



BioTechnology

An Indian Journal

FULL PAPER

BTAIJ, 8(8), 2013 [1113-1118]

New incentive policy effects of China's listed firms of logistics industry

He Xuefeng^{1*}, Xu Youyi²

¹Accounting R&D Center, Chongqing University of Technology, Chongqing, (CHINA)

²College of Accounting, Chongqing University of Technology, Chongqing, (CHINA)

E-mail: hxf@cqut.edu.cn; 280827920@qq.com

ABSTRACT

In this paper, we conduct an event study to investigate how China's equity market responds to announcements of new incentive policy of logistics industry. Examining 16 listed firms of Shenzhen market and 25 listed firms of Shanghai market in 2012 under the influence of logistics industry with a time window of 31 days, we find that new incentive policy had positive impacts on China's stock market. And the new incentive policy increase both the firms' value and shareholders' wealth after the announcement. © 2013 Trade Science Inc. - INDIA

KEYWORDS

Logistics industry;
Incentive policy;
Event study;
Market reaction.

INTRODUCTION

In order to promote the robust development of the country's logistics industry, China's State Council issued new guidelines on August 19, 2011 offering fiscal and administrative incentives to logistics enterprises and noticed local government departments to implement earnestly combined with reality^[1].

To logistic enterprises, this new incentive policy is an important piece of news. As for China, little research has been done about the new incentive policy effects of China's logistics enterprises. So, in this paper, we conduct an event study to investigate the stock price changes before and after the announcement of the 41 quoted logistics firms by using a window empirical analysis method. The results are surprising—the new incentive policy has a prominent effect on the listed companies of logistics industry.

LITERATURE REVIEW

The issuance of the guidelines showed the government's determination to cure its 'chronic disease' in logistics, particularly how to handle problems concerning the high costs of logistics, such as road tolls, uneven business tax rates and repeated taxation issues.

The new guidelines covered nine areas: reducing tax burdens on logistics enterprises, providing favorable land policies for the industry, promoting convenient transport of vehicles, accelerating reform in logistics management, encouraging integration of logistics resources, boosting the innovation and application of logistics technologies, increasing investment into the logistics industry, prioritizing the development of agricultural product logistics, and strengthening coordination among government departments^[1].

Bin Jiang, Edmund Prater (2002) analyzed that China's distribution system lies somewhere between

FULL PAPER

socialist mode and the free market mode. Meanwhile, there are three main forces that are changing and modernizing China's distribution and logistics system. These are the booming economy, entering the WTO and e-commerce. The inevitable revolution of China's distribution and logistics system is on the way^[2]. Mark Goh, Charlene Ling, (2003) provides a comprehensive overview of trade and foreign investments approaches that, an enormous challenge is posed to the logistics industry as it endeavors to meet the increased demands of the market. Despite the improvements and advancements undertaken by the Government and other agencies, the current logistics infrastructure, particularly those of transportation networks, telecommunications systems, warehousing facilities and customs procedures are still lacking. Future developments are also highlighted to portray an accurate assessment of the logistics situation in China^[3]. Jun Wang (2004) analyzes Logistics industry is likened to the "accelerator" of economic growth in the world, is of active influence on the healthy development of Chinese economy. By using econometric model method, taking the gross domestic product (GDP) as the explained variable to represent the developing level of Chinese economy, and taking the value of cargo circular flow as the explaining variable to represent the developing level of the logistics industry^[4]. Junjie Hong, Anthony T.H. Chin, Binglian Liu, (2007) investigated the current status and future prospects of logistics service providers in a transitional economy. China being an emerging player in the world economy, an understanding and assessment of China's logistics service providers is appropriate and timely; they also offered invaluable information and implications for local providers, government authorities and foreign logistic service providers that are interested in the market^[5]. Kwok Hung Lau, Yiming Wang, (2009) presented a systematic analysis of the external and the internal factors affecting reverse logistics implementation in developing countries like China. They also identified the major drivers and obstacles faced by the industry, a clear understanding of which might facilitate the formulation of appropriate nation-wide reverse logistics policy and strategy through the support of the government and the investment of the manufacturers^[6].

After the accession of China to the World Trade Organisation, an enormous challenge is posed to the

logistics industry as it endeavours to meet the increased demands of the market with the increase of trade and foreign investments. However, up to now, New Incentive Policy Effects of China's Logistics enterprises have been received little attention. Therefore, it seems necessary and valuable for us to study listed firms of logistics industry positively.

In this paper, we conduct an event study to investigate the stock price changes before and after the announcement of the 41 quoted logistics firms by using a window empirical analysis method. The results are surprising—the new incentive policy has a prominent effect on the listed companies of logistics industry.

DATA AND METHODOLOGY

This paper carries on an empirical research by the basic method of event study based on the data of 16 listed firms of Shenzhen market and 25 listed firms of Shanghai market in 2012 under the influence of logistics industry with a time window of 31 days. The event gets to be defined as the day "incentive policy" was announced, and we define the day as $t=0$, the event study period as $(-15, 15)$, which means 15 trading days before and after event occurrence point. We suppose that the new "incentive policy" is beneficial for listed firms of logistics industry, which increase shareholders' wealth and the value of those firms in a short period around the announcement day. The sample sources are: 41 randomly selected quoted logistics firms which are related to China's incentive policy, among which there are 25 in Shanghai market, 16 in Shenzhen Market.

This paper adopts the standard event study methodology as described by MacKinlay^[7]. We define the date when the new "incentive policy" is announced as the event day, then choose the period before and after the announcement date as event window. We define t as the event day, and employ a 31-day event window, denoted by $[t-15, t+15]$. $t-15$ means 15 days before the event day. $t+15$ means the 15th day after the event day.

We adopt the Capital Asset Pricing Model (CAPM) as our market model. The CAPM due to Sharpe^[8] and Lintner^[9] is an equilibrium theory where the expected return of a given asset is determined by its covariance with the market portfolio. The following CAPM mar-

ket model was estimated for each listed company.

$$r_{i,t} = \beta_0 + \beta_1 r_{f,t} + \beta_2 r_{M,t} + \varepsilon_{i,t} \quad (1)$$

Where $\varepsilon_{i,t}$ is the zero mean disturbance term. $r_{i,t}$ is the anticipated normal return for the stock of the listed company i in period t . $r_{f,t}$ is non-risk interest rate. $r_{M,t}$ is the return of portfolio, which we respectively use Shanghai and Shenzhen comprehensive index to present. We induce the Ordinary Least Square (OLS) method to estimate parameter β . Then we calculate the excess return for the stock of company i in period t .

$$ar_{i,t} = r_{i,t} - r_{f,t} \quad (2)$$

$ar_{i,t}$ is the excess return for the stock of firm i in period t . $\hat{r}_{i,t}$ is the actual return for the stock of firm i in period t . Then we calculate the average excess return and the

cumulative average excess return in equation (3) and (4), which are respectively denoted by AAR_t and CAR_t .

$$AAR_t = \frac{1}{N} \sum_{j=1}^N AR_{jt} \quad (3)$$

$$CAR_s = \sum_{t=1}^s AAR_t \quad (4)$$

EMPIRICAL RESULTS

We figured up the daily stock excess return, AAR_t and CAR_t by Excel data analysis software and carried out T test of the daily accumulative total stock excess return by SPSS 16.0 software. (The conclusion is presented in TABLE 1, 2, 3, 4 and Figure 1, 2).

TABLE 1 : AAR_t and CAR_t during the event window of Shenzhen market:

T	ARR_t (n=16)	CAR_t (n=16)	T	ARR_t (n=16)	CAR_t (n=16)
-15	0.003743625	0.003743625	1	0.005999733	-0.01832746
-14	0.001149867	0.004893492	2	0.003126313	-0.015201147
-13	-0.000491933	0.004401559	3	-0.007171786	-0.022372933
-12	-0.002900714	0.001500845	4	0.0023985	-0.019974433
-11	0.001449375	0.00295022	5	-0.002947	-0.022921433
-10	-0.009775375	-0.006825155	6	-0.007735938	-0.030657371
-9	-0.024347125	-0.03117228	7	0.004579062	-0.026078309
-8	-0.003829733	-0.035002013	8	0.000813667	-0.025264642
-7	0.003525375	-0.031476638	9	0.003163375	-0.022101267
-6	0.002188938	-0.0292877	10	-0.001850214	-0.023951481
-5	0.004170438	-0.025117262	11	0.001478467	-0.022473014
-4	0.001117133	-0.024000129	12	0.006093812	-0.016379202
-3	-0.007216563	-0.031216692	13	-0.00257075	-0.018949952
-2	0.0000479370	-0.031168755	14	0.000290143	-0.018659809
-1	0.000927437	-0.030241318	15	0.005696733	-0.012963076
0	0.005914125	-0.024327193			

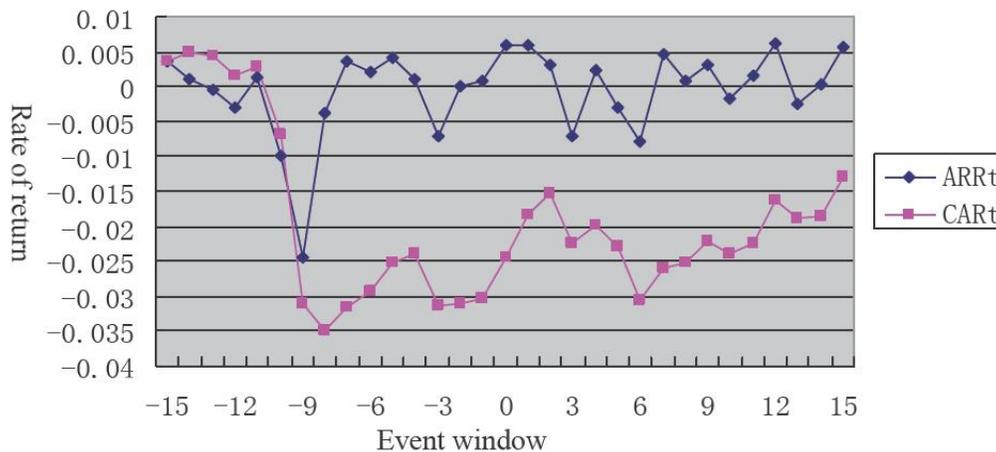


Figure 1 : Attachment abnormal returns for sample firms of Shenzhen market

FULL PAPER

TABLE 2 : T test conclusion of one sample

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CAR (-15,15)*	-9.064	30	0.000	-0.01931	-0.0237	-0.0150
CAR (-15,-5)**	-2.472	10	0.033	-0.01285	-0.0244	-0.0013
CAR (-5,-5)***	-15.275	10	0.000	-0.02408	-0.0276	-0.0206
CAR (0,15)***	-18.974	15	0.000	-0.02129	-0.0237	-0.0189

Note:***, **, * denotes separately significance at 1%,5% and 10% level (Two-tailed test).

TABLE 1 shows that the AAR of sample group in Shenzhen stock is 0.59% on the announcement day. The new “incentive policy” influenced the market positively. It is a normal phenomenon that AAR and CAR waved between positive and negative after the announcement day. Then we placed a T test. TABLE 2 reveals that the mean value of CAR (-15,15) gets -0.01931

and has a marked difference from 0 at the level of 10%, the mean value of CAR (-15,-5) gets -0.01285 and has a marked difference from 0 at the level of 5%,the mean values of CAR (-5,-5),(0,15) have a marked difference from 0 at the level of 1%. That illustrated it is a piece of good news for stock market, the new “incentive policy” has an active influence on Shenzhen stock market.

TABLE 3 : AAR_t and CAR_t during the event period of Shanghai market:

T	ARR (n=25)	CAR (n=25)	T	ARR (n=25)	CAR (n=25)
-15	-0.00306148	-0.00306148	1	0.00517364	0.015293028
-14	0.00823588	0.0051744	2	0.00186656	0.017159588
-13	0.00034064	0.00551504	3	-0.00290225	0.014257338
-12	-0.005025375	0.000489665	4	-0.00421276	0.010044578
-11	0.002253792	0.002743457	5	0.001580083	0.011624661
-10	0.001983	0.004726457	6	-0.004627208	0.006997453
-9	-0.01634688	-0.011620423	7	0.00105675	0.008054203
-8	-0.00293988	-0.014560303	8	0.003441609	0.011495812
-7	0.007732591	-0.006827712	9	0.002974783	0.014470595
-6	0.00901672	0.002189008	10	-0.000758435	0.01371216
-5	0.006509708	0.008698716	11	-0.001584	0.01212816
-4	-0.00505376	0.003644956	12	0.002884952	0.015013112
-3	-0.00299616	0.000648796	13	0.00174784	0.016760952
-2	0.003870174	0.00451897	14	-0.00225708	0.014503872
-1	-0.002954542	0.001564428	15	0.002662043	0.017165915
0	0.00855496	0.010119388			

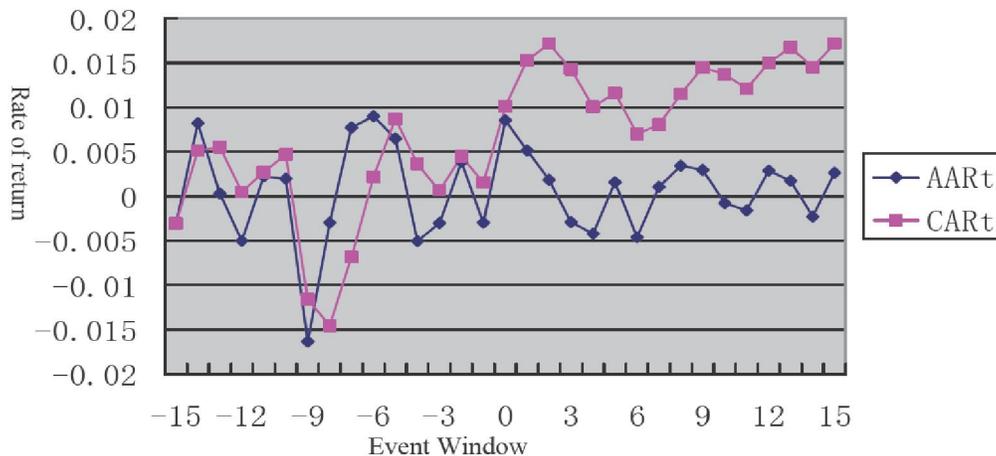


Figure 2 : Attachment abnormal returns for sample firms of Shanghai market

TABLE 4 : T test conclusion of one sample

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CAR (-15,15)*	4.654	30	0.000	0.00686	0.0038	0.0099
CAR (-15,-5)**	-.262	10	0.799	-0.00059	-0.0057	0.0045
CAR (-5,-5)***	5.227	10	0.000	0.00887	0.0051	0.0127
CAR (0,15)***	16.673	15	0.000	0.01305	0.0114	0.0147

Note:***, **, * denotes separately significance at 1%, 5% and 10% level (Two-tailed test).

TABLE 3 shows that the AAR of sample group stock is 0.85% on the announcement day. The new “incentive policy” influenced the Shanghai market positively and illustrated it is a piece of good news for stock market. Both CAR and AAR waved between positive after the announcement day. To CAR data, stock kept continuously positive in 15 days after the announcement day, and then we placed a T test. TABLE 4 reveals that the mean value of CAR (-15,-5) is a negative number, while mean values of CAR (-15,15),(-5,5),(0,15) are positive numbers, increasing by degrees. Both (-5,-5) and (0,15) have a marked difference from 0 at the level of 1%, and (-15,15) has a marked difference from 0 at the level of 10%, it represents that CAR mean values are markedly positive in 15 days before new “incentive policy” got announced at least. Here, the new “incentive policy” has a rather active influence on Shanghai stock market again.

CONCLUSIONS

This text inspected the effect of listed firms of logistics industry concerning the publication of the new “incentive policy” by event study methodology and investigated all from time series perspective.

Above all, we come to three conclusions: first and foremost, the announcement of new “incentive policy” has a prominent effect and an evident market reaction on the listed firms of logistics industry, namely it produced on the development of our country’s logistic industry and behaviors of investors in this market. Second, the new “incentive policy” is in favor of optimizing financing environment for the development of this industry and provides a strong mechanism for the market’s economic growth. Third, the new “incentive policy” has produced certain influence on behaviors of both do-

mestic and foreign investors in this market.

According to the three conclusions along with the correlative policies and reports, we propose several suggestions as follows:

First, as for the firms of logistic industry, it seems timely to embrace the point that Logistics management implies the making of choices between options, with respect both to content and process. There is no one standardized model for all companies to follow. Each company must cater for the particular financing environment in which it operates.

Second, our country should take efforts to attract further investment and to promote the logistics industry, and more sophisticated warehouses should be built. Government also should provide facilities for distribution, information collection, management, packaging, storage and transportation and introduce policies to attract both domestic and foreign investors to join logistic industry.

Last but not least, the new guidelines should put forward specific measures to solve the long-term problems in the industry, including the transportation and taxation issues – the major concerns of many logistics businesses. At the same time, implement government policy support and tax cuts, while increase the credit support for the firms of logistic industry.

REFERENCES

- [1] Information on http://english.gov.cn/2011-08/19/content_1929000.htm
- [2] Bin Jiang, Edmund Prater; Distribution and logistics development in China: The revolution has begun, International Journal of Physical Distribution & Logistics Management, (2002).
- [3] Mark Goh, Charlene Ling; Logistics development in China, International Journal of Physical Distribution & Logistics Management, (2003).

FULL PAPER

- [4] Wang Jun; Empirical Analysis on the Effects of Chinese Logistics Industry on Economic Growth, *Sci/tech Information Development & Economy*, ISSN: 1005-6033.0.2004-01-038.
- [5] Junjie Hong, Anthony T.H.Chin, Binglian Liu; Logistics service providers in China: Current status and future prospects, *Asia Pacific Journal of Marketing and Logistics*, (2007).
- [6] Kwok Hung Lau, Yiming Wang; Reverse logistics in the electronic industry of China: A case study, *Supply Chain Management: An International Journal*, (2009).
- [7] A.C.MacKinlay; Event studies in economics and finance, *Journal of Economic Literature*, (1997).
- [8] W.F.Sharpe; Capital asset prices: A theory of market equilibrium under conditions of risk, *The Journal of Finance*, (1964).
- [9] J.Lintner; The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *The Review of Economics and Statistics*, (1965).