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An Investigation on Stock Market Calendar
Month Anomalies

A thesis presented in partial fulfillment of the requirements for the degree
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Dedicated to my partner Benjamin Liu, my parents and my friend Lynn Ye
Abstract

Calendar anomalies are one of the earliest identified challenges against market efficiency theory, but to a large extent yet remain unsolved today. This raises the question of whether the anomalies are real, or simply products of data snooping. This dissertation comprises three independent studies investigating stock market seasonal anomalies.

Using extended long time series data of over 300 years of UK market index returns, the first study reveals that many well-known monthly seasonals are sample specific. For instance, the January effect only emerges around 1830. Most months have had their 50 years of fame, showing the importance of long time series to safeguard against sample selection bias, noise and data snooping. The overall conclusion is that monthly seasonals might simply be in the eye of the beholder.

The second study examines the ‘Halloween indicator’ or ‘Sell in May’-effect using all 108 available stock market indices over all time periods. In total 55,425 monthly observations over 319 years show winter returns – November through April - are 4.52% significantly higher than summer returns. The effect is increasing in strength: The average difference between November-April and May-October returns is 6.25% over the past 50 years. A Sell-in-May trading strategy beats the market more than 80% of the time over 5 year horizons. The study also addresses a number of (methodological) issues that have been raised with respect to the effect.

The third study examines the seasonal behaviour of vacation activity as a possible explanation for the seasonal pattern in stock market returns using 34 countries’ outbound travel data as a proxy for vacation behaviour. It shows that vacation activity
has a negative impact on stock market returns, and significant lower summer returns are attributable to the seasonal behaviour in vacation activities, however, the well known Halloween effect may only be partially related to seasonal behaviour of vacations. The evidence is especially strong in the European markets. The findings offer support to vacation induced change in exogenous liquidity demand and risk aversion hypothesis proposed in Bouman and Jacosen (2002), but cast doubt on the vacation induced lack of trading hypothesis argued in Hong and Yu (2009).
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