AVERAGE RETURNS TO SMALL AND LARGE INVESTORS IN SINGAPORE INITIAL PUBLIC OFFERINGS

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A number of explanations have been advanced for the sizable rates of return experienced by initial public offerings (IPO's) in the first few days or weeks of listing.[1] Baron (1982), Rock (1986), and Beatty and Ritter (1986) suggest that underpricing is the result of a winner's curse to uninformed investors caused by asymmetric information. Allen and Faulhaber (1989), Grinblatt and Hwang (1989), Welch (1989), and Chemmanur (1993) argue that asymmetric information causes high quality firms to signal their quality by underpricing, and thereby expect to raise capital under better terms in the future. Ibbotson (1975) and Titus (1988) claim that underpricing results because issuing firms desire to avoid lawsuits. Michaely and Shaw (1993) find evidence supporting the winner's curse explanation for underpricing and reject the signalling explanation in their comparison of master limited partnership IPO's and regular IPO's.[2] Koh, Lim, and Chin (1992) support the signalling predictions of Grinblatt and Hwang in their study of Singapore IPO's from June 1975 and June 1987.

Rock (1986) argues that asymmetric information creates two classes of investors, informed and uninformed. When oversubscription occurs the issue is rationed among all applicants. As expected IPO underpricing increases, informed investors request relatively more shares than uninformed investors. The returns to uninformed investors are therefore skewed towards less profitable issues. To minimise issue costs and encourage uninformed investors participation,

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[1] *Smith (1986) and Ibbotson and Ritter (1993) summarize this underpricing. Dawson (1987) analyzes new issue price performance in Hong Kong, Singapore, and Malaysia from the first day through the first year of trading.*

[2] *All income from master limited partnership (MLP) IPO's is taxable income to all recipients whereas some of the income from regular IPO's is not taxable to some recipients. The result is that institutional investors (i.e. informed investors) mainly avoid MLP IPO's while non-insituational investors (i.e. the uninformed) participate in their issue.*

underwriters price IPO's at a level which earn uninformed investors the risk-free rate of return. Informed investors in Rock's model have perfect information about IPO's and therefore earn returns at least equal to the risk-free rate. Returns to informed investors are higher the more valuable their information since, as Rock notes, an informed investor bids "for mispriced securities... and obtains some remuneration for showing where capital should best be allocated." (Rock, p. 187).

Koh and Walter (1989) and Keloharju (1993) test Rock's model using publicly available rationing data and classifying uninformed investors as those requesting small number of shares. Both appear to confirm Rock's prediction that uninformed IPO investors earn the riskless rate of return. However, these findings are weak since, in both studies, the average return to uninformed investors was positive, with just enough variability to not reject the null of zero average returns. In addition, in both studies informed investors earned less, on average, than uninformed investors. The statistical significance of this result is not reported in Koh and Walter but their Figure 2 shows average returns declining with the number of shares requested. Keloharju shows that average IPO returns become significantly negative after the number of shares requested is worth more than 200,000 Finnish marks.[3] Brannman (1992), in a study of Malaysian IPO's, also finds small investors earning positive average returns and, after a given level, negative average returns to large investors.

The purpose of this study is to provide additional evidence from Singapore that small investors realize positive returns from IPO participation and that large investors often lose. The procedure for rationing oversubscribed issues in Singapore has changed since the Koh and Walter study, giving small investors greater priority in share allocations. Assuming unrestricted entry into the uninformed investor category, a known greater allocation of shares should result in relatively more uninformed participation, until the expected ex-ante returns to the uninformed category equal the risk-free rate of rate return. However, as is seen below, the ex-post results show that the returns from IPO participation to the uninformed investor category have been greater than the risk-free rate.

SINGAPORE IPO'S

Shares in Singapore initial public offerings are underwritten by investment banks and offered to the public via a subscription process.[4] Investors request a particular number of

[3] *Keloharju (1993, p. 264), Table 2.*

[4] *Firms may now choose either 100% subscription or a mixture of subscription and tendering to place their new issues with the public. All new issues analyzed in this paper were placed using the subscription process.*

by submitting an application together with full payment for the requested number of shares at the subscription price. The subscription price is typically below the expected market price, causing new issues to be oversubscribed. The method used to allocate oversubscribed shares is balloting: applications are put into categories according to the number of shares requested and winners are randomly chosen from within each category.

The rewards from IPO participation are substantial when the difference between the subscription price and the price on the first day of trading is large. However, the chances of winning are often quite small and the application procedure involves losing income while the funds are idle. Dawson (1984a, 1985) summarizes the gains experienced by Singapore and Malaysian IPO's from 1979-1983, without adjusting for the chances of winning or the opportunity cost of money. Dawson's (1984b) study of seven Singapore IPO's issued in 1983 assumes a participation level of 100,000 shares for each IPO and shows that the returns are considerably lower when the chances of winning and the opportunity cost of money are taken into consideration. Excess returns and rates of return are calculated in the present paper for various participation levels using two measures of the opportunity cost of money, the prime rate plus two percent and the savings deposit rate during the balloting month for each IPO. The latter is a proxy for the risk-free rate of return obtainable with small amounts of money over small time intervals.

The figure below shows the two outcomes, winning or losing, that may occur when an investor applies for 3,000 shares. Assume that the subscription price is $1.00 per share, the price on the first day of trading is $1.50 per share, and the investor earns an annual return of 3% by investing his money elsewhere. When the investor wins, he is awarded 1,000 shares. The unused $2,000 is returned 8 days after the application date.[5] The 1,000 shares are sold on the listing date, 22 days from the date of application and the proceeds of $1482.25 (a 1% brokerage commission, $2 stamp duty, and $0.75 clearing fee are deducted from the $1500) are delivered one week later. The gross return from winning, evaluated 29 days after the application is submitted, is $3485.70 ($1482.25, plus the $2,000 refund, plus $3.45 for the 21 days of returns on the $2,000 refund). When the investor loses, his $3,000 is returned 5 days after application. The gross return from losing, evaluated 29 days from the date of application, is $3005.92 (24 days of returns at 3% per annum on the $3,000).

[5] *All times are appproximate and appear to conform with the general experience of the investing public. The sample's average time from balloting to listing was 21.52 days, with an estimated standard deviation of 4.37 days. On May 28, 1993 the Singapore Stock Exchange allowed "when issued" trading of new issues, effectively cutting the time from balloting to listing to only a few days. The IPO's studied in this paper were all issued prior to May 1993.*

WIN

|---1 day---|-----7 Days----|----------14 days----------|---7 days----|

-3,000 Balloting +2,000 sell +1,482.25

LOSE

|---1 day---|---4 days---|----------24 Days----------|

-3,000 Balloting +3,000

The expected gain from participating equals the expected gain from playing and winning plus the expected gain from playing and losing, i.e. EV(play)=EV(play and win) + EV (play and lose). Let R be the number of shares requested, W the number of shares won, r the daily rate of return from investing elsewhere, LP the listing price on the opening day of trading, SP the subscription price, and P(win) the probability of winning. Evaluate all cash flows at the end of the balloting process, 29 days from the initial application to get:

$$EV(\text{play and win}) = [(R-W)*SP*(1+r)^{21}+W*(LP-SP)] *P(\text{win}) \quad (1)$$

$$EV(\text{play and lose}) = R*SP*(1+r)^{24}*[1-P(\text{win})] \quad (2)$$

The expected return in this example is $3485.70 times the probability of winning plus $3005.92 times the probability of losing. The cost of participating is $3007.16 (29 days of returns on the application funds of $3,000). The excess return is the difference between the expected return and the cost of participating.

DATA

The expected return is influenced by the number of shares requested, the probability of winning, the number of shares won by successful applicants, transaction cost associated with balloting and selling any shares that are won, and the selling price on the listing day. Information on the first three influences is given in newspaper reports of the balloting results.[6] Table 1 shows the balloting results for SAL Industrial Leasing and Hotel Plaza Limited shares. The SAL shares were balloted on July 16, 1991 and the Hotel Plaza shares on June 19, 1990. Each SAL application for 1,000 shares had a 1/10 chance of winning and 1,000 shares were allocated to each winner. Each SAL application for between 5,000 and 9,000 shares had a 1/5 chance of winning and winners were allocated 1,000 shares

[6] *All win probabilities are determined ex-post, after the balloting occurs. An investor's optimal investment strategy must necessarily depend on the ex-ante win probabilities, or at least his subjective beliefs about those probabilities and his beliefs about the market price. The purpose of this paper is not to develop optimal investment behavior but rather to see whether or not there are consistent biases in Singapore IPO offerings. Use of ex-post relative win frequencies and the closing price on the day of listing will satisfy this purpose.*

The chance of winning and the number of shares awarded to winners varies across participation categories. The expected rate of return therefore depends on the number of shares requested. Obtaining this number is often trivial. For example, participants in the first SAL category requested one thousand shares. When the reported interval covers a range of values (e.g. five to nine thousand shares), the number of shares requested by each participant is unknown and must be estimated. Two methods are used. Method I assumes that all participants request the number of shares given by the start of the interval and Method II assumes that all participants request the number of shares given by the mean of the interval.[7] The number of observations for each participation level is obtained by matching levels across firms. In Table 1, there are two observations for all but the following participation levels, which have one observation each: SAL (5,000 and 50,000 shares) and Hotel Plaza (200,000 and 30,000,000 shares).

Methods I and II put bounds on the calculated excess IPO returns. Method I overstates the gain from participating - the assumed application funds are less than the actual application funds but the rewards from winning are the same. Method II understates the gains from participating since the number of applications declines at a decreasing rate with the number of shares. The assumed application funds are therefore greater than the actual application funds while, again, the rewards from winning are the same.

Transaction costs include the fixed costs of an application, broker fees, stamp duty, and clearing fees. Fixed costs, as in Koh and Walter (1989), are set equal to S$5 per application and represent the fees for a cashiers order, postage costs, and other application processing costs. Broker fees start at 1.0% on the first S$250,000 and decline by 0.1% for each S$250,000 unit, up to S$1 million. Broker fees for amounts over S$1 million are negotiable and, in the present study, are set equal to 0.5% of the transaction amount, the minimum commission for large value trades. Broker fees for shares priced below S$1 are S$5.00 per 1000 shares for shares priced below 50 cents and S$10.00 per 1000 shares for shares priced between 50 cents and 99 cents, both subject to the above declining rates on large volume transactions. The stamp duty is S$1 per S$1000 or part thereof, and the clearing fee is 0.05% on the value of the contract.

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[7] *Participants must request shares in 1,000 unit blocks but the calculated interval means often imply requests in 500 unit blocks. This problem was ignored since it does not alter the downward bias of Method II or the upward bias of Method I.*

On February 8, 1990 the Singapore Stock Exchange issued new regulations, effective immediately, giving the SES more authority over the rationing system and requiring that investors requesting between one and nine thousand shares be allocated at least 30 percent of the issue. Prior to this decision, the balloting was determined jointly by the issuer, the issue manager, and the exchange. The present study's sample of 36 IPO's includes all but three from the February ruling to the end of 1992 and two from 1993. The three excluded issues were Horiguchi, Singapore Computer Systems, and Keppel Intergrated Engineering. Balloting information for Horiguchi, listed on July 10, 1991 was not available. The other two issues were placed through a mixture of tendering and balloting for the fixed price portions. The fixed price portions for these companies were oversubscribed but detailed balloting information was not available.

Four issues, Swens, PCI, Kay Hian James Capel, and Courts were undersubscribed and all participants in these issues received the number of shares they requested. Undersubscription in the present study was dealt with by adding an observation, with a probability of winning equal to one, to each participation category. The number of shares won by participants in undersubscribed issues is assumed to equal the start of the interval when the subscription price is less than the price on the listing date and the mid-point of the interval when the subscription price is greater than the price on the listing date. This assumption biases downward the returns from participating.

RESULTS

The average Method I and II excess rates of return and nominal returns, calculated at the closing price on the listing date, are shown in Tables 2 and 3. [8] The average excess nominal return is the difference between the average amounts earned by participating at various levels less the amounts which could have been earned by not participating. The excess rate of return figures are the excess nominal returns as a percentage of the amount which could have been earned by not participating. Table 2 reports the Method I (start of interval) results and Table 3 reports the Method II (mid-point of interval) results. Column one gives the number of shares requested, in 1,000 share units. Column two gives the

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[8] *Method II (the mid-point method) occasionally involved calculting participation levels for open-ended intervals. The sizes of these intervals were assumed to equal the sizes of the immediately preceding intervals so that an average could be calculated. In Table 1, the last SAL participation category was assumed to be from 20,000-29,999 and the last Hotel Plaza category from 30,000-39,999.*

number of sample IPO's having this particular participation level in common.[9] The first two columns of returns assume that an investor's application funds earn the prevailing prime rate plus two percent elsewhere. The last two columns assume that the application funds earn the prevailing savings deposit rate elsewhere. The interest rate data are from the Monetary Authority of Singapore's monthly bulletin and are averages of the rates quoted by the 10 largest banks.

Knowledge of the distributions of average excess returns and average rates of return is required to test the significance of the results in Tables 2 and 3,. For large sample sizes, these averages are normally distributed. For small sample sizes, the distributions are unknown and depend on the distributions of the variables in equations (1) and (2). For a given application, the subscription price (SP) and the requested number of shares (R) are known with certainty and may be treated as constants. Over the short time periods analyzed, the opportunity cost of capital (r) may also be regarded as constant. Since SP, R, and r are constant, the cost of an application is constant. The uncertain parts of (1) and (2), to a given applicant, are the probability of winning, P(win), the number of shares won (W), and the listing price (LP). P(win) and W are exogenously determined by the company on the balloting date. Insufficient information about the distributions investors perceive for these variables means that small sample significance tests may not be conducted. Accordingly, standard errors are not reported for samples with fewer than twenty observations. Assuming that samples with more than twenty observations are representative of all past and future IPO offerings, average estimates different from zero at the 0.95 significance level are indicated by single asterisks. [10]

Average excess returns under Methods I and II are significantly greater than zero at the 0.95 level only for investors requesting 1,000 shares. The relatively large standard errors under other participation levels suggests that the variability in individual excess returns is too large to establish significance of the means at significance levels lower than 0.10. However, the general pattern of average excess returns to investors requesting a large number of shares shows that they often suffer considerably, becoming consistently negative after a certain point using both methods. As expected, using a cost of capital

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[9] *The first participation level, for 1,000 shares, has one less observation under Method II since the first frequency distribution interval for Jaya Holdings Ltd. extended beyond 1,000 shares.*

[10] *A t-test with n-1 degrees of freedom was conducted for each level of participation. The test results, as the sample size falls to 20, should be viewed with increasing skepticism. Statistical convention is to invoke the central limit theorem for sample sizes larger than 30. The limit of 20 was arbitrarily chosen to retain at least some of the higher participation levels reported in the two tables.*

equal to the prime rate plus two percent yielded lower average excess returns (and greater average excess losses) than using the savings deposit rate. Since greater income is foregone, the effect of using one or the other becomes more pronounced as the number of shares requested grows. The difference between the prime plus two percent and savings deposit rates ranged between 5.27% and 6.1% during the sample period.

CONCLUSION

If there are expected ex-ante gains from participating in Singapore IPO's relative to earning income elsewhere, then the investment community should respond by increasing the number of applications. The number of applications should increase until, according to Rock (1986), the expected ex-ante risk adjusted return to uninformed investors equals the risk-free rate of return. Moreover, investors with greater information, assumed in the present study to be those applying for large number of shares, should realize greater returns.

Singapore initial public offerings during the sample period offer small investors returns significantly greater than could be obtained elsewhere. In addition, very large investors suffer negative average excess returns. These results appear quite robust, having also been found in studies of Malaysian and Finnish IPO's. An inefficient response by large and small investors to the revised Singapore rationing rules is one explanation. Brannman (1993) supports this inefficient response explanation, showing that the greater returns to small investors and negative returns to large investors effects are even more pronounced if the sample includes only oversubscribed issues.

REFERENCES

Allen, Franklin and Faulhaber, Gerald R. 1989. "Signalling by Underpricing in the IPO Market," *Journal of Financial Economics* Vol. 23, pp. 303-323.

Baron, David P., 1982. "A model of the Demand for Investment Banking Advising and Distribution Services for New Issues," *Journal of Finance* Vol. 37, pp. 955-976.

Brannman, L. 1993. "Returns to Balloting for New SES Share Issues," Nanyang Technological University School of Accountancy and Business, CREFS Working Paper 93-07.

Brannman, L. 1992 "Bumiputera and Public Returns to Balloting for New KLSE Share Issues," *Malaysian Journal of Economic Studies* Vol. 29, No. 2, pp. 1-10.

Chemmanur, Thomas J. 1993. "The Pricing of Initial Public Offerings: A Dynamic Model with Information Production," *Journal of Finance* Vol. 48, pp. 285-304.

Dawson, S. 1984a. "Underpricing New Share Issues: Is Singapore an Immature Market?," *Singapore Management Review* July 1984, pp. 1-10.

Dawson, S. 1984b. "Overbidding for New Share Issues," *Singapore Stock Exchange Journal* June 1984, pp. 4-7.

Dawson, S. 1985. "Raising Capital with New Share Issues: The Issuers View," *Malaysian Management Review* August 1985, pp. 49-55.

Dawson, S. 1987. "Secondary Stock Market Performance of Initial Public Offers: Hong Kong, Singapore, and Malaysia," *Journal of Business Finance and Accounting* Vol. 14, No. 1, pp. 65-67.

Grinblatt, Mark, and Hwang, Chuan Yang, 1989. "Signalling and the Pricing of New Issues," *Journal of Finance* Vol. 44, pp. 393-420.

Ibbotson, Roger G. 1975. "Price Performance of Common Stock New Issues," *Journal of Financial Economics*, Vol. 2, pp. 235-272.

Ibbotson, Roger and Ritter, Jay 1993. "Initial Public Offerings," in *Handbooks of Operations Research and Management Science: Finance* ed. Robert Jarrow, Vojislav Maksimovic, and Willian Ziemba (North-Holland, Amsterdam).

Keloharju, Matti. 1993. "The Winner's Curse, Legal Liability, and the Long-Run Price Performance of Initial Public Offerings," *Journal of Financial Economics* Vol. 34, No. 2, pp. 251-277.

Koh, Francis and Joseph Lim and Neo Chin, 1992, "The Signalling Process in Initial Public Offerings," *Asia Pacific Journal of Management* Vol. 9, No. 2, pp. 151-165.

Koh, Francis and Walter, Terry. 1989. "A Direct Test of Rock's Model of the Pricing of Unseasoned Issues," *Journal of Financial Economics* Vol. 23, pp. 251-272.

Michaely, Rani and Shaw, Wayne H. 1993. "The Pricing of Initial Public Offerings: Tests of Adverse-Selection and Signalling Theories," Cornell University Johnson Graduate School of Management Discussion Paper.

Rock, Kevin, 1986, "Why New Issues are Underpriced," *Journal of Financial Economics* Vol. 15, pp. 187-212.

Ross, S., Westerfield, R., and Jaffe, J., 1990. *Corporate Finance* 2nd edition, Richard D. Irwin, Inc.

Smith, Clifford Jr. 1986. "Investment Banking and the Capital Acquisition Process," *Journal of Financial Economics* Vol. 15, pp. 3-29.

Tinic, Seha M. 1988. "Anatomy of Initial Public Offerings of Common Stock," *Journal of Finance* Vol. 43, pp. 789-822.

Welch, Ivo. 1989. "Seasoned Offerings, Imitation Costs, and the Underpricing of Initial Public Offerings," *Journal of Finance* Vol. 44, pp. 421-449.

Table 1

Basis for Balloting and Allotting 34,147,000 Ordinary Shares SAL Industrial Leasing Limited

Range of Shares Requested (1,000 share units)		% Chance	No. of Shares per Successful Applicant
1	1	1/10	1,000
2	4	3/20	1,000
5	9	4/20	1,000
10	49	6/20	1,000
50	99	12/20	2,000
100	499	12/20	3,000
500	999	3/4	5,000
1,000	1,999	3/4	7,000
2,000	4,999	3/4	10,000
5,000	9,999	3/4	14,000
10,000	19,999	3/4	22,000
20,000	above	1/2	40,000

Basis for Balloting and Allotting 95,170,000 Ordinary Shares Hotel Plaza Limited

Range of Shares Requested (1,000 share units)		% Chance	No. of Shares per Successful Applicant
1	1	1/5	1,000
2	9	1/4	1,000
10	99	1/3	1,000
100	199	1/2	2,000
200	499	3/4	3,000
500	999	3/4	5,000
1,000	1,999	3/4	6,000
2,000	4,999	3/4	11,000
5,000	9,999	3/4	19,000
10,000	19,999	3/4	32,000
20,000	29,999	3/4	65,000
30,000	above	2/3	90,000

Table 2:

Average Excess Returns - Start of Interval Method (I)

(standard errors in parentheses)

# of Shares Requested (1,000 shares)	# of Observations	Excess ROR[1] Prime + 2%	Excess Return[2] Prime + 2%	Excess ROR[1] Savings Rate	Excess Return[2] Savings Rate
1	36	4.60*	43.48*	4.87*	45.81*
		(2.12)	(21.34)	(2.13)	(21.46)
2	35	2.89	44.44	3.17	49.43
		(2.72)	(49.84)	(2.72)	(49.56)
3	7	2.20	25.44	2.47	31.48
5	10	1.60	152.60	1.87	166.77
10	35	-1.88	-132.03	-1.44	-98.56
		(2.86)	(236.28)	(2.66)	(226.87)
20	7	0.23	218.17	0.43	263.79
30	7	0.77	321.62	0.99	390.00
50	28	-0.02	-202.15	0.16	-114.05
		(1.04)	(600.07)	(1.03)	(590.41)
100	33	0.51	415.32	0.67	559.94
		(0.45)	(433.60)	(0.45)	(434.74)
200	16	-0.16	-357.79	0.02	10.37
500	33	-0.13	-686.76	0.04	85.16
		(0.45)	(2224.12)	(0.45)	(2210.67)
1000	35	-0.42	-3073.47	-0.23	-1360.52
		(0.54)	(4556.50)	(0.51)	(4421.40)
2000	29	0.05	-1308.20	0.19	1099.29
		(0.42)	(8136.91)	(0.42)	(8074.68)
3000	17	-0.28	-9566.22	-0.13	-5069.64
5000	22	-0.25	-12586.36	-0.10	-5690.15
		(0.53)	(26439.22)	(0.53)	(26314.45)
10000	19	-0.52	-43946.52	-0.35	-28170.99
20000	8	-0.68	-140284.83	-0.51	-104420.02

Notes:

* *denotes significance at the 0.05 level*

[1] *Excess Return = Average returns from participating less what could have been earned by not participating.*

[2] *Excess ROR = Excess Return, as a percentage of what could have been earned by not participating.*

Table 3:

Average Excess Returns - Midpoint of Interval Method (II)

(standard errors in parentheses)

# of Shares Requested (1,000 shares)	# of Observations	Excess ROR[1] Prime + 2%	Excess Return[2] Prime + 2%	Excess ROR[1] Savings Rate	Excess Return[2] Savings Rate
1	35	4.56*	43.15*	4.82*	45.48*
		(2.18)	(21.95)	(2.19)	(22.08)
2	7	1.80	11.70	2.05	15.60
3	10	1.52	77.04	1.78	84.83
5.50	27	0.68	7.97	0.85	16.90
		(1.32)	(61.38)	(1.32)	(60.67)
7	10	1.14	146.36	1.39	163.93
14.50	7	0.16	176.91	0.36	210.19
29.50	25	-0.38	-208.93	-0.23	-163.48
		(0.89)	(295.14)	(0.88)	(289.94)
54.50	9	-0.88	-450.77	-0.72	-369.39
74.50	27	0.44	236.21	0.59	344.51
		(0.52)	(370.12)	(0.52)	(369.85)
149.50	14	-0.02	15.53	0.14	252.14
299.50	22	-0.21	-827.84	-0.07	-443.15
		(0.55)	(1614.12)	(0.54)	(1601.46)
349.50	12	-0.76	-2591.25	-0.60	-1951.34
749.50	32	-0.24	-1730.18	-0.09	-628.20
		(0.41)	(3045.49)	(0.40)	(3029.13)
1249.50	7	-1.05	-11349.70	-0.85	-8131.18
1499.50	29	-0.06	-2014.75	0.08	-240.10
		(0.41)	(6032.00)	(0.41)	(5986.73)
2499.50	19	-0.09	-5364.59	0.06	-1811.50
2999.50	7	-0.70	-21067.34	-0.51	-15182.08
3499.50	12	-0.44	-14763.43	-0.28	-10529.47
3999.50	14	-0.39	-17046.40	-0.24	-10748.33
6499.50	10	-0.55	-34093.74	-0.39	-25026.76
7499.50	16	-0.39	-30482.50	-0.25	-19296.69
12499.50	11	-0.52	-65980.25	-0.36	-45754.06
14999.50	8	-0.69	-105485.11	-0.51	-78619.30
24999.50	8	-0.69	-176105.31	-0.52	-131338.77

Notes:

* *denotes significance at the 0.05 level*

[1] *Excess Return = Average returns from participating less what could have been earned by not participating.*

[2] *Excess ROR = Excess Return, as a percentage of what could have been earned by not participating.*