



Research Paper

Share repurchases and stock market reactions: Messages from the restaurant industry

Jaehee Gim, SooCheong (Shawn) Jang*

School of Hospitality and Tourism Management, Purdue University, Marriott Hall, 900 W. State Street, West Lafayette, IN 47907, USA

ARTICLE INFO

Keywords:

Share repurchase
Market reaction
Restaurant firms
Franchising
Event study method

ABSTRACT

It is generally accepted that investors tend to react favorably to share repurchases. However, it is actually not uncommon for investors to underreact to some share repurchases. Recently, a number of restaurant firms have spent huge amounts of internal cash on share repurchases but little is known regarding the market's under-reaction to share repurchases in the restaurant industry. Hence, this study attempted to identify factors that could mitigate market reactions to share repurchases. Analyzing U.S. restaurant firms, this study revealed that growth opportunities, franchising, dividend payments, and spending excessive free cash flows on share repurchases negatively impacted market reactions. However, the negative impact of growth opportunities was weaker for franchise restaurants than for non-franchise restaurants. This study provides useful managerial information regarding the timing of and the amount that can be spent on restaurant firms' share repurchases.

1. Introduction

After share repurchases were legalized by the U.S. Securities and Exchange Commission (SEC) in 1982, a number of U.S. firms adopted share repurchase programs as a means of returning excess cash flows to shareholders (Huang, 2017). A "share repurchase" happens when a firm buys its own shares back from the stock market to artificially reduce the number of outstanding shares and, thereby, make the remaining shares more valuable for the current shareholders (Hayes, 2019). In fact, in 2018 U.S. corporations spent \$806.4 billion on share repurchases, which is considerably higher than the \$461.8 billion spent on dividend payments (Yardeni Research, Inc., 2019). This phenomenon may imply that share repurchases have become the preferred method to return investment outcomes to shareholders rather than traditional dividend payments.

The restaurant industry has been no exception to this trend, and the amount of share repurchases continues to increase. Many restaurant firms, including Starbucks, Wendy's, and McDonald's, have recently announced their plans to expand their share repurchase programs (Aaron Allen and Associates, 2018). Further, from 2015 to 2017 restaurant firms spent more than 100% of their total profits on share repurchases, whereas across industries the average U.S. firm only spent approximately 60% of their profits on share repurchases (Roosevelt, 2018). This trend indicates that on average restaurant firms are engaging more actively in stock repurchases than other types of U.S. firms.

Additionally, in order to access funds to support share repurchase programs, some restaurant firms rely on external financing sources (The Atlantic, 2018).

Why firms are actively embracing share repurchase programs has become a central question in the academic field of finance. Various motives have been reported, such as adjusting capital structures, defending against takeovers, and avoiding the double taxation that normally accompanies dividend payments (Lo and Wang, 2008). Moreover, share repurchases are commonly seen as exerting a positive influence on market expectations and, thereby, driving up undervalued stock prices (Zhang, 2005). According to signaling theory, when a firm purchases a significant number of its own shares it could be seen as a positive signal of a firm's confidence in its future earnings and growth prospects and positively influence investors' expectations (Ochere and Ross, 2002). Another reason why firms embrace share repurchase programs is based on the agency theory of free cash flow. Share repurchases effectively reduce available free cash flow and, thus, significantly mitigate investors' concerns that managers might misuse excessive free cash flows at the expense of shareholders (Isagawa, 2002).

However, despite the theoretical and empirical support for the positive impact of share repurchases on market reactions, recent studies (e.g., Goldberg, 2018; Levine, 2018) have indicated that the market response might not always be substantial. For example, the S&P 500 Buyback Index, which tracks the top 100 stocks with the highest

* Corresponding author.

E-mail addresses: jgim@purdue.edu (J. Gim), jang12@purdue.edu (S.S. Jang).<https://doi.org/10.1016/j.ijhm.2020.102457>

Received 8 June 2019; Received in revised form 25 November 2019; Accepted 4 January 2020

Available online 16 January 2020

0278-4319/© 2020 Elsevier Ltd. All rights reserved.

buyback ratios, showed that the return on the biggest stocks was only 1.3% in 2018, greatly underperforming the S&P 500's 3.2% return (Levine, 2018). Further, Citigroup announced a share repurchase (buyback) of more than \$15 billion in 2017, but its stock was down by more than 20% over the following one-year period (Goldberg, 2018). These findings demonstrate that despite managers' expectations, not all share buybacks pay off. Further, share repurchase programs are a costly method for increasing a firm's wealth because they consume a massive amount of internal cash and may require paying premiums above current market prices (Wrońska-Bukalska, 2014). Therefore, in order to avoid using substantial amounts of cash on unfruitful share repurchases, managers need to understand why the market underreacts to some share repurchases but not others.

Even greater care should be taken in the restaurant industry because using share repurchases to signal inside information and reduce agency costs associated with free cash flows may not always be effective due to the nature of the industry. First, restaurants are capital intense businesses that have high borrowing costs (Lee, 2010; Mao and Gu, 2008) and, thus, need to reserve internal cash for growth opportunities. Accordingly, the presence of growth opportunities would weaken the role of share repurchases by reducing the agency costs associated with free cash flows. Second, the magnitude of signaling conveyed by a share repurchase could vary across franchise and non-franchise restaurant firms (Spencer, 2010) because the level of information asymmetry differs across the two business formats. Third, due to innate differences between the two business formats in terms of capital expenditures and costs of capital (Norton, 1988; Shane, 1998a, 1998b), the impact of growth opportunities on market reactions to share repurchases could also differ. Fourth, it seems unlikely that investors in the restaurant industry would respond consistently to share repurchases regardless of whether the firm issues dividend payments because dividend payments play a similar role to share repurchases in terms of signaling and reducing agency costs in the restaurant industry (Sheel and Zhong, 2005; Dalbor and Upneja, 2007). In addition, given the importance of internally generated cash in the restaurant industry (Kim et al., 2011), spending excessive amounts of free cash on share repurchases might raise concerns among investors and reduce its effectiveness in terms of signaling and reducing agency costs.

However, despite the existence of industry-specific factors that can cause variations in market reactions, no study has attempted to investigate whether investors in the restaurant industry react differently to share repurchases under certain circumstances. To fill this research gap, this study investigated a timely issue in the restaurant industry. Thus, the main purpose of this study was to examine various restaurant industry-specific factors that could influence market reactions to share repurchases. More specifically, this study performed a panel regression analysis of U.S. restaurant firms covering the years 1996–2018 in order to explore the effect of various circumstances on market reactions to share repurchases. Although different types of share repurchases exist depending on the target audience (e.g., open market, private negotiations, self-tender repurchase, fixed price tender offer, or Dutch auction), this study focused on open-market share repurchases, which refers to repurchasing a portion of the outstanding shares directly from the open market (stock exchange) and represents almost 95% of all repurchases (Fernandes, 2014).

The remainder of this study is organized as follows: Section 2 discusses the theoretical background and hypotheses of this study. Section 3 presents the data and describes the research method used to test the hypotheses. Section 4 describes the empirical results. Section 5 presents the summary and discusses the findings.

2. Literature review and hypotheses development

2.1. Theoretical foundation of market reactions to share repurchases

With the rising popularity of share repurchase programs, many

theories (e.g., signaling theory, agency theory of free cash flow, tax theory, capital structure adjustment theory, takeover deterrence theory, and employee stock options theory) have been suggested to explain managerial motives for buying back shares. However, what sets signaling theory and agency theory of free cash flow apart from the other theories is that they directly connect managers' motives for repurchasing shares to their efforts to positively influence market reactions (Bhana, 2007; Kuan et al., 2012). Since the main focus of this study was to investigate market reactions to share repurchases rather than why firms buy back shares, this study focused on these two theories in the discussion that follows.

Signaling theory builds on the idea that managers have better access to inside information about a firm than outside shareholders (Fama and French, 2001). This information "asymmetry" can result in situations wherein managers have good news regarding a company's future profitability but the value of the shares does not fully reflect this information (Bergh and Gibbons, 2011). Although managers can make a public announcement in an attempt to reduce the information gap, many researchers have argued that such simple announcements are not taken seriously by investors due to a lack of concrete evidence (Lotfi, 2018). Accordingly, managers may use active gestures, such as conducting share repurchase programs, to convey or signal credible information that a firm's future is bright (Bhana, 2007; Lindgren and Sjöberg, 2018). In other words, if managers believe that their stock is priced below its intrinsic value, or undervalued, then they may repurchase shares in an attempt to correct the market's undervaluation. This is because investors interpret managers spending massive amounts of cash on share repurchases as a signal of managements' confidence that anticipated increases in future profitability will provide sufficient cash flows.

Alternatively, agency theory is based on the premise that the interests of the agent (management) are not always aligned with those of the principal (shareholders) (Wirtz, 2011). In other words, while shareholders prioritize maximizing their own value, management may make decisions that are in their own best interest rather than in the best interest of shareholders. Agency theory of free cash flow posits that managers are more likely to put their own interests ahead of shareholders' interests when excess free cash flows are available. Once all operating expenses and capital projects have been funded, managers could be tempted to use the remaining cash to benefit themselves (Jensen, 1986). This theory argues that management can effectively minimize shareholders' concerns about excessive free cash flows by utilizing surplus cash (Kuan et al., 2012). Disbursing sizable amounts of free cash to shareholders through a share repurchase could effectively accomplish this goal.

2.2. Deviations in market reactions to share repurchases

As discussed previously, the positive impact of share repurchases on market reactions is mainly due to the effects of signaling and of reducing agency problems associated with free cash flows. However, these effects may not be consistent in all situations. The following section discusses various circumstances in the restaurant industry in which either one or both of the above effects are minimized, thereby mitigating the overall positive impact of share repurchases on market reactions.

2.2.1. Growth opportunity

When profitable growth opportunities are on the horizon, firms need to reserve internally generated cash. Pecking order theory (Myers and Majluf, 1984) posits that when firms raise capital for growth opportunities, internal funding is preferred over external financing, such as debt or equity because high returns are typically required (e.g., significant interest or dividend payments). Therefore, when firms face growth opportunities, investors, especially those who prioritize firm growth and expansion over immediate returns, may underreact to a

share repurchase since disbursing corporate earnings through a buyback could harm future investment projects (Boudry et al., 2013).

However, previous studies reported mixed results regarding the impact of growth opportunities on market reactions to share repurchases. Some studies (e.g., Dittmar, 2000; Grullon and Michaely, 2004; Firth et al., 2010) supported the view that growth opportunities have a negative impact, whereas other studies (e.g., Zheng and Gong, 2014; Wrońska-Bukalska et al., 2018) reported no significant results. The current study assumed that these inconsistent results can be attributed to the failure of previous studies (e.g., Dittmar, 2000; Grullon and Michaely, 2004; Zheng and Gong, 2014) to take into account the firms' varied levels of capital intensity and borrowing costs when they examined the effect of growth opportunities on market reactions to share repurchases.

When a firm's capital intensity is low, there should be less of a need to hold internally generated cash for growth opportunities. When the costs of purchasing or upgrading fixed assets (such as equipment, property, and plants) are low, reinvesting in the business does not necessitate spending a lot of cash (Drobetz and Grüninger, 2007). In addition, when low-priced debt financing is readily available, the right combination of internal cash and debt issuance helps to minimize the total cost of raising capital (Goldberg, 2018), which further reduces the need to hold internally generated cash for growth opportunities. According to trade-off theory, a firm can benefit from debt financing when borrowing costs are low enough that the incremental value of the tax shield effect of debt outweighs the incremental distress costs of debt financing (Lewellen and Lewellen, 2006). Therefore, even in the presence of high growth opportunities, the market may react less negatively to share repurchases that are executed by firms with low capital intensity or readily available low-cost external financing options.

In line with this view, the impact of growth opportunities on market reactions to share repurchases in the restaurant industry should be examined further. As Kim et al. (2011) noted, restaurant firms usually possess substantial amounts of tangible assets, such as land, buildings, and equipment, which indicates the capital-intensive nature of restaurant businesses. In other words, in order to turn growth opportunities into business, restaurant firms require huge amounts of cash up front. Moreover, debt markets generally tend to impose high interest rates on restaurant firms due to their high default rates (Mao and Gu, 2008). In addition, the low current ratio of restaurant firms, which indicates that current assets cannot satisfy current liabilities, also contributes to increased borrowing costs since potential lenders use this ratio when granting short-term loans (Kim and Ayoun, 2005). These factors make it all the more important for restaurant firms to hold internally generated cash to minimize the probability of forgoing profitable growth opportunities. In fact, Kim et al. (2013) and Kim and Gu (2009) demonstrated that the presence of growth opportunities is a strong determinant of cash-holding levels for restaurant firms, suggesting that restaurant firms hold more cash as a precaution. Therefore, in the presence of growth opportunities, investors in the restaurant industry would underreact to share repurchases because they reduce internal cash reserves for future investment opportunities. Based on this reasoning, this study hypothesized the following:

H1. In the restaurant industry, growth opportunity has a negative influence on market reactions to share repurchases.

2.2.2. Franchising

As previously mentioned, a share repurchase is intended to signal privileged inside information to outside investors, thereby generating positive responses from the market. Accordingly, this signaling effort could be less effective when only a narrow information gap exists between managers and outside investors (Billett and Yu, 2016). Specifically, the effectiveness of signaling through a share repurchase could differ across franchise and non-franchise restaurant firms because franchise restaurant firms are subject to less information asymmetry

due to the greater weight of institutional investments and wider media and analyst coverage (Gim and Jang, 2019; Hall, 2013). Institutional investors are usually considered well-informed market players because institutions are large-scale shareholders that can exploit economies of scale to acquire and process information (Ajina et al., 2015). In addition, it has been widely demonstrated that the capital market relies heavily on analysts and media to acquire and disseminate information (Bushee et al., 2010). In this regard, the number of media outlets and analysts that cover a restaurant firm heavily influences the amount of publicly available information about a firm (Chun and Wei, 2007).

In sum, the aforementioned factors all contribute to minimizing information gaps between management and outside investors for franchise restaurant firms. Therefore, if there is less inside information to signal, then investors may be less attentive to the information signaled by franchise restaurant firms' share repurchase programs. This would result in the market underreacting to franchise restaurant firms' share repurchases. Based on this reasoning, this study hypothesized the following:

H2. Market reactions to share repurchases are weaker for franchise restaurant firms than for non-franchise restaurant firms.

2.2.3. Growth opportunities and franchising

As explained above, the market may underreact to share repurchases when restaurant firms face growth opportunities because restaurant firms' high-intensity capital expenditures, coupled with expensive borrowing costs, make holding cash even more important. However, due to the inherent differences between franchise and non-franchise restaurant firms in terms of capital expenditures and costs of capital, the effect of growth opportunities on market reactions to share repurchases could diverge even further across the two business formats.

If a restaurant firm is a pure franchisor, then it does not need additional capital expenditures to increase business units (franchisee properties) because franchisees finance their own outlets. In contrast, a non-franchise restaurant firm must rely on financing sources to fund growth opportunities (Moon and Sharma, 2014). In other words, franchising allows franchise restaurant firms to use a franchisee's financial resources. Consequently, franchisors require less capital for growth (Norton, 1988; Shane, 1998a, 1998b). Similarly, Singal (2015) argued that firms choose to franchise their business to mitigate the risk originating from high levels of capital intensity and the consequent inflexibility of fixed assets.

Furthermore, it has been suggested that lenders tend to see franchises as less risky than non-franchise restaurant firms and impose lower interest rates on them (Seo, 2016) because their main revenue source, franchise fees, are relatively stable over time (Lashley and Morrison, 2000). Further, the collateral value of franchise income does not depreciate over time compared with conventional asset-backed securitizations (Moody's Investor Service, 2006). In addition, larger firms in the restaurant industry generally hold less cash compared with smaller firms due to their ability to readily raise capital at a low cost (Kim et al., 2013). This suggests that franchise restaurants, which are typically bigger than non-franchise restaurant firms (Roh et al., 2013), can also benefit from low borrowing costs when cash is required in the future.

In sum, given that franchise restaurant firms have lower capital requirements and borrowing costs than non-franchise restaurant firms, the market may be less concerned about the potential harm of a share buyback on franchise restaurant firms' ability to finance future growth. Therefore, the negative impact of growth opportunities on market reactions to share repurchases could be weaker for franchise restaurant firms than for non-franchise restaurant firms. Based on this reasoning, this study hypothesized the following:

H3. The negative impact of growth opportunity on market reactions to share repurchases is weaker for franchise restaurant firms than for non-

franchise restaurant firms.

2.2.4. Dividends

Dividends are a traditional corporate payout method for distributing a portion of a firm's earnings to its shareholders (Vyas and RK, 2018). Further, the U.S. restaurant industry has grown significantly and it has become a normal practice for restaurant firms to initiate dividends soon after they go public (Oak et al., 2012). Therefore, when share repurchase programs were first introduced as an alternative to dividends and later took their place as the most popular method for paying back shareholders, many researchers attempted to investigate whether share repurchase programs serve as a substitute for or a complement to dividend payments.

Some researchers (e.g., Brown et al., 2015; Isa et al., 2017) argued that share repurchases have certain advantages over dividend payments, such as tax benefits due to not being subject to the double taxation that normally accompanies dividend payments. However, many researchers (e.g., Grullon and Michaely, 2002; Skinner, 2008; Von Eije and Megginson, 2008) argued that share repurchases and dividend payments are interchangeable when it comes to signaling effects and reducing agency costs of free cash flow. For example, Bhattacharya (1979) and Miller and Rock (1985) claimed that although some differences exist between dividends and share repurchases in terms of signaling costs, the effectiveness of the signaling is not related to the payout method. Similarly, Easterbrook (1984) and Jensen (1986) explained that neither method (i.e., share repurchases or dividends) is superior to the other in terms of reducing agency costs. That is, both methods could control managers' actions by taking excess cash out of a firm.

In the restaurant industry, the use of dividend payments as a means for managers to signal information and reduce agency costs has been well documented. Sheel and Zhong (2005) and Borde et al. (1999) demonstrated that investors adjust their estimations of the market value of restaurant firms in response to the signal dividend policies convey. In addition, Dalbor and Upneja (2007) reported that dividend payouts are positively related to the number of shareholders, suggesting that in the restaurant industry managerial motivations exist to reduce agency costs by using dividends.

Based on the above reasoning, this study assumed that in the restaurant industry share repurchases and dividend payments are relatively equal in terms of signaling inside information and reducing agency costs of free cash flows. Yet, this poses another question: Will the size of the market reaction to a share repurchase change if it is executed in conjunction with dividend payments? If a restaurant firm chooses dividend payments over share repurchases, then the firm's information gap would already be reduced even before the stock repurchase. Similarly, if a restaurant firm pays dividends in addition to repurchasing shares, then the firm's agency costs would not be as serious a concern as for firms that only repurchase shares. Hence, the market reaction to a share repurchase should be less substantial for dividend-paying firms than for non-dividend paying firms. Moreover, in the restaurant industry, once dividends have been paid out, restaurant firms tend to maintain the payments (Gim and Jang, 2019). Given the sticky nature of dividend payments in the restaurant industry, it is likely that the level of information asymmetry and agency costs would have already been smoothed by consistent dividends, further minimizing the effect of share repurchases on market reactions. Therefore, this study hypothesized the following:

H4. Market reactions to share repurchases are weaker for dividend-paying firms than for non-dividend paying firms.

2.2.5. Degree of share repurchase

As noted repeatedly above, share repurchases are generally seen to exert a positive influence on market reactions. Nevertheless, given the

importance of internally generated cash for the restaurant industry (Kim et al., 2011), this study also pointed out that spending too much internally generated cash on a share repurchase could cause investors to be concerned about depleted cash reserves. In other words, a high degree of share repurchase could have a negative impact on market reactions for the restaurant industry.

Accordingly, this line of thought led to the following research question: What is the optimal level of share repurchase in terms of maximizing the positive impact of share repurchases on market reactions? This study assumed that although the positive impact of share repurchases on market reactions increases with the number of repurchased shares, there should also be a threshold for repurchasing shares; beyond this threshold, a negative effect would be triggered. At that trigger point, investors start to raise marginal concerns about using cash for share repurchases that outweigh the marginal benefits of signaling and reducing agency costs. That is, even though the positive impact of share repurchases on market reactions increases with the degree of share repurchase, eventually the rate could decrease to zero and, ultimately, turn negative at a certain point. Therefore, this study suggested that a curvilinear relationship exists between the degree of share repurchase (measured by share repurchase to free cash flows) and market reactions. Based on this reasoning, this study hypothesized the following:

H5. The degree of share repurchase has an inverted U-shaped relationship with market reactions.

3. Methodology

3.1. Samples and data

The data used in this study was comprised of U.S. restaurant firms (SIC 5812) from 1996–2018 and mainly retrieved from the Compustat database of Wharton Research Data Services. This study also referred to 10-K annual reports to classify the sampled restaurant firms as franchise or non-franchise businesses and for the dates and amounts of open-market share repurchase announcements.¹ After excluding observations with missing data, the total sample included 592 firm-year observations for 82 franchise restaurants and 42 non-franchise restaurants.

3.2. Event study method (ESM)

This study used an event study method (ESM) to examine the effect of share repurchases on stock market reactions. ESM is widely used to measure the effect of an economic event on the value (or stock returns) of a firm (Chen et al., 2007). It is common to use announcements about economic events in ESM. Along the same lines, this study examined the influence of share repurchase announcements on market reactions by performing an event study method (ESM). The ESM separates components of firms' stock price movements due to firm-specific events and market-wide movements. The component attributed to firm-specific events, such as share repurchase announcements, is expected to cause 'abnormal' returns (AR), which are computed as the difference between the returns that would have been expected if the analyzed event would not have taken place (expected returns) and the returns based on the respective event occurring (actual returns) (de Jong, 2007).

3.3. Measuring abnormal and cumulative returns

First, in order to estimate the expected returns on restaurant firms' stocks based on the market model (MM), restaurant firms' stock returns were regressed against returns of the market index derived from S&P 500 to control for overall market effects (Eq. (1)). For the estimation

¹ The announcements are confounded and not clean announcements.

window, this study used an estimation period of -254 to -2 days (252 days). This period was used because the average number of trading days in a calendar year is 252 for most years. Therefore, an estimation window that is close to this number is appropriate because it includes all possible seasonal cycles a company may go through (Anderson-Weir, 2010). The regression is given as

$$R_{j,t} = \alpha_j + \beta_j R_{m,t} + \varepsilon_{j,t} \quad (1)$$

$$R_{j,t} = \ln\left(\frac{P_{j,t}}{P_{j,t-1}}\right) \times 100 \quad (2)$$

where $R_{j,t}$ is the return on a restaurant firm's stock j on day t ; $R_{m,t}$ is the return on the market on day t ; and $P_{j,t}$ is the closing price of stock j on day t .

Then, using the estimated parameters α_j and β_j from Eq. (1), the expected return was obtained by conducting ordinary least square (OLS) regression analysis during the event period of -1 to $+1$ days (3 days), with zero being the event day (Eq. (3)). Although there is no uniform standard for the duration of an event period, the event period of -1 to $+1$ days is the most typically used event window to capture market reactions to share repurchases (Hackethal and Zdantchouk, 2006). A short event period can effectively minimize confounding effects from other firm-specific events (McWilliams and Siegel, 1997; Oler et al., 2008). In addition, one day before the event day was included in the event window to capture potential information leakage prior to the event (Qing, 2016). Finally, abnormal return (AR) was calculated by subtracting the expected return from the actual stock return during the event window of -1 to $+1$ days (Eq. (4)).

$$ER_{j,t} = \hat{\alpha}_j + \hat{\beta}_j R_{m,t} \quad (3)$$

$$AR_{j,t} = R_{j,t} - ER_{j,t} \quad (4)$$

To obtain the full picture of the effect of a share repurchase announcement, more than one day must be examined. Hence, a calculation of multiple days is necessary. Summing up all abnormal returns (ARs) in the event window of -1 to $+1$ days for every observation separately results in the cumulative abnormal return (CAR) (Eq. (5)), which can be used as a dependent variable in the analysis.

$$CAR_{j,t} = \sum_{t=-1}^{+1} AR_{j,t} \quad (5)$$

3.4. Analyses for hypothesis testing

The purpose of this study was to examine the effect of various factors on market reactions to share repurchase announcements. To achieve this, this study used the following variables. As previously mentioned, cumulative abnormal returns (CAR_{it}) were used for the dependent variable of this study, which was measured as the sum of all abnormal returns (ARs) in the event window of -1 to $+1$ days. For independent variables, this study used growth opportunity ($GROW_{it}$: firm market value divided by book value of total assets), a franchise dummy (DFR_{it} : 1 if the firm has franchise outlets and 0 otherwise), a dividend dummy (DIV_{it} : 1 if the firm pays dividend in the year before share repurchase announcement and 0 otherwise), and the degree of share repurchase (REP_{it} : ratio of share repurchase to free cash flows).

This study also included the following control variables that are known to influence market reactions to share repurchase announcements. First, firm size ($SIZE_{it}$: natural log of total assets) has been found to have a negative impact on market reactions to share repurchases (Isa et al., 2017). Since more information is publicly available for large firms than for small firms, this makes it less likely for the value of large firms' stock to be mispriced. Therefore, investors should display indifference to share repurchase announcements made by large firms (Hatakeda and Isagawa, 2004). Second, previous literature found that

Table 1
Variable descriptions.

Variables	Measurement
Cumulative abnormal returns (CAR_{it})	Sum of abnormal returns in the event window of 0 to $+3$ days
Growth opportunity ($GROW_{it}$)	Firm market value divided by book value of total assets
Firm size ($SIZE_{it}$)	Natural log of total assets
Leverage ratio (LEV_{it})	Total debt divided by total assets
Franchise dummy (DFR_{it})	1 if the firm has franchise outlets 0 otherwise
Dividend dummy (DIV_{it})	1 if the firm paid dividends the year before a share repurchase announcement 0 otherwise
The degree of share repurchase (REP_{it})	Ratio of share repurchase to free cash flows
$D_{YEAR1996-2018}$	Year dummy

leverage ratio (LEV_{it} : total debt divided by total assets) has a major influence on market reactions to share repurchases. This is because investors perceive leveraged share repurchases as risky on the grounds that the distress costs associated with increasing debt ratios outweigh the benefits of share repurchases (Minnick and Zhao, 2006). Lastly, this study included time dummies representing the 23 years from 1996–2018 in a regression model to control for any unobserved year effects. Table 1 provides variable definitions.

To test the hypotheses of this study, the following regression equations were specified:

$$CAR_{it} = \beta_0 + \beta_1 GROW_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + Time\ dummies + e_{it} \quad (Model\ 1)$$

$$CAR_{it} = \beta_0 + \beta_1 DFR_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + Time\ dummies + e_{it} \quad (Model\ 2)$$

$$CAR_{it} = \beta_0 + \beta_1 GROW_{it} + \beta_2 DFR_{it} + \beta_3 GROW \times DFR_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + Time\ dummies + e_{it} \quad (Model\ 3)$$

$$CAR_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + Time\ dummies + e_{it} \quad (Model\ 4)$$

$$CAR_{it} = \beta_0 + \beta_1 REP_{it} + \beta_3 REP_{it}^2 + \beta_2 SIZE_{it} + \beta_4 LEV_{it} + Time\ dummies + e_{it} \quad (Model\ 5)$$

where CAR_{it} = cumulative abnormal return, $GROW_{it}$ = market to book ratio (a proxy for growth opportunity), $SIZE_{it}$ = firm size, LEV_{it} = leverage ratio, DFR_{it} = franchise dummy (1 if the firm has franchise outlets and 0 otherwise), DIV_{it} = dividend dummy (1 if the firm paid dividends in the year before a share repurchase announcement and 0 otherwise), and REP_{it} = ratio of share repurchases to free cash flows.

Specifically, this study included $GROW_{it}$, DFR_{it} and DIV_{it} in Models 1, 2, and 4, respectively, to investigate the impact of growth opportunity (Hypothesis 1), franchising (Hypothesis 2), and dividend payments (Hypothesis 4) on market reactions to share repurchases. Next, this study included the interaction term of $GROW \times DFR_{it}$ in Model 3 to test whether there is any difference in the effects of growth opportunity between franchise and non-franchise restaurant firms (Hypothesis 3). Lastly, both the linear term of REP_{it} and the squared term of REP_{it}^2 were included in model 5 to investigate the inverted u-shaped relationship between the degree of share repurchase and market reactions to share repurchases (Hypothesis 5).

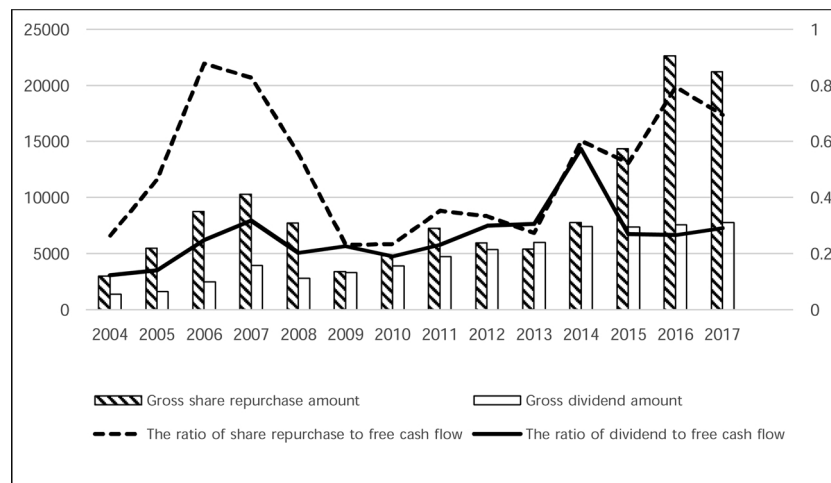


Fig. 1. Recent trends in restaurant firms' share repurchases and dividend payments.

4. Results

4.1. Share repurchase behaviors of restaurant firms

Fig. 1 shows the recent trends for restaurant firms' share repurchase and dividend payment behaviors. As seen in Fig. 1, the gross amounts of share repurchases and dividends, as well as the two ratios of share repurchases to free cash flows (share repurchase rate) and dividends to free cash flows (dividend rate), generally had increasing trends over the study period. The sudden drop around 2008 for both payout methods should be due to the financial crisis of 2008. One interesting thing to note is that stock repurchases dropped more sharply than dividend payments during the crisis. This discrepancy is consistent with the dividend smoothing theory, which posits that dividend payments remain consistent because investors take punitive actions in response to reductions in dividend payments and dividends are a primary component of stock valuation (Brav et al., 2005; Guttman et al., 2010). Since 2014, the dividend rate has decreased, whereas the share repurchase rate has increased. This suggests that the restaurant industry has recently prioritized share repurchases over dividends as a corporate payout method.

4.2. Impact of share repurchases on restaurant firms' abnormal returns and CARs

Prior to conducting the main analyses for hypothesis testing, this study first conducted a series of *t*-tests to investigate whether estimated abnormal returns (ARs) and cumulative abnormal returns (CARs) significantly differed from zero. As shown in Table 2 and Fig. 2, significant positive abnormal returns (ARs) were found on days *t*-1 (*t* = 2.06, *p* < 0.05), *t*0 (*t* = 5.59, *p* < 0.01), *t*1 (*t* = 1.85, *p* < 0.1), *t*2 (*t* = 1.99, *p* < 0.1), *t*3 (*t* = 3.28, *p* < 0.01) and *t*4 (*t* = 2.36, *p* < 0.05). The results suggest that the positive impact of share repurchases on firms' stock prices was first detected one day prior to the share repurchase announcement and lasted until 4 days after the announcement. The seemingly spurious positive impact one day before a share repurchase announcement can be interpreted as potential information leakage prior to the announcement. Similarly, among the different event windows for CAR, the event periods of -1 to +1 and -1 to +3 showed the strongest significant results. Further, the significance of CAR lasted up until the event period of -1 to +5. In sum, the statistically significant results of the daily abnormal returns (ARs) and the cumulative abnormal return (CAR) for the event period of -1 to +1 suggest that the CAR for the 3-day event window (-1, +1) statistically qualified as a dependent variable for the regression models specified in this study.

Table 2

T-statistics for daily abnormal returns and CARs for selected windows.

Event date	Abnormal returns	T-value	P-value	Obs.
Day -5	-0.11	-1.02	0.3102	592
Day -4	0.33	0.5	0.6182	592
Day -3	-0.21	1.45	0.1502	592
Day -2	1.02	0.96	0.3394	592
Day -1	0.62**	2.06	0.047	592
Day 0	1.86***	5.59	0.000	592
Day 1	1.74*	1.85	0.073	592
Day 2	1.11*	1.99	0.055	592
Day 3	1.35***	3.28	0.002	592
Day 4	0.84**	2.36	0.024	592
Day 5	0.33	1.57	0.1196	592
Day 6	0.21	0.99	0.3246	592
Day 7	0.35	1.1	0.274	592
Day 8	-0.47	-1.32	0.055	592
Day 9	0.48	0.96	0.3394	592
Day 10	-0.26	-1.6	0.1128	592
Event window	CAR	T-value	P-value	Obs.
Day (-5, -2)	1.03	1.12	0.2632	592
Day (-1, +1)	4.22***	4.51	0.000	592
Day (-1, +3)	6.68***	4.48	0.000	592
Day (-1, +5)	7.85**	2.15	0.0319	592
Day (-1, +7)	8.41	1.13	0.2589	592
Day (-1, +10)	9.19	1.01	0.3129	592

* *p* < 0.1.

** *p* < 0.05.

*** *p* < 0.01.

4.3. Variations in market reactions to share repurchases in the restaurant industry

Table 3 shows the analysis results for testing the proposed hypotheses of this study. As explained earlier, the dependent variable was cumulative abnormal returns (CAR_{it}), which signifies stock market reactions to share repurchases. In Model 1, the term of $GROW_{it}$, which represents the effect of growth opportunities on market reactions, was used to test hypothesis 1. The coefficient of $GROW_{it}$ was -0.26213 and statistically significant at 5%. The negative sign of $GROW_{it}$ showed that growth opportunities have a negative impact on market reactions to share repurchases, which supports hypothesis 1.

Model 2 presents the results for the effect of franchising on market reactions to share repurchases. The coefficient of the dummy variable DFR_{it} , which represents the difference in magnitude of market reactions to share repurchases between franchise and non-franchise restaurant firms (benchmark group), was -1.48923 (*p* < 0.1). Since the size of the market reaction was 2.49639 (constant value) for non-franchise

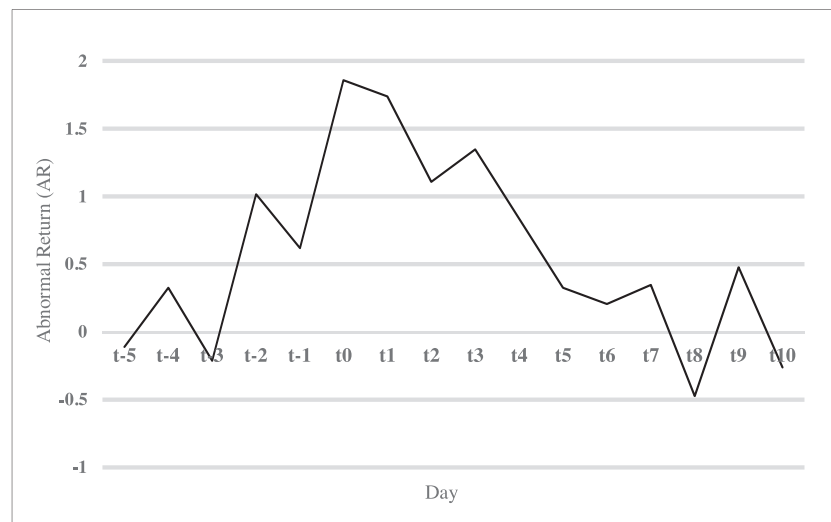


Fig. 2. Abnormal returns (ARs) for share repurchase announcements.

Table 3

Analysis results.

Dependent Variable: CAR_{it}	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	2.15951** (0.456531)	2.49639** (0.75110)	3.72096*** (0.72946)	1.39499* (0.29594)	2.18345*** (0.43370)
$GROW_{it}$	-0.26213** (0.05737)		-0.63131** (0.25901)		
DFR_{it}		-1.48293* (0.71087)	-2.29272* (0.82111)		
$GROW_{it} \times DFR_{it}$			0.50359** (0.25136)		
DIV_{it}				-0.80284** (0.40996)	
REP_{it}					0.075831** (0.041276)
REP_{it}^2					-0.049356** (0.015613)
$SIZE_{it}$	0.000094* (0.000053)	0.000087* (0.000059)	0.000099** (0.000065)	0.000041* (0.000025)	0.000022** (0.000041)
LEV_{it}	0.083706 (0.310413)	0.313819* (0.27254)	0.119426 (0.170155)	0.363068 (0.245178)	0.00523 (0.354576)
Adjusted R^2	0.1059	0.2237	0.2572	0.1445	0.1016
Observations	592	592	592	592	592
Number of firms	124	124	124	124	124

Note: We did not report the coefficients for time dummies because it was not our major concern; Figures in the parentheses are standard deviation; CAR_{it} = cumulative abnormal return, $GROW_{it}$ = market to book ratio (a proxy for growth opportunity), $SIZE_{it}$ = firm size, LEV_{it} = leverage ratio, DFR_{it} = franchise dummy (1 if the firm has franchise outlets and 0 otherwise), DIV_{it} = dividend dummy (1, if the firm pays dividend in the year of but before share repurchase announcement and 0, otherwise), and REP_{it} = ratio of share repurchase to free cash flow.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

restaurant firms (benchmark group), the size of the market reaction for franchise restaurant firms was $2.49639 + (-1.48293) = 1.01346$. This shows that the impact of share repurchases on market reactions was weaker for franchise restaurants (1.01346) than for non-franchise restaurants (2.49639). This supports hypothesis 2.

Model 3 shows the results of the interaction term ($GROW_{it} \times DFR_{it}$), which was used to examine the differential role of franchising on the effect of growth opportunities on market reactions to share repurchases. The coefficient of $GROW_{it} \times DFR_{it}$ was 0.50359 and statistically significant at 5%. The positive coefficient sign indicates that the slope estimate of growth opportunities ($GROW_{it}$) was less negative for franchise restaurants ($-0.63131 + 0.50359 = -0.12772$) than for non-franchise restaurants (-0.63131). In other words, the negative impact of growth opportunities on market reactions to share repurchases was

weaker for franchise restaurants than for non-franchise restaurants, which supports hypothesis 3.

Model 4 showed the impact of dividends on market reactions to share repurchases. The coefficient of DIV_{it} was negative (-0.80284) and statistically significant at 5%. This result indicates that the market reaction to share repurchases was weaker for dividend-paying firms ($1.39499 - 0.80284 = 0.59215$) than for non-dividend paying firms (1.39499), which supports hypothesis 4.

Model 5 presents the results of the nonlinearity between share repurchase rates and market reactions. Specifically, the coefficient of REP_{it} was positive and significant (coefficient = 0.075831, $p < 0.05$) and the coefficient of REP_{it}^2 was negative and significant (coefficient = -0.049356 , $p < 0.05$). The results indicate that the share repurchase rate had an inverted U-Shaped relationship with market

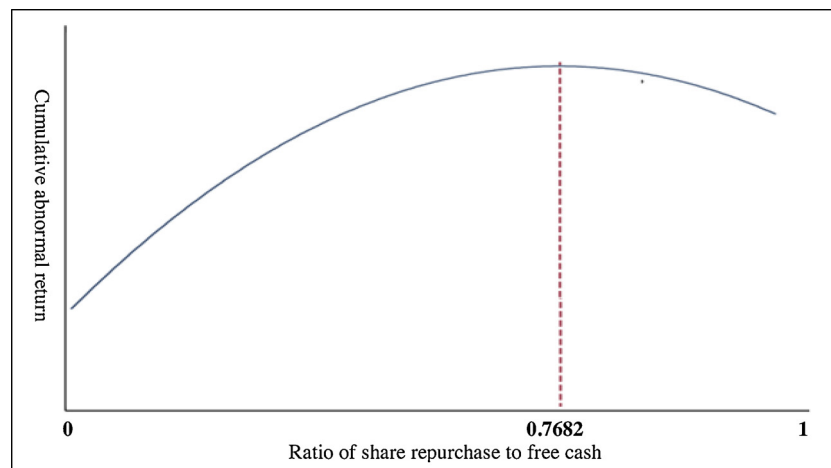


Fig. 3. The inverted U-shaped relationship between the degree of share repurchase and cumulative abnormal returns.

reactions, which supports hypothesis 5. Mathematically, taking the derivative of REP_{it} ($0.075831 - 0.098712 \times REP = 0$) and solving the equation for REP ($REP = -0.075831 / -0.098712 \approx 0.7682$) equaled approximately 0.7682. This means that the market's positive reaction increased until share repurchases reached 76.82% of free cash flows but then decreased when the rate went beyond the 76.82% threshold. This result suggests that share repurchases have a positive effect on stock market reactions in terms of enhancing valuation, but excessive share repurchases could have a negative impact on the market. Fig. 3 displays a graphical representation of the inverted U-shaped relationship.

5. Conclusions

Restaurant firms have widely adopted share repurchase programs as a method of returning internal cash to shareholders. Some restaurant firms even execute share buybacks by borrowing cash from external funding sources. However, despite the popular view that investors generally react favorably to share repurchases, some restaurant-specific factors could cause investors to underreact to share repurchases. Even though many restaurant firms have spent huge amounts of internal cash on share repurchases, there is still a limited understanding of the market's underreaction to some share repurchases in the restaurant industry. To the best of our knowledge, no prior studies have examined how factors in the restaurant industry influence investors' reactions to share repurchases. Therefore, this study intended to fill this gap in knowledge and determine why and how these restaurant industry-specific factors influence market reactions to share repurchases.

Overall, the results of this study revealed that growth opportunities and franchising mitigate market reactions to share repurchases. The main reason for this may be that both factors diminish the effectiveness of share repurchases in terms of signaling and reducing the agency costs of free cash flow. Furthermore, when considering growth opportunities together with franchising, the mitigating effect of growth opportunities on market reactions to share repurchases was weaker for franchise restaurant firms than for non-franchise restaurant firms. In addition, this study demonstrated that dividend payments, together with share repurchases, significantly reduce the market's positive reaction. Last but not least, this study found that market reactions to share repurchases could be influenced by the degree of share repurchase. Specifically, the positive impact of share repurchases on market reactions holds until 76.82% of free cash flows are spent on share repurchases. Beyond this threshold, the market starts to underreact to share repurchases due to investors' concerns that too much free cash is being used to repurchase shares, which could endanger future growth.

This study offers both practical and theoretical implications. Unlike dividend payments, whose timing and amount are heavily influenced

by firms' previous dividend behaviors, share repurchases greatly rely on managers' discretion to determine both their timing and the amount spent (Lane, 1976). Accordingly, managers' ability to choose the timing and amount spent for share repurchases plays a critical role in realizing maximum returns on cash-return activities. The goal of a share repurchase is usually to achieve a sizable increase in a firm's undervalued stock prices. In this regard, this study could provide valuable information for managers in the restaurant industry since it could help them choose the right timing and amount to initiate a share repurchase program.

Specifically, the results suggested that managers should be cautious about share repurchases when their restaurant firms are in the growth stage. However, this caution can be taken less seriously for franchise restaurant firms. The previous literature showed inconclusive results regarding the effect of growth opportunities on market reactions to share repurchases. Whereas, the present result shows which view is more applicable to the restaurant industry by demonstrating the importance of capital intensity and borrowing costs in explaining the effect of growth opportunities. In addition, franchise restaurant firms and dividend-paying restaurant firms should not expect the same level of market reactions to share repurchases as non-franchise and non-dividend paying restaurant firms. Last, this study suggests that restaurant firms should not spend more than 76.82% of free cash flows on share repurchases in order to maintain their positive impact on stock market reactions. In sum, by exploring factors that were neglected by the previous literature, this study provides some evidence that there are other important factors to consider when examining market reactions to share repurchases. Specifically, the results of this study could provide meaningful messages to other service industries because there are a number of commonalities across service industries in terms of the nature of businesses and business formats such as franchising.

Theoretically, both signaling and agency theories have been widely adopted to explain why the market positively reacts to share repurchases. Even though recent evidence shows that the market does not always respond favorably to share repurchases, previous studies did not seriously consider the possible variations of these two theories. In this regard, this study on the restaurant industry could open a door to other possible variations in the validity of signaling and agency theories.

References

- Aaron Allen and Associates, 2018. Foodservice Companies Prioritizing Stock Buybacks Over CAPEX Investments. Retrieved May 6, 2019, from <https://aaronallen.com/blog/stock-buybacks-dividend-distributions>.
- Ajina, A., Lakkhal, F., Sougné, D., 2015. Institutional investors, information asymmetry and stock market liquidity in France. *Int. J. Manage. Financ.* 11 (1), 44–59.
- Anderson-Weir, C.H., 2010. How does the stock market react to corporate environmental news?. Undergraduate Anderson-Weir, C. H. (2010). *Econ. Rev.* 6 (1), 9.

- Bergh, D.D., Gibbons, P., 2011. The stock market reaction to the hiring of management consultants: a signalling theory approach. *J. Manage. Stud.* 48 (3), 544–567.
- Bhana, N., 2007. The market reaction to open market share repurchases announcements: the South African experience. *Invest. Anal. J.* 36 (65), 25–36.
- Bhattacharya, S., 1979. Imperfect information, dividend policy, and “the bird in the hand” fallacy. *Bell. J. Econ.* 10 (1), 259–270.
- Billett, M.T., Yu, M., 2016. Asymmetric information, financial reporting, and open-market share repurchases. *J. Financ. Quant. Anal.* 51 (4), 1165–1192.
- Borde, S.F., Byrd, A.K., Atkinson, S.M., 1999. Stock price reaction to dividend increases in the hotel and restaurant sector. *J. Hosp. Tour. Res.* 23 (1), 40–52.
- Boudry, W.I., Kallberg, J.G., Liu, C.H., 2013. Investment opportunities and share repurchases. *J. Corp. Financ.* 23, 23–38.
- Brav, A., Graham, J.R., Harvey, C.R., Michaely, R., 2005. Payout policy in the 21st century. *J. Financ. Econ.* 77 (3), 483–527.
- Brown, C., Handley, J., O'Day, J., 2015. The dividend substitution hypothesis: Australian evidence. *Abacus* 51 (1), 37–62.
- Bushee, B.J., Core, J.E., Guay, W., Hamm, S.J., 2010. The role of the business press as an information intermediary. *J. Account. Res.* 48 (1), 1–19.
- Chen, M.H., Jang, S.S., Kim, W.G., 2007. The impact of the SARS outbreak on Taiwanese hotel stock performance: an event-study approach. *Int. J. Hosp. Manage.* 26 (1), 200–212.
- Chun, Z., Wei, L., 2007. Disclosure, analyst following and financial constraint. *Acc. Res.* 11.
- Dalbor, M.C., Upneja, A., 2007. An examination of dividend policy in the US restaurant industry. *J. Foodserv. Bus. Res.* 10 (2), 83–91.
- De Jong, F., 2007. Event Studies Methodology. *Lecture Notes*.
- Dittmar, A.K., 2000. Why do firms repurchase stock. *J. Bus.* 73 (3), 331–355.
- Drobtz, W., Grüniger, M.C., 2007. Corporate cash holdings: evidence from Switzerland. *Financ. Mark. Portf. Manage.* 21 (3), 293–324.
- Easterbrook, F.H., 1984. Two agency-cost explanations of dividends. *Am. Econ. Rev.* 74 (4), 650–659.
- Fama, E.F., French, K.R., 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? *J. Financ. Econ.* 60 (1), 3–43.
- Fernandes, N., 2014. *Finance for Executives: a Practical Guide for Managers*. NPV Publishing.
- Firth, M., Leung, T.Y., Rui, O.M., 2010. Double signals or single signal? An investigation of insider trading around share repurchases. *J. Int. Financ. Mark. Inst. Money* 20 (4), 376–388.
- Gim, J., Jang, S.S., 2019. Heterogeneous dividend behaviors: the role of restaurant franchising. *Int. J. Hosp. Manage.* 80, 183–191.
- Goldberg, M., 2018. *Investors Should Be Furious: 3 Blue-Chip Stock Buybacks That Went Horribly Wrong*. Retrieved March 11, 2019, from <https://www.cnn.com/2018/12/11/investors-should-be-furious-3-stock-buybacks-that-went-horribly-wrong.html>.
- Grullon, G., Michaely, R., 2002. Dividends, share repurchases, and the substitution hypothesis. *J. Finance* 57 (4), 1649–1684.
- Grullon, G., Michaely, R., 2004. The information content of share repurchase programs. *J. Finance* 59 (2), 651–680.
- Guttman, I., Kadan, O., Kandel, E., 2010. Dividend stickiness and strategic pooling. *Rev. Financ. Stud.* 23 (12), 4455–4495.
- Hackethal, A., Zdzantchouk, A., 2006. Signaling power of open market share repurchases in Germany. *Financ. Mark. Portf. Manage.* 20 (2), 123–151.
- Hall, A., 2013. *Franchisor Must Provide Mandated Franchise Disclosure Document in MN*. Retrieved March 10, 2019, from <https://aaronhall.com/franchisor-must-provide-mandated-franchise-disclosure-document-in-mn/>.
- Hatakeda, T., Isagawa, N., 2004. Stock price behavior surrounding stock repurchase announcements: evidence from Japan. *Pacific-Basin Financ. J.* 12 (3), 271–290.
- Hayes, A., 2019. *What Is a Buyback?* Retrieved April 11, 2019, from <https://www.investopedia.com/terms/b/buyback.asp>.
- Huang, R., 2017. *Are Open Market Share Repurchase Programs Really Flexible?* Available at SSRN: <https://ssrn.com/abstract=2699632>.
- Isa, M., Ghani, Z., Lee, S.P., 2017. Market reaction to actual share repurchase in Malaysia. *Asian J. Bus. Acc.* 4 (2) 72–46.
- Isagawa, N., 2002. Open-market repurchase announcements and stock price behavior in inefficient markets. *Financ. Manage.* 31 (3), 5–20.
- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *Am. Econ. Rev.* 76 (2), 323–329.
- Kim, H., Gu, Z., 2009. Financial features of dividend-paying firms in the hospitality industry: a logistic regression analysis. *Int. J. Hosp. Manage.* 28 (3), 359–366.
- Kim, J., Kim, H., Woods, D., 2011. Determinants of corporate cash-holding levels: an empirical examination of the restaurant industry. *Int. J. Hosp. Manage.* 30 (3), 568–574.
- Kim, J., Woods, D., Kim, H., 2013. Identifying the financial characteristics of cash-rich and cash-poor restaurant firms: a logistic regression analysis. *Tour. Econ.* 19 (3), 583–598.
- Kim, W.G., Ayoun, B., 2005. Ratio analysis for the hospitality industry: a cross sector comparison of financial trends in the lodging, restaurant, airline, and amusement sectors. *J. Hosp. Financ. Manage.* 13 (1), 59–78.
- Kuan, T.H., Li, C.S., Liu, C.C., 2012. Corporate governance and cash holdings: a quantile regression approach. *Int. Rev. Econ. Financ.* 24, 303–314.
- Lane, W.R., 1976. *Managerial Discretion in the Repurchase of Common Stock*. Doctoral dissertation. University of North Carolina at Chapel Hill.
- Lee, S., 2010. Effects of capital intensity on firm performance: the US restaurant industry. *J. Hosp. Financ. Manage.* 18 (1), 1–13.
- Levine, M., 2018. *Companies Keep Buying Back Stock*. Retrieved March 5, 2019, from <https://www.bloomberg.com/opinion/articles/2018-07-09/companies-keep-buying-back-stock>.
- Lewellen, J., Lewellen, K., 2006. *Internal Equity, Taxes, and Capital Structure*. Unpublished Working Paper. Dartmouth College.
- Lindgren, D., Sjöberg, P., 2018. *Long-Term Abnormal Returns Following Share Repurchase Announcements: Do Repurchasing Firms Outperform the Market?* (Master's thesis). Retrieved from <http://www.diva-portal.org/smash/get/diva2:1222662/FULLTEXT01.pdf>.
- Lo, K.H., Wang, K., Yeh, C.T., 2008. Stock repurchase and agency problems: new evidence in Taiwan's stock market. *Emerg. Mark. Financ. Trade* 44 (1), 84–94.
- Lotfi, T., 2018. Dividend and stock repurchase announcement in Tunisia: a signaling approach. *Glob. J. Manage. Bus. Res.* 18 (1), 33–52.
- Mao, Z., Gu, Z., 2008. The relationship between financial factors and firm performance: empirical evidence from US restaurant firms. *J. Foodserv. Bus. Res.* 11 (2), 138–159.
- McWilliams, A., Siegel, D., 1997. Event studies in management research: theoretical and empirical issues. *Acad. Manage. J.* 40 (3), 626–657.
- Miller, M.H., Rock, K., 1985. Dividend policy under asymmetric information. *J. Finance* 40 (4), 1031–1051.
- Minnick, K., Zhao, M., 2006. *Levered Repurchases: Who Benefits*. Working Paper. Department of Finance, Bentley College.
- Moody's Investor Service, 2006. *Global Credit Research*. Retrieved July 15, 2018, from https://www.moody.com/research/MOODY-RATES-DUNKIN-BRANDS-FRANCHISE-ROYALTY-FEE-SECURITIZATION-Aaa-PR_114174/.
- Moon, J., Sharma, A., 2014. Franchising effects on the lodging industry: optimal franchising proportion in terms of profitability and intangible value. *Tour. Econ.* 20 (5), 1027–1045.
- Lashley, C., Morrison, A., 2000. *Franchising Hospitality Services*. Butterworth-Heinemann, Oxford, United Kingdom.
- Myers, S.C., Majluf, N.S., 1984. Corporate financing and investment decisions when firms have information that investors do not have. *J. Financ. Econ.* 13 (2), 187–221.
- Norton, S.W., 1988. An empirical look at franchising as an organizational form. *J. Bus.* 61 (2), 197.
- Oak, S., Hua, N., Dalbor, M., 2012. Why do restaurant firms initiate dividends? *J. Hosp. Financ. Manage.* 20 (1), 31–55.
- Oler, D.K., Harrison, J.S., Allen, M.R., 2008. The danger of misinterpreting short-window event study findings in strategic management research: an empirical illustration using horizontal acquisitions. *Strateg. Organ.* 6 (2), 151–184.
- Otchere, I., Ross, M., 2002. Do share buy back announcements convey firm-specific or industry-wide information?: a test of the undervaluation hypothesis. *Int. Rev. Financ. Anal.* 11 (4), 511–531.
- Qing, H., 2016. Is there information leakage prior to share repurchase announcements? Evidence from daily options trading. *J. Financ. Mark.* 27 (C), 79–101.
- Roh, E.Y., Tarasi, C.O., Popa, E.M., 2013. An empirical examination of financial differences between franchised and non-franchised restaurant firms. *J. Foodserv. Bus. Res.* 16 (1), 1–19.
- Roosevelt, 2018. *The High Costs of Stock Buybacks for Worders in the Restaurant Industry*. Retrieved March 11, 2019, from <http://rooseveltinstitute.org/wp-content/uploads/2018/07/The-Big-Tradeoff-Issue-Brief-Restaurant-Industry-072618.pdf>.
- Seo, K., 2016. The effect of franchising on debt maturity in the US restaurant industry. *Tour. Econ.* 22 (6), 1404–1422.
- Shane, S., 1998a. Explaining the distribution of franchised and company-owned outlets in franchise systems. *J. Manage.* 24 (6), 717–739.
- Shane, S., 1998b. Making new franchise systems work. *Strateg. Manage. J.* 19 (7), 697–707.
- Sheel, A., Zhong, Y., 2005. Cash dividend announcements and abnormal returns in the lodging and restaurant sectors: an empirical examination. *J. Hosp. Financ. Manage.* 13 (1), 49–58.
- Singal, M., 2015. How is the hospitality and tourism industry different? An empirical test of some structural characteristics. *Int. J. Hosp. Manage.* 47, 116–119.
- Skinner, D.J., 2008. The evolving relation between earnings, dividends, and stock repurchases. *J. Financ. Econ.* 87 (3), 582–609.
- Spencer, E.C., 2010. *The Regulation of Franchising in the New Global Economy*. Edward Elgar Publishing, Northampton, MA.
- The Atlantic, 2018. *Are Stock Buybacks Starving the Economy?* Retrieved July 11, 2019, from <https://www.theatlantic.com/ideas/archive/2018/07/are-stock-buybacks-starving-the-economy/566387/>.
- Von Eije, H., Megginson, W.L., 2008. Dividends and share repurchases in the European Union. *J. Financ. Econ.* 89 (2), 347–374.
- Vyas, H., RK, P., 2018. A Study of buyback of shares as a restructuring tool: reference to the Indian companies act. *Int. J. Res. Manage. Social Sci.* 6 (1). Available at SSRN: <https://ssrn.com/abstract=3171649>.
- Wirtz, P., 2011. *Beyond Agency Theory: Value Creation and the Role of Cognition in the Relationship Between Entrepreneurs and Venture Capitalists*. Springer, New York, NY.
- Wróńska-Bukalska, E., 2014. Information content, signalling hypothesis and share repurchase programs in Poland. *Management* 9 (3), 173–185.
- Wróńska-Bukalska, E., Kaźmierska-Jóźwiak, B., Rozkovec, J., 2018. The information content of share repurchases—evidence from Poland. *Econ. Manage.* 21 (2), 172–185.
- Yardeni Research, Inc., 2019. *Stock Market Indicators: S&P 500 Buybacks & Dividends*. Retrieved May 10, 2019, from <https://www.yardeni.com/pub/buybackdiv.pdf>.
- Zhang, H., 2005. Share price performance following actual share repurchases. *J. Bank. Financ.* 29 (7), 1887–1901.
- Zheng, Y., Gong, R., 2014. *Market Reaction to Repurchase Announcement—A Study for UK 2010–2011 Stock Market Reaction*. Springer, Berlin, Heidelberg.