following information: a unique identification number, an account number that identifies the trader, a transaction date, a buy/sell indicator, an order type (indicating whether an order is a limit or market order), the type of derivatives traded (e.g. index options or index futures) and trading volume, age, gender, trader class, account opening date, years trading, proxy for strategic trading (No. of accounts), birthday, and mailing address. Complete transaction records from trader's account opening date (as early as July 21, 1998) until December 31, 2008 are

available for over one million traders, with which their portfolios can be reconstructed on a frequency such as daily, weekly or monthly.

Hypotheses

The heterogeneity of preference in securities trading within different stage of life cycle implies potential differences in attitudes toward risk-taking across individuals. The overconfidence in Barber and Odean (2001) is defined by "men trade more than women and by trading more, men hurt their performance more than do women." In this study, we define overconfidence as men trade more than women, but men lose more or gain less. If overconfidence is observed to sustain, we would examine the following hypotheses because overconfidence might be inclined to increase risk-taking perceptions and aggressive attitudes.

H1: Individuals tend to experience a loss than organizational investors and men tend to lose more than women.

H2: Aggressiveness is observed for overconfident traders and the effect is different for female and male groups.

Barber, Lee, Liu, and Odean (2009) use transaction-level data from the Taiwan Stock Exchange to classify each trade as "passive" (liquidity-providing) or "aggressive" (liquidity-demanding). Orders to buy with prices in excess of the most recent unfilled sell limit order are categorized as aggressive; those with prices below the most recent unfilled buy limit order are categorized as passive; and those with an order price between two unfilled limit order prices are categorized as indeterminant.

We wonder traders might behave differently from normal time during a depressed economic period owing to increased risk aversion. In addition, investors tend to sell shares whose price has increased, while keeping shares that have dropped in value, namely, disposition effect. We hence hypothesize:

H3: Overconfidence/disposition effect tends to be stronger in a bull market but subdued in a bear market with a disproportional change rate in both markets.

Main findings

Motivated by Galai and Sade (2006), Karlsson et al. (2009), Sicherman et al. (2013), and Gherzi et al. (2014), we are curious whether a psychological bias might be caused by menopause and hence lead to a lower risk-taking propensity. Based on a health survey to Taiwanese women from 2003 to 2004 by Bureau of Health promotion, 45% participants agree women during menopausal period tend to be mentally unstable.

Our dataset has order type indicator (limit / market). We hence can classify the limit orders into 3 categories, extreme limit order, median limit order, and tradable limit order to study the effect of trading aggressiveness and analyze whether aggressiveness wanes during menopausal and andropausal regimes. First, traders are split into groups based on menopausal and non-menopausal ages according to different sex because the age at menopause/andropause for women and men is different.

Table 0 defines the variables used in this study and Table 1 summarizes all the participants in the Taiwan derivative market. We find the number of male traders is 50% more than that of female traders and most of traders are within the age range from 25 to 44 for both male and female traders. The result indicates that traders under the age of 25 trade in a higher quantity than the other age groups for male and female traders. In Table 2, execution time seems indifferent to the trading performance. The trading history plays a minor role on trading performance. An increase of one day increases more than one percent of trading profit. Surprisingly, day traders lose quite a lot and same as frequent traders. Trading with more than three accounts can make profit more than trading with less account. The market price orders can benefit from quick execution in Taiwan derivative market. In finance literature, market order is a proxy for informed trades or trading aggressiveness.

In Table 3, sex represents local male, female and organizational traders to control for the effect of sexual difference. As those previous studies, individual traders make less profit than organizational traders and men perform better than women, a result is different from that in Barber and Odean (2001). After controlling for sexual difference and individual-organizational difference, day-traders begin to profit from trading. Experienced traders start to profit than non-experienced traders. In Table 4, the sexual effect is same as in Table 3, but we can distinguish the market-price effect by male, female, and organizational traders. Male traders use more market price orders to profit and gain stronger impact on trading profit than their counterparts, female traders and organizational traders. The sexual impact on experience for male is quite strong and even subdues the main effect of experience on profit, but the impact for female is less. In literature, individuals lose resulting from trading too much. The

results in this study further shows trading too much for organizations results in loss, too.

In Table 5, age has minor effect on trading profit, but it has stronger effect on placing market orders to profit. A one-year-old increase in age can raise 2.3% profit from placing market orders to profit. The older people using strategy have less profit than the younger who use strategy. In Table 6, age is included to Table 5 to examine the interaction effect between age and sex. The other effects are similar to those mentioned above. In Table 7, age is divided into 10 groups to explore the menopause effect and compare the age effect across sex.

Appendix

A. Impact of overconfidence

Leverage effect

To explore life-cycle effect, our dataset is divided into five regimes based on trader's age (less than 25, greater than or equal to 25 and less than 45, greater than or equal to 45 and less than 55, greater than or equal to 55 and less than 64, greater than 64) for men and women.

Ostrich effect

Owing to menopause and andropause, we suspect the traders in menopausal or andropausal regime will refuse to face reality or accept facts than those in other regimes. This study will follow the methodology used in Galai and Sade (2006), Karlsson et al. (2009), Sicherman et al. (2013), and Gherzi et al. (2014) to explore whether Ostrich effect is enforced during the menopausal and andropausal regimes and the effect is different for female and male groups.

B. Bull/Bear market prediction

Overconfidence may wax and wane, both on an individual level and in the aggregate according to bull or bear market. In this study, binary response models are used to predict bear and bull markets determined by a mechanical dating rule based on Bry and Boschan (1971) turning point dating rule and following Pagan and Sossounov (2003) and Candelon, Piplack, and Straetmans (2008). A general property of Markov switching models is that unobserved regimes are identified within the model, while binary response models are observed as the values of a binary time series.

$$r_t = \mu_{s_t} + \sigma_{s_t}\varepsilon_t = s_t(\mu_1 + \sigma_1\varepsilon_t) + (1 - s_t)(\mu_0 + \sigma_0\varepsilon_t) \quad (1)$$

where the return r_t follows a different regime depending on the value of the observable binary time series s_t. In this model, the error term ε_t is identically and independently distributed (IID) with zero mean and unit variance (i.e., $E(\varepsilon_t) = 0$ and $Var(\varepsilon_t) = 1$) and is assumed to be independent of s_t. Throughout this study, the value one signifies a bear market state and the value zero denotes a bull market. That is,

$$S_t = \begin{cases} 1, & a\ bear\ market\ state\ at\ time\ t, \\ 0, & a\ bull\ market\ state\ at\ time\ t. \end{cases} \quad (2)$$

Hence, if the market is in the bear state ($s_{t=1}$), then the mean return generated by (1) is μ_1 while in the bull market state it is μ_0. The market states are also characterized by the regime-dependent variances ($\sigma_1^2\ and\ \sigma_0^2$).

B.1 Identifying bear and bull markets in real time

To construct forecasts for the state of the market, it is first necessary to determine bear and bull market periods (2). There is no consensus in the literature on how these periods should be identified. One possibility is to use a "naïve" moving average dating rule where the regimes are based on a mean return over the last few periods (see, e.g., Chen 2009, Asem and Tian 2010). If the mean return is positive (negative), the market status is bull (bear). An alternative approach is based on parametric models, such as Markov switching models, in which the underlying unobserved state of the market is assumed to follow a Markov process (see, e.g., Maheu and McCurdy 2000, Chauvet and Potter 2000). Following the assumptions made by Candelon et al. (2008) and Chen (2009), the time spent in a bear market (time from peak to next trough) or bull market (trough to peak) must be at least 6 months. In addition, the duration of a complete cycle from the trough to the next trough (or alternatively peak to peak) is assumed to be at least 15 months.

B.2 Estimation

After identifying bear and bull regimes, we would estimate the results of the regime switching model (1) to see the effects of the extracted bear and bull regimes and then examine whether overconfidence/disposition effect increases in bull market but risk aversion enforces in bear market. We will follow the framework shown on Table 2 in Nyberg (2013) to compare estimation results of the regime switching model (1) where the regimes are observed as a binary time series S_t, with a linear model without regimes (i.e., $\mu = \mu_1 = \mu_0\ and\ \sigma = \sigma_1^2 = \sigma_0^2$) and a Markov switching

model similar to (1) in which the regimes are unobserved. The parameters of model (1) are estimated using the method of maximum likelihood, assuming that the error term ε_t is Gaussian (NID).

We also will test the restriction that there is no relationship between return and the market regimes extracted (i.e., model (1) reduces to the single-regime linear model). We expect the estimation results of model (1) show that the mean parameter of the bull regime (μ_0) is positive while it is negative in the bear regime (μ_1) and that both are statistically significant. The bear market state will be clearly a much more volatile regime. The estimated Markov switching model shares the same characteristics as model (1) but the magnitudes of the estimated coefficients are somewhat different. Moreover, we wonder whether the mean return during the bear market regime can be estimated much more accurately when there is an explicit dependence on the observed bear and bull market states. As a whole, we predict model (1) outperforms the Markov switching model in terms of the values of the log-likelihood function as well as Akaike (AIC) and Schwarz (BIC) information criteria.

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Appendix : Variable Definitions

Variables	Definitions
tradingyears2	Trading covered years, calculated by trading date minus the trader's first trading date
avget	Average execution time
avglimit	Average market-price order, limit=1 denotes market price, 0 for limit price.
dtrader	Day traders, 1 for daytraders, 0 for non-daytraders
frequent	Frequent traders, 1 for frequent traders, 0 for non-frequent traders
strategic	Strategic traders, 1 for strategic traders, 0 for non-strategic traders
exp	Experienced traders, 1 for experienced, 0 for non-experienced.
W	W denotes trading profit, 0 for trading loss, and 1 for trading profit
sex0	Local organizations
sex1	Local male
sex2	Local female
sex3	Foreign organizations
sex4	Foreign individuals
gp1	1 denotes local male and age<=25, 0 otherwise
gp2	1 denotes local male and age>25 and age<=44, 0 otherwise
gp3	1 denotes local male and age>44 and age<=54, 0 otherwise
gp4	1 denotes local male and age>54 and age<=64, 0 otherwise
gp5	1 denotes local male and age>64 , 0 otherwise
gp6	1 denotes local female and age<=25, 0 otherwise
gp7	1 denotes local female and age>25 and age<=44, 0 otherwise
gp8	1 denotes local female and age>44 and age<=54, 0 otherwise
gp9	1 denotes local female and age>54 and age<=64, 0 otherwise
gp10	g1 to g9 all are zero

Table 1

Variables	N	Orders	Quantity	Execution Time	Market Price	Quantity	Execution Time	Market Price	Orders	Quantity	Execution Time	Market Price
				(Aggregate)			(Per order)				(Per person)	
Total	215,719	75,427,396	137,595,481	13,637,364,886	16,111,689	1.82	181	0.21	350	638	63,218	74.69
Local Organizations	1,476	12,852,665	28,953,656	2,178,749,947	574,625	2.25	170	0.04	8,708	19,616	1,476,118	389.31
Local Male	127,344	37,327,513	62,608,832	7,303,263,085	10,225,256	1.68	196	0.27	293	492	57,351	80.30
Local Female	86,744	20,648,392	35,007,113	3,667,640,744	5,165,442	1.70	178	0.25	238	404	42,281	59.55
Intl Organizations	69	4,586,195	11,006,375	485,345,065	141,994	2.40	106	0.03	66,467	159,513	7,033,986	2,057.88
Intl Inviduals	83	12,596	19,457	2,345,603	4,350	1.54	186	0.35	152	234	28,260	52.41
Male, age<=25	5,020	1,001,070	1,931,934	176,677,290	240,113	1.93	176	0.24	199	385	35,195	47.83
Male, age>25 and age<=44	73,421	20,528,093	34,614,358	3,315,101,458	5,795,946	1.69	161	0.28	280	471	45,152	78.94
Male, age>44 and age<=54	30,595	10,801,784	18,262,029	2,562,578,834	2,845,117	1.69	237	0.26	353	597	83,758	92.99
Male, age>54 and age<=64	12,964	3,862,976	6,197,802	1,237,169,681	1,054,047	1.60	320	0.27	298	478	95,431	81.31
Male, age>64	5,344	1,133,590	1,602,709	365,090,400	290,033	1.41	322	0.26	212	300	68,318	54.27
Female, age<=25	3,402	680,152	1,224,929	50,763,822	165,271	1.80	75	0.24	200	360	14,922	48.58
Female,age>25 and age<=44	45,615	10,656,075	18,331,879	2,025,666,049	2,818,432	1.72	190	0.26	234	402	44,408	61.79
Female,age>44 and age<=54	23,861	6,103,993	10,127,919	1,030,350,663	1,425,109	1.66	169	0.23	256	424	43,181	59.73
Female,age>54 and age<=64	10,208	2,467,090	4,221,518	471,443,288	578,058	1.71	191	0.23	242	414	46,184	56.63
Female, age>64	3,658	741,082	1,100,868	190,944,565	178,572	1.49	258	0.24	203	301	52,199	48.82

Table 2

LOGISTIC REGRESSION BACKWARD ELIMINATION

Optimization Technique : Fisher's scoring

Analysis of Maximum Likelihood Estimates					Odds Ratio Estimates		
Parameter	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**	**Point Estimate**	**95% Wald Confidence Limits**	
Intercept	0.0719	0.000836	7399.5841	<.0001			
tradingyears2	0.0107	0.000161	4408.1859	<.0001	1.011	1.01	1.011
avget	0.000053	3.45E-07	23592.2589	<.0001	1	1	1
avglimit	0.00648	0.000739	76.8298	<.0001	1.006	1.005	1.008
dtrader	-0.1692	0.000559	91716.641	<.0001	0.844	0.843	0.845
frequent	-0.3008	0.00082	134628.947	<.0001	0.74	0.739	0.741
strategic	0.3435	0.000908	142945.486	<.0001	1.41	1.407	1.412
exp	-0.062	0.000967	4101.0712	<.0001	0.94	0.938	0.942
W= 0 observations	33,943,356						
W= 1 observations	41,484,040						
Total observations	81,172,023						

Table 3

LOGISTIC REGRESSION BACKWARD ELIMINATION
Optimization Technique : Fisher's scoring
Analysis of Maximum Likelihood Estimates

Parameter	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds Ratio Estimates: Point Estimate	95% Wald Confidence Limits	
Intercept	1.254	0.0011	1295600	<.0001			
sex1	-1.1993	0.00077	2422864.21	<.0001	0.301	0.301	0.302
sex2	-1.295	0.000833	2415171.45	<.0001	0.274	0.273	0.274
tradingyears2	-0.0631	0.000176	128478.71	<.0001	0.939	0.939	0.939
avglimit	0.2626	0.000765	117668.774	<.0001	1.3	1.298	1.302
dtrader	0.0793	0.000583	18513.3829	<.0001	1.083	1.081	1.084
frequent	-0.4635	0.000825	315784.908	<.0001	0.629	0.628	0.63
strategic	-0.0285	0.0011	668.7547	<.0001	0.972	0.97	0.974
exp	0.0759	0.00103	5389.5307	<.0001	1.079	1.077	1.081
W= 0 observations	30,987,660						
W= 1 observations	39,840,910						
Total observations	70,828,570						

Table 4

LOGISTIC REGRESSION BACKWARD ELIMINATION
Optimization Technique : Fisher's scoring

Analysis of Maximum Likelihood Estimates					Odds Ratio Estimates		
Parameter	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**	**Point Estimate**	**95% Wald Confidence Limits**	
Intercept	1.2859	0.0118	11844.81	<.0001			
sex1	-1.3083	0.0119	12161.058	<.0001	0.27	0.264	0.277
sex2	-1.3985	0.0119	13824.172	<.0001	0.247	0.241	0.253
tradingyears2	-0.1198	0.000331	130717.26	<.0001	0.887	0.887	0.888
avglimit	-0.8401	0.00405	43031.409	<.0001	0.432	0.428	0.435
dtrader	0.0776	0.000583	17709.241	<.0001	1.081	1.079	1.082
frequent	-0.1943	0.0118	269.6557	<.0001	0.823	0.805	0.843
strategic	-0.0382	0.00203	355.4372	<.0001	0.963	0.959	0.966
exp	0.1833	0.00223	6761.4812	<.0001	1.201	1.196	1.206
sex1_tradingyears2	0.0809	0.000419	37353.415	<.0001	1.084	1.083	1.085
sex1_avget	0.000071	5.13E-07	19195.916	<.0001	1	1	1
sex1_avglimit	1.1863	0.00416	81315.6	<.0001	3.275	3.248	3.302
sex1_frequent	-0.2578	0.0119	470.9281	<.0001	0.773	0.755	0.791
sex1_strategic	0.023	0.00261	77.2085	<.0001	1.023	1.018	1.028
sex1_exp	-0.1936	0.00266	5284.1681	<.0001	0.824	0.82	0.828
sex2_tradingyears2	0.0823	0.000497	27368.935	<.0001	1.086	1.085	1.087
sex2_avget	0.000121	6.15E-07	38765.858	<.0001	1	1	1
sex2_avglimit	1.1243	0.00427	69447.503	<.0001	3.078	3.052	3.104
sex2_frequent	-0.2688	0.0119	509.4539	<.0001	0.764	0.747	0.782
sex2_strategic	-0.0421	0.00309	185.6378	<.0001	0.959	0.953	0.965
sex2_exp	-0.1262	0.00303	1731.4879	<.0001	0.881	0.876	0.887
W= 0 observations	30,987,660						
W= 1 observations	39,840,910						
Total observations	70,828,570						

Table 5

LOGISTIC REGRESSION BACKWARD ELIMINATION

Optimization Technique : Fisher's scoring

Analysis of Maximum Likelihood Estimates					Odds Ratio Estimates		
Parameter	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**	**Point Estimate**	**95% Wald Confidence Limits**	
Intercept	0.351	0.00301	13560.2	<.0001			
age	-0.00816	0.000068	14459.7	<.0001	0.992	0.992	0.992
tradingyears2	-0.00198	0.000163	146.563	<.0001	0.998	0.998	0.998
avget	0.000075	3.57E-07	44278.8	<.0001	1	1	1.000
avglimit	-0.8312	0.00238	121767	<.0001	0.436	0.434	0.438
dtrader	-0.0702	0.000571	15117.6	<.0001	0.932	0.931	0.933
frequent	-0.0476	0.00304	244.467	<.0001	0.954	0.948	0.959
strategic	0.6275	0.00166	142981	<.0001	1.873	1.867	1.879
exp	-0.0262	0.00144	331.281	<.0001	0.974	0.971	0.977
age_avglimit	0.0231	0.000055	175866	<.0001	1.023	1.023	1.023
age_frequent	-0.00758	0.000069	12211.4	<.0001	0.992	0.992	0.993
age_strategic	-0.0127	0.000046	74478.6	<.0001	0.987	0.987	0.988
age_exp	0.000806	0.000028	809.589	<.0001	1.001	1.001	1.001
W= 0 observations	33,943,356						
W= 1 observations	41,484,040						
Total observations	81,172,023						

Table 6

LOGISTIC REGRESSION BACKWARD ELIMINATION
Optimization Technique : Fisher's scoring

Analysis of Maximum Likelihood Estimates					Odds Ratio Estimates		
Parameter	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**	**Point Estimate**	**95% Wald Confidence Limits**	
Intercept	1.4945	0.0119	15685.0715	<.000			
sex1	-1.6638	0.0122	18599.4793	<.000	0.189	0.185	0.194
sex2	-1.3031	0.0123	11213.9946	<.000	0.272	0.265	0.278
age	-0.0171	0.000094	32891.6175	<.000	0.983	0.983	0.983
age_sex1	0.0216	0.000063	116407.974	<.000	1.022	1.022	1.022
age_sex2	0.0116	0.00007	27535.5687	<.000	1.012	1.012	1.012
tradingyears2	-0.1481	0.000415	127096	<.000	0.862	0.862	0.863
avglimit	-0.6457	0.00425	23100.0475	<.000	0.524	0.52	0.529
dtrader	-0.5065	0.00469	11673.4049	<.000	0.603	0.597	0.608
frequent	-0.2938	0.0119	605.9394	<.000	0.745	0.728	0.763
strategic	0.0696	0.0114	37.0652	<.000	1.072	1.048	1.096
stra_freq	-0.2841	0.0112	645.6709	<.000	0.753	0.736	0.769
exp	0.1058	0.00268	1558.275	<.000	1.112	1.106	1.117
age_tradingyears2	0.00147	0.000015	9963.1498	<.000	1.001	1.001	1.001
age_avglimit	-0.00783	0.00007	12499.3904	<.000	0.992	0.992	0.992
age_frequent	0.0101	0.000071	20099.1722	<.000	1.01	1.01	1.01
age_strategic	0.0115	0.000092	15631.5098	<.000	1.012	1.011	1.012
age_exp	0.00492	0.00009	2987.4273	<.000	1.005	1.005	1.005
sex1_tradingyears2	0.0272	0.000588	2137.4923	<.000	1.028	1.026	1.029
sex1_avglimit	1.3038	0.00462	79724.3224	<.000	3.683	3.65	3.717
sex1_dtrader	0.5886	0.00474	15391.2549	<.000	1.801	1.785	1.818
sex1_frequent	-0.5917	0.0122	2354.4099	<.000	0.553	0.54	0.567
sex1_strategic	-0.3801	0.0039	9510.3699	<.000	0.684	0.679	0.689
sex1_exp	-0.3214	0.00371	7511.2779	<.000	0.725	0.72	0.73
sex2_tradingyears2	0.03	0.000653	2117.8064	<.000	1.03	1.029	1.032
sex2_avglimit	1.252	0.00472	70356.0721	<.000	3.497	3.465	3.53
sex2_dtrader	0.5749	0.0048	14367.085	<.000	1.777	1.76	1.794
sex2_frequent	-0.633	0.0122	2675.0336	<.000	0.531	0.518	0.544
sex2_strategic	-0.4456	0.00431	10683.199	<.000	0.64	0.635	0.646
sex2_exp	-0.2572	0.00405	4034.7786	<.000	0.773	0.767	0.779
W= 0 observations	30,987,660						
W= 1 observations	39,840,910						
Total observations	70,828,570						

Table 7

LOGISTIC REGRESSION BACKWARD ELIMINATION

Optimization Technique : Fisher's scoring

Analysis of Maximum Likelihood Estimates					Odds Ratio Estimates		
Parameter	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**	**Point Estimate**	**95% Wald Confidence Limits**	
Intercept	-0.0541	0.0064	71.541	<.0001			
gp1	-0.0901	0.00872	106.7894	<.0001	0.914	0.898	0.93
gp2	0.1011	0.00655	238.2367	<.0001	1.106	1.092	1.121
gp3	0.1005	0.00671	224.2152	<.0001	1.106	1.091	1.12
gp4	0.0525	0.00718	53.3604	<.0001	1.054	1.039	1.069
gp5	-0.0155	0.00826	3.5189	0.0607	0.985	0.969	1.001
gp6	0.0758	0.00952	63.42	<.0001	1.079	1.059	1.099
gp7	0.0248	0.00666	13.8655	0.0002	1.025	1.012	1.039
gp8	-0.0785	0.00738	113.2447	<.0001	0.924	0.911	0.938
gp9	-0.0123	0.00734	2.8007	0.0942	0.988	0.974	1.002
tradingyears2	-0.0368	0.00104	1255.8496	<.0001	0.964	0.962	0.966
avglimit	0.1519	0.00356	1818.9515	<.0001	1.164	1.156	1.172
dtrader	0.0757	0.00059	16488.627	<.0001	1.079	1.077	1.08
frequent	-0.4492	0.00664	4571.9454	<.0001	0.638	0.63	0.646
strategic	-0.1721	0.00307	3143.4436	<.0001	0.842	0.837	0.847
exp	0.0934	0.00254	1352.7187	<.0001	1.098	1.092	1.103
gp1_tradingyears2	-0.1259	0.00295	1822.7347	<.0001	0.882	0.877	0.887
gp1_frequent	-0.3397	0.009	1424.2698	<.0001	0.712	0.7	0.725
gp2_tradingyears2	-0.061	0.0011	3048.9439	<.0001	0.941	0.939	0.943
gp2_frequent	-0.0958	0.00679	199.1659	<.0001	0.909	0.897	0.921
gp3_tradingyears2	0.00228	0.00113	4.088	0.0432	1.002	1	1.005
gp3_frequent	0.1188	0.00695	292.4942	<.0001	1.126	1.111	1.142
gp4_tradingyears2	0.0572	0.00126	2062.6638	<.0001	1.059	1.056	1.062
gp4_frequent	0.1899	0.0074	657.9611	<.0001	1.209	1.192	1.227
gp5_tradingyears2	0.017	0.00174	94.5228	<.0001	1.017	1.014	1.021
gp5_frequent	0.1899	0.00846	503.7842	<.0001	1.209	1.189	1.229
gp6_tradingyears2	-0.3836	0.00289	17567.355	<.0001	0.681	0.678	0.685
gp6_frequent	-0.2959	0.0101	858.566	<.0001	0.744	0.729	0.759
gp7_tradingyears2	-0.0203	0.00101	404.5425	<.0001	0.98	0.978	0.982
gp7_frequent	-0.0934	0.00691	182.7319	<.0001	0.911	0.899	0.923
gp8_tradingyears2	0.3792	0.0027	19708.338	<.0001	1.461	1.453	1.469
gp8_frequent	0.3952	0.008	2442.1713	<.0001	1.485	1.462	1.508
gp9_tradingyears2	0.00327	0.0011	8.8581	0.0029	1.003	1.001	1.005
gp9_frequent	-0.0313	0.00772	16.4144	<.0001	0.969	0.955	0.984
gp1_avglimit	0.725	0.00734	9754.5748	<.0001	2.065	2.035	2.095
gp1_strategic	-1.1916	0.0171	4832.2918	<.0001	0.304	0.294	0.314
gp1_exp	-0.6335	0.0148	1826.1498	<.0001	0.531	0.516	0.546
gp2_avglimit	0.2383	0.00378	3965.5118	<.0001	1.269	1.26	1.279

gp2_strategic	0.0964	0.0041	553.848	<.0001	1.101	1.092	1.11
gp2_exp	-0.0308	0.00326	89.1332	<.0001	0.97	0.963	0.976
gp3_avglimit	0.0573	0.00398	207.2208	<.0001	1.059	1.051	1.067
gp3_strategic	0.1534	0.00397	1494.4494	<.0001	1.166	1.157	1.175
gp3_exp	-0.0853	0.00364	547.2843	<.0001	0.918	0.912	0.925
gp4_avglimit	-0.0589	0.00461	163.5889	<.0001	0.943	0.934	0.951
gp4_strategic	0.0125	0.00543	5.2703	0.0217	1.013	1.002	1.023
gp4_exp	-0.1931	0.00492	1537.9756	<.0001	0.824	0.816	0.832
gp5_avglimit	0.1282	0.00666	369.8356	<.0001	1.137	1.122	1.152
gp5_strategic	0.1068	0.0103	106.6661	<.0001	1.113	1.09	1.136
gp5_exp	0.0429	0.0086	24.9205	<.0001	1.044	1.026	1.062
gp6_avglimit	0.1158	0.00428	732.2775	<.0001	1.123	1.113	1.132
gp6_strategic	0.1497	0.00475	993.3559	<.0001	1.161	1.151	1.172
gp6_exp	-0.1083	0.00441	602.0053	<.0001	0.897	0.89	0.905
gp7_avglimit	0.1303	0.004	1059.7936	<.0001	1.139	1.13	1.148
W= 0 observations	22,987,746						
W= 1 observations	34,988,159						
Total observations	57,975,905						

因國內財金系博士生人數銳減,很難找到合適的人寫程式，因程式大部分自己撰寫，所以臨時人力尚有餘款，故流用至新加坡移地研究，希望透過與國際知名學者合作提升計畫品質與增加新案申請通過率。加上目前與中央大學老師合作的論文日內資料無法在國內取得,故至新加坡南洋理工大學與 INSEAD 新加坡分校與學者合作並蒐集資料，從 2/12 至 2/24 訪問 12 天。

INSEAD 被評比為歐洲最好的商學院，與美國的華頓商學院有很密切的學術合作關係， 雖然此次是拜訪它的新加坡分校，仍可以感受到國際最高學府的氛圍，沉浸在這樣的氛圍連頭腦的思緒都變得不一樣了，很高興有這樣的機會。

就像每次參加國際會議一樣，這次除了在知識上有所提昇，有機會知道財務領域目前的研究方向與前沿議題外，更難得的是有機會觀摹學習國外學者的思維架構與創意模式，對於個人所做的計畫與研究主題有很大的幫助。此外，還可就研究上所碰到的困難與障礙，就教於相關學者與先進，吸收別人的經驗與建立一些學術合作的關係。難得的是第一天安排的圓桌會議中，學者與業界人士分享探索財務在實務上的新需求與指出新的方向的經驗，令人有眼界大開的感覺。因為奧蘭多擁有全球最大的狄斯奈樂園，故產生特殊的經濟聚落，對於文創產業的發展很有利基，尤其奧蘭多與全球第三大多元文化城市邁阿密只有 3 個多小時的距離，更奠定了它在時尚與文創上的發展利基。故此行交流與見聞方面都是收穫豐富，很高興能有此機會放鬆心情、略做休息，且感謝有這個機會出去學習。

104年度專題研究計畫成果彙整表

計畫主持人：林美滿	**計畫編號：**104-2629-H-129-001-
計畫名稱：性別與年齡對台灣衍生性金融商品交易行為的影響（A02）	

成果項目					量化	單位	質化 （說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等）
國內	學術性論文	期刊論文			0	篇	
		研討會論文			1		NCTU conference, Asian FA conference
		專書			0	本	
		專書論文			0	章	
		技術報告			0	篇	
		其他			0	篇	
	智慧財產權及成果	專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權			0		
		營業秘密			0		
		積體電路電路布局權			0		
		著作權			0		
		品種權			0		
		其他			0		
	技術移轉	件數			0	件	
		收入			0	千元	
國外	學術性論文	期刊論文			0	篇	
		研討會論文			0		
		專書			0	本	
		專書論文			0	章	
		技術報告			0	篇	
		其他			0	篇	
	智慧財產權及成果	專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權			0		
		營業秘密			0		
		積體電路電路布局權			0		
		著作權			0		
		品種權			0		

		其他	0		
	技術移轉	件數	0	件	
		收入	0	千元	
參與計畫人力	本國籍	大專生	2	人次	學生可從計畫中獲得資料整理與文獻蒐集的訓練
		碩士生	1		學生可從計畫中獲得資料整理與文獻回顧的訓練
		博士生	0		
		博士後研究員	0		
		專任助理	0		
	非本國籍	大專生	0		
		碩士生	0		
		博士生	0		
		博士後研究員	0		
		專任助理	0		
其他成果 （無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。）					

科技部補助專題研究計畫成果自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現（簡要敘述成果是否具有政策應用參考價值及具影響公共利益之重大發現）或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估
   ■達成目標
   □未達成目標（請說明，以100字為限）
   　□實驗失敗
   　□因故實驗中斷
   　□其他原因
   說明：

2. 研究成果在學術期刊發表或申請專利等情形（請於其他欄註明專利及技轉之證號、合約、申請及洽談等詳細資訊）
   論文：□已發表　□未發表之文稿　■撰寫中　□無
   專利：□已獲得　□申請中　■無
   技轉：□已技轉　□洽談中　■無
   其他：（以200字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性，以500字為限）
   瞭解男性與女性在不同的市場狀況下(牛市與熊市),過度樂觀的表現是否會有差異及探討其與投資理財及決策間的關係

4. 主要發現
   本研究具有政策應用參考價值：□否　■是，建議提供機關內政部,
   （勾選「是」者，請列舉建議可提供施政參考之業務主管機關）
   本研究具影響公共利益之重大發現：■否　□是
   說明：（以150字為限）