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An Investigation on Stock Market Calendar Month Anomalies

A thesis presented in partial fulfillment of the requirements for the degree

Doctor of Philosophy

at

School of Economics and Finance

Massey University, Albany

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2013

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 Jacobsen (2002), but cast doubt on the vacation induced lack of trading hypothesis argued in Hong and Yu (2009).

Acknowledgements

I wish to express my deepest gratitude to my chief supervisor, Professor Ben Jacobsen, for inspiring me to embark on the PhD journey and for guiding me through the journey with his constant encouragement, advice and support. Thank you for having confidence in me. Your enthusiasm and dedication toward research will continue to inspire me to become a better researcher. My gratitude also goes to my co-supervisor, Dr. John Lee, I am grateful for the many discussions and insights he offered me about research; to my mentor and good friend, Dr. Klaus Buhr, thank you for sharing all your life, teaching and research wisdom with me. I would also like to thank Professor Christoph Schumacher and Dr. Jeffrey Stangl for being extremely approachable and for their generosity with their time in helping me.

Special thanks go to all the office ladies and Mark Woods; thank you for continuously offering excellent support to our PhD students, you make the department a fun, warm and welcoming place. If the emotional feeling of doing a PhD is like riding on a rollercoaster, I would like to thank the “PhD Dream Team” - Somi, Annie and Kristoe - for riding it with me. We shared all the ups and downs, the joys and the blues. The PhD life would not have been as colourful and memorable without your company.

I appreciate the generous support offered by the School of Economics and Finance at Massey University that made the attendance of several financial conferences possible for me. I would like to acknowledge the anonymous reviewer and the editor Burton Hollifield of the *Review of Finance* in which the first essay in this thesis is to be published. This dissertation has also benefited from comments from Sven Bouman, Walter Torous, and seminar participants at the 2011 Financial Management Association

Asian meeting in Queenstown, New Zealand, the 2011 and 2012 New Zealand Financial Colloquium and presentations at several universities.

I dedicate this PhD dissertation to my partner Benjamin Liu, my parents and my friend Lynn Ye who have always been with me throughout the journey. The dissertation is completed with their unconditional care, love and encouragement. It is the faith they have on me that has made this journey possible and for this I am eternally grateful.

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