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Sell in May and Go Away: Evidence from China

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ABSTRACT

Using the Chinese stock market data from 1997 to 2013, this paper examines the "Sell in May and Go Away" puzzle first identified by Bouman and Jacobsen (2002). We find strong existence of the Sell in May effect, robust to different regression assumptions, industries, and after controlling for the January or February effect. However, part of the puzzle is subsumed by the seasonal affective disorder effect. We then construct a trading strategy based on this puzzle, and find that it outperforms the buy-and-hold strategy and could resist the market downside risk during large recession periods.

1. Introduction

Bouman and Jacobsen (2002) document the "Sell in May and Go Away" puzzle, which means that stocks have higher returns in the November–April period than the May–October period. Recently, Jacobsen and Zhang (2012) report that the Sell in May effect is significant in 35 out of 108 countries. Andrade et al. (2013) conduct an out-of-sample test of the Sell in May effect.[1]

In this paper we provide further evidence on the calendar anomalies by examining the "Sell in May and Go Away" puzzle that was first identified by Bouman and Jacobsen (2002) and using the Chinese

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[1] Other recent studies on equity market seasonality include Dowling and Lucey (2008), Kamstra et al. (2012) and Lu and Chou (2012), etc.

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Table 1
Descriptive statistics of the stock returns.

		All months	May–October (r_1)	November–April (r_2)
Mean		0.0098	−0.0036	0.0232
Maximum		0.3638	0.3638	0.2983
Minimum		−0.2651	−0.2651	−0.1926
Standard Deviation		0.0871	0.0909	0.0814
H_0: $r_1 = r_2$	t-Value	−2.28		
	p-Value	0.02		

Notes: The last row reports the t-test results for the null hypothesis that the returns are equal between the two periods.

stock market data from 1997 to 2013. This puzzle cannot be explained by the well-known January or February effect (Donald, 1983; Gao and Kling, 2005), nor by time-varying risk, nevertheless, it is associated with time-varying risk aversion found in Kamstra et al. (2003). This study is the first detailed work on Chinese market, the world's largest emerging market, with sample periods covering the 1997–1998 Asian crisis and the recent global financial crisis. In addition, we investigate the economic benefits with a trading strategy based on this puzzle. Different from the evidence in Dichtl and Drobetz (2014) for developed markets, we find the strategy outperforms a buy-and-hold strategy and could resist the market downside risk during large recession periods in China. Overall the findings of this study complement the evidence found in other developed and emerging markets (Andrade et al., 2013) and have special implications for those international investors as MSCI plans to add Chinese A shares to its emerging index from May 2015.[2]

2. Methodology: dummy regression

Following Bouman and Jacobsen (2002), we run a dummy regression as follows:

$$R_t = \beta_0 + \beta_1 \times \text{dummy}_t + \varepsilon_t \quad (1)$$

where R_t is stock returns and the dummy = 0 when the date t is in the May–October period, and dummy = 1 when otherwise. If the coefficient of dummy is significantly above 0, we can conclude that the stock returns of the November–April period are higher than those of the May–October period. Newey–West standard errors are used to adjust for heteroskedasticity and autocorrelation.[3]

3. Empirical analysis

3.1. Data

The data used in this paper is obtained from the GTA CSMAR (China Securities Market & Accounting Research) Database that included in the WRDS (Wharton Research Data Service). Our monthly data focuses on the Chinese A shares[4] with periods from February 1997 to December 2013, since the 10% price limit policy was not implemented before 1997. GTA CSMAR computes the monthly stock returns of the value-weighted market index to minimize the possible January effect largely caused by small companies (Bouman and Jacobsen, 2002).

Table 1 reports the descriptive statistics of our data for all months, May–October and November–April. The mean return is positive for November–April and is negative for May–October, suggesting that the summer months may generate lower returns than the winter months. Moreover, the null hypothesis that the returns are equal between these two periods is rejected at the 5% level.

[2] http://www.reuters.com/article/2014/03/12/china-msci-idUSL6N0M921D20140312.
[3] We also test an ARMA-GARCH model and allow for a thick tailed distribution to avoid the possible biases caused by autocorrelation, heteroscedasticity, and non-normal distributed stock returns, our conclusion remains.
[4] A shares are for domestic investors and B shares are for foreigners investors.