Stock returns on US capital market during the last trading days of winter months

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1. Introduction

The Efficient Market Hypothesis, Behavioral Finance and Adaptive Markets Hypothesis had different approaches to the changes occurred in the calendar effects.

This paper investigates the abnormal stock returns presence on United States capital market, during the last three trading days of winter months (December, January and February). The stock prices from these days are exposed to the influence of several factors that are believed as generating some well-known calendar anomalies, such as the Intra-Month Effects, the “Halloween Strategy” or the January Effect.

Two periods of investigation: January 1992 – December 2006 and January 2007 – June 2024.

2. Data and methodology

- daily closing values of four major indexes from United States capital market: Standard & Poor's 500 (S&P 500), Dow Jones Industrial Average (DJIA), NASDAQ Composite (NASDAQ) and Russell 2000;
- two sub-samples, corresponding to the two periods of investigation;
- logarithmic returns of the four indexes.

The results of Augmented Dickey – Fuller unit root tests indicate that, for both sub-samples, the returns of the four indexes are stationary.

We defined two time intervals associated to the object of this investigation:

- L3WIN, that contained the last three trading days of December, January and February;
- NL3WIN that includes the trading days from the rest of the year.

We use a dummy variable (D_L3WIN_t) with the formula:

$$D\_L3WIN_t = \begin{cases} 1, & \text{if the trading day t belongs to L3WIN} \\ 0, & \text{otherwise} \end{cases}$$

OLS and GARCH(1,1) models include D_L3WIN_t. In these models, a φ_1 coefficient is associated to D_L3WIN_t. It reflects the difference between the averages of returns from F7NOV and NF7NOV.

We consider that abnormal returns occurred in L3WIN, when the φ_1 coefficient associated to D_L3WIN_t is statistically significant:

- low abnormal returns when φ_1 has a significant negative value;
- high abnormal returns when φ_1 has a significant positive value.

3. Empirical Results

For the first sub-sample: statistically significant positive value of φ_1 coefficient in the case of Russell 2000

For the second sub-sample: significant negative values of φ_1 coefficient for all the four indexes.

4. Conclusions

In the case of period January 1992 – December 2006 we found abnormal high returns of Russell 2000, an index composed by small cap companies. Several studies revealed some particularities of calendar anomalies in the case of small firms' returns.

For the turbulent period January 2007 – June 2024 all the four indexes displayed abnormal low returns. The Great Recession of 2007 – 2008, Russia's invasion of Ukraine and the Global Energy Crisis brought pessimism among some investors that hesitated to invest in the last trading days of winter months, when the uncertainty about changes in the monetary policy could be high.