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Are momentum and contrarian effects related? Evidence from the Chinese stock market

Shangkari V Anusakumar
Universiti Sains Malaysia

Ruhani Ali
Universiti Sains Malaysia

Chee-Wooi Hooy
Universiti Sains Malaysia

Abstract

Behavioral models suggest that momentum and contrarian effects are linked. We examine the two effects in the Chinese stock market over an 18-year period. The findings reveal that there is no momentum effect in China. Nevertheless, contrarian portfolio yields significant returns. In other words, contrarian effect exists despite the absence of momentum. Further, we find that the contrarian portfolio returns remain positive in the short term. The evidence suggests that momentum and contrarian effects are separate anomalies.

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Contact: Shangkari V Anusakumar - Shely_abg@yahoo.com, Ruhani Ali - ruhani@usm.my, Chee-Wooi Hooy - cwwooy@usm.my.

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1. Introduction

Contrarian and momentum effects are long standing market anomalies. Both effects deal with trading in the best ('winners') and worst ('losers') performing stocks. For the momentum effect, buying winners and selling losers yields significant returns in the short term (Jegadeesh and Titman, 1993). For the contrarian effect, shorting winners and taking a long position in losers generates significant returns in the long term (DeBondt and Thaler, 1985, 1987). Momentum is claimed to lead to the manifestation of contrarian effect in the long term. For instance, Hong and Stein (1999) postulate that underreaction occurs in the short term and excessive trading to exploit the underreaction subsequently causes return reversals in the long term. Are momentum and contrarian effects related? We aim to shed light on this question.

We test for the presence of momentum and contrarian effects in the Chinese stock market. In addition, we investigate the relationship between the two phenomenons. Specifically, we look at whether short term momentum eventually reverses in the long term and whether contrarian portfolio returns are negative in the short term. As per the contentions of behavioural models of Hong and Stein (1999) and Barberis *et al.* (1998), momentum in the short term is followed by reversals in the long term. If contrarian effect is preceded by the momentum effect, then the returns to the contrarian portfolio should be negative in the short term. In a similar vein, holding the momentum portfolio beyond 12 months should produce apparent return reversals.

The Shanghai Stock Exchange (SSE) is one of the largest stock markets in the world (by market capitalization). As noted by Chen *et al.* (2012), the Chinese stock market has recently experienced tremendous growth and is more accessible to foreign investors. Therefore, it is paramount to gain a deeper understanding of the market. Griffin *et al.* (2005) found that momentum is weaker in Asian markets. Hameed and Kusnadi (2002) and Ryan and Curtin (2006) could not find any momentum in Asia. Thus, it would be of interest to test whether momentum exists in China. On the other hand, the evidence for contrarian effect is prevalent in international markets including Asia (Baytas and Cakici, 1999; Dissanaik, 1999; Bildik and Gülay, 2007; Foster and Kharazi, 2008; Ramiah *et al.*, 2011; Malin and Bornholt, 2013). There are some momentum and contrarian studies on the Chinese market but these often examine a single anomaly and may not explore the relationship between the effects. Kang *et al.* (2002) found some evidence of momentum and contrarian effect in China but the study examined a relatively short horizon of 1 to 26 weeks. Wang (2004) reported negative returns to the momentum portfolio. However, Naughton *et al.* (2008) found momentum in the Chinese market for the period of 1995 to 2005. In a recent study, Chen *et al.* (2012) documented significant returns to the contrarian portfolio using weekly data.

2. Methodology

We obtain the data for stock returns from Datastream for the period 1993 to 2010. Our sample consists of 951 stocks listed on the Shanghai Stock Exchange (SSE). Active and delisted stocks are included to prevent survivorship bias. We generally adopt the portfolio construction methodology from DeBondt and Thaler (1985). The stocks are ranked using the returns during the portfolio formation period. The stocks with the top (bottom) 10% performance during formation period are allocated to the winner (loser) portfolio. As per convention, portfolios are equally weighted. A one month gap is included after the formation period to minimize microstructure biases (Jegadeesh and Titman, 2001). Formation and

holding period for the momentum strategy range from 3 months to 12 months. The formation and holding period for the contrarian strategy range from 2 years to 5 years.

In addition, we test the proposition of behavioural models that momentum and contrarian effects are related. For this purpose we calculate the cumulative returns to the momentum portfolio (formation period of 6 months) with holding period of from 3 months to 60 months. We construct a contrarian portfolio (24 month formation period) with holding period ranging from 3 months to 60 months.

3. Results

The results for the momentum strategy are presented in Table 1. Winner and loser portfolios yield significant positive returns for all formation and holding periods. The loser portfolio appears to outperform winner portfolio as evidenced by the negative returns to the momentum portfolio for selected formation/holding periods. However, none of the returns to the momentum portfolio are significant. This implies that there is no momentum in the Chinese stock market. The lack of momentum in China mirrors the findings of past studies on Asian markets (Hameed and Kusunadi, 2002; Fu and Wood, 2010).

The results for the contrarian strategy are presented in Table 2. Winner and loser portfolio returns are positive for all formation and holding periods. Moreover, the returns are all statistically significant. Notably, the loser portfolio outperforms the winner portfolio. Contrarian portfolio returns are significant for all formation and holding periods reaching as high as 0.92%. There appears to be a positive relationship between contrarian portfolio returns and length of the formation period. In contrast, contrarian portfolio returns seem to be inversely related to the length of the holding period. Overall, the evidence indicates that there is a strong contrarian effect in the long term.

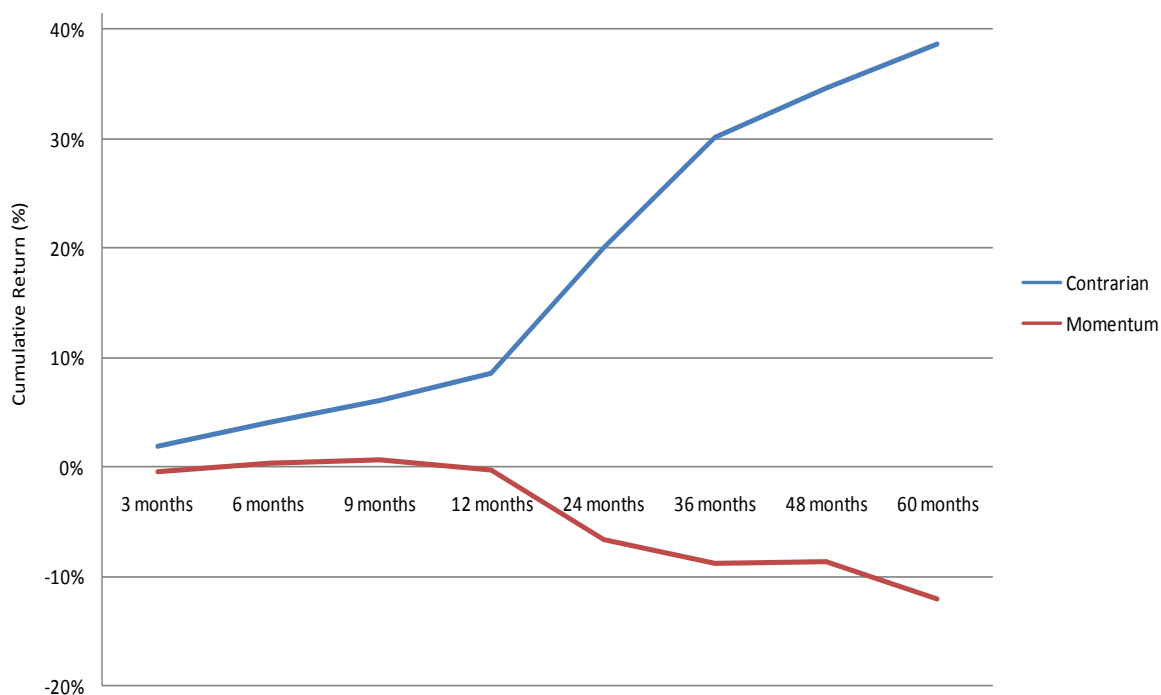
Given that the contrarian effect exists in China in spite of the absence of the momentum effect, the two anomalies seem unlikely to be connected. To further explore this issue, we examine the long term and short term behaviour of the two effects. Figure 1 illustrates the cumulative returns to these momentum and contrarian portfolios. There is no evident of return reversal in the long term for the momentum portfolio. The negative returns continue to be negative with increasing magnitude from 12 months onwards. Contrarian portfolio returns appear to be positively related to the length that the portfolios are held. The contrarian portfolio returns are positive even in the short term. The short-term profitability of contrarian portfolios is in line with the findings of Bildik and Gülay (2007). The behavioural based theories of Hong and Stein (1999) and Barberis *et al.* (1998) are unlikely to explain the long term contrarian effect.

Table I. Momentum strategy in China

Formation Period	Portfolio	Holding Period			
		3 months	6 months	9 months	12 months
3 months	Winners	1.71% (3.51)	1.85% (5.13)	1.89% (6.53)	1.88% (7.49)
	Losers	1.94% (3.36)	1.88% (4.86)	1.84% (6.14)	1.84% (7.25)
	W-L	-0.23% (-1.11)	-0.03% (-0.24)	0.05% (0.46)	0.04% (0.43)
6 months	Winners	1.80% (3.45)	1.96% (5.18)	1.98% (6.58)	1.86% (7.00)
	Losers	1.93% (3.34)	1.90% (4.90)	1.90% (6.47)	1.89% (7.20)
	W-L	-0.12% (-0.61)	0.06% (0.42)	0.08% (0.62)	-0.03% (-0.25)
9 months	Winners	1.98% (3.57)	1.97% (5.27)	1.79% (6.01)	1.73% (6.45)
	Losers	1.96% (3.45)	1.89% (5.11)	1.81% (6.19)	1.83% (7.02)
	W-L	0.01% (0.07)	0.08% (0.54)	-0.01% (-0.10)	-0.11% (-1.02)
12 months	Winners	1.85% (3.47)	1.62% (4.53)	1.57% (5.30)	1.50% (5.74)
	Losers	2.03% (3.66)	1.77% (4.92)	1.76% (6.05)	1.80% (6.91)
	W-L	-0.17% (-0.86)	-0.15% (-1.02)	-0.19% (-1.57)	-0.30% (-2.76)

Table II. Contrarian strategy in China

Formation Period	Portfolio	Holding Period			
		24 months	36 months	48 months	60 months
24 months	Winners	1.29% (6.75)	1.20% (7.39)	1.21% (7.87)	1.01% (7.56)
	Losers	1.93% (9.59)	1.78% (10.46)	1.74% (10.98)	1.56% (11.43)
	L-W	0.65% (11.80)	0.58% (13.56)	0.54% (13.07)	0.55% (14.33)
36 months	Winners	1.12% (5.36)	1.06% (6.05)	1.01% (6.29)	0.80% (5.94)
	Losers	1.86% (8.78)	1.76% (9.79)	1.69% (10.17)	1.40% (10.52)
	L-W	0.75% (13.15)	0.70% (13.84)	0.68% (14.88)	0.60% (14.72)
48 months	Winners	1.02% (4.48)	0.88% (4.71)	0.85% (5.01)	0.69% (4.79)
	Losers	1.85% (8.26)	1.72% (9.07)	1.57% (9.07)	1.34% (9.83)
	L-W	0.83% (13.26)	0.84% (15.70)	0.72% (16.11)	0.64% (18.33)
60 months	Winners	0.90% (3.64)	0.75% (3.72)	0.80% (4.34)	0.65% (3.96)
	Losers	1.82% (7.73)	1.59% (8.07)	1.51% (8.34)	1.29% (8.89)
	L-W	0.92% (11.72)	0.84% (13.61)	0.71% (17.92)	0.65% (20.83)

Figure 1. Cumulative return of momentum and contrarian portfolios

4. Conclusions

We examine whether momentum and contrarian effects are linked in the Chinese stock market. We find no evidence of a momentum effect; returns to the momentum portfolios are insignificant. We find highly significant returns to the contrarian portfolio. Intriguingly, there is a strong contrarian effect but momentum effect is absent. Further tests reveal that the contrarian portfolio does not yield any negative returns in the short term. The contrarian effect appears to exist independently of the momentum effect. The evidence suggests that theories linking momentum and contrarian effects in an effort to explain both anomalies are not supported. Future studies would need to develop a model that is capable of explaining the momentum effect independently of contrarian effect and also account for the absence of momentum in countries such as China.

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