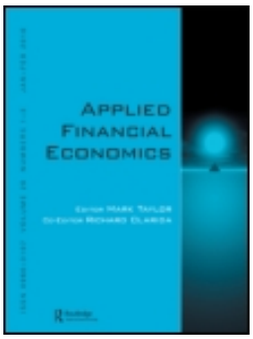

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# Comparison of the 'turn-of-the-month' and lunar new year return effects in three Chinese markets: Hong Kong, Shanghai and Shenzhen

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Within the context of the mainland Chinese (Shanghai and Shenzhen) and Hong Kong market places, we investigate two of the most important documented calendar anomalies: the 'turn-of-the-month' and Chinese Lunar New Year (CLNY) return effects. Both appear as features of all three markets over the 1995 to 2010 time-frame. However, the 'turn-of-the-month' effect is much more pronounced in Hong Kong and the mainland B-markets than it is in the more segmented and less international (mainland Chinese) A-market. The CLNY effect is concentrated in returns over four trading days: three days prior to and one day after the CLNY holiday. Moreover, the effect is common to all major sectors of the Hong Kong market as well as to the Shanghai and Shenzhen A- and B-markets. Despite an elevation in mean return levels at the 'turn-of-the-month' and CLNY, volatility levels appear little different to other periods. In addition, as in McGuinness (2005), a pre-CLNY seasonal effect is absent from results. A post-CLNY seasonal effect, capturing the earnings reporting season in Hong Kong, also proved elusive. Consistent with McConnell and Xu (2008) for the US, we also offer no discernible evidence of a 'turn-of-the-month' effect at quarter ends. Finally, and importantly, we find strong evidence that Hong Kong short-sales turnover shrinks as the calendar month-end nears. This is consistent with some participants delaying or bringing-forward short positions so as to avoid an anticipated upturn in returns at month-end.

**Keywords:** 'turn-of-the-month'; Chinese Lunar New Year (CLNY); calendar effects

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## I. Introduction

A catalogue of documented calendar anomalies has become a staple of the finance literature over the past 30 to 40 years. Two of the most intriguing of these, and certainly the most marked and persistent, have been the 'turn-of-the-month' and Chinese Lunar New Year (CLNY) effects. McConnell and Xu's (2008) recent confirmation of a marked intra-month effect has renewed interest in the first of these calendar anomalies.[1] They note a strong 'turn-of-the-month' effect in the vast majority of the (35) countries they investigate over an 80-year time-frame running up to 31 January 2006.[2] These results contrast with other widely scrutinized calendar effects, like the day-of-the-week or weekend effect, which can often be quite elusive and desultory.[3]

The CLNY effect is also one that has been widely reported in Asian markets like Hong Kong (see Cadsby and Ratner, 1992; McGuinness, 2005).[4,5] As with the 'turn-of-the-month', the CLNY effect is one that is pronounced and resistant to the passage of time. The most obvious manifestation of the CLNY effect is a marked perturbation in returns 1 day prior to the CLNY trading break. We will show that the effect is also apparent for the first day of trading after the extended CLNY nontrading break. This is all the more interesting given evidence that the general US pre-holiday effect, while significant for much of the 60s, 70s and 80s, has declined in importance in recent years.[6]

In this article, we revisit the 'turn-of-the-month' and CLNY calendar effects for both Hong Kong and the mainland Chinese markets of Shanghai and Shenzhen. While there is some examination of the Hong Kong market setting in respect of both effects, comparatively little has been done for the mainland markets of Shanghai and Shenzhen.[7] Given the rapid emergence of mainland China's two equity markets, both of which opened only as recently as 1990, and the growing integration of the Hong Kong and mainland Chinese economies, it is timely to examine the relative importance of the two calendar effects within each of China's three markets (Hong Kong, Shanghai and Shenzhen). We do this for the period 30 December 1994 to 29 October 2010, which takes-in almost 16 years of daily return data.

In carrying out the various investigations in this article, we first set out in Section II the institutional and market background of the three markets and the various market indices examined. The data and empirical design we utilize are then described in Section III with results and conclusions following in Sections IV and V, respectively

## II. Market Background and Indices Examined

Equity stock can only be listed on the Shanghai and Shenzhen exchanges in the form of A- or B-shares. A-shares dominate, both in terms of number of issuers and shares outstanding, and represent stock tradable in Chinese Yuan (Renminbi) for trades between domestic mainland Chinese investor concerns. China's over-arching capital control policies mean that the Qualified Foreign Institutional Investor (QFII) is the only nondomestic party invited to trade such stock. In contrast, B-shares are open to

[1] For earlier documented evidence of 'intra-month' or 'turn-of-the-year' effects in one or more international markets, see Ariel (1987, 1988), Lakonishok and Smidt (1989), Cadsby and Ratner (1992), Agrawal and Tandon (1994), Wong (1995), Hensel and Ziemba (1996) and Kunkel *et al*. (2003). There is also evidence of such effects in the US Real Estate Investment Trust (REIT) market (Wiley and Zumpano, 2009) and American Depositary Receipt (ADR) arenas (Bouges *et al*., 2009).

[2] Dzhabarov and Ziemba (2010) show that the US 'turn-of-the-month' effect is partially reflected in futures prices ahead of time. Zwergel (2010) shows that profitable trading strategies in futures can be developed from knowledge of 'turn-of-the-month' effects.

[3] For early and recent examinations of day-of-the-week effects in Hong Kong, see Ho (1990) and Yakob *et al*. (2005). For Shanghai and Shenzhen, see Ogunc *et al*. (2009). Bohl *et al*. (2010) point to weakening day-of-the-week effects in the Chinese B-share markets in the aftermath of the markets' 2001 reform.

[4] There is also evidence in various Asian markets of elevated returns in the weeks leading up to the CLNY (see Mok, 1990; Wong *et al*., 1990; Yen *et al*., 2001; McGuinness, 2005). However, McGuinness's (2005, p. 1121) more recent study suggests that this seasonal effect weakened in Hong Kong over the period 1990 to 2005 (as compared to 1975 to 1989).

[5] Culturally-based and religious holidays may also help in elevating stock returns (see Chan *et al*.; 1996; Frieder and Subrahmanyam, 2004).

[6] As reported in Ariel (1990), a marked pre-holiday return effect was apparent in the US in earlier years. However, Vergin and McGinnis (1999) and Keef and Roush (2005) indicate that the general US pre-holiday effect noticeably weakened from the late 1980s onwards.

[7] For data prior to the 2002 year-end, Mitchell and Ong (2006, p. 19) report strong CLNY holiday return effects for both mainland markets' A- and B-share sectors. In respect of the 'turn-of-the-month', Zhang and Li (2006), for returns on the 'Shanghai Composite Index' between December 1991 and April 2004, provide evidence in favour of the effect up to 1997, but not for the period thereafter.

all foreign (i.e. non-mainland) concerns. However, reforms instituted in the first quarter of 2001, designed to open-up the B-sphere to domestic parties, mean that the market is now the preserve of both domestic and foreign investors. Parties trading in the Shanghai B-share market do so through the use of US Dollars and in Shenzhen through HK Dollars. The presence of foreign investors suggests, at least *a priori*, that the B-market is likely to be much more closely integrated, than the A-share market, with the Hong Kong market.

While only companies of mainland Chinese incorporation are currently eligible for a stock listing in either Shanghai or Shenzhen, Hong Kong Exchanges and Clearing Limited (HKEx) has an open remit to entice issuers from various jurisdictions, including mainland China. This means that HKEx serves some of China's largest state-owned entities as well as issuers from the broader regional and global settings. Issuers of mainland Chinese incorporation list as H-shares in Hong Kong and constitute some of HKEx's largest capitalization value stocks. The flagship index for this H-sector is the *Hang Seng China Enterprises Index* (HSCEI), which hereafter is referred to as the 'H-share index'. Offshore-incorporated affiliates of Chinese state-owned concerns, while typically of slightly lower strategic importance to the PRC state than H-shares, list as 'Red-Chips'. The prime index of interest for this sector is the *Hang Seng China-Affiliated Corporations Index* (HSCACI), which for convenience is referred to hereafter as the 'Red-Chip' Index.

In addition to the 'H-share' and 'Red-Chip' indices, we also examine the bellwether index for the overall Hong Kong market, the Hang Seng Index (HSI). This is referred to in the following as the 'Blue-Chip' Index. An additional benchmark, in the form of the *Hang Seng Small Cap Index* (HSSCI), is selected to proxy for the market's 'Small Cap' sector. As argued in McGuinness (2006) there are good reasons to expect a more significant 'turn-of-the-month' effect in small capitalization value stocks. This is especially so if the elevation in 'turn-of-the-month' returns is an analogue of month-end income payment effects (see Ogden, 1990). Income constraints are likely to be considerably more important in the small-cap sector, where retail investors dominate, than in other settings (like the H-, 'Red-Chip' and 'Blue-Chip' sectors) where institutional and corporate-based players hold sway.

Given the four market sectors for the mainland Chinese equity markets - namely, the Shanghai A-, Shenzhen A-, Shanghai B- and Shenzhen B-sectors – and the four identified for Hong Kong, we examine eight market sectors in total. The market indices for each of these are summarized in Table 1.

## III. Data and Empirical Design

Using closing price data, we compute close-to-close daily returns for the period 30 December 1994 to 29 October 2010, inclusive. This allows for 16 CLNY holiday and 190 'turn-of-the-month' events to be examined in each of the three markets.

In the first stage of analysis, we check for 'turn-of-the-month' effects by running a simple Ordinary Least Squares (OLS) regression (1) of close-to-close returns for each of the eight market sectors on a 'turn-of-the-month' (TOM) categorical value. The form of this regression is described as follows:

$$\text{Return on index}_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + e_t \quad (1)$$

where, as in the spirit of McConnell and Xu (2008), TOM is coded 1 for the business day 1 day prior to a new trading month and for the first three business days of a given trading month. For all other business days, TOM is accorded value zero. The mean estimated coefficient $\beta_1$ captures the difference in means between daily return levels for 'turn-of-the-month' days (TOM = 1) and non- 'turn-of-the-month' days (TOM = 0).

To control for the likely modulating effect of the US market, which closes only a few hours before the open of the HKEx, Shanghai stock exchange and Shenzhen stock exchange markets, a lagged variable for the daily close-to-close return on the Standard and Poors 500 index is introduced into the regression equation.[8] This gives rise to Equation 2.

$$\text{Return on index}_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + \beta_2 \cdot \text{SP500(lag, 1)}_t + e_t \quad (2)$$

where TOM is coded as before and SP500(lag, 1) is the daily close-to-close return on the Standard and Poors 500 index lagged 1 day.

Holiday effects are then factored into the analysis by forming Equation 3.

$$\begin{aligned}\text{Return on index}_{I,t} &= \alpha + \beta_1 \cdot \text{TOM}_t + e_t + \beta_2 \cdot \text{SP500(lag, 1)}_t \\ &+ \beta_3 \cdot \text{WNY}_t + \beta_4 \cdot \text{CLNY}_t + \beta_5 \cdot \text{PREHOL}_t \\ &+ \beta_6 \cdot \text{POSTHOL}_t + e_t \end{aligned} \quad (3)$$

[8] Such a control is evident in studies elsewhere, including Kim and Park's (1994, p. 154) assessment of daily returns in the UK and Japan.

**Table 1. Market indices examined**

| | |
|---|---|
| *Indices of interest in the Hong Kong market*:[a] | |
| HSI | Daily close-to-close return on the Hang Seng Index ('Blue-Chip' index); |
| HSCEI | Daily close-to-close return on the Hang Seng China Enterprises Index ('H-Share index') |
| HSCACI | Daily close-to-close return on the Hang Seng China-Affiliated Corporations Index ('Red-Chip' index) |
| HSSCI | Daily close-to-close return on the Hang Seng Small Cap Index ('Small Cap' index) |
| *Indices of interest in the mainland Chinese markets*: | |
| SHGSEA[b] | Daily close-to-close return on the Shanghai SE A-Index |
| SHGSEB[b] | Daily close-to-close return on the Shanghai SE B-Index |
| SHZSEA[c] | Daily close-to-close return on the Shenzhen SE A-Index |
| SHZSEB[c] | Daily close-to-close return on the Shenzhen SE B-Index |

*Notes*: [a]For details of the first three indices see the respective Hang Seng Indexes Co. Ltd. web-links at http://www.hsi.com.hk/HSI-Net/HSI-Net; http://www.hsi.com.hk/HSI-Net/HSI-Net; and http://www.hsi.com.hk/HSI-Net/HSI-Net. The 'Small Cap' Index represents one sector of the broader 'Hang Seng Composite Size Indexes' (http://www.hsi.com.hk/HSI-Net/HSI-Net).
[b]For details of the Shanghai SE A- and B-indices, see the following respective web-links to the Shanghai stock exchange: http://static.sse.com.cn/sseportal/index/en/singleIndex/000002/intro/intro.shtml?indexCode = 000002; and http://static.sse.com.cn/sseport al/index/en/singleIndex/000003/intro/intro.shtml?indexCode = 000003.
[c]For details of the Shenzhen SE A- and B-indices, see the following web-link to the Shenzhen Stock Exchange: http://www.szse.cn/main/en/marketdata/Indiceslist/#.

where TOM and SP500(lag, 1) are defined as earlier. WNY is the Western New Year effect (coded 1 for the trading day immediately prior to the Western New Year (WNY) and for the first three trading days thereafter). $\text{CLNY}_{\text{HK}}$ and $\text{CLNY}_{\text{Ch}}$ are dummy variables designed to capture the respective CLNY holiday effects in Hong Kong and the mainland. These are coded 1 for each of the three trading days immediately prior to, as well as the day following, the CLNY holiday break. $\text{PREHOL}_{\text{HK}}$ and $\text{PREHOL}_{\text{Ch}}$ are binary variables constructed to capture pre-holiday trading effects for non-CLNY holidays. Both variables are coded one for the trading day before such holidays. Likewise, $\text{POSTHOL}_{\text{HK}}$ and $\text{POSTHOL}_{\text{Ch}}$ are designed to capture any post-holiday effect. Accordingly, the dummy variables are assigned a value of one for the trading day immediately following a non-CLNY holiday in the two respective settings. Detailed description of these, and all other variables featured in Equations 1–3, can be found in Table 2.

Holidays for both the Shanghai and Shenzhen markets are broadly aligned. However, notable differences are evident between Hong Kong and mainland China, principally due to the legacy of Hong Kong's pre-1997 British rule. While Hong Kong has more trading breaks, mainland China often has longer holidays within a given nontrading gap. This is especially true of the CLNY break which, over the 16 year period of interest (1995–2010), was typically of longer duration in mainland China. This also meant that pre- and post-CLNY holiday return effects occurred over slightly different time intervals. Accordingly, we control for daily close-to-close returns over the 3 days immediately prior to and the first day after the CLNY holiday in Hong Kong using dummy variable $\text{CLNY}_{\text{HK}}$. The same procedure is adopted for the mainland Chinese CLNY break (using $\text{CLNY}_{\text{Ch}}$).[9]

Further regressions are also constructed to examine possible seasonal effects. In doing so, we analyse Equation 4

$$\begin{aligned}\text{Return on index}_{I,t} &= \alpha + \beta_1 \cdot \text{TOM}_t + \beta_2 \cdot \text{SP500(lag, 1)}_t \\ &\quad + \beta_3 \cdot \text{WNY}_t + \beta_4 \cdot \text{CLNY}_t \\ &\quad + \beta_7 \cdot \text{SEAS}_t + \beta_8 \cdot \text{GDP}_t + \beta_9 \cdot (\text{GDP} * \text{TOM})_t \\ &\quad + \beta_{10} \cdot \text{HIBOR}_t + e_t \end{aligned} \quad (4)$$

where TOM, SP500(lag, 1), WNY, $\text{CLNY}_{\text{HK}}$ and $\text{CLNY}_{\text{Ch}}$ are defined as in Equations 1–3. Seasonal effects are investigated through the use of variables SEAShk and SEASCh. Each variable is coded one for the period from the second trading day after the CLNY holiday (as relevant to the respective setting, Hong Kong or mainland China) to the end of March. The respective categorical variables control for a possible run-up in prices after the CLNY. This period more or less coincides with the earnings reporting

[9] Holidays were defined as nontrading periods where daily close-to-close returns for the Shanghai and Shenzhen stock exchange A and B indices were all at levels of 0.00000%. There was one trading day when the Shanghai A index recorded such a return but a nonpositive return was evident in one or more of the three other sectors. This particular day was not treated as a holiday break. There were 59 non-CLNY holiday periods (75 in total) in the mainland market over the sampleframe.

**Table 2. Definitions of variables (as relevant to regressions in Tables 3–6)**

| | |
|---|---|
| *Dependent variables* | |
| HSI | Daily close-to-close return on the Hang Seng Index; |
| HSCEI | Daily close-to-close return on the Hang Seng China Enterprises Index ('H-Share index') |
| HSCACI | Daily close-to-close return on the Hang Seng China-Affiliated Corporations Index ('Red-Chip' index) |
| HSSCI | Daily close-to-close return on the Hang Seng Small Cap Index |
| SHGSEA | Daily close-to-close return on the Shanghai SE A-Index |
| SHGSEB | Daily close-to-close return on the Shanghai SE B-Index |
| SHZSEA | Daily close-to-close return on the Shenzhen SE A-Index |
| SHZSEB | Daily close-to-close return on the Shenzhen SE B-Index |
| *Explanatory variables* | |
| TOM | Coded as described in Equation (1). For any given turn-of-the-month, 4 business days are coded 1 (number of available trading days at turn-of-month coded 1 is less than 4 where one or more such business days is a holiday). |
| SP500(lag, 1) | Daily close-to-close return on the Standard and Poors 500 index lagged 1 day |
| WNY | Western New Year effect (coded 1 for the trading day immediately prior to the Western New Year and for the first three trading days thereafter) |
| CLNY(HK) | CLNY holiday effect (coded 1 for each of the three trading days immediately prior to the Hong Kong CLNY holiday and for the first trading day thereafter) |
| CLNY(Ch) | CLNY effect (coded 1 for each of the three trading days immediately prior to the mainland CLNY holiday and for the first trading day thereafter) |
| PREHOL(HK) | Trading day before all holidays other than the CLNY in the Hong Kong market (coded 1 for the trading day prior to a non-CLNY holiday) |
| PREHOL(Ch) | Trading day before all holidays other than the CLNY in the mainland Chinese market (coded 1 for the trading day prior to a non-CLNY holiday) |
| POSTHOL(HK) | Trading day immediately after a holiday other than the CLNY in the Hong Kong market (coded 1 for the trading day following a non-CLNY holiday) |
| POSTHOL(Ch) | Trading day before all holidays other than the CLNY in the mainland Chinese market (coded 1 for the trading day prior to a non-CLNY holiday) |
| SEAS(HK) | Variable coded 1 for period from second trading day after the CLNY holiday in Hong Kong to the end of March |
| SEAS(Ch) | Variable coded 1 for period from second trading day after the CLNY holiday in mainland China to the end of March |
| GDP(HK) | Quarterly real GDP growth for Hong Kong (annualized on a year-on-year basis) |
| GDP(Ch) | Quarterly real GDP growth for Hong Kong (annualized on a year-on-year basis) |
| GDP(HK) * TOM | Interaction term equal to GDP(HK) * TOM |
| GDP(Ch) * TOM | Interaction term equal to GDP(Ch) * TOM |
| HIBOR | Daily percentage change in the 3-month HIBOR [$=((\text{HIBOR}_{3,t} - \text{HIBOR}_{3,t-1})/\text{HIBOR}_{3,t-1})\times 100$] |

season in Hong Kong, given that the majority of HKEx-listed issuers disclose annual earnings figures during this window. The common use of a 31st of December year-end, and the application of a 4-month grace period for the disclosure of relevant year-end earnings numbers, leads to the majority of issuers posting results between mid-February and late March. We also look at a possible seasonal effect running from the WNY-end to the period 4 days prior to the CLNY holiday ($\text{SEAS}_{\text{PRECLNY}}$). The design of this variable deliberately excludes the observed run-up in prices over the 3 days leading up to the CLNY.

Equation 4 also includes variables for Gross Domestic Product (GDP) growth. $\text{GDP}_{\text{HK}}$ and $\text{GDP}_{\text{Ch}}$ are the respective quarterly real GDP growth rates for Hong Kong and mainland China (annualized on a year-on-year basis). The principal reason for using GDP growth rates was to investigate whether the turn-of-the-month effect varied in relation to the state of the economy. This was examined using the interaction term GDP * TOM. Finally, control was made for inter-bank interest rates in the Hong Kong market by examining the daily percentage change in the 3-month Hong Kong Dollar Inter-Bank Offer Rate (HIBOR).

All closing index values were obtained from Datastream, with the exception of closing values for the HSSCI which were drawn from Bloomberg. All other relevant data items were obtained from Bloomberg.[10] With the notable exception of the HSSCI, daily close-to-close returns were computed for all indices for the period 30 December 1994 to 29 October 2010 inclusive. Given the launch of the

[10] Thanks are due to Gary Yan for his assistance in down-loading relevant data items from Datastream and Bloomberg.

**Table 3. Estimated OLS regression coefficients for Equation 1: 30 December 1994 to 29 October 2010**

| Variable | | HSI | HSCEI | HSCACI | **HSSCI** | SHGSEA | SHZSEA | SHGSEB | SHZSEB |
|---|---|---|---|---|---|---|---|---|---|
| | $\alpha$ | 0.010 | −0.006 | 0.004 | −0.041 | 0.033 | 0.057 | 0.024 | 0.041 |
| | | (0.304) | (−0.146) | (0.089) | (−1.279) | (0.949) | (1.571) | (0.578) | (1.009) |
| TOM | $\beta_1$ | 0.188 | 0.367 | 0.337 | 0.373 | 0.164 | 0.144 | 0.270 | 0.285 |
| | | (2.501)** | (3.497)*** | (3.250)*** | (4.844)*** | (1.922)* | (1.594) | (2.655)*** | (2.794)*** |
| | $N(\hat{})$ | 3909 | 3909 | 3909 | 2672 | 3836 | 3827 | 3820 | 3778 |

Return on index$_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + e_t$

*Notes*: Figures in parentheses are $t$ statistics.
($\hat{}$) Indicates number of return observations after excluding nontrading days.
Nontrading days (other than Saturdays and Sundays) were identified for each market by removing all daily close-to-close returns with a value of 0.000%. The four mainland market sectors occasionally experienced different days of nontrading, hence the variation in $N$ across the four sectors (see also footnote 9).
All relevant closing index values were obtained from Datastream, except those for the HSSCI which were obtained from Bloomberg.
***, ** and * denote significant $t$ statistics at the 1, 5 and 10% levels, respectively.
As in McConnell and Xu (2008), TOM is coded 1 for business days 1 day prior to a new trading month and for the first 3 days of a given trading month.

HSSCI on 3 January 2000, daily close-to-close returns were only available for the 'Small Cap Index' from 4 January 2000 onwards.

## IV. Results

Results for Equation 1 are reported in Table 3. Significant mean daily return differences, at the 5% level, are evident in six of the eight market sectors.[11] Interestingly, the Shanghai A- and Shenzhen A-share markets, which have very little direct foreign (and therefore international) investor participation, display only a weak 'turn-of-the-month' effect. The effect appears strongest in Hong Kong's 'Small-Cap', H- and 'Red-Chip' sectors.

Interestingly, and in sharp contrast to the A-markets, notable 'turn-of-the-month' effects are evident in each set of B-share returns. This is perhaps reflective of the foreign investor interest in such markets, and thus international 'turn-of-the-month' effects spilling-over into B-prices.[12] When taking into account the moderating effect of the US market, the results appear largely unchanged (Table 4). Not surprisingly, the B-markets exhibit a much stronger association with the lagged close-to-close return of the Standard and Poors 500 index than is so for the much more segmented A-share market.

When factoring-in controls for holidays, as reflected in Equation 3, the CLNY holiday effect appears particularly pronounced (Table 5). For the four Hong Kong market sectors scrutinized, daily returns on the 3 days prior to and the day immediately after the CLNY holiday appear to be around 56 to 88 basis points higher than on other trading days. The elevation in returns around the CLNY is strongest for the 'Red-Chip' and 'Small Cap' indices.[13]

Refining the CLNY categorical variable to include days outside the 3 day pre-holiday and 1-day post-CLNY period offered little additional explanatory power and, if anything, led to a weakening of results. The CLNY effect is therefore one that is concentrated

[11] In comparing 'turn-of-the-month' and non-'turn-of-the-month' days, a Levene test indicated the absence of significant differences in daily return variance levels. This result held for all eight sectors investigated. For background on the test, see Levene (1960).
[12] As noted in Kunkel *et al*. (2003), the assumed distributional properties of returns may not necessarily be met when conducting 'turn-of-the-month' tests. Accordingly, Kunkel *et al*. (2003) conduct both parametric and nonparametric tests in their investigation of intra-month effects. As a final robustness check, we also look at Mann-Whitney U/Wilcoxon W tests for the eight market sector 'turn-of-the-month' effects. In six of the eight market sectors, the resulting two-tailed $Z$ statistics are significant at the 1% level. As with the parametric results, the nonparametric tests point to a weaker effect in the Shanghai and Shenzhen A-share markets.
[13] Again, as a robustness check, Mann-Whitney U/Wilcoxon W tests were performed. For three Hong Kong market sectors and all four mainland Chinese sectors, the associated $Z$ statistics were significant at the 1% level (two-tails). CLNY returns for the 'H-share' Index exhibited the lowest significance level. Nonetheless, the $Z$ statistic was still highly significant (at the 0.026 level, for two-tails).

**Table 4. Estimated OLS regression coefficients for Equation 2: 30 December 1994 to 29 October 2010**

| Variable | | HSI | HSCEI | HSCACI | HSSCI | SHGSEA | SHZSEA | SHGSEB | SHZSEB |
|---|---|---|---|---|---|---|---|---|---|
| | $\alpha$ | −0.003 | −0.018 | −0.009 | −0.035 | 0.030 | 0.055 | 0.020 | 0.037 |
| | | (−0.088) | (−0.424) | (−0.209) | (−1.199) | (0.889) | (1.525) | (0.492) | (0.912) |
| TOM | $\beta_1$ | 0.155 | 0.335 | 0.303 | 0.341 | 0.154 | 0.134 | 0.251 | 0.265 |
| | | (2.240)** | (3.310)*** | (3.064)*** | (4.914)*** | (1.805)* | (1.481) | (2.478)** | (2.613)*** |
| SP500(lag, 1) | $\beta_2$ | 0.563 | 0.537 | 0.582 | 0.476 | 0.117 | 0.096 | 0.189 | 0.217 |
| | | (27.118)*** | (17.643)*** | (19.548)*** | (24.736)*** | (4.701)*** | (3.648) | (6.333)*** | (7.338)*** |
| | $N(\hat{})$ | 3908 | 3908 | 3908 | 2672 | 3835 | 3826 | 3819 | 3777 |

Return on index$_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + \beta_2 \cdot \text{SP500(lag, 1)}_t + e_t$

where TOM is coded as described in Equation (1) and SP500(lag, 1) is the daily close-to-close return on the Standard and Poors 500 index lagged 1 day.

*Notes*: Same as in Table 3.
***, ** and * denote significant $t$ statistics at the 1, 5 and 10% levels, respectively.

over only a few days; specifically, in the run-up to and immediate aftermath of the seasonal holiday break. The 'feel-good' factor surrounding the Lunar New Year festivities, and the business practice of dishing-out bonuses, probably accounts for the run-up in stock prices ahead of the CLNY. The strong post-holiday CLNY return may be seized upon as a propitious signal, wrought by retail investors' desire to usher-in a favourable open to the trading year. What is particularly interesting is that the CLNY effect appears at similar levels in mainland China and Hong Kong. Moreover, the effect is almost as strong in the segmented A-market as it is in the more international B-market.

As consistent with results in McGuinness (2005) for Hong Kong, and Vergin and McGinnis (1999) and Keef and Roush (2005) for the US, a general pre-holiday effect is not indicated from the results in Table 5. In other words, holidays other than the CLNY appear to offer fairly limited explanatory power in the context of both Hong Kong and mainland China. This observation appears to hold even for the (WNY) holiday. As seen through the prism of the Hong Kong, Shanghai and Shenzhen stock markets, this points to the absence of the much-publicized US January effect. In relation to the mainland markets, the results resonate with earlier findings which offer only limited evidence for a January month-of-the-year effect (see Mookerjee and Yu, 1999; Mitchell and Ong, 2006; Zhang *et al*., 2008).

Results in Table 5 also highlight the absence of a significant post-holiday return effect in respect of non-CLNY trading breaks. For the mainland Chinese markets this holds despite the extended May and October trading hiatuses, which seem to do little to boost general PREHOL and POSTHOL return effects.

Further regression analysis was conducted by adding-in a variable for a mooted seasonal effect between the second day of trading following the CLNY holiday break and the end of March. Results in Table 6 suggest that, as far as Hong Kong is concerned, the earnings reporting season has only a negligible impact on mean daily return levels across the 16 year time-frame, 1995 to 2010. One reason perhaps, is the mix of bull and bear markets during the extended time-frame. The bull markets of 1995 to 1997 and 2005 to mid-2007 were interspersed with the Asian Financial Crisis and its hangover of 1998 to 2003 and the Global Financial Crisis of 2008 to 2009. Surprisingly, the volatility of daily returns during the earnings reporting season appears at similar levels to those outside the reporting season.

For mainland China there is some evidence of a moderate post-CLNY seasonal effect. This resonates with findings in Zhang *et al*. (2008). For the January 1993 to December 2003 period Zhang *et al*. (2008) find a notable upturn in returns during the month of March. They ascribe this elevation in March returns to policy interventions or 'political window-dressing' at a time 'when China is in the political high season' (p. 1681).[14]

Inclusion of an additional seasonal variable ($\text{SEAS}_{\text{preclny}}$), to capture a possible run-up in prices

[14] Interestingly, Zhang *et al*. (2008) argue against a CLNY effect, given the relatively low level of February returns they report. While this observation makes good sense, the CLNY sometimes occurs in January. In the present study (1995–2010), the CLNY holiday occurred in January in seven of the 16 years scrutinized (in the sense that the trading day immediately prior to the holiday was dated January). Moreover, as the CLNY effect is concentrated over just a few days it may not be so apparent when examining monthly returns.

**Table 5. Estimated OLS regression coefficients for Equation 3: 30 December 1994 to 29 October 2010**

| Variable | | HSI | HSCEI | HSCACI | HSSCI | SHGSEA | SHZSEA | SHGSEB | SHZSEB |
|---|---|---|---|---|---|---|---|---|---|
| | $\alpha$ | −0.019 | −0.028 | −0.025 | −0.053 | 0.018 | 0.039 | 0.007 | 0.021 |
| | | (−0.652) | (−0.655) | (−0.600) | (−1.801)* | (0.520) | (1.064) | (0.177) | (0.499) |
| TOM | $\beta_1$ | 0.153 | 0.298 | 0.293 | 0.321 | 0.143 | 0.123 | 0.256 | 0.264 |
| | | (2.128)** | (2.833)*** | (2.842)*** | (4.438)*** | (1.613) | (1.311) | (2.423)** | (2.500)** |
| SP500(lag, 1) | $\beta_2$ | 0.561 | 0.536 | 0.580 | 0.474 | 0.118 | 0.097 | 0.189 | 0.217 |
| | | (27.056)*** | (17.599)*** | (19.489)*** | (24.675)*** | (4.723)*** | (3.664)*** | (6.335)*** | (7.324)*** |
| WNY | $\beta_3$ | −0.203 | 0.481 | 0.055 | 0.075 | 0.120 | −0.046 | −0.201 | −0.350 |
| | | (−0.814) | (1.318) | (0.155) | (0.300) | (0.344) | (−0.125) | (−0.485) | (−0.851) |
| CLNY(HK) | $\beta_4$ | 0.637 | 0.561 | 0.875 | 0.754 | – | – | – | – |
| | | (3.088)*** | (1.854)* | (2.954)*** | (3.641)*** | | | | |
| CLNY(Ch) | $\beta_4$ | – | – | – | – | 0.795 | 0.877 | 0.847 | 0.910 |
| | | | | | | (3.255)*** | (3.366)*** | (2.909)*** | (3.130)*** |
| PREHOL(HK) | $\beta_5$ | 0.106 | −0.072 | −0.004 | 0.138 | – | – | – | – |
| | | (0.747) | (−0.350) | (−0.017) | (0.987) | | | | |
| PREHOL(Ch) | $\beta_5$ | – | – | – | – | 0.128 | 0.137 | 0.252 | 0.336 |
| | | | | | | (0.472) | (0.476) | (0.777) | (1.049) |
| POSTHOL(HK) | $\beta_6$ | 0.142 | 0.119 | 0.103 | 0.091 | – | – | – | – |
| | | (1.004) | (0.577) | (0.507) | (0.656) | | | | |
| POSTHOL(Ch) | $\beta_6$ | – | – | – | – | −0.143 | 0.126 | −0.255 | −0.003 |
| | | | | | | (−0.536) | (0.445) | (−0.803) | (−0.009) |
| | $R^2$ adj. | 0.161 | 0.077 | 0.092 | 0.196 | 0.009 | 0.006 | 0.013 | 0.017 |
| | $N(\hat{})$ | 3908 | 3908 | 3908 | 2672 | 3835 | 3826 | 3819 | 3777 |

Return on $\text{index}_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + \beta_2 \cdot \text{SP500(lag, 1)}_t + \beta_3 \cdot \text{WNY}_t + \beta_4 \cdot \text{CLNY}_t + \beta_5 \cdot \text{PREHOL}_t + \beta_6 \cdot \text{POSTHOL}_t + e_t$

*Notes*: Figures in parentheses are $t$ statistics. See notes in Table 3.
($\hat{}$) Indicates number of return observations after excluding nontrading days.
***, ** and * denote significant $t$ statistics at the 1, 5 and 10% levels, respectively.

**Table 6. Estimated OLS regression coefficients for Equation 4: 30 December 1994 to 29 October 2010**

| Variable | | HSI | HSCEI | HSCACI | HSSCI | SHGSEA | SHZSEA | SHGSEB | SHZSEB |
|---|---|---|---|---|---|---|---|---|---|
| | $\alpha$ | 0.002 | −0.078 | −0.070 | 0.034 | −0.130 | −0.189 | −0.229 | −0.026 |
| | | (0.042) | (−1.401) | (−1.283) | (0.766) | (−0.668) | (−0.913) | (−0.984) | (−0.111) |
| TOM | $\beta_1$ | 0.169 | 0.439 | 0.363 | 0.411 | 0.597 | 0.871 | 1.459 | 1.087 |
| | | (1.901)* | (3.367) *** | (2.848)*** | (3.989)*** | (1.220) | (1.683)* | (2.504)** | (1.871)* |
| SP500(lag, 1) | $\beta_2$ | 0.549 | 0.522 | 0.567 | 0.472 | 0.118 | 0.098 | 0.190 | 0.219 |
| | | (26.554) *** | (17.188)*** | (19.061)*** | (24.572)*** | (4.746)*** | (3.701)*** | (6.378)*** | (7.400)*** |
| WNY | $\beta_3$ | −0.131 | 0.541 | 0.109 | 0.125 | 0.119 | 0.049 | −0.196 | −0.229 |
| | | (−0.537) | (1.513) | (0.313) | (0.509) | (0.368) | (0.142) | (−0.508) | (−0.597) |
| CLNY(HK) | $\beta_4$ | 0.640 | 0.609 | 0.900 | 0.757 | – | – | – | – |
| | | (3.120)*** | (2.021)** | (3.051)*** | (3.657)*** | | | | |
| CLNY(Ch) | $\beta_4$ | – | – | – | – | 0.812 | 0.894 | 0.879 | 0.939 |
| | | | | | | (3.321)*** | (3.430)*** | (3.019)*** | (3.230)*** |
| SEAS(HK) | $\beta_7$ | −0.009 | 0.111 | 0.049 | −0.035 | – | – | – | – |
| | | (−0.118) | (1.024) | (0.464) | (0.470) | | | | |
| SEAS(Ch) | $\beta_7$ | | | | | 0.096 | 0.098 | 0.174 | 0.209 |
| | | | | | | (1.042) | (1.001) | (1.584) | (1.908)* |
| GDP(HK) | $\beta_8$ | −0.003 | 0.011 | 0.013 | −0.017 | – | – | – | – |
| | | (−0.417) | (1.162) | (1.361) | (−2.437)** | | | | |
| GDP(Ch) | $\beta_8$ | – | – | – | – | 0.015 | 0.023 | 0.023 | 0.002 |
| | | | | | | (0.701) | (1.066) | (0.924) | (0.083) |
| GDP(HK) * TOM | $\beta_9$ | −0.004 | −0.043 | −0.022 | −0.017 | – | – | – | – |
| | | (−0.247) | (−1.905)* | (−0.998) | (−1.026) | | | | |
| GDP(Ch) * TOM | $\beta_9$ | – | – | – | – | −0.049 | −0.080 | −0.129 | −0.087 |
| | | | | | | (−0.934) | (−1.454) | (−2.084)** | (−1.413) |
| HIBOR | $\beta_{10}$ | −0.038 | −0.045 | −0.045 | −0.008 | – | – | – | – |
| | | (−7.775) *** | (−6.163)*** | (−6.264)*** | (−1.706)* | | | | |
| | $R^2$ adj. | 0.175 | 0.086 | 0.101 | 0.200 | 0.008 | 0.006 | 0.014 | 0.018 |
| | $N(\hat{})$ | 3908 | 3908 | 3908 | 2672 | 3835 | 3826 | 3819 | 3777 |

$$\text{Return on index}_{I,t} = \alpha + \beta_1 \cdot \text{TOM}_t + \beta_2 \cdot \text{SP500(lag, 1)}_t + \beta_3 \cdot \text{WNY}_t + \beta_4 \cdot \text{CLNY}_t + \beta_7 \cdot \text{SEAS}_t + \beta_8 \cdot \text{GDP}_t + \beta_9 \cdot (\text{GDP} * \text{TOM})_t + \beta_{10} \cdot \text{HIBOR}_t + e_t$$

*Notes*: Figures in parentheses are $t$ statistics. See notes in Table 3.
($\hat{}$) Indicates number of return observations after excluding nontrading days.
***, ** and * denote significant $t$ statistics at the 1, 5 and 10% levels, respectively.

between the WNY-end and the fourth business day prior to the CLNY, made little difference to the pattern of results. This echoes earlier findings for Hong Kong in McGuinness (2005), where a marked pre-Lunar New Year seasonal effect, apparent between 1975 and 1989, gave way to a lukewarm effect between 1990 and 2005.[15]

GDP or income effects also appeared relatively unimportant, at least in terms of the proxies we employ: GDP and GDP * TOM. In the case of both Hong Kong and mainland China, real rates of quarterly GDP growth had relatively weak correlations with daily return levels. This is presumably due to anticipated income growth being efficiently impounded into prices. The general lack of significance of GDP * TOM suggested that 'turn-of-the-month' effects were not simply an analogue of periods of high GDP growth. In one sense this offers tentative evidence against a possible income effect (Ogden, 2001). However, we are aware that real GDP growth rates offer only a partial glimpse into this issue.

The control variable for the daily change in HIBOR proved to be highly significant in explaining stock returns. As one would expect, this was negatively signed. This suggests that as inter-bank liquidity tightens, and a commensurate rise in inter-bank rates occurs, market support wanes.[16]

'Turn-of-the-month' effects at quarter-ends were also examined. As in McConnell and Xu's (2008, p. 56) examination of the US, we find quarter-end 'turn-of-the-month' returns to be, in the main, insignificantly different from nonquarter end returns. Tests were conducted by regressing each of the eight index return variables on respective quarter-end 'turn-of-the-month' (January, April, July and October) categorical variables.[17] For the Shanghai and Shenzhen A-markets, a significant negative July 'turn-of-the-month' effect was apparent. This variable was also negatively signed in respect of B returns, but was not significant at conventional levels. Interestingly, and consistent with earlier results in respect of the WNY, a January 'turn-of-the-month' effect was generally absent from results. Only the regression featuring the dependent H-share index variable indicated a significant effect. In sum, only limited evidence could be found for quarter-end effects.

Finally, in the spirit of McConnell and Xu (2008, p. 61), we also examined standardized trading turnover levels.[18] For the Hong Kong market, there was no tangible evidence of a spike in turnover at the 'turn-of-the-month'. Therefore, as McConnell and Xu (2008) argued in their study, a 'payday hypothesis' does not appear to be directly relevant to the pattern of results. However, a contraction in standardized turnover levels was evident over the trading week just prior to the 'turn-of-the-month' (i.e. week 4 of a given trading month).[19,20]

In addition, we observed a notable fall in short-selling turnover in Hong Kong during the same period (i.e. between 6 and 2 days prior to a given month-end). While we are unable to comment on the duration of such short positions, and therefore the subsequent timing of any 'short-covering', the story we decipher is consistent with such parties' anticipation of a possible upturn in month-end prices.[21] In other words, it is conceivable that a short might be positioned so as to avoid the increased probability of loss from a month-end run-up in prices. Results for the relation between week-of-the-year and the magnitude of short turnover are reported in Table 7. Parametric and nonparametric results appear consistent and point to a marked contraction in standardized total and standardized short-sales turnover in the week leading up to the 'turn-of-the-month'.

In sum, we report a notable 'turn-of-the-month' return effect for various sectors of the Hong Kong market as well as for the Shanghai and Shenzhen

[15] For the mainland Chinese A- and B-markets, the results broadly support findings in Zhang *et al*. (2008) where January and February return effects were found to be largely absent.
[16] It is possible that a 'turn-of-the-month' effect might be apparent in the rate of change of HIBOR. Regressing this variable against TOM suggested otherwise, however.
[17] The January 'turn-of-the-month' variable corresponds to WNY (see Table 1) in our analysis, which captures daily returns for the last trading day of December and the subsequent first three business days of January. Likewise, the April 'turn-of-the-month' variable is configured with value one for the last trading day of March and the first three business days of April.
[18] McConnell and Xu (2008) constructed a centred 20-day moving average to standardize daily turnover levels. To allow comparison with their study, we also employ such a measure.
[19] Data for the daily turnover of short sales were obtained from Bloomberg. The data covered the period 24 February 1998 to 29 October 2010. After removing days when the HSI daily return was 0.0000%, there were 3133 observations. Standardizing such turnover levels by the series' own 20-day moving average meant that the short-selling activity was assessed from 10 March 1998 to 15 October 2010 (3113 observations).
[20] Short-selling activity could not be assessed for the mainland Chinese A- and B-share markets given its strict prohibition until only very recently.
[21] Blau and Shkliko's (2009) US evidence indicates that short traders are able to extract profits from known anomalies, like the 'turn-of-the-month' and 'Weekend' effects.

**Table 7. Estimated OLS regression coefficients for standardized trading turnover and short-sales turnover in the Hong Kong market place: 30 December 1994 to 29 October 2010**

| Variable | | SST | TTT |
|---|---|---|---|
| | $\alpha$ | 1.015 | 1.019 |
| | | (77.864)*** | (148.533)*** |
| WEEK 1 | $\beta_1$ | 0.004 | −0.011 |
| | | (0.193) | (−0.1002) |
| WEEK 3 | $\beta_3$ | −0.008 | −0.010 |
| | | (−0.400) | (−0.909) |
| WEEK 4 | $\beta_4$ | −0.049 | −0.046 |
| | | (−2.436)** | (−4.357)*** |
| | $N(\hat{})$ | 3113 | 3891 |

Standardized turnover (either $SST_t$ or $TTT_t$) $= \alpha + \beta_1 \cdot \text{WEEK } 1_t + \beta_3 \cdot \text{WEEK } 3_t + \beta_4 \cdot \text{WEEK } 4_t + e_t$

| | WEEK 1 | | WEEK 2 | | WEEK 3 | | WEEK 4 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | WEEKS 1–4 |
| *Descriptive statistics* | | | | | | | | | |
| SST (mean) | 1.0193 | 0.9986 | 1.0129 | 1.0002 | 1.0073 | 1.0019 | 0.9661 | 1.0140 | 1.0031 |
| SD | 0.3804 | 0.4189 | 0.3749 | 0.4213 | 0.3623 | 0.4246 | 0.5219 | 0.3712 | 0.4108 |
| Mann-Whitney U/Wilcoxon W (two-tailed significance level) | | | | | −4.250 (0.000) | | | | |
| TTT (mean) | 1.0083 | 1.0026 | 1.0191 | 0.9992 | 1.0094 | 1.0022 | 0.9727 | 1.0130 | 1.0039 |
| SD | 0.2308 | 0.2451 | 0.2342 | 0.2342 | 0.2107 | 0.2508 | 0.2896 | 0.2253 | 0.2420 |
| Mann-Whitney U/Wilcoxon W (two-tailed significance level) | | | | | −5.578 (0.000) | | | | |

Description of Variables featured in Table 7

| | |
|---|---|
| SST | Standardized short-selling turnover. Measured as daily short sales turnover for HKEX's Main Board (as sourced from Bloomberg) divided by the 20-day centred moving average of such short sales turnover. |
| TTT | Standardized total trading turnover. Measured as daily total turnover for the Hong Kong main board (as sourced from Bloomberg) divided by the 20-day centred moving average of such total turover. |
| WEEK 1 | Variable assigned value one for the last business day of the previous month and the first four business days of the current month. |
| WEEK 2 | Variable assigned value one for the 5th, 6th, 7th, 8th and 9th business days of a calendar month. |
| WEEK 3 | Variable assigned value one for business days 11, 10, 9, 8 and 7 days prior to the calendar month-end. |
| WEEK 4 | Variable assigned value one for business days 6, 5, 4, 3 and 2 days prior to the calendar month-end. |

*Notes*: Figures in parentheses are $t$ statistics.
($\hat{}$) Indicates number of return observations after excluding nontrading days. (i.e., certain business days within weeks 1–4 were nontrading days).
In the computation of the centred moving averages relevant to SST and TTT, turnover values were imputed for any nontrading business day (Monday–Friday) by using turnover figures for the day immediately prior to a given trading break.
***, ** and * denote significant $t$ statistics at the 1, 5 and 10% levels, respectively.

B-markets. Interestingly, the anomaly is considerably weaker in the context of mainland China's A-markets. The CLNY effect in contrast is pronounced across all eight market sectors we investigate and therefore a prominent feature of the greater China market landscape.

## V. Conclusions

This article is motivated by the recent and rapid emergence of mainland China's equity markets (Shanghai and Shenzhen) and their growing integration with the much more open and international Hong Kong market. We investigate two calendar effects that appear to be robust to various institutional/market trading arrangements: notably, an upswing in returns at the 'turn-of-the-month' and the period straddling the CLNY. The first of these has international currency, given its prevalence across a wide range of settings (McConnell and Xu, 2008). The second, unsurprisingly, is more regionally-based and is common to a number of Asian markets, especially those with strong Chinese investor participation.

We note evidence in favour of a strong and recurrent CLNY effect for the recent 16-year

period, 1995–2010, that is apparent in all of the major sectors of the Hong Kong market (H-, 'Red-Chip', 'Blue-Chip' and 'Small Cap') and in mainland China's A- and B-share markets. The CLNY effect is quite specific and is concentrated around a 4-day trading window straddling the CLNY holiday break. Moreover, the effect does not appear to be part of a protracted seasonal elevation in returns, given its dissipation as progress is made beyond the first day of the post-CLNY trading period. Likewise, there is little evidence to support a seasonal run-up in prices in the period from the WNY to the fourth trading prior to the CLNY. This helps confirm McGuinness' (2005) findings of a waning pre-CLNY seasonal effect in the Hong Kong market place. For the mainland market, the findings bear out evidence in Mookerjee and Yu (1999), Mitchell and Ong (2006) and Zhang *et al*. (2008) suggesting the absence of a January month-of-the-year effect. We also note that other holidays are insignificantly related to daily return levels. This applies across all eight market sectors.

While the 'turn-of-the-month' effect is marked in Hong Kong and the mainland B-share markets, it is noticeably weaker in China's domestic A-share market. We also observe that trading effects may be guided or, perhaps, are the outcome of the marked upturn in returns at the 'turn-of-the-month'. For Hong Kong, we are able to gather information on total trading turnover as well as short-sales turnover. When standardizing the two turnover variables we find a marked contraction in turnover levels in the week just prior to a calendar month-end.

In relation to short-sales activity, this is consistent with some participants perhaps avoiding the establishment of open position when, *ceteris paribus*, the probability of a subsequent upturn in share prices is at its greatest (relative to other points in the calendar month).

In respect of the two pronounced calendar effects examined, our findings suggest that the Hong Kong and mainland Chinese markets are closely aligned. This is despite the very different institutional and policy-based arrangements that envelope the two market places. As capital controls ease over the next 10 to 20 years in mainland China, and as the Chinese Yuan becomes more and more convertible, we anticipate even greater alignment of prices. Currently, the lack of trading fungibility between Hong Kong and the mainland markets of Shanghai and Shenzhen limits the scope for deeper price alignment. Despite this, this research article indicates the prevalence of two important calendar effects in both market environments. Market segmentation does not therefore preclude the existence of common calendar trading patterns.

As a future area of research, it would be interesting to explore other explanations for the recurring and resilient 'turn-of-the-month' effect. One interesting area of investigation concerns the timing of macroeconomic news announcements. Nikkinen *et al*. (2007) offer compelling, albeit indirect, evidence in support of 'a macroeconomic news announcement hypothesis' for the 'turn-of-the-month' return effect in relation to the US Standard and Poors 100 index. It would be of interest to determine how much of the Chinese 'turn-of-the-month' effect is a spill-over from the US and how much is locally-driven. An examination of the specific timing of both macroeconomic and corporate announcements in the Hong Kong and mainland Chinese settings would offer one interesting avenue for research in this area.

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