Contrarian Investment Strategies Work Better for Dually-Traded Stocks: Hong Kong Evidence

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Abstract

We investigate the profitability of contrarian investment strategies for equities listed on the Hong Kong Stock Exchange (HKEX) separating our sample into cross-listed firms and firms listed only in Hong Kong. We also investigate the relationship between stock returns and past trading volume for these equities. We report significant contrarian profits for the period investigated in this paper and document that this is a persistent feature of stock returns for both cross-listed and HKEX only listed firms. We also document that contrarian portfolios earn returns as high as 6.08% per month for the dually-traded companies and 3.07% for HKEX only listed firms.

JEL Classification: G11, G12, G15

Keywords: Contrarian Strategy; Turnover Ratio; Hong Kong; Multifactor Model

I. Introduction

Lo and MacKinlay (1990) define a contrarian portfolio strategy as a strategy that exploits negative serial dependence in asset returns. They discovered that it is possible to generate profit unrelated to market forces by purchasing past poorly performing securities and by selling past well performing securities in the United States. De Bondt and Thaler (1985) were among the first to suggest the idea of contrarian profits; they challenged the notion of market efficiency and rational market behaviour by arguing that contrarian profits were the result of the psychological aspect of individual naïve investors who tend to pay more attention to recent information and less attention to prior data, resulting in stock prices overreacting[1] and deviating from intrinsic values. They argued that prior losers generally out-performed the market and prior winners under-performed. Hence investors could buy the loser and short sell the winners to earn abnormal profit.

Research on identifying profitable contrarian strategies has expanded rapidly in recent years and many studies have documented the profitability of contrarian strategies in various countries. For instance, Brouwer, Van Der Put and Veld (1997) found contrarian profits in a portfolio of four European countries (France, Germany, Netherlands and the United Kingdom). Mun, Vasconcellos and Kish (1999) showed that short-term contrarian portfolios in France and Germany work better than long-term portfolios. Forner and Marhuenda (2003) provided evidence of lucrative long-term contrarian strategies in the Spanish Stock markets. Mengoli (2004) showed a systematic reversal effect is found when a longer holding period (more than 3 years) is considered, and reversing the momentum strategy (buying past loser and selling past winner) results in production of profitable contrarian profits in Italian equity market. Recently, Novak and Hamberg (2005) observed contrarian profits on non-financial Swedish stocks. Antoniou, Galariotis and Spyrou (2005) found that negative serial

[1] Other researchers who contributed to this debate are Lehmann (1990) and Jegadeesh and Titman (1995)

correlation is present in the Athens Stock Exchange (Greece) and this leads to short-term contrarian profits.

Turning to the Asia Pacific region, Kang, Liu and Ni (2002) found statistically significant short-term contrarian profits in China. Chin, Prevost and Gottesman (2002) found that contrarian strategies produced superior returns in New Zealand. Yoshio, Hideaki-Kiyoshi and Toshifumi (2002) found that a one-month contrarian strategy concentrating on low trading volume stocks would be effective in Japan. Hameed and Ting (2000) on the other hand documented a significant relation between contrarian return profitability and trading volume in the Malaysian stock market. While contrarian profits were evident in Malaysia they admitted that the strategy might not produce economically significant profits if transaction costs were factored into consideration. Monagle, Ramiah, Hallahan and Naughton (2006) documented that contrarian portfolios earned returns as high as 11.74% per month in Australia and their study showed that low volume traded portfolios drive contrarian.

Otchere and Chan (2003) studied the De Bondt and Thaler (1985) version of the contrarian strategy and found that arbitrageurs could not earn excess profits from overreaction in Hong Kong. They observed a small but significant degree of overreaction in Hong Kong prior to the Asian financial Crisis. Otchere and Chan (2003) also documented that price reversals were more pronounced for winners rather than losers. They noted that there was a delay in price reversal and argue that cultural factors may account for the small size of the price reversal as well as the delay or lack of reversal. Leung and Li (1998) mentioned that prior losers outperform prior winners during the subsequent test in the reversal period. Fung and Lam (2004) showed that loser portfolios of the 33 stocks in the Hang Seng Index, on average, outperform the winner portfolios by 9.9% one year after the formation periods and once more the study was using the De Bondt and Thaler (1985) approach. However this study was limited to 33 stocks and fails to consider that a substantial amount of companies in Hong Kong are listed in other countries. No study investigated the impact of dually-traded stocks on contrarian investment strategy. Furthermore, there is no contrarian investment study that uses the Lo and MacKinlay (1990) approach in Hong Kong. It is worth noting that the Hong Kong evidence is mixed; Otchere and Chan (2003) suggested that there was no excess returns from overreaction in Hong Kong, whereas Fung and Lam (2004) and Leung and Li (1998) showed the opposite.

The Hong Kong Stock Exchange (HKEX) is a good example of an integrated market. Johnson and Soenen (2002) showed that it was integrated with the Japanese market, and similarly Cheung, Chinn and Fuji (2003) concluded it was integrated with China, and Taiwan, while Bhoocha and Stansell (1990) provided evidence with the US and Singapore markets. Corhay, Rad and Urbain (1995) found that the Pacific-Basin financial markets, including Australia and New Zealand, were integrated. Tsang & Ma (2000) found that essentially, Hong Kong was closely integrated with the rest of the world.

Most of the markets in which the companies in Hong Kong are dually listed tend to exhibit evidence of contrarian profitability with the exception of Singapore. Baruch, Karolyi and Lemmon (2003) provided several benefits of dually-traded stocks. Such benefits include international diversification, assess global capital, broaden shareholder base and enhanced company visibility. Our study attempts to postulate that contrarian investment strategies migrate to Hong Kong. Specifically it will seek to discover if investing only in the local Hong Kong market is more profitable than investing in a dually-traded stocks portfolio. Furthermore we seek to discover if investors are able to generate superior returns by investing in strategies not related to market movements.

In addition we will explore the potential of trading volume explaining our results. The role of trading volume permeates the literature. For example, Blume, Easley and O'Hara (1994) presented a model in which technical analysts were able to profit using volume information along with historical price information. In the area of contrarian strategies, Chordia and

Swaminathan (1999) observed that trading volume was a significant determinant of the lead-lag patterns in stock returns of Lo and MacKinlay (1990). Specifically, Chordia and Swaminathan (1999) found that returns of portfolios containing high trading volume lead returns of portfolios comprised of low trading volume stocks. They argue that the reason for this lead-lag cross-autocorrelations was the tendency of low volume stocks to reacting sluggishly to new information. Hameed and Ting (2000) added to this branch of literature by examining whether return predictability of contrarian investment strategies differed significantly across high and low volume securities. They found that portfolios of heavily and frequently traded securities tended to earn substantially higher contrarian profits than low trading activity portfolios. Their tests showed that profitability differences between high volume and low volume portfolios was not totally due to firm size effects although there was more obvious differences in smaller firms. Kodjovi and Oumar (2004) documented short term contrarian strategies for small capital size firm were at least 6 times higher than those in middle and large capital firm in Canadian stock markets. Bremer and Hiraki (1999) documented a short-term return reversal using the Japanese weekly stock returns and found that loser stocks with high trading volume in the previous week tended to have larger return reversals in the following week. Conrad, Hameed and Niden (1994) showed that return reversals were more frequently observed for heavily traded stocks and that less traded stocks tended to exhibit return continuation. Yoshio, Hideaki-Kiyoshi and Toshifumi (2002) examined the interaction between past returns and past trading volume in predicting returns over a one month period in Japan and found that the loser-winner reversal was more pronounced among low trading volume stocks, which was a challenge to Conrad, Hameed and Niden (1994) and most other studies cited above. They also found that low trading volume loser stocks earned higher future returns but the same patterns were not observed for winner stocks.

Our analysis indicates that there is an evident contrarian phenomenon. We find that on average, a zero cost portfolio that invests in past losers and sells past winners earns returns as high as 6.08% per month. These returns are largely driven for dually-traded stocks as the returns in this group is almost double the amount of return observed for Hong Kong only listed stocks. Interestingly, when we introduced trading volume into the analysis we find that high trading volume does play an explicit role in predicting future returns of stocks in short-term periods.

The remainder of the paper is organised as follows. In Section II we present the data and methods used in this paper. Section III presents the empirical findings while section IV concludes the paper.

II. Data and Methods

Data

Our data comprising monthly calendar stock return index, trading volume and the number of outstanding shares data for Hong Kong was sourced from Datastream for the period of March 2001 to March 2006. We identified a total of 1399 Stocks in the integrated markets set, of which 761 were listed only in the Hong Kong market while the remainder 638 (45%) were cross-listed on other international stock exchanges such as Australia (2), United Kingdoms (7), USA (159), Singapore (11), Europe (456), France (2) and Greece (1). Mainland China stocks listed in Hong Kong (i.e. either Shanghai or Shenzhen stock exchanges) are not treated as cross-listed.

Descriptive statistics of the above-mentioned data for all stocks in the sample and Hong Kong only listed set are shown in Table 1. Average monthly returns for both sets are statistically different from zero, positively skewed, leptokurtic and thus not normal. Average yearly return for all the stocks (inclusive of the dually traded stocks) is seen to be around 36% which is statistically higher than the Hong Kong only set of 24%, thus illustrating a dually traded effect. Volume and turnover ratio on the hand is statistically lower for the cross-listed market, whilst the number of outstanding shares is higher.

When modelling the Fama and French three-factor model we access the risk free rate and market index from Datastream. We used the three-month Hong Kong Treasury Bill rate as the risk free rate, and the Hang Seng Index as the proxy for the market. The book-to-market factor (HML) was obtained from the Kenneth French's website[2]. To overcome the lack of a readily available size factor for the model we proxy the factor using indices[3]. We used the Hang Seng small cap as a proxy for small firms and the Hang Seng large cap as a proxy for big firms. We define SMB as the difference between the returns on the small cap index and the large cap index. The descriptive statistics in Table 2 shows show that both the SMB portfolio and HML portfolios generate a positive return.

Methodology

We define monthly return as follows:

$$MR_i = \frac{(SRI_{it} - SRI_{it-1})}{SRI_{it-1}} \qquad (1)$$

Where

MR_i is the monthly return for stock *i*.

SRI_{it} is the stock return index for stock *i* at month t.

SRI_{it-1} is the stock return index for stock *i* at month t-1.

Trading volume is defined as the average monthly turnover ratio where the monthly turnover ratio is obtained by dividing the monthly trading volume of a stock by the number of shares of the same stock at the end of the month. Many studies have used turnover ratio as a

[2] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

[3] Faff (2004) argues that there exists useful proxies for the Fama and French factors that can be easily constructed from 'off the shelf' index data. In his paper he uses the Russell Indexes to construct SMB and HML portfolios. Naughton, Ramiah and Veeraraghavan (2006) computed the size factor using different market proxies.

consistent measure of trading volume since raw trading volume is not scaled and highly likely to be correlated with size.[4]

Our portfolio construction follows the methodologies used by Lo and MacKinlay (1990), Jegadeesh and Titman (1995), Lee and Swaminathan (2000), Kang, Liu and Ni (2002) and Naughton, Ramiah and Veeraraghavan (2006). Portfolios are formed on a monthly basis. At the beginning of each month from March 2001 to March 2006, we rank all eligible stocks independently on the basis of past returns for the return momentum. The stocks are then assigned to one of ten deciles portfolios based on their returns over the past J months (where J = 1, 3, and 6 months respectively). Next the portfolios are held for K months (where K = 1, 3, 6, 9 and 12 months). Returns for K-month holding period are based on equally weighted average returns of every stock in the portfolios. For example, the monthly return for a three-month holding portfolio is the average of the portfolio return from this month's strategy, last month's strategy and strategy from two months ago. We focus on the extreme winner and loser deciles over the next K months and next five years. The strategies are to sell the winner portfolio and buy the loser portfolio for different holding and formation periods.

The winner and loser portfolios are then subcategorized into three other portfolios namely, high volume (H), medium volume (M) and low volume (L). The stocks within each decile are split into three other tertiles (H, M, L) based on average monthly trading volume during the J-month estimation period. Our definition of trading volume and the criteria to classify high and low trading volume stocks are based on stock turnover ratios as described above. The high, medium and low portfolios within each tertile refer to stocks with smallest to largest trading volume. The strategy is to long the high volume traded portfolios and short the low volume traded in each decile. Therefore, H-L return can be calculated for each decile. When these

[4] See, Campbell, Grossman, and Wang (1993) and Lee and Swaminathan (2000).

returns are positive (negative) we can conclude that, conditional on past returns, high volume stocks generally perform better (worst) than low volume stocks.

Lakonishok et al. (1994) report the importance of the three-factor model in explaining contrarian profits. A time series analysis similar to Fama and French (1996), Naranjo et al. (1998), Heston et al. (1999), Faff (2004) and Naughton, Ramiah and Veeraraghavan (2006) is used in this approach. Thus, we regress the contrarian portfolio returns on the overall market factor, size and book to market equity factors. We also regress the returns of winners and losers on the market, firm size and book-to-market factors:

$$R_{pt} - R_{Ft} = \alpha_p + \beta_p (R_{Mt} - R_{Ft}) + S_p (SMB_t) + H_p (HML_t) + e_{pt} \qquad (2)$$

Where R_{pt} is the return of portfolio in month t, R_{Ft} is the risk free asset in month t, and R_{Mt} is the return on the market proxy in the month. R_{pt}-R_{Ft} is the excess return on the portfolio and R_{Mt} - R_{Ft} is the excess return on the market portfolio. SMB represents the mimic portfolio for the size factor and HML the mimic portfolio for the book-to-market factor.

III. Empirical Findings

This section reports the returns for different contrarian and volume-based contrarian strategies. We confirm strong contrarian behaviour in that contrarian effects are present in Hong Kong. In addition we find evidence of a relationship between stock returns and trading volume over the short and medium term holding period.

Simple Strategies

Tables 3 and 4 summarise the empirical results from several contrarian strategies in the different states. We report the mean return from a dollar neutral strategy of selling extreme winners and buying extreme losers, R1-R10. At the beginning of each month, stocks are ranked and grouped into deciles on the basis of their returns over the previous 1, 3, and 6 months. Thus, there are 10 portfolios ranging from top winners to worst losers every month from March 2001 to March 2006.

We report results for the extreme losers (R1) and the winner (R10). In each month, we also short the winner portfolio and long the loser portfolio and the returns of this zero cost portfolio is shown as R1-R10. The results in Tables 3 and 4 suggest a clear and consistent contrarian effect for equities listed in the Hong Kong Stock Exchange. Returns for winner portfolios are significantly smaller than those of stocks in the loser portfolio in most formation periods. These results are consistent across the two different boards, i.e. for dually-traded firms and Hong Kong listed only.

Rows 3 to 10 report the equal-weighted average monthly returns over the next K months (K=1, 3, 6, 9, 12) for portfolios formed based on J months. For example on the dually-traded(see Table 3), when J=6 and K=1, with a one month portfolio formation period, past losers on average win 7.87 % over the next six months while past winners on average gain 3.03% over the same period. The zero cost portfolio which short the winner and long the loser in this case earns 4.84% over six months. The differences in monthly returns between loser and winner portfolios are mostly positive and significant in every combination of K and J in both the short and long run.

This result is consistent across the two categories, but on average, these differences are high. For example on the dually-traded stocks, the zero cost portfolio earns 5.81% and 6.08% per month, when K=1 and J=1 or K=1 and J=3 respectively. The last 3 rows of Tables 3 and 4 report the monthly returns for each portfolio for up to four years following the portfolio formation. We find that the contrarian effect lasts up to one year for portfolios formed based on past 1, 3, and 6 months for the dually-traded stocks and is short lived for the Hong Kong listed only. Another interesting point is that there is a turning point after the one-year holding period for both scenarios (see Exhibit 1A and Exhibit 2A). Contrarian returns decrease for holding periods of up to one year to then increase in the subsequent two years.

The contrarian returns based on our range of formation periods for the dually-traded stocks are shown in Table 3 and then graphically in Exhibit IA. All formation periods show the highest returns in the first month of holding followed by a steady decline. For formation period of 1 month to 3 months, the mean reversal process is slower than the remaining formation period. Contrarian returns are calculated as the returns on the extreme loser portfolios minus the returns on the extreme winner portfolios (R1-R10). For winner portfolios, the returns reach their lowest at K=1 (except for J=1) and converge towards the 2.5% return for higher holding periods (see Exhibit 1B). This unexplained 2.5% residue return is also observed by a momentum study done by Naughton, Ramiah and Veeraraghavan (2006) in Singapore.

It is noticeable from Exhibit 1C that for all formation periods, the losers' returns are at their highest in the first month of holding followed by a steady decline through to K=12. When the holding period is extended to more than 1 year, returns for loser portfolios (R1) generally increase for two and three years of holding period. Similar characteristics are observed for the slopes of the graphs of contrarian returns. It is thus possible to conclude that the losers drive contrarian returns in Hong Kong. Based on these ex-post analyses, we can develop another trading strategy that would have a long position on both the winner and loser portfolios. The strategy will be to buy and hold the top winners and losers in Hong Kong and for formation period of one month and holding period of one month, investors will earn around 8.5% per month.

We now proceed to analyse the Hong Kong listed only companies. The contrarian returns based on our range of formation periods are shown in Table 4 and then graphically in Exhibit

2A. The formation periods show high returns in the first month of holding followed by a decline for the next four holding periods to then rebound after the one year. All formation periods reverse to a mean return of about 0.5% in year 1 to then steadily increase over the next two years.

The contrarian loser and winner returns for this group of companies are almost half of the amount from the dually-traded stocks. We test if the returns generated from dually-traded stocks are statistically larger than those generated from Hong Kong only listed firms. Table 5 shows the results. Contrarian profits are statistically larger for the dually-traded stocks, for formation periods of three months and holding periods of 3 months to two years. The evidence also shows that loser portfolios generate superior return for the dually-traded stocks for both medium and long term. However there is no such evidence for winners for the short run, but winners appears to do better in the long run. These portfolios exhibit similar pattern to the dually-traded stocks.

Stock Returns and Past Trading Volume

In this section we examine whether there is any relationship between stock returns and past trading volume for equities listed in the Hong Kong market. Tables 6 and 7 report returns for portfolios formed on the basis of a two-way sort between past returns and past trading volume on the two boards. So far, most of our findings are consistent with previous studies in this respect. However, when we take trading volume into consideration, we find that trading volume does help predict stock returns. In this respect our findings support prior research in the informational content of trading volume.

Several interesting results can be observed in these tables. Conditional on past returns, when lower volume stocks perform better than high volume stocks, the H (high volume) - L (low volume) portfolios results in a negative value. Our results shows negative returns for H-L for both loser and contrarian portfolios in both scenarios. Hence we can conclude that, conditional on past returns, there is evidence that low volume stocks for both losers and contrarian portfolios will outperform high volume stocks over the next 12 months on both of these boards. Furthermore we can observe that medium (M)-L generates negative returns on both the losing portfolios (R1) and the contrarian portfolios (R1-R10), and the values are statistically different from zero[5]. As for winners, there is no evidence that volume explains any of the portfolio returns for the dually-traded stocks but high volume tend to explain the winner's return for Hong Kong only listed firms. Therefore, our findings on the relationship between volume traded and contrarian profits are inconsistent with Conrad et al. (1994), Bremer and Hiraki (1999), and Hameed and Ting (2000) but are consistent with Yoshio et al. (2002) who investigated the Japanese market.

In Tables 6 and 7 we also report returns of R1-R10. For example, when K= J=1, the high volume zero cost portfolio R1H-R10H only earns 0.75% for the dually-traded stocks, and negative 2.52% for the Hong Kong listed only. On the other hand, the low volume zero cost portfolio R1L-R10L earns 10.90% for the dually-traded stocks, and 6.28% for the other group.

Application of the Three-Factor Model

Table 2 shows basic descriptive statistics of the proxies used in the Fama and French regressions. Some really interesting results are observed on the dually-traded stocks (see Table 8). The intercept term (alpha) is statistically different from zero for almost every trading strategy except for the winners in holding period of one month. Alpha is positive for all the different portfolios, that is, winner, loser and contrarian portfolios. It appears that there exists an unexplained pattern for these three types of portfolios for the dually-traded stocks. The portfolios have a tendency to produce positive 'risk-adjusted performance'. These patterns increase moderately for winner, decrease for both loser and contrarian portfolios when we increase the holding period. The results are very similar to Exhibits 1A, 1B and 1C. Alpha

[5] Note that we do not report these t-statistics.

appears to increase for formation period of 3 months and then decreases for formation period of six months. On the other hand, the size factor and the book-to-market factor hardly explain any of these portfolio returns. Another important finding is that the three-factor model implies the existence of a contrarian pattern on the dually-traded board but fails to explain this phenomenon. Similar findings are observed for the Hong Kong listed only companies (see Table 9).

IV. Conclusions

In this paper, we investigate various contrarian-trading strategies for equities listed on the Hong Kong Stock Exchange. We also consider the role of trading volume and use different formation and holding periods. We find evidence of substantial contrarian profits during the period 2001 to 2006. A zero cost portfolio that goes long past losers and short past winners earns on average up to 6.08% per month. We also report that returns for dually-traded stocks were consistently higher than for the Hong Kong only listed firms. Consistent with the literature our results find that past trading volume does play an explicit role in predicting future returns of stocks in shorter term horizons. However, our findings contradict the bulk of the literature as we find that low trading volume has the greatest explanatory power. An attempt is also made to explain the contrarian effect using the three-factor model. The results show that while the three-factor model of Fama and French provides evidence in support of our strategies, it cannot explain the contrarian phenomenon.

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Table 1: Descriptive Statistics of Return, Volume, and Number of Shares (NOSH) for Equities in Hong Kong from 2001 to 2006

	All Stocks				Hong Kong Listed Only			
	Monthly Return	Volume (000's)	NOSH (000's)	Turnover Ratio	Return	Volume (000's)	NOSH (000's)	Turnover Ratio
Mean	0.030055	39454	1708557	0.030357	0.023928	71164	1448119	0.05492
Standard error	0.001664	3244	76711	0.001774	0.001536	5701	73535	0.002882
Median	0.018204	2586	892437	0.004322	0.018138	20918	750938	0.031667
Standard Deviation	0.062231	121327	2869246	0.06637	0.042374	157265	2028549	0.079499
Excess Kurtosis	50.719539	60	95	46.285066	19.290514	34	29	30.879713
Skewness	5.466529	7	8	5.666067	3.291183	5	4	4.639851
Range	1.039421	1541021	51371874	0.830804	0.461138	1541004	22116755	0.830794
Minimum	-0.117289	0	781	0	-0.086614	17	11213	0.00001
Maximum	0.922132	1541021	51372655	0.830804	0.374524	1541021	22127968	0.830804
Count	1399	1399	1399	1399	761	761	761	761
JB-Statistic	156921	221753	535035	132364	13173	39704	28289	32966
*t-Test Statistic**	*18.06*				*15.58*			
*t-Test Difference ***	*2.70*	*-4.83*	*2.45*	*-7.25*				

* Testing if the Monthly Mean return is statistically different from Zero

** Testing if the Mean for Integrated Market Set is statistically different from Hong Kong Only set

Table 2: Descriptive Statistics* of the Market Return, Risk-free Rate, HML and SMB

	RM***	RF	RM-RF	HML	SMB
Mean	0.00479	0.00157	0.00322	0.00638	0.01064
Standard error	0.00655	0.00014	0.00657	0.00684	0.00487
Median	0.01397	0.00142	0.01245	0.00480	0.00978
Standard Deviation	0.05074	0.00112	0.05087	0.05168	0.03769
Sample Variance	0.00257	0.00000	0.00259	0.00267	0.00142
Kurtosis	-0.16558	-1.00084	-0.16917	1.66988	0.10181
Skewness	-0.44690	0.42558	-0.43931	0.27152	0.26580
Minimum	-0.11945	0.00004	-0.12143	-0.14740	-0.07005
Maximum	0.12751	0.00366	0.12647	0.15350	0.11908
*t-Test Statistic***	*0.73123*	*10.85082*	*0.49052*	*0.93169*	*2.18747*
JB-Statistic	2.06574	4.31543	2.00152	7.32306	0.73239

* Sample Period: Monthly - Data April 2001 - Dec 2005

** Testing if the Monthly Mean return is statistically different from Zero

*** Return on the Market (RM) is calculated from the Hang Seng Index

Table 3: Contrarian portfolios and stock returns for dually-traded stocks Portfolio

This table presents average monthly returns for the time period 2001 to 2006. R1 represents the loser portfolio and R10 the winner portfolio. K represents monthly holding periods where K=1,3,6,9 or 12 months. Returns are average monthly returns over the portfolio formation period. Y2 to Y4 represent the average monthly return for portfolios held for 2 to 4 years. The number in italics are t-values.

		J1	J3	J6
K=1	**R1**	7.15%	7.78%	7.87%
	t-Stats	*5.25*	*4.84*	*5.27*
	R10	1.34%	1.70%	3.03%
	t-Stats	*1.17*	*1.38*	*2.88*
	R1-R10	**5.81%**	**6.08%**	**4.84%**
	t-Stats	*4.91*	*4.79*	*4.30*
K=3	**R1**	5.63%	6.10%	5.59%
	t-Stats	*5.25*	*5.94*	*5.52*
	R10	2.30%	2.44%	3.43%
	t-Stats	*2.72*	*3.12*	*4.63*
	R1-R10	**3.33%**	**3.67%**	**2.16%**
	t-Stats	*3.52*	*6.00*	*3.57*
K=6	**R1**	4.35%	4.57%	4.25%
	t-Stats	*5.09*	*5.36*	*5.05*
	R10	2.60%	2.40%	3.02%
	t-Stats	*4.31*	*4.30*	*5.14*
	R1-R10	**1.75%**	**2.17%**	**1.23%**
	t-Stats	*2.56*	*4.37*	*2.33*
K=9	**R1**	4.05%	4.25%	3.77%
	t-Stats	*5.62*	*5.49*	*4.66*
	R10	2.42%	2.38%	2.74%
	t-Stats	*4.47*	*5.06*	*5.77*
	R1-R10	**1.63%**	**1.87%**	**1.03%**
	t-Stats	*2.84*	*4.04*	*2.11*
K=12	**R1**	3.64%	4.02%	3.76%
	t-Stats	*5.99*	*5.71*	*5.14*
	R10	2.58%	2.50%	3.04%
	t-Stats	*5.80*	*6.67*	*8.69*
	R1-R10	**1.06%**	**1.53%**	**0.71%**
	t-Stats	*2.32*	*3.60*	*1.45*
K=Y2	**R1**	4.26%	4.92%	5.05%
	t-Stats	*8.96*	*10.40*	*10.90*
	R10	2.76%	2.75%	2.94%
	t-Stats	*10.28*	*12.49*	*21.88*
	R1-R10	**1.50%**	**2.17%**	**2.11%**
	t-Stats	*3.78*	*5.26*	*4.23*
K=Y3	**R1**	3.92%	4.67%	5.20%
	t-Stats	*10.90*	*11.29*	*17.31*
	R10	2.74%	2.46%	2.44%
	t-Stats	*14.99*	*17.20*	*25.45*
	R1-R10	**1.18%**	**2.22%**	**2.76%**
	t-Stats	*3.16*	*5.16*	*8.24*
K=Y4	**R1**	3.06%	3.46%	3.83%
	t-Stats	*12.97*	*12.83*	*19.11*
	R10	2.32%	2.50%	2.44%
	t-Stats	*17.02*	*8.64*	*11.95*
	R1-R10	**0.74%**	**0.97%**	**1.38%**
	t-Stats	*2.69*	*2.51*	*5.86*

Table 4: Contrarian portfolios and stock returns for Hong Kong Listed only Portfolio

This table presents average monthly returns for the time period 2001 to 2006. R1 represents the loser portfolio and R10 the winner portfolio. K represents monthly holding periods where K=1,3,6,9 or 12 months. Returns are average monthly returns over the portfolio formation period. Y2 to Y4 represent the average monthly return for portfolios held for 2 to 4 years. The number in italics are t-values.

		J1	J3	J6
K=1	**R1**	4.40%	4.27%	4.84%
	t-Stats	*3.18*	*3.02*	*3.56*
	R10	1.54%	1.20%	2.73%
	t-Stats	*1.40*	*1.17*	*2.67*
	R1-R10	**2.86%**	**3.07%**	**2.11%**
	t-Stats	*2.40*	*2.91*	*2.15*
K=3	**R1**	2.89%	3.20%	3.37%
	t-Stats	*3.36*	*3.72*	*3.75*
	R10	1.31%	1.34%	2.49%
	t-Stats	*1.87*	*1.91*	*3.54*
	R1-R10	**1.58%**	**1.87%**	**0.87%**
	t-Stats	*2.94*	*4.18*	*1.71*
K=6	**R1**	2.32%	2.40%	2.39%
	t-Stats	*3.56*	*3.46*	*3.47*
	R10	1.56%	1.54%	2.34%
	t-Stats	*3.24*	*3.09*	*4.14*
	R1-R10	**0.76%**	**0.86%**	**0.05%**
	t-Stats	*2.12*	*2.53*	*0.16*
K=9	**R1**	2.11%	2.09%	2.05%
	t-Stats	*3.77*	*3.48*	*3.29*
	R10	1.60%	1.70%	2.14%
	t-Stats	*3.71*	*3.98*	*4.76*
	R1-R10	**0.52%**	**0.38%**	**-0.10%**
	t-Stats	*1.60*	*1.28*	*-0.28*
K=12	**R1**	2.12%	2.19%	2.14%
	t-Stats	*4.40*	*4.12*	*4.07*
	R10	1.79%	1.78%	2.15%
	t-Stats	*4.81*	*4.73*	*5.86*
	R1-R10	**0.33%**	**0.40%**	**0.00%**
	t-Stats	*1.23*	*1.56*	*-0.01*
K=Y2	**R1**	2.79%	2.97%	3.23%
	t-Stats	*7.57*	*9.14*	*9.94*
	R10	1.95%	1.92%	2.02%
	t-Stats	*7.98*	*8.26*	*15.48*
	R1-R10	**0.85%**	**1.05%**	**1.21%**
	t-Stats	*4.03*	*5.03*	*4.13*
K=Y3	**R1**	2.67%	2.98%	3.29%
	t-Stats	*10.14*	*10.88*	*14.41*
	R10	1.96%	1.67%	1.57%
	t-Stats	*12.56*	*11.48*	*15.44*
	R1-R10	**0.70%**	**1.31%**	**1.72%**
	t-Stats	*3.33*	*6.25*	*7.96*
K=Y4	**R1**	1.95%	2.09%	2.18%
	t-Stats	*7.67*	*7.20*	*12.13*
	R10	1.54%	1.45%	1.43%
	t-Stats	*18.64*	*14.29*	*14.11*
	R1-R10	**0.40%**	**0.63%**	**0.75%**
	t-Stats	*1.58*	*2.09*	*4.90*

Table 5: Testing for the difference between the two sets of companies

This table presents the difference between the mean returns for the time period 2001 to 2006. R1 represents the loser portfolio and R10 the winner portfolio. K represents monthly holding periods where K=1,3,6,9 or 12 months. Returns are average monthly returns over the portfolio formation period. Y2 and Y4 represent the average monthly return for portfolios held for 2 to 4 years. The numbers in italics are t-values

		J1	J3	J6
K=1	**R1**	2.76%	3.51%	3.03%
	t-Stats	*1.42*	*1.64*	*1.50*
	R10	-0.19%	0.51%	0.30%
	t-Stats	*-0.12*	*0.32*	*0.20*
	R1-R10	2.95%	3.00%	2.74%
	t-Stats	*1.76*	*1.82*	*1.83*
K=3	**R1**	2.74%	2.90%	2.22%
	t-Stats	*1.99*	*2.16*	*1.64*
	R10	0.99%	1.10%	0.94%
	t-Stats	*0.90*	*1.05*	*0.92*
	R1-R10	1.75%	1.80%	1.29%
	t-Stats	*1.61*	*2.38*	*1.63*
K=6	**R1**	2.03%	2.17%	1.87%
	t-Stats	*1.88*	*1.98*	*1.72*
	R10	1.04%	0.86%	0.68%
	t-Stats	*1.35*	*1.16*	*0.84*
	R1-R10	0.98%	1.31%	1.18%
	t-Stats	*1.27*	*2.17*	*1.90*
K=9	**R1**	1.94%	2.17%	1.72%
	t-Stats	*2.12*	*2.21*	*1.69*
	R10	0.82%	0.68%	0.60%
	t-Stats	*1.19*	*1.07*	*0.91*
	R1-R10	1.11%	1.49%	1.12%
	t-Stats	*1.69*	*2.70*	*1.89*
K=12	**R1**	1.52%	1.84%	1.61%
	t-Stats	*1.96*	*2.08*	*1.79*
	R10	0.79%	0.71%	0.90%
	t-Stats	*1.36*	*1.34*	*5.86*
	R1-R10	0.73%	1.12%	0.72%
	t-Stats	*1.37*	*2.26*	*1.24*
K=Y2	**R1**	1.47%	1.96%	1.83%
	t-Stats	*2.44*	*3.41*	*3.22*
	R10	0.82%	0.83%	0.93%
	t-Stats	*2.25*	*2.60*	*4.94*
	R1-R10	0.65%	1.12%	0.90%
	t-Stats	*1.46*	*2.43*	*1.55*
K=Y3	**R1**	1.26%	1.69%	1.91%
	t-Stats	*2.82*	*3.41*	*5.08*
	R10	0.78%	0.79%	0.88%
	t-Stats	*3.23*	*3.87*	*6.27*
	R1-R10	0.48%	0.91%	1.04%
	t-Stats	*1.11*	*1.89*	*2.61*
K=Y4	**R1**	1.12%	1.38%	1.65%
	t-Stats	*3.22*	*3.48*	*6.12*
	R10	0.78%	1.05%	1.01%
	t-Stats	*4.90*	*3.41*	*4.42*
	R1-R10	0.34%	0.33%	0.64%
	t-Stats	*0.89*	*0.68*	*2.27*

Table 6: Returns for Portfolios Sorted on Past Returns and Volume for Dually-traded Stocks

This table presents average monthly returns for portfolios sorted on past returns and past average monthly turnover for the period 2001 to 2006. K represents monthly holding periods where K=1,3, 6, 9 or 12 months. R1 represents the loser portfolio and R10 represents the winner portfolio. L represents the lowest trading volume portfolio, M represents the medium trading volume portfolio and H represents the highest trading volume portfolio. The numbers in parentheses are t-values.

		K=1				K=3				K=6				K=9				K=12			
J	**Portfolio**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**
1	**R1**	11.12%	4.33%	3.73%	-7.39%	8.53%	3.55%	3.73%	-4.80%	6.60%	2.49%	2.38%	-4.21%	6.06%	2.36%	2.29%	-3.76%	5.18%	2.40%	2.04%	-3.15%
	T-stats	*7.33*	*3.23*	*1.74*	*-2.82*	*6.87*	*2.63*	*1.74*	*-2.99*	*6.81*	*3.09*	*2.43*	*-3.05*	*8.11*	*3.64*	*2.80*	*-3.39*	*8.57*	*4.79*	*3.17*	*-3.57*
	R10	0.22%	0.57%	2.98%	2.76%	0.22%	0.57%	2.98%	2.76%	2.77%	3.48%	2.10%	-0.67%	2.77%	0.00%	1.92%	-0.84%	3.14%	3.09%	1.90%	-1.24%
	T-stats	*0.14*	*0.43*	*2.43*	*1.37*	*0.14*	*0.43*	*2.43*	*2.17*	*3.71*	*2.84*	*4.48*	*-0.76*	*4.51*	*0.03*	*4.90*	*-1.16*	*7.18*	*4.13*	*6.37*	*-2.34*
	R1-R10	10.90%	3.76%	0.75%	-10.15%	6.60%	0.21%	0.29%	-6.31%	3.83%	-0.98%	0.28%	-3.54%	3.29%	-0.83%	0.37%	-2.92%	2.05%	-0.69%	0.14%	-1.91%
	T-stats	*6.05*	*3.04*	*0.37*	*-3.76*	*4.96*	*0.10*	*0.35*	*-4.04*	*4.50*	*-0.79*	*0.33*	*-2.93*	*4.81*	*-0.94*	*0.51*	*-2.92*	*3.82*	*-0.99*	*0.25*	*-2.47*
3	**R1**	11.99%	6.66%	3.25%	-8.74%	9.15%	4.57%	3.22%	-5.94%	7.22%	3.31%	2.12%	-5.10%	6.80%	2.81%	2.13%	-4.67%	6.13%	2.68%	1.83%	-4.30%
	T-stats	*0.17*	*0.15*	*0.12*	*-3.21*	*8.32*	*3.65*	*2.33*	*-3.36*	*6.89*	*4.12*	*2.64*	*-3.87*	*7.48*	*4.25*	*2.96*	*-4.03*	*7.51*	*5.17*	*3.08*	*-4.26*
	R10	1.59%	0.12%	2.71%	1.12%	3.85%	0.92%	2.23%	-1.63%	3.57%	1.63%	2.20%	-1.37%	3.49%	2.05%	2.11%	-1.37%	3.79%	1.96%	1.91%	-1.88%
	T-stats	*0.15*	*0.11*	*0.08*	*0.49*	*3.29*	*1.16*	*3.15*	*-1.19*	*4.46*	*3.16*	*4.63*	*-1.47*	*5.53*	*4.64*	*5.67*	*-1.87*	*8.10*	*5.07*	*7.18*	*-3.49*
	R1-R10	10.41%	6.53%	0.54%	-9.86%	5.30%	3.66%	0.99%	-4.31%	3.64%	1.69%	-0.09%	-3.73%	3.31%	0.76%	0.02%	-3.30%	2.34%	0.72%	-1.83%	-4.17%
	T-stats	*4.17*	*3.47*	*0.52*	*-3.65*	*4.90*	*4.01*	*0.86*	*-2.73*	*4.20*	*3.08*	*-0.14*	*-3.46*	*4.10*	*1.74*	*0.03*	*-3.29*	*3.32*	*2.08*	*-0.17*	*-4.93*
6	**R1**	10.80%	7.44%	3.93%	-6.87%	7.58%	5.23%	2.72%	-4.86%	6.02%	3.56%	2.45%	-3.57%	5.43%	3.16%	2.03%	-3.40%	5.33%	2.98%	1.96%	-3.37%
	T-stats	*4.66*	*3.99*	*3.15*	*-2.61*	*5.55*	*4.66*	*3.48*	*-3.09*	*5.71*	*4.41*	*3.55*	*-2.84*	*5.52*	*4.79*	*3.71*	*-3.02*	*5.90*	*5.85*	*4.42*	*-3.35*
	R10	3.19%	2.29%	3.71%	0.52%	4.54%	2.36%	3.21%	-1.33%	3.96%	2.73%	2.59%	-1.37%	3.55%	2.62%	2.20%	-1.35%	4.28%	2.48%	1.96%	-2.32%
	T-stats	*1.92*	*1.78*	*3.45*	*0.26*	*4.24*	*2.99*	*4.52*	*-1.04*	*4.95*	*4.59*	*4.88*	*-1.42*	*6.11*	*5.37*	*5.66*	*-1.93*	*9.74*	*6.27*	*7.27*	*-4.50*
	R1-R10	7.61%	5.15%	0.21%	-7.39%	3.04%	2.87%	-0.48%	-3.53%	2.06%	0.83%	-0.14%	-2.21%	1.88%	0.54%	-0.17%	-2.05%	1.05%	0.50%	0.00%	-1.05%
	T-stats	*3.60*	*2.98*	*0.22*	*-3.20*	*2.81*	*3.85*	*-0.88*	*-2.90*	*2.21*	*1.76*	*-0.26*	*-2.03*	*2.19*	*1.36*	*-0.43*	*-2.16*	*1.21*	*1.36*	*0.00*	*-1.14*

Table 7: Returns for Portfolios Sorted on Past Returns and Volume for the Hong Kong Listed only Companies

This table presents average monthly returns for portfolios sorted on past returns and past average monthly turnover for the period 2001 to 2006. K represents monthly holding periods where K=1,3, 6, 9 or 12 months. R1 represents the loser portfolio and R10 represents the winner portfolio. L represents the lowest trading volume portfolio, M represents the medium trading volume portfolio and H represents the highest trading volume portfolio. The numbers in parentheses are t-values.

		K=1				K=3				K=6				K=9				K=12			
J	**Portfolio**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**	**L**	**M**	**H**	**H-L**
1	**R1**	5.71%	4.47%	0.97%	-4.74%	3.65%	2.67%	0.97%	-2.68%	3.22%	2.21%	1.11%	-2.12%	2.85%	2.18%	1.05%	-1.80%	2.71%	1.89%	1.12%	-1.59%
	T-stats	*3.78*	*2.46*	*0.61*	*-2.16*	*3.89*	*2.59*	*0.61*	*-2.01*	*4.57*	*2.96*	*1.82*	*-2.27*	*4.90*	*4.20*	*1.87*	*-2.23*	*5.64*	*4.25*	*2.48*	*-2.42*
	R10	-0.56%	1.21%	3.49%	4.05%	-0.56%	1.21%	3.49%	4.05%	0.92%	1.65%	2.29%	1.37%	1.35%	0.00%	2.00%	0.64%	1.80%	1.95%	2.01%	0.21%
	T-stats	*-0.39*	*0.97*	*2.76*	*2.10*	*-0.39*	*0.97*	*2.76*	*3.47*	*1.51*	*3.16*	*4.79*	*1.76*	*2.55*	*0.02*	*5.34*	*1.00*	*3.91*	*5.01*	*6.98*	*0.38*
	R1-R10	6.28%	3.26%	-2.52%	-8.80%	3.60%	1.34%	-1.14%	-4.74%	2.30%	0.56%	-1.18%	-3.48%	1.50%	0.29%	-0.95%	-2.45%	0.91%	-0.06%	-0.89%	-1.80%
	T-stats	*3.91*	*1.77*	*-1.94*	*-4.26*	*4.30*	*1.61*	*-1.70*	*-4.42*	*3.98*	*1.06*	*-2.75*	*-4.84*	*3.37*	*0.65*	*-2.30*	*-4.04*	*2.35*	*-0.15*	*-2.61*	*-3.49*
3	**R1**	4.61%	5.09%	2.86%	-1.75%	4.23%	2.89%	2.39%	-1.84%	3.40%	2.28%	1.65%	-1.75%	2.81%	2.25%	1.20%	-1.61%	2.88%	1.91%	1.05%	-1.83%
	T-stats	*0.12*	*0.13*	*0.13*	*-0.77*	*4.66*	*3.02*	*2.34*	*-1.35*	*4.58*	*3.19*	*2.50*	*-1.76*	*4.48*	*4.18*	*2.20*	*-1.94*	*5.33*	*4.44*	*2.34*	*-2.60*
	R10	-1.83%	1.62%	2.61%	4.44%	-0.78%	1.73%	2.22%	3.00%	0.61%	1.80%	2.18%	1.57%	1.22%	2.14%	2.04%	0.82%	1.74%	1.92%	1.86%	0.12%
	T-stats	*-0.10*	*0.09*	*0.09*	*2.56*	*-0.85*	*2.31*	*3.05*	*2.56*	*1.05*	*3.29*	*4.43*	*2.05*	*2.29*	*4.62*	*5.26*	*1.24*	*3.31*	*5.40*	*6.68*	*0.19*
	R1-R10	6.44%	3.47%	0.24%	-6.19%	5.01%	1.16%	0.17%	-4.84%	2.78%	0.48%	-0.53%	-3.32%	1.58%	0.11%	-0.84%	-2.42%	1.14%	0.00%	-1.05%	-2.19%
	T-stats	*4.04*	*1.93*	*0.22*	*-3.17*	*6.70*	*1.49*	*0.27*	*-4.97*	*5.26*	*0.94*	*-1.20*	*-4.81*	*3.06*	*0.28*	*-2.39*	*-3.87*	*2.57*	*0.00*	*-2.74*	*-4.12*
6	**R1**	7.20%	2.60%	2.93%	-4.27%	4.98%	2.44%	1.97%	-3.01%	3.48%	2.49%	1.05%	-2.43%	3.07%	1.99%	0.98%	-2.09%	3.01%	1.92%	0.99%	-2.03%
	T-stats	*3.89*	*2.11*	*1.84*	*-1.75*	*5.16*	*2.79*	*1.85*	*-2.09*	*4.86*	*3.77*	*1.57*	*-2.47*	*4.72*	*3.83*	*1.84*	*-2.49*	*5.96*	*4.62*	*2.28*	*-3.04*
	R10	0.64%	3.48%	3.30%	2.67%	1.26%	2.96%	3.07%	1.81%	1.98%	2.81%	2.75%	0.77%	2.07%	2.58%	2.39%	0.32%	1.93%	2.54%	2.23%	0.30%
	T-stats	*0.51*	*2.99*	*2.74*	*1.53*	*1.67*	*3.95*	*3.80*	*1.64*	*3.14*	*4.72*	*4.76*	*0.90*	*3.57*	*5.54*	*5.85*	*0.45*	*3.62*	*7.90*	*7.86*	*0.50*
	R1-R10	6.56%	-0.88%	-0.37%	-6.94%	3.72%	-0.52%	-1.10%	-4.82%	1.51%	-0.31%	-1.69%	-3.20%	1.00%	-0.59%	-1.41%	-2.41%	1.09%	-0.62%	-1.24%	-2.32%
	T-stats	*3.59*	*-0.80*	*-0.31*	*-3.18*	*5.05*	*-0.84*	*-1.43*	*-4.52*	*3.45*	*-0.62*	*-3.21*	*-4.68*	*2.15*	*-1.55*	*-3.49*	*-3.92*	*2.67*	*-1.97*	*-3.45*	*-4.29*

Table 8: The Application of the Three-Factor Model for the Dually-traded Stocks

This table presents the time series results of the Fama and French Three Factor model for the period 2001 to 2005. K represents monthly holding periods where K=1,3, 6, 9 or 12 months. R1 represents the loser portfolio and R10 represents the winner portfolio. Alpha represents the intercept of the regression, the coefficient of RM-RF represents the beta of the portfolio, SMB represents the size factor and HML represents the Book-to-market factor. The numbers in italic are t-values.

		K=1				K=3				K=6				K=9				K=12			
J	Portfolio	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML
1	R1	0.071	0.281	-0.055	-0.129	0.056	0.419	-0.166	-0.198	0.043	0.120	-0.189	0.111	0.039	-0.027	-0.078	0.140	0.035	-0.061	-0.064	0.127
	T-stats	*4.919*	*0.856*	*-0.142*	*-0.388*	*5.086*	*1.649*	*-0.559*	*-0.769*	*4.761*	*0.586*	*-0.807*	*0.549*	*5.093*	*-0.161*	*-0.390*	*0.828*	*5.378*	*-0.433*	*-0.380*	*0.911*
	R10	0.008	0.475	0.414	-0.072	0.022	0.352	0.119	-0.318	0.025	0.038	0.054	-0.076	0.023	0.017	0.086	-0.099	0.024	0.000	0.092	-0.068
	T-stats	*0.653*	*1.790*	*1.337*	*-0.268*	*2.476*	*1.764*	*0.510*	*-1.575*	*3.823*	*0.258*	*0.318*	*-0.521*	*3.903*	*0.136*	*0.574*	*-0.776*	*4.947*	*0.001*	*0.747*	*-0.665*
	R1-R10	0.065	-0.195	-0.469	-0.060	0.036	0.065	-0.285	0.118	0.019	0.081	-0.243	0.185	0.018	-0.047	-0.161	0.236	0.013	-0.063	-0.152	0.192
	T-stats	*5.284*	*-0.698*	*-1.436*	*-0.212*	*3.678*	*0.286*	*-1.080*	*0.516*	*2.810*	*0.508*	*-1.340*	*1.181*	*3.056*	*-0.361*	*-1.062*	*1.833*	*2.715*	*-0.629*	*-1.275*	*1.934*
3	R1	0.082	0.030	-0.603	-0.122	0.062	-0.159	-0.473	0.236	0.044	-0.299	0.004	0.234	0.042	-0.266	-0.081	0.206	0.041	-0.221	-0.175	0.148
	T-stats	*4.912*	*0.078*	*-1.348*	*-0.315*	*5.906*	*-0.658*	*-1.699*	*0.974*	*4.849*	*-1.495*	*0.016*	*1.183*	*5.100*	*-1.497*	*-0.388*	*1.168*	*5.459*	*-1.391*	*-0.929*	*0.951*
	R10	0.018	0.512	-0.211	-0.290	0.024	-0.023	-0.186	0.114	0.022	-0.034	0.016	0.063	0.023	-0.046	-0.029	0.021	0.024	-0.027	-0.066	0.020
	T-stats	*1.408*	*1.764*	*-0.622*	*-0.987*	*2.904*	*-0.122*	*-0.859*	*0.609*	*3.700*	*-0.251*	*0.101*	*0.481*	*4.506*	*-0.413*	*-0.226*	*0.192*	*6.009*	*-0.310*	*-0.644*	*0.229*
	R1-R10	0.066	-0.484	-0.393	0.165	0.040	-0.139	-0.288	0.119	0.023	-0.268	-0.010	0.168	0.020	-0.223	-0.048	0.181	0.017	-0.196	-0.105	0.126
	T-stats	*5.079*	*-1.628*	*-1.133*	*0.549*	*6.418*	*-0.975*	*-1.754*	*0.836*	*4.519*	*-2.393*	*-0.076*	*1.524*	*4.238*	*-2.177*	*-0.403*	*1.790*	*4.008*	*-2.134*	*-0.965*	*1.393*
6	R1	0.072	0.166	0.449	0.064	0.049	-0.304	0.502	0.147	0.040	-0.198	0.133	0.122	0.036	-0.125	-0.035	0.114	0.037	-0.027	-0.109	0.025
	T-stats	*4.631*	*0.464*	*1.097*	*0.180*	*4.756*	*-1.316*	*1.859*	*0.646*	*4.422*	*-1.016*	*0.582*	*0.630*	*4.175*	*-0.666*	*-0.156*	*0.619*	*4.765*	*-0.166*	*-0.560*	*0.146*
	R10	0.027	-0.121	0.052	0.198	0.031	-0.182	0.219	-0.015	0.028	-0.152	0.145	-0.009	0.026	-0.095	0.076	0.008	0.029	-0.019	0.043	0.045
	T-stats	*2.471*	*-0.475*	*0.178*	*0.788*	*4.069*	*-1.061*	*1.091*	*-0.090*	*4.517*	*-1.139*	*0.928*	*-0.067*	*5.001*	*-0.866*	*0.585*	*0.075*	*7.528*	*-0.237*	*0.460*	*0.545*
	R1-R10	0.046	0.286	0.397	-0.136	0.019	-0.123	0.284	0.160	0.013	-0.048	-0.009	0.127	0.012	-0.032	-0.107	0.102	0.010	-0.010	-0.149	-0.023
	T-stats	*3.967*	*1.067*	*1.299*	*-0.516*	*3.115*	*-0.900*	*1.776*	*1.185*	*2.332*	*-0.392*	*-0.064*	*1.054*	*2.346*	*-0.289*	*-0.817*	*0.944*	*1.938*	*-0.097*	*-1.163*	*-0.207*

Table 9: The Application of the Three-Factor Model For the Hong Kong Listed only

This table presents the time series results of the Fama and French Three Factor model for the period 2001 to 2005. K represents monthly holding periods where K=1,3, 6, 9 or 12 months. R1 represents the loser portfolio and R10 represents the winner portfolio. Alpha represents the intercept of the regression, the coefficient of RM-RF represents the beta of the portfolio, SMB represents the size factor and HML represents the Book-to-market factor. The numbers in italic are t-values.

		K=1				K=3				K=6				K=9				K=12			
J	Portfolio	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML	Alpha	RM-RF	SMB	HML
1	R1	0.042	0.371	0.073	-0.171	0.030	0.412	-0.230	-0.245	0.023	0.142	-0.242	0.018	0.021	0.077	-0.071	-0.007	0.021	0.030	-0.092	0.024
	T-stats	*2.889*	*1.117*	*0.189*	*-0.507*	*3.433*	*2.067*	*-0.988*	*-1.214*	*3.464*	*0.916*	*-1.365*	*0.115*	*3.398*	*0.574*	*-0.455*	*-0.052*	*3.992*	*0.270*	*-0.689*	*0.214*
	R10	0.011	0.445	0.334	-0.189	0.013	0.376	-0.045	-0.341	0.015	0.075	-0.077	-0.036	0.015	0.029	-0.017	-0.063	0.017	0.009	0.013	-0.046
	T-stats	*0.979*	*1.727*	*1.109*	*-0.724*	*1.871*	*2.327*	*-0.240*	*-2.085*	*2.918*	*0.643*	*-0.571*	*-0.312*	*3.274*	*0.279*	*-0.140*	*-0.616*	*4.115*	*0.099*	*0.121*	*-0.528*
	R1-R10	0.032	-0.076	-0.261	0.016	0.018	0.034	-0.185	0.093	0.010	0.065	-0.166	0.052	0.007	0.046	-0.052	0.053	0.005	0.020	-0.101	0.066
	T-stats	*2.584*	*-0.264*	*-0.778*	*0.054*	*3.265*	*0.270*	*-1.242*	*0.724*	*2.736*	*0.783*	*-1.746*	*0.630*	*1.944*	*0.617*	*-0.593*	*0.720*	*1.943*	*0.334*	*-1.443*	*1.134*
3	R1	0.047	0.229	-0.525	-0.330	0.034	-0.091	-0.430	0.014	0.023	-0.192	-0.014	0.052	0.020	-0.125	-0.044	0.038	-0.001	0.002	0.000	0.003
	T-stats	*3.246*	*0.686*	*-1.351*	*-0.980*	*3.887*	*-0.448*	*-1.845*	*0.069*	*3.127*	*-1.169*	*-0.072*	*0.324*	*3.137*	*-0.891*	*-0.271*	*0.274*	*-10.219*	*0.487*	*0.061*	*0.791*
	R10	0.014	0.055	-0.388	-0.087	0.013	-0.192	-0.291	0.199	0.014	-0.152	-0.046	0.134	0.016	-0.112	-0.059	0.059	0.017	-0.067	-0.069	0.062
	T-stats	*1.335*	*0.227*	*-1.361*	*-0.352*	*1.878*	*-1.169*	*-1.540*	*1.214*	*2.665*	*-1.298*	*-0.336*	*1.156*	*3.588*	*-1.130*	*-0.507*	*0.594*	*4.212*	*-0.768*	*-0.664*	*0.717*
	R1-R10	0.034	0.172	-0.137	-0.246	0.022	0.099	-0.139	-0.187	0.010	-0.042	0.034	-0.083	0.005	-0.014	0.018	-0.024	-0.017	0.067	0.069	-0.062
	T-stats	*3.110*	*0.676*	*-0.464*	*-0.957*	*4.916*	*0.950*	*-1.163*	*-1.804*	*2.895*	*-0.527*	*0.370*	*-1.065*	*1.557*	*-0.207*	*0.217*	*-0.345*	*-4.212*	*0.768*	*0.664*	*-0.717*
6	R1	0.042	0.134	0.454	0.027	0.028	-0.322	0.419	0.110	0.021	-0.133	0.142	0.018	0.019	-0.092	0.021	0.036	0.021	-0.036	-0.080	0.011
	T-stats	*2.982*	*0.413*	*1.221*	*0.084*	*3.090*	*-1.585*	*1.765*	*0.548*	*2.902*	*-0.830*	*0.760*	*0.114*	*2.823*	*-0.639*	*0.120*	*0.251*	*3.705*	*-0.304*	*-0.568*	*0.089*
	R10	0.024	-0.123	0.034	0.244	0.023	-0.171	0.172	-0.023	0.022	-0.120	0.092	-0.031	0.020	-0.050	0.062	-0.005	0.020	0.004	0.004	0.028
	T-stats	*2.253*	*-0.497*	*0.120*	*0.999*	*3.051*	*-1.041*	*0.896*	*-0.145*	*3.617*	*-0.928*	*0.608*	*-0.239*	*4.039*	*-0.482*	*0.501*	*-0.047*	*5.041*	*0.045*	*0.037*	*0.333*
	R1-R10	0.019	0.255	0.421	-0.219	0.007	-0.153	0.249	0.131	0.001	-0.014	0.053	0.045	0.000	-0.044	-0.038	0.037	0.002	-0.042	-0.080	-0.021
	T-stats	*1.928*	*1.105*	*1.592*	*-0.959*	*1.337*	*-1.323*	*1.846*	*1.154*	*0.262*	*-0.187*	*0.597*	*0.606*	*0.131*	*-0.558*	*-0.407*	*0.481*	*0.669*	*-0.629*	*-1.012*	*-0.302*

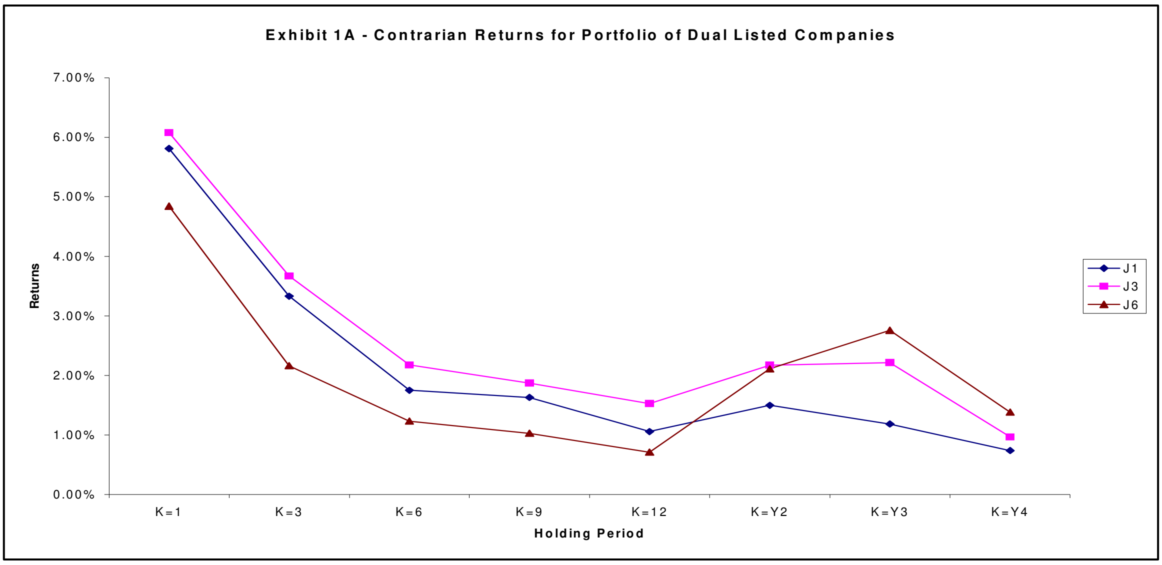
Exhibit 1A - Contrarian Returns for Portfolio of Dual Listed Companies
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Returns
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6

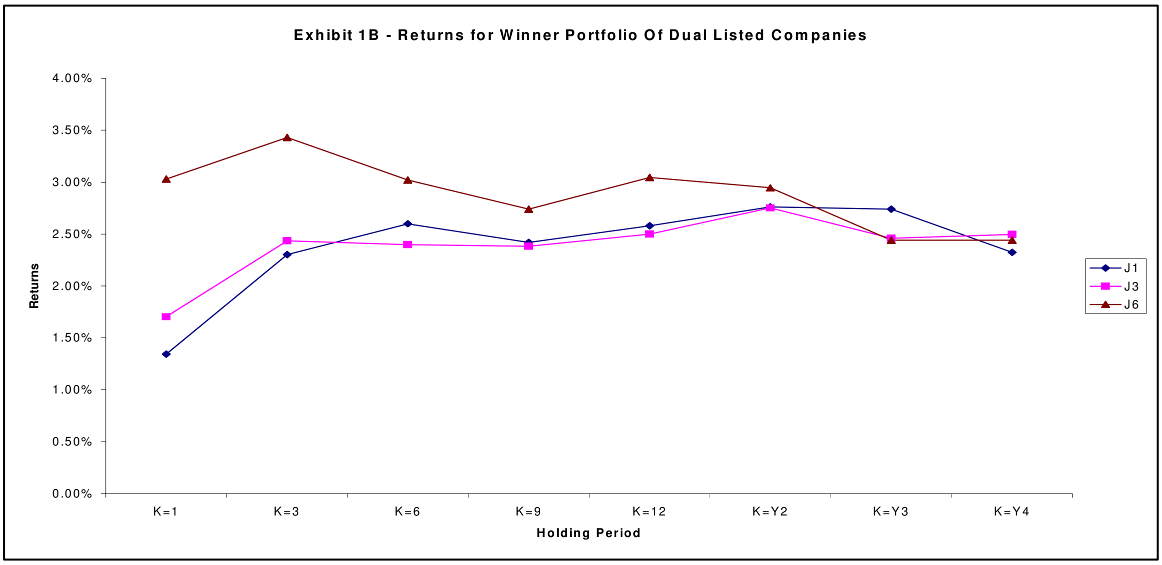
Exhibit 1B - Returns for Winner Portfolio Of Dual Listed Companies
4.00%
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
Returns
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6

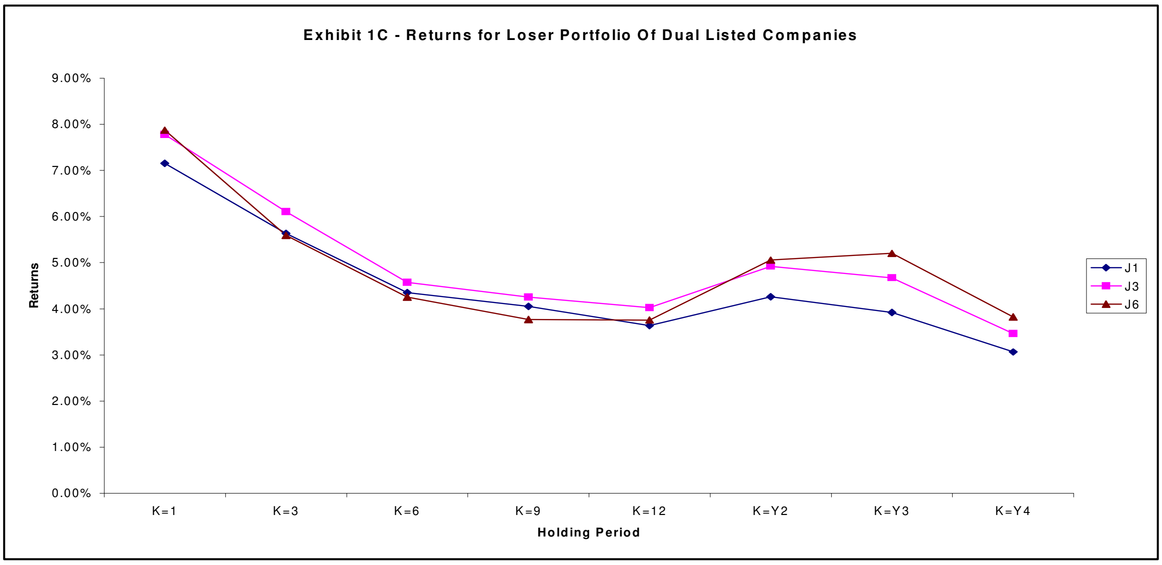
Exhibit 1C - Returns for Loser Portfolio Of Dual Listed Companies
9.00%
8.00%
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Returns
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6

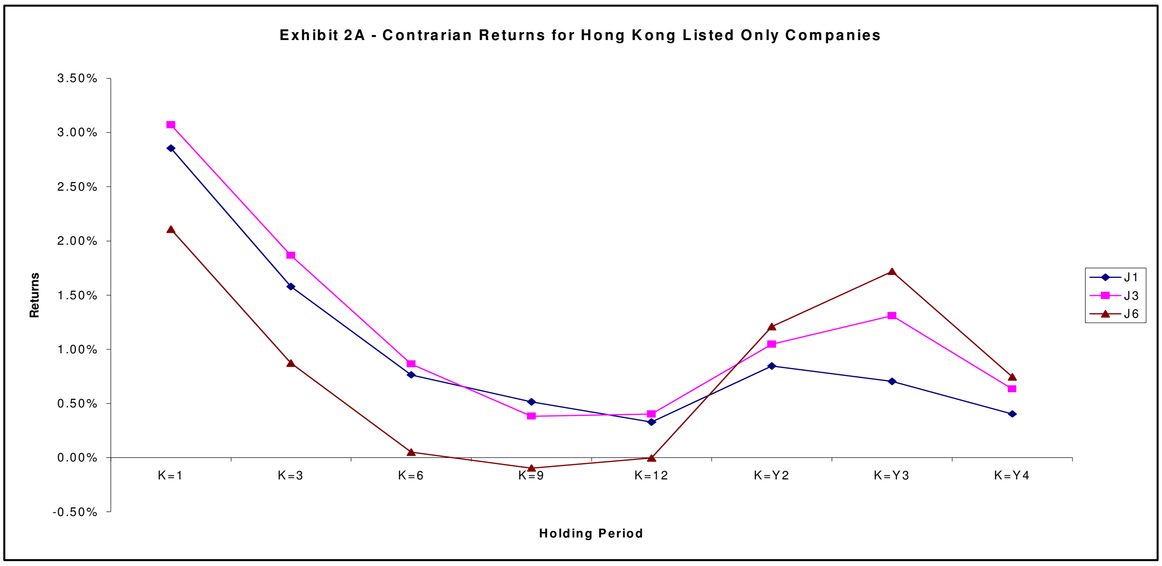
Exhibit 2A - Contrarian Returns for Hong Kong Listed Only Companies
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
-0.50%
Returns
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6

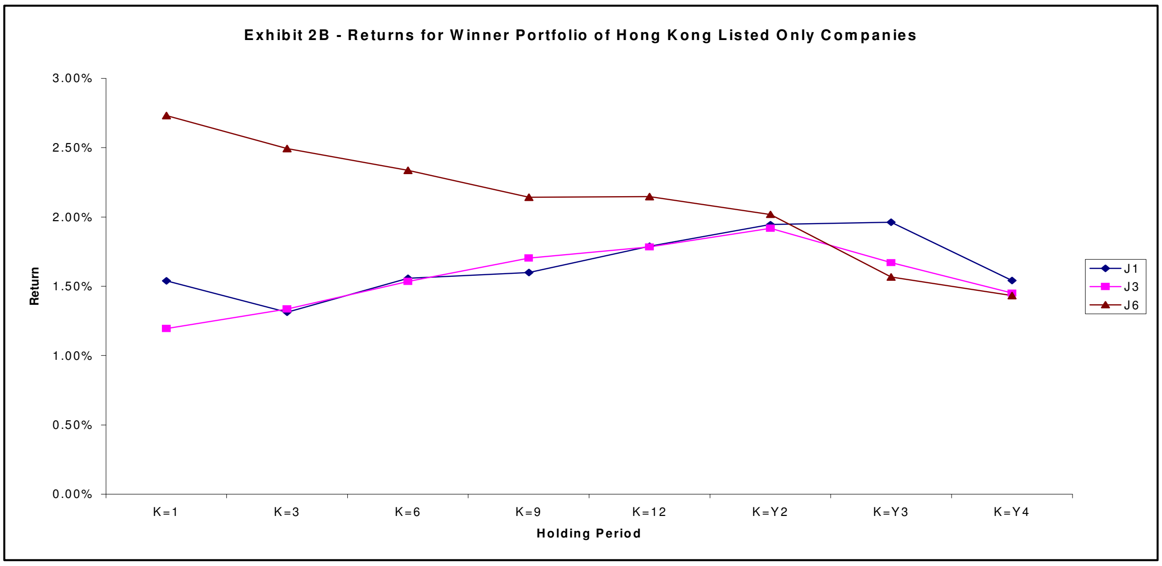
Exhibit 2B - Returns for Winner Portfolio of Hong Kong Listed Only Companies
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
Return
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6

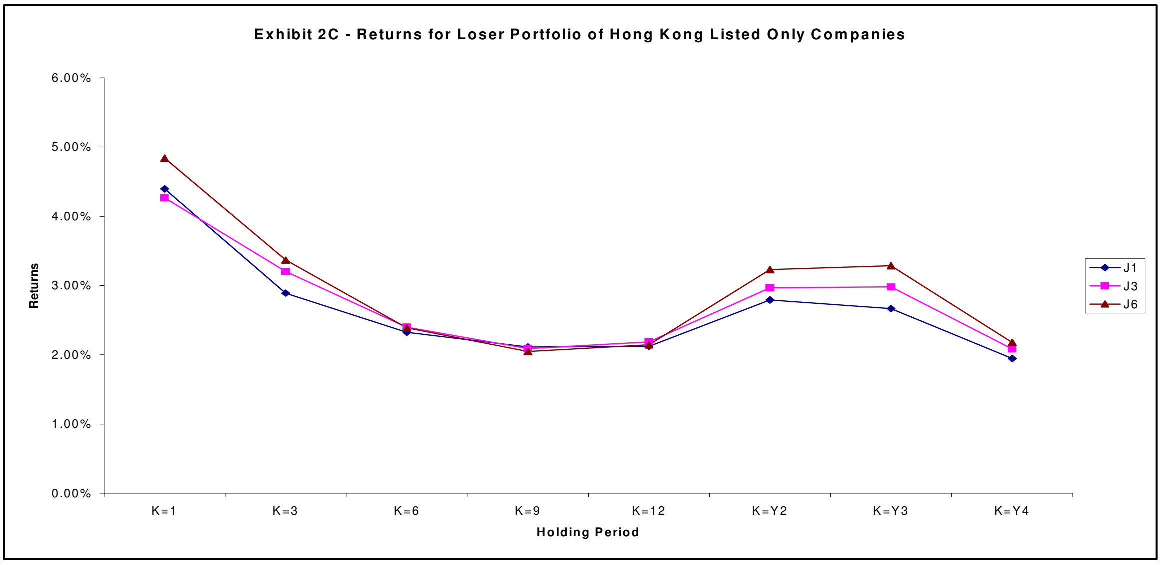
Exhibit 2C - Returns for Loser Portfolio of Hong Kong Listed Only Companies
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Returns
K=1
K=3
K=6
K=9
K=12
K=Y2
K=Y3
K=Y4
Holding Period
J1
J3
J6