Share repurchase: a review of the literature

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Abstract: This study aims to synthesise and analyse the existing literature on share repurchases. It summarises the key findings and identifies the potential research gaps in the extant literature. A pool of 206 research articles are chosen based on relevance and impact from a variety of reputed databases spanning over 1981–2020. The authors use the guideline of Templier and Paré (2015) and follow the narrative approach of literature review which consists of gathering and synthesising existing literature on share buyback. The diverse strands of literature on buyback are classified based on different research themes. The results indicate a paucity of research on share buyback in emerging markets (e.g., India and China). Overall, the research in the following areas is found to be sparse: buyback and firm's reputation and the wealth effect of buyback on bondholders. The impact of executive reward schemes post buyback and presence of industry effect remains largely untapped.

Keywords: share buyback; liquidity; tender offer; open market; signalling.

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1 Introduction

Share repurchase (or buyback) takes place when companies purchase their shares back from its shareholders. A country's set of rules and regulations allows shares repurchased to be either cancelled or kept in the treasury for further issues. In India, Sweden, France, Canada, Australia, and the UK, firms must cancel (or extinguish) the repurchased shares. Countries like the USA and Spain retain the repurchased shares in treasury for their reissue. Italy enjoys the benefit of both the options.

The growth of buybacks has been significant from post-1980 in the USA,[1] with its introduction in the late 1960s. In the 1990s, this activity witnessed a global change where countries like Canada, the UK, Australia, Japan and France adopted it. With clearance from the Securities Exchange Board of India (SEBI), the practice of share buyback in India started in 1998. Share repurchases are an interesting aspect to study since it involves making a variety of decisions in corporate finance. Such decisions encompass investment decisions, payout decisions (substitute to dividend), capital structure decisions (increasing the company's leverage), and decisions concerned with the ownership structure. With the growing significance and popularity of repurchases, the need of why firms undertake repurchases continue to grow.

Stock repurchases provide opportunities for managers to seek benefit from market inefficiencies. In other words, firms having free cash flows at their disposal, possessing debt capacity, should exploit the opportunities which an inefficient market offers (Vermaelen, 2005). Understanding share buyback activity involves getting solutions to three questions – the motives behind share buyback, the correct timing of repurchase, the reason for stock prices increase post-buyback announcement. Past studies on share repurchases are rich with explanations of different hypotheses for reasons of changes in stock prices.[2]

Share buybacks have a vast literature mainly concentrated on reasons underlying share repurchase motivations and market performance surrounding share buyback. Figure 1 highlights the highest frequency of studies on share buyback during 2003–2005 and later in 2010–2016. This work summarises around 206 research papers/articles published in reputed journals spanning between 1981–2020 (details in Figure 2).

Figure 1 Figure 1 shows year-wise distribution of the research articles on share buyback for the period 1972–2020 (see online version for colours)

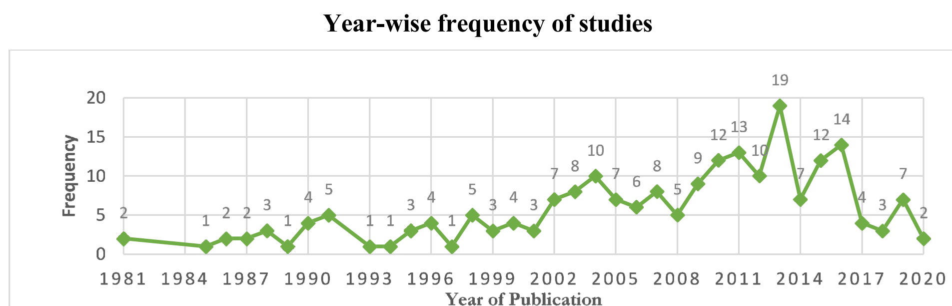
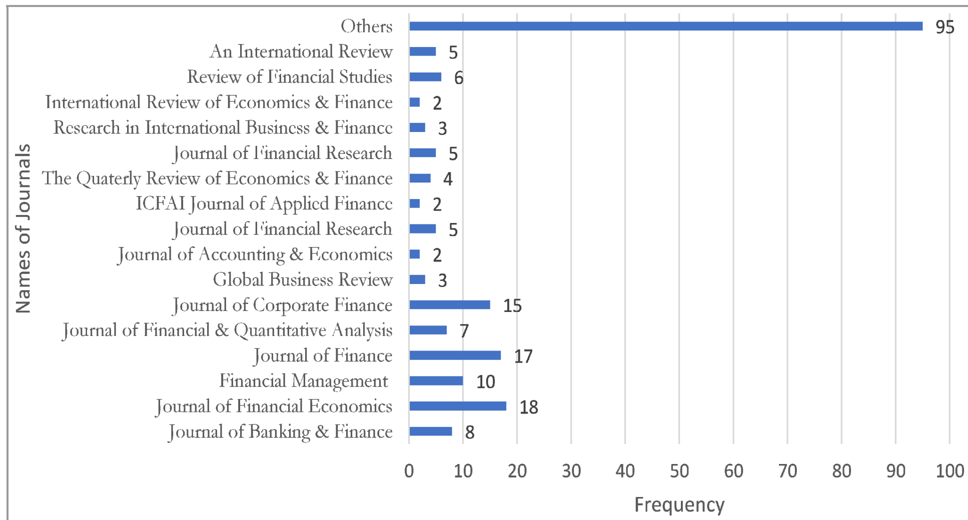


Figure 2 Journal frequency (see online version for colours)



1.1 Method of literature review

We use the guideline of Templier and Paré (2015) to select the style of literature review. This study follows the narrative approach of literature review which entails on gathering and synthesising existing literature on share buyback. This marks the beginning for future examination and research developments. We apply on a logic of configuration for analysing data. This logic comprises of addressing then organising the varied dimensions of share repurchase.

1.1.1 Approach for exploring, identifying, and compiling research articles

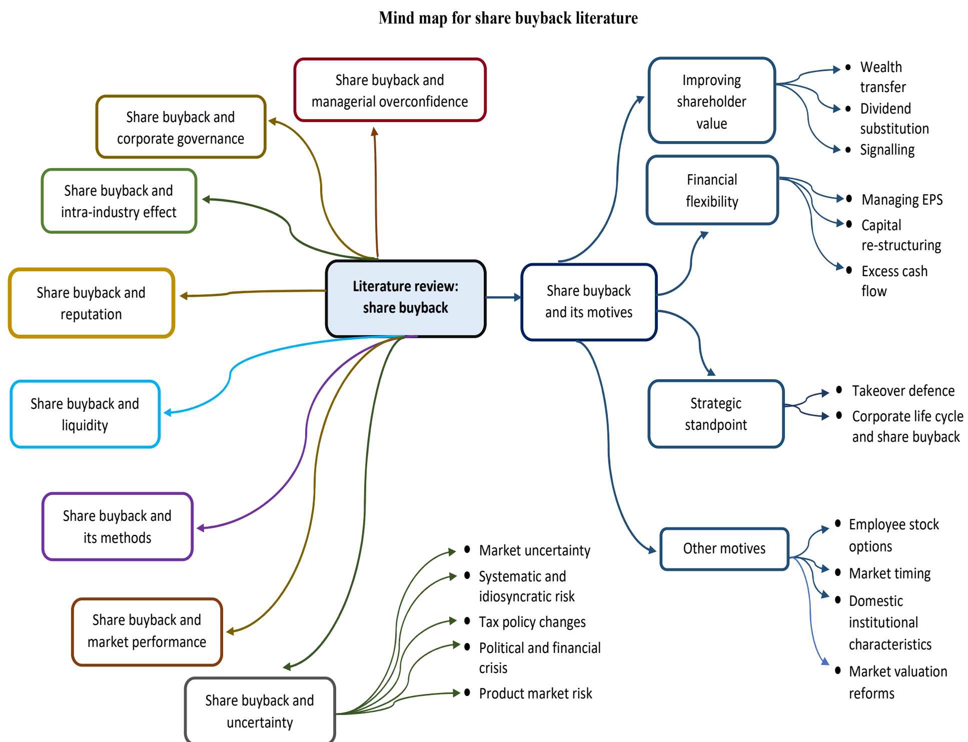
First, two broad keywords are used to explore the relevant research articles, i.e., share buyback and share repurchase. This search offers a large corpus of literature on buyback, which is not feasible to be reviewed. Hence, the following criteria are chosen to reduce the voluminous literature to a manageable number:

- research papers where full text with complete details are available
- diverse and adequate coverage of both developed and emerging market economies
- preference to highly ranked research papers from peer-reviewed academic journals [for ranking criteria, Chartered Association of Business Schools (CABS), Australian Business Deans Council (ABDC), and Scopus Journal rankings are considered]
- priority is given to research papers in reputed databases covering: Emerald, Wiley Inter-Science, EBSCO, Elsevier Science Direct, Web of Science, ProQuest and JSTOR
- additionally, we consider backward searches by examining references in selected papers of interest.

This filtration criteria finally lead to 206 articles spanning a period of 46 years (1981–2020). These papers are then classified into nine main subjects germane to share buyback.

Regarding motivations for buyback, from the lens of financial flexibility, share repurchases are driven by the motive of managing earnings per share (EPS). They help in achieving an optimal capital structure as it leads to a reduction in share capital. It is also an alternative investment channel when there are unprofitable investment opportunities and excess cash availability. Regarding shareholder value maximisation, a positive wealth transfer is associated with a share buyback. The substitutability of share repurchases over dividends affects the corporate payout choice. Existence of free cash flows, company size, dividend yield, shareholder heterogeneity is found to affect such a decision. Vermaelen (1981) and Asquith and Mullins (1986) support the information signalling hypothesis as the primary motive of share buyback. Strategically, share buyback is used as a tool for takeover deterrence (Doan et al., 2011; Sinha, 1991; Cudd et al., 1996). The strategies differ at each stage of the corporate life cycle. Employee stock options (Kahle, 2002), market timing (Brockman and Chung, 2001; Cole et al., 1996; Dittmar, 2000), domestic institutional characteristics, and market valuation reforms (Lasfer and Andriosopoulos, 2015) also determine the popularity of buybacks.

Figure 3 This figure is a visual representation of different strands of share buyback literature (see online version for colours)



Note: It weaves the various research themes of the literature.

There are mixed reviews of the impact of buyback on liquidity. This study offers evidence of the effect of market uncertainty on buyback. Different aspects of uncertainty are investigated, including product-market risk, political and financial crisis, systematic and idiosyncratic risk, tax uncertainty, and market uncertainty.

On examining the corporate governance effect around share buyback, it is observed in most of the studies that corporate governance lends credibility to repurchase announcements and improves firm value in countries with good corporate governance and strong investor protection. A mind-map of the extant literature is presented in Figure 3.

The rest of this report is organised in parts as follows. Section 2 is broadly classified into cogent categories as follows. Share buyback motives, methods along with its relationship with market performance, liquidity, uncertainty, intra-industry effect, reputation, managerial overconfidence (MOC), and corporate governance are elucidated in order. Section 3 summarizes the empirical literature and concludes the report by discussing research gaps and future scope.

2 Share repurchase: a literature review

2.1 Share repurchases and its motives

There is extensive literature exploring the motives behind share repurchase by a corporation. Undervaluation being the primary reason in most of the studies (Asquith and Mullins, 1986; Baker et al., 2003; Dann, 1981; Drousia et al., 2019; Lee et al., 2010; Miller and Rock, 1985; Mitchell and Dharmawan, 2007; Ofer and Thakor, 1987; Rajagopalan and Shankar, 2012; Reddy et al., 2013) a variety of other motivations include capital restructuring, dissemination of free cash flows, signalling, takeover defence, cash dividend substitution, shareholder wealth effect. Some studies (Reimers and Singleton, 2010; Stonham, 2002) identify different motives for share buybacks and not just the dominance of a single motive. Stonham (2002) documents multiple reasons for buyback, which include share price increase, achieve optimal capital structure, prevent dilution of earnings, substitute dividends, and returning excess cash to shareholders. He also suggests a game-plan or checklist for firms that wish to maximise value for shareholders and obtain strategic advantage from share buyback program. The list comprises of both internal (firm) and external (market) characteristics.

Reimers and Singleton (2010) disclose both traditional and strategic reasons for conducting share repurchases along with accounting methods for treasury stock. Traditional reasons are cited as the distribution of shares for compensation plans, increase EPS, and provide a signal to shareholders. Strategic goals include having excess cash and capital structure maintenance.

These motivations for share buyback can be further categorised into three broad divisions, i.e., from a financial flexibility perspective, strategic perspective, and shareholder wealth maximisation standpoint. However, these broad categories are not water-tight compartments and hence, are mutually non-exclusive.

2.1.1 Financial flexibility

2.1.1.1 Capital restructuring

In a survey undertaken by Dixon et al. (2008), they focus on the motivation for share repurchase in the UK and compares the findings with similar research in the US context. The UK regulation requires cancellation of the shares bought back and are thus not available for re-distribution. This, in turn, influences the capital structure by a reduction in share capital. The authors consider this reason to share buybacks being favoured by the UK managers as a vehicle for capital restructuring. Tsetsekos et al. (1991) find capital restructuring as a significant motive for engaging in share repurchases. He also concludes that low share prices are essential for triggering a share buyback. Rau and Vermaelen (2002) further suggested that debt-financed share repurchases can reduce the cost of capital by availing tax advantages from debt in the UK. This does not hold for open-market share repurchases, which are usually financed with excess cash. Corporate restructuring rather than undervaluation, thus, motivate large firms to go for a tender offer share buyback (Ikenberry et al., 2000).

2.1.1.2 Excess cash flow

The share repurchase is an alternative avenue for investment when there is excess cash available, and profitable investment opportunities are absent. The consideration of stock undervaluation by managers makes this a good investment decision as to the effect of price increase post-buyback represents investing in a positive NPV project. This is also in line with the study of Jensen (1986), suggesting excess cash distribution to shareholders to reduce agency costs. Boudry et al. (2013) reports a positive association between excess cash availability and repurchase programs after controlling for other investment opportunities.

Using Tobin's Q and regression analysis to compute abnormal returns (AR) for share buybacks during 1994–2007 by US firms, the findings conclude that firms with higher free cash flows at their disposal have higher AR as compared to others (Yook and Gangopadhyay, 2010). Ikenberry and Vermaelen (1996) refer to share purchase announcements as an option to exchange the market value of the firm for its real value; the company effectively creates a new investment option that may be exercised in the future.

2.1.1.3 Managing EPS

Earnings management around open market repurchases (OMR) showed that firms who are involved in earnings manipulation (deflation) fetch 28% more return than performance-matched control firms (Rodríguez and Yue, 2005). Farrell et al. (2013) analyse US firm characteristics that engage in managing EPS through share repurchases during 1997–2006. Specifically, firms with less independent boards and having CEO duality are more likely to adopt EPS-driven share repurchases. Also, a high percentage of CEO share ownership is found to discourage the use of share buyback to manage earnings.

A fixed-price tender offer has a stronger undervaluation signal than Dutch auction fixed tender offer because of the negative discretionary accruals reported before the Dutch auction fixed tender offer (Louis and White, 2007). Taking abnormal accruals as a

proxy for earnings quality, Gong et al. (2008) investigated the relationship between post-buyback operating performance, abnormal stock return, and earnings management before the buyback announcement. Controlling for earnings management, a negative association is observed between abnormal accruals and superior post-buyback operating performance and abnormal stock return. Post-repurchase realised growth in earnings surpasses expectations formed based on pre-repurchase manipulated (deflated) earnings numbers, accounting for post-repurchase AR.

A fuzzy regression discontinuity design is employed in the study of Almeida et al. (2016) to evaluate the real effects of share repurchases on other firm outcomes. The real effects are estimated by studying those firms which are close to the threshold of zero earnings surprise. The discontinuity design shows that EPS-motivated repurchases subsequently decrease investment, employment, and R&D. The evidence suggests that managers have the intention to do a trade-off between investment and employment for stock to meet analysts' forecasts. They are willing to give up valuable investments to finance EPS-motivated share repurchases.

When the incentives of managers are tied to a firm's value or stock options, firms with poor earnings quality were observed to have positive discretionary accrual before buyback announcements to increase the stock price (Chan et al., 2010). Contrary to this, Di and Marciukaityte (2015) explain the negative discretionary accruals. A negative association between current discretionary accruals and contemporaneous cash flows is consistent with the income smoothing proposition. Smoothing of income reduces its volatility due to a sudden rise or fall in revenue.

The effect of the legislative arm of the US regarding financial reporting, i.e., Sarbanes-Oxley Act (SOX)[3] on earnings management, is explored by Chen and Huang (2013). They find that the act provides fewer opportunities for earnings manipulation before repurchases. Farrell et al. (2014) provide evidence of how the presence of debt-financing constraints impacts the occurrence of repurchase-based earnings management and also chooses between accrual and real-based earnings management. High debt-financing constraints hold a positive relation with accruals and lead to an increase in accrual-based earnings management and fall in real earnings management. Financial constraints are chosen since it is major friction that influences corporate policy in matters such as investment and capital structure (Froot et al., 1993).

Sun et al. (2014) ascertain the motivation for firms that announce share buyback but do not follow it with actual repurchases. The authors analyse whether earnings quality can predict subsequent repurchase behaviour for aborted repurchases of such firms. It is found that the poor long-term earnings quality before buyback and its rapid decline after the repurchase announcement discourage a firm from carrying out the intended repurchase plan. Also, their only motivation seems to get a bounce in the share price normally linked to such announcements.

2.1.2 Improving shareholder value

2.1.2.1 Wealth transfer

Alderson et al. (2019) investigated the wealth effects of share repurchases on bondholders. They find no evidence of share repurchases on bondholder wealth expropriation. The results suggest that share repurchases are not harmful to bondholders,

as reported in the financial press. The results are unaffected in highly levered firms where wealth transfer is expected to be dominant.

There are other studies (Jun et al., 2009; Maxwell and Stephens, 2003; Nishikawa et al., 2011) that examine the correlation between equity value and bond claims surrounding share buyback. While Nishikawa et al. (2011) document an insignificant relationship between the two, Jun et al. (2009) and Maxwell and Stephens (2003) find evidence consistent with wealth transfers. While explaining the returns for large buyback programs, bond returns are more negative with more positive stock returns. This is followed by a higher likelihood of bond ratings being downgraded, suggesting a wealth transfer in the form of stockholder's gain.

A positive statistically significant wealth transfer from an individual (uninformed) to institutions (informed) over a 6-and-a-12-month period following share buyback is observed in the empirical work of DeLisle et al. (2020). Their measure of wealth transfer builds on the work of Sloan and You (2015), who find evidence of significant wealth effect (wealth transfer from ongoing shareholders to transacting shareholders) during share repurchases and issuances. Institutional investors appear to be informed shareholders that use share buyback as an opportunity to augment the effect of their informational advantage over individual investors. The findings are consistent with the study of Brennan and Thakor (1990), who put forth a shareholder preference model and predicts a positive wealth transfer from uninformed to informed shareholders during share repurchase. Also, unlike the repurchasing firm's characteristics, the size of buyback explains the variation in wealth transfers significantly.

Examining the shareholder's wealth effect of share buyback and drivers of wealth effect in the Taiwan market, Chen et al. (2011) provide evidence of positive buy-and-hold AR during post repurchase announcement in the long-term. Undervaluation and unexpected operating profits are two significant determinants explaining the wealth effect irrespective of the firm's investment prospects. These results are consistent with the study of Ikenberry et al. (1995), Oswald and Young (2004) and Liao et al. (2005).

The prior experience of share repurchases also influences the wealth effect of OMR (Chang et al., 2010). A stronger positive market reaction is experienced by firms that have a better record of actual buybacks and stock performance following previous announcements of share repurchase. An event study methodology employing cumulative average abnormal returns (CAAR) gives a positive wealth effect, though statistically insignificant for Malaysian companies during the period 2007 to 2011 (Chong et al., 2015). This implies weak evidence of a positive market reaction to the share buyback announcement. Abdul Latif et al. (2014) also examine the long-term wealth effect in the Malaysian context. The results are similar to Chong et al. (2015), documenting the market's indifference surrounding repurchase announcements while a positive response to repurchasing implementations.

For stock repurchase announcements between 1981 and 1997, a significant positive wealth effect associated with share repurchase is observed in the insurance industry (Born et al., 2004). However, the magnitude of such impact is smaller as compared to samples obtained from industrial firms. This can be attributed to a higher degree of monitoring and regulation in the insurance industry, which reduces the degree of information asymmetry between investors and insurers.

Yook and Gagopadhayay (2010) examine the wealth effect as a driver of share repurchase. The study also links wealth effect to the different characteristics of repurchase programs such as the method used for repurchasing shares, the stated intent of

the program, and the repurchase size. The study provides evidence for a drastic decline in wealth effect for the sample comprising 11,862 repurchase programs announced during 1994 and 2007. The study does not find much evidence with the signalling hypothesis, i.e., undervaluation as a rationale for share repurchases. In another study, they re-examine the wealth effect of accelerated stock repurchases (ASR) by partitioning the sample into three groups-high, medium, and low wealth effect group. The market reacts differently to the announcement of ASR in these groups. They find evidence that weaker wealth effects, as documented in prior studies, are attributed to sampling related issues. Testing the wealth transfer hypothesis, Jun et al. (2009) provide evidence that bondholders have significant losses around buybacks, but the amount of loss is mitigated by the positive signalling effect. This loss amount is not obscured by the positive signalling impact in firms associated with stock options.

The wealth effect of Dutch auction and transferable put rights (TPR) share buyback mechanism is compared with the traditional fixed-price tender offer method in the study of Gay et al. (1991). TPR's are observed to provide more significant wealth gains to non-tendering shareholders and smaller gains to tendering shareholders. Also, the wealth benefits from share buyback vary proportionately with the degree of heterogeneity in shareholder valuation.

2.1.2.2 Dividend substitution

Firms have a strategic choice between corporate payout policies, i.e., to pay a dividend or buyback shares. Wesson et al. (2018) ascertain the determinants affecting the payout choice (share repurchases or dividends) in the South African context. Overall, the drivers are identified as shareholder heterogeneity, the size of the distribution, and the level of company undervaluation. Disaggregating the sample into the sector and company size categories, two additional determinants, i.e., agency cost and dividend payment history, are found to be statistically significant. Small size firms with fewer shareholders and more public investors prefer OMR over special dividends. Companies that indulged in share buyback programs are found to be undervalued than companies paying a special dividend. Also, higher directors' ownership and debt level (agency cost) are found to be associated with OMR.

De Jong et al. (2003) provide empirical evidence of share repurchase policies for Canadian firms. It is found that payout for firms with executive stock option plans is less likely to go for dividend payments. The existence of free cash flows significantly determines the payout decision. Also, the findings conclude that firms decide first on the payout question and then the form of payout, i.e., dividends or share buyback or both. Jiraporn and Ning (2006) find that dividends and repurchases do not substitute each other. Buyback is most likely to occur in case of low dividend yield, losses, or short-term gains that occur before the tax reform Act of 1986 (Lie and Lie, 1999). Hyderabad (2013) supports the dividend substitution theory in the Indian context.

2.1.2.3 Signalling

In a survey study by Baker et al. (2003), the most cited reasons for repurchasing shares are consistent with the undervaluation aspect (i.e., signalling hypothesis) and adding value to shareholders. The study indicates a shift in the motives of the previous surveys

conducted. The study finds support for other secondary reasons, such as the best utilisation of excess cash, increasing the stock price, and increasing EPS.

Drousia et al. (2019) investigate the motivation for firms when conducting actual repurchases on the Athens Stock Exchange, Greece. The findings reveal that companies engage in buyback activities when the stock price shows a diminishing trend. The results are in line with those of Zhang (2005). The price pattern around repurchases for small firms and firms with a high book-to-market ratio is consistent with the signalling hypothesis. Price patterns around buybacks for larger firms and firms with a lower book-to-market ratio is consistent with the price support hypothesis. A firm's stated reason for approving a share repurchase program (SRP) is found to influence the market reaction at the time of actual repurchases. Further, higher long-term AR for firms that engage in buybacks contrasts with previous studies (Zhang, 2005; Akyol and Foo, 2013).

Lee et al. (2010) explore the determinants of share repurchase for German, French, British, and Italian firms. They find a significant and positive share price reaction for share repurchases by German, Italian, and US firms. The results differ for British and French firms. Small positive AR are observed for British repurchase announcements during its insignificantly different from zero for the French repurchase announcement. Their findings support the undervaluation hypothesis and takeover deterrence hypothesis with partial support for investment opportunity hypothesis (i.e., distributing excess cash with a lack of alternative investment opportunity). Fried (2001) empirically shows the inconsistency in signalling theory and provides testable implications of managerial opportunism theory associated with OMR's.

Consistent with the undervaluation (information signalling) hypothesis of Miller and Rock (1985). Mitchell and Dharmawan (2007) find more significant incentives for signalling stock undervaluation in Australian firms as compared to US firms. Daily buyback transactions are required to be disclosed in the Australian context while in the USA, where there are no formal guidelines for information disclosure relating to share repurchases.

A survey study by Wansley et al. (1989) finds information signalling of the firm's present and future intentions as the primary motivation of share repurchase. The results hold in case of buyback through a tender offer and not by the popular way of OMR. The information signalling hypothesis is also supported by Vermaelen (1981) and Asquith and Mullins (1986). The repurchase is an 'extra news bulletin' when the manager is convinced of the undervaluation of its shares and is willing to pay a premium at the time of buyback (Asquith and Mullins, 1986).

2.1.3 Strategic standpoint

2.1.3.1 Takeover defence mechanism

Contrary to popular literature which uses the content of public repurchase announcement to examine repurchase motives, Cudd et al. (1996) employ a questionnaire survey approach. This is in accordance[4] with the view that actual motivations may differ from those laid out in announcements. The responses to the questionnaire are received from chief financial officers of major companies who conducted share repurchases. They find that controlling motives (increasing insider holdings, takeover defence) are important drivers of repurchases. Denis (1990) explores announcements of defensive share buyback programs in response to hostile corporate takeover activity. It is found to be associated

with a significant decline in the wealth of target firm shareholders resulting in huge losses. Thus, repurchases, as an anti-takeover mechanism, is successful in retaining the target firm's independence. Australian firms used share buybacks as a defending tool against hostile takeover attempts (Doan et al., 2011).

Huang (2015) argue that firms with higher takeover vulnerability before an OMR announcement add credibility to signal of undervaluation. The relationship between takeover likelihood and abnormal announcement return, post-repurchase operating performance, long-run abnormal stock returns, analysts' forecast revisions, and shareholder-management agreement is examined. There is a positive association observed between takeover probability and the rest of the variables, i.e., experiencing greater announcement effects with improved operating performance, long-run returns, upward revisions in analysts forecasts, and an improved agreement between management and investors.

Sinha (1991), in his study, propose a model which suggests that firms that are takeover targets use debt-financed share repurchases to bond themselves to reduce perquisite consumption and enhance the value of an investment in the firm. The resulting value increase makes the target firm a less attractive deterring takeover.

2.1.3.2 Corporate life cycle and share repurchases

Yu and Jiang (2010) examine the relationship between the corporate life cycle and share repurchases in the Taiwan stock market during 2000–2009. The life cycle descriptors and cluster approach reveal that there are different motivations of stock repurchase at each stage of the corporate life cycle. However, signalling information is observed to be a common reason for all though it partially supports explaining share buyback drivers in the stagnant stage of the life cycle. The results support the findings of Wrońska-Bukalska and Kaźmierska-Jóźwiak (2017) that concludes that firms at their growth stage indulged in fewer repurchase programs as compared to firms in their maturity stage. Also, firms repurchasing in their growth stage are significantly undervalued than repurchasing firms in their maturity stage. This also supports the research of Liang et al. (2013) in the US context that confirms the signalling hypothesis for growth firms while mature firms dispense free cash flows by way of repurchases.

2.1.4 Other motives

Lasfer and Andriosopoulos (2015) study the determinants of share buyback across major European countries. The determinants are studied using a pooled regression model. They find the significance of domestic institutional characteristics and reforms in market valuation that determines the popularity of buybacks.

Employee stock options are found as a primary driver affecting buyback decisions in the study of Kahle (2002). The study concludes that firms having higher non-managerial options were affected less by the buyback announcement.

Firm characteristics (market-to-book ratio, liquidity, stock volatility) are important determinants of market timing. As the frequency of repurchase activity increases, the firm's ability to time the market decreases. Frequent repurchasers (at least nine times a year), may thus have alternative reasons for stock buyback other than undervaluation. Also, they earn significantly less stock return (though positive) as compared to infrequent repurchasers. However, such a relationship is difficult to establish when sometimes

the stock buyback announcement is not followed by stock repurchase (Stephens and Weisbach, 1998).

Many studies (Brockman and Chung, 2001; Cole et al., 1996; Dittmar, 2000) find that stock repurchases are driven by market timing of managers. Brockman and Chung (2001) examine the market-timing ability using repurchase trading data of 190 firms in Hong Kong. The studies provide evidence that post aggregate market turndown, managers time the market along with their trading by paying a lower price for the shares bought. Ikenberry et al. (1995) also find evidence of the market-timing abilities of managers to correctly assess that their stock is a good investment even after the stock repurchase announcement.

2.2 Methods of repurchases

A strand of literature on share buybacks discusses repurchase methods through OMR's and tender offer. OMR's have gained popularity over other methods of share buyback (Bagwell and Shoven, 1988; Grullon and Michaely, 2002). Open-market form of repurchases shows a weak signal of undervaluation than repurchases in the form of the tender offer (Comment and Jarrell, 1991).

Exploring the open market and tender offer SRP in New Zealand for 1995–2004, the study finds evidence in support of agency free cash flows for tender offer repurchases and supporting undervaluation hypothesis for OMR. The caveats of share repurchase along with the alternative buyback methods (including OMR and tender offers) are also discussed in the study of Stonham (2002). By examining all types of share repurchases (open-market, negotiated, Dutch-auction, fixed-price tender offer), it is observed that Dutch-auction tender offers experience larger announcement period positive returns (positive wealth effect) as compared to fixed-price tender offers (Yook and Gagopadhayay, 2010).

2.3 Common stock buyback and market performance

Understanding stock repurchases in different institutional settings helps to analyse the market reaction of such announcements. For example, in Germany, due to a more structured process of buyback, the reason for repurchasing is stated in most buyback announcements while it is present for some in the USA (Seifert and Stehle, 2003). Different empirical studies (Gerke et al., 2002; Schremper, 2002) examine the impact of the repurchase announcement effect on stock performance for Germany. Repurchases were prohibited there from 1931 to 1998, contributing to its low volume while in the US market, the announced value of buybacks increased from 15.4 billion dollars to 113 billion dollars between 1985 and 1996 (Jagannathan et al., 2000). For New Zealand, Koerniadi et al. (2007) conclude that share repurchase is not a popular method as there are less than 50 firms that undertake repurchase programs.

The study of Crawford and Wang (2012) centres around share performance surrounding OMR announcements in the UK. In contrast to US studies, share repurchases in the UK do not suffer from share undervaluation before the announcement. However, experiencing positive abnormal short-term returns surrounding the announcement and long-run AR following the announcement makes it similar to US studies. A slow market reaction to actual repurchases by value firms is observed in the UK, refuting the under-reaction and over-reaction hypothesis proposed by Ikenberry et al. (1995) and

Peyer and Vermaelen (2009) respectively. Existing evidence reflects share repurchases as a cash-generating mechanism for corporations as companies having deep pockets tend to earn abnormal announcement returns when starting new buyback programs (Grullon and Michaely, 2004).

Zhang (2005), in his study, finds that the market responds positively to repurchases made by firms in Hong Kong. This is consistent with the review of Rees (1996) in the UK context. The South African experience of open market share buybacks reported by 117 firms listed on the Johannesburg Stock Exchange (JSE) during 2000–2003 is similar to the results obtained in the US market (Bhana, 2007). Market underreacts to OMR on JSE. This underreaction is by the manager's claim of share price undervaluation. They find evidence that managerial signals of shares being undervalued lead to increased share prices post-repurchases.

Analysing US firms making actual repurchases from 1980 to 1997, Grullon and Michaely (2002) find evidence of positive long-term price performance. The application of the BHAR method supports the market efficiency (semi-strong form) proposition and rules out market underreaction after repurchase announcement for 865 Malaysian firms listed on FTSE Bursa Malaysia for the year 2006–2010 (Albaity and Said, 2016). In another study (Ikenberry et al., 2000) on Canadian firms, results indicated that actual repurchases that are dominantly motivated by undervaluation than by any other factor lead to better long-term stock performance. Consistent with this, Mitchell and Stafford (2000) used the buy-and-hold strategy for US firms making buybacks. However, no evidence of long-run abnormal performance in stock price is observed when the calendar-time portfolio approach is used. The application of both buy-and-hold abnormal returns (BHAR) and calendar-time (CTIME) methodologies are made by Chan et al. (2007). Extending their previous work, they re-examined the long-run AR after open-market repurchase announcements. Both methods gave significant evidence of positive long-term share price return post repurchase. Thus, the results are sensitive to the methodology used for measuring such long-term returns (Barber and Lyon, 1997).

In nearly half of the cases of share buybacks in India from 1998–1999 to 2002–2003, the actual repurchase price is less than one half of the maximum price (Gupta, 2006). Similar to these results, the empirical analysis of Chatterjee and Rakshit (2012) and Chatterjee and Mukherjee (2015) revealed that the positive influence of repurchase on share price is not observed in all the buyback cases in India. An empirical study on a sample of 75 buybacks of NSE listed companies confirmed the result of previous year studies with a positive impact of buybacks post-announcement leading to positive AR (Chavali and Shemeem, 2011).

A study on nine Indian IT companies who made share repurchase announcements during 2006–2008 (Attri and Rathore, 2018) indicate market movements towards informational efficiency. Testing a sample of 96 insurance companies for the impact of repurchase announcement on their value, Miller and Shankar (2005), in their study found a considerable increase in the value of such firms for the period surrounding the announcement. The market inefficiency observed in the Indian context implies that the stock prices did not instantaneously impound the buyback information fully for the period 2004–2009, making the AR around the announcement date insignificant (Dua et al., 2010).

With a plethora of research conducted in the USA, the UK, Canada, etc., there is a deficit of research in the Indian context. Some studies exist on the impact of dividend announcements on stock prices in the Indian equity market (Maitra and Dey, 2012; Saravanakumar, 2011). However, only a few are there on share buybacks in the Indian equity market and hence remains an untapped area.

Contrary to this popular view of the favourable market reaction to share repurchases, Gim and Jang (2020) identify factors that alleviate market reactions to share repurchases in the context of the US restaurant industry. Such factors include growth opportunities, franchising, dividend payments, and spending free cash flows on share buyback. This mitigating effect of growth opportunities on market reactions to share repurchase is weaker for franchise restaurant and dividend-paying firms than for non-franchise restaurant and non-dividend-paying firms. This can be due to the difference in the level of information asymmetry across two business formats (Spencer, 2010) or variation in terms of capital expenditures and cost of capital (Norton, 1988; Shane, 1998a, 1998b). The positive market reaction to share repurchase is maintained as long as restaurant firms do not exceed 76.82% spending of their free cash flows on share buyback activities.

A rich literature exists on the informational efficiency of stock market concerning buyback of shares. Studies have been conducted both in the Indian as well as international contexts. Mixed results are observed regarding earning AR post-repurchases. Yook (2010) explains for such mixed results. To overcome confounding effects, firms who frequently announce buyback programs should consider overlapping announcements that fall during the performance estimation period. Using a dataset of firms listed on NYSE, NASDAQ, and AMEX announcing buybacks during 1994–2007, his study considers such corrections and result in positive abnormal long-term returns for firms who do not often make buyback announcements and repurchase shares. These increased long-term returns are explained by improvements in operational performance linked to the free cash flow theory. Share repurchases make use of excess funds, leads to diversion of funds from internal investments causing firms to incur debt, which results in positive stock performance.

Lasfer and Andriosopoulos (2015) analyse the market valuation of share repurchases in Europe and conclude that the announcement date market response is lower in comparison to the USA. This is because earlier announcements reduce any information asymmetries considerably and have greater information content than ensuing announcements. The low market reaction, according to the study, is attributed to governance and cross-cultural issues. Also, the regulatory reform requiring the UK firms to keep repurchased shares as treasury stock reduces the market impact. Unlike other studies based on a single country [Ikenberry et al. (2000) for Canadian firms; Ginglinger and Hamon (2007) for French firms; Bessler et al. (2009) and Hackethal and Zdantchouk (2006) for German firms; Oswald and Young (2004) for the UK firms and Ikenberry et al. (1995), Stephens and Weisbach (1998) and Bonaimé (2012) for firms in the USA], this study is a cross-country analysis involving different institutional setups.

An increase in repurchases marked by the rise in short interest in the same quarter makes the motive of buybacks clear, i.e., to support overvalued equity (Liu and Swanson, 2016). It studies the relationship between insider trading, short selling, and share buybacks. The price support quarter is followed by a sharp multi-quarter decline in return on assets (ROA) with a corresponding modest decline in EPS due to a decrease in outstanding shares. The reasons for this price support are two-fold. First, the reduction of shares outstanding owing to repurchases reduces the effect of a decline in profitability

on reported EPS. Second, the demand-supply mismatch created by buybacks leads to inflated demand for the company's stock and their reduced supply in circulation. A consistent decline in market returns leading to a further reduction in a firm's future profitability contributes to larger buyback attempts by managers.

The regulations and norms around repurchase need to be stringent in India if the company needs to derive long-term advantages from share buybacks (Mishra, 2005). He observes oversubscription for stocks that were bought back at a price above premium, followed by a fall in prices after repurchasing took place. Thus, there is not a sustained increase in the prices of the shares.

Wang et al. (2009) address issues of repurchase announcement clustering occurring on the same day in the UK firms. A positive and significant market reaction is found for firms having low Tobin Q's ratio (indicating overinvestment). The empirical evidence supports the free cash flow hypothesis suggesting that share repurchases shift financial resources from getting it listed on negative NPV projects, thereby creating firm value. This support for the free cash flow hypothesis is consistent with Nohel and Tarhan (1998).

2.4 Share repurchases and liquidity

The liquidity effect of share repurchases is examined by Hillert et al. (2016). Using a dataset of US firms doing repurchases between 2004–2010, the study concludes that buybacks provide liquidity in times of crisis or when other investors sell the firm's stock. The medium for executing repurchase programs is also influenced by liquidity. Whether firms demand or provide liquidity during buyback is a debatable issue addressed in past literature (Barclay and Smith, 1988). Liquidity change is a significant factor that explains abnormal stock returns around the repurchase announcement (Eberhart et al., 2004).

A cross country comparison allows us to differentiate in this context, as mixed reviews are observed. In the case of France and Hong Kong, buybacks reduce liquidity while for Canada, Italy, Sweden, and Switzerland,[5] a direct relation between liquidity and repurchases is seen. Evidence from the US remains ambiguous in this regard.

Consistent with the findings of Brockman et al. (2008), it is argued that cost minimisation is one of the objectives of the manager while executing stock repurchase programs. The illiquidity of the firm's stock does not allow buybacks to take place. Managers adopt repurchase strategies based on observed liquidity of their stock and other stocks as well. Liquidity supply and price support go together. Their work tests whether firms play the role of a patient investor by providing liquidity along with specific firm characteristics which affect their patience and liquidity supply. Liquidity needs, private information, and risk aversion determine investor's patience.

For the Italian stock market during the period 1997–2004, De Cesari et al. (2011) provide clear evidence of improved liquidity, and reduced short-term volatility is found when share repurchases are traded. The impact on liquidity is statistically significant in terms of reduction in the spread, which is more pronounced for previously held illiquid stocks. With no significant effect on trading volume, trading in own stocks can significantly lower the excess short-term volatility (variance), leading to a smooth price discovery process. These results are found to be consistent with the motives for share repurchases for Italian firms stated as improving liquidity and price stability of their stock. Competing market maker hypothesis and information asymmetry hypothesis[6] were put forward in the study of Barclay and Smith (1988), who lends support to the

information asymmetry hypothesis while rejecting the other. Similar results were obtained using 248 repurchase announcements in NYSE (Miller and McConnell, 1995). Brockman and Chung (2001) did this for firms in Hong Kong and find that the presence of informed traders in the market hits up the adverse selection costs. This widens the bid-ask spread and reduces the depth in the market. McNally and Smith (2011) determine the repurchase impact on liquidity using a sample of Canadian firms. In his study, narrow spreads followed by an increase in depth differentiates repurchase from non-repurchase days. The change in the spread is due to a reduction in the cost of information asymmetry after the buyback announcement (Franz et al., 1995).

Following Barclay and Smith (1988) and Ahn et al. (2001) analysed the market maker hypothesis in the framework of tender offers by examining 65 fixed tender offers listed on the NYSE or American Stock Exchange (AMEX). It shows the temporary nature of liquidity increase during the offer period and its reversal to the pre-announcement period once the offer expires. This transitory nature is also consistent with the study of Nayar et al. (2008).

2.5 Share repurchase and uncertainty

This section reviews the existing studies that evidenced the relationship between share repurchase activity and uncertainties surrounding the firm. The uncertainties evaluated include; market-wide uncertainty, systematic and idiosyncratic risk, product-market risk, tax policy changes, and political and financial crisis.

2.5.1 Market-wide uncertainty external to the firm

Exploring the repurchase behaviour of US firms under uncertain market conditions, the study of Pirgaip and Dinçergök (2019) reveals that managers prefer to make less or no repurchases in highly uncertain times. The proxy for uncertainty used the economic policy uncertainty (EPU) index proposed by Baker et al. (2016). This index covers three uncertainty metrics encompassing economic, uncertainty, and policy-related matters, i.e., newspaper coverage of EPU (economic), federal tax code provisions in expiration (uncertainty), and disagreements among economic forecasters (policy-related). With repurchases as an alternative payout tool, the results are rooted in well documented corporate investment policy and dividend payout literature. A part of it is also covered under the motives section with buybacks as a substitute for dividends.

Firms that repurchase shares in the absence of dividend payout face a significant degree of volatility in operating profitability (i.e., a proxy for cash flow uncertainty) compared to firms that only pay dividends (Chay and Suh, 2009). The likelihood of an economy facing a crisis can depend on share repurchases too. One such study by Sakinc (2017) puts forward the repercussions of directing the financial resources towards activities central to shareholder maximisation in Europe. One such way of value extraction is by increasing corporate payouts in the form of share repurchases. Sakinc (2017) avers that owing to stagnant growth of the economy along with the ongoing consolidation of industries through mergers and acquisitions, and rising payouts will aggravate the susceptibility of the European economy towards a crisis in the long run.

2.5.2 Systematic and idiosyncratic risk

There is a smaller marginal effect of risk in the probability of undertaking a stock repurchase as compared to dividend changes (Hoberg and Prabhala, 2009). One standard deviation increase in risk reduces the buyback probability by 3% to 6%. In contrast, a one standard deviation increase in risk reduces the chance of dividend increases, initiations, and dividend payouts by 14%, 22%, and 46%, respectively. The primary proxy for risk is the standard deviation of residuals from a regression of its excess returns (raw returns less risk-free rate) on the Fama and French three-factor model, i.e., HML, SMB, and market beta. Systematic risk is the standard deviation of the predicted value obtained from the above regression.

Regarding the determinants of repurchase decisions posing an idiosyncratic risk, firms with high market-to-book ratio, and firms exhibiting rapid growth are less likely to repurchase. In contrast, profitable firms and large firms are more likely to repurchase. Kang et al. (2011) find that bank relations with repurchasing firms influence stock repurchase decisions in Japan significantly. Also, the returns are negatively related to non-bank debt ratios as market discounts for financial distress risk. The findings of Bhunia (2011) conclude that market discounts the information content of share buyback announcement based on the past performance of firms and management's intent to repurchase. This is further supported by Cook et al. (2004) in the US market.

Hsu and Huang (2016) explain positive long-run stock returns after open-market share repurchases. They point it to the increase in idiosyncratic volatility due to a rise in the financial leverage of repurchasing firms. This upward trend of financial leverage becomes significant in ascertaining the changes in idiosyncratic volatility. Macroeconomic variables are found to be a significant determinant of repurchase choice for financially unconstrained firms in the study of Korajczyk and Levy (2003). They time their issue choices to match with a period of favourable macroeconomic conditions.

2.5.3 Product market risk

Competitive threats, as reflected in product market fluidity, holds a significant relationship with stock repurchases in the study of Hoberg et al. (2014). The product text descriptions that construct the fluidity measure offer both characterisation of the competitive structure of product markets and its underlying dynamics. The propensity to repurchase shares reduces for firms in more fluid product markets. This indicates a negative relationship between product market fluidity and share repurchase. These firms also keep high cash balances at their disposal, adopting more conservative policy decisions, which is in line with deep pockets arguments of Telser (1966) and Bolton and Scharfstein (1990).

2.5.4 Tax policy changes

Blouin et al. (2004a, 2004b) provide evidence that new dividend tax cut reform in 2003 increases both regular and special dividend payouts and slackens the demand for share repurchases. This is because dividends became a more attractive option resulting in a slump in share repurchases after enactment. Concurrent work of Lie and Lie's (1999) document that managers consider shareholders' tax liabilities in choosing between dividends and share repurchases. Corroborating these results, Hsich and Wang (2004),

in their empirical work report that tax incentives of insiders influence corporate payout choices.

2.5.5 Political and financial crisis

Huang et al. (2015) examine the impact of political uncertainty on the firm's payout policy, particularly its intertemporal dividend decisions. Bliss et al. (2015) provide evidence from the 2008–2009 financial crisis that payout reductions are more significant and more prevalent during the crisis period, especially in those firms that are expected to be more prone to negative consequences of an external financial shock. Payout reductions in the form of repurchase ratio exhibit a greater decline as compared to dividend ratio. Cash savings resulting from aggregate payout reductions build financial flexibility by increasing cash reserves and funding corporate investments. So as to manage internal resources, industrial firms are found to have a greater likelihood to cut repurchases than to cut dividends (if necessary) during the credit crisis.

Floyd et al. (2015) also report the persistent nature of dividends during the financial crisis in contrast to share repurchases. Almeida et al. (2009) observe that firms cut payout (repurchases mostly) to fulfil payment of debt requirements following the credit supply shock. Attig et al. (2016) report a negative relationship between family firms and corporate payout policy (including repurchases in their robustness tests) during the 2008–2009 global financial crisis.

2.6 Share repurchase and intra-industry effect

Otchere and Ross (2002) that suggests the dominance of the contagion effect over competitive effect by examining the intra-industry impact of repurchase deregulation in the Australian context. In support of the dominance of contagion effect over competitive effect, they further add that the market reaction to rival firms appears with a lag.

The findings conclude that this information is influenced by repurchasing a firm's industry characteristics. Also, repurchasing firms experience a significant positive announcement period returns while portfolios of competing firms in the same industry experience a significant adverse and contemporaneous stock price reaction contrary to Hertzel (1991).

2.7 Share repurchase and reputation

Bonaimé (2012) documents the past repurchase completion rate (by which firms develop repurchase reputation) to influence its credibility on the next repurchase announcements in the US context. The findings indicate a positive correlation between prior repurchase completion rate and current completion rate as well as announcement returns. The study of Ota et al. (2019) offers evidence that a firm can establish a reputation through multiple sources of announcements. A low repurchase reputation is found to have a more robust market reaction to forecast reputation. For firms where there is no repurchase reputation, the stock market assesses the credibility of the repurchase announcement based on a forecast reputation within the firm. However, both studies reinforce the existence of reputational effect underlying share repurchases.

2.8 Share repurchase and MOC

The examination of the relationship between share repurchases and MOC adds to the growing literature on behavioural corporate finance. Chen and Lu (2015) finds higher repurchase costs and poor market timing have the ability to execute OMR account for the reduced post-announcement short-term returns and long-run stock performance. Supporting this view regarding market-timing ability, Handy (2019) complements it by exploring the efficiency of OMR across MOC. Compared to overconfident managers, moderately confident managers are found to repurchase shares at relatively lower prices (close to the quarterly low stock price). Adding to the evidence of overreaction driving the repurchase anomaly, Andreou et al. (2018) identify the firm's characteristics for which there is strong underperformance. These firms are difficult to value firms (small, young, non-dividend paying, distressed, having negative earnings or high book to market ratio) and financially constrained firms.

An analysis of the US-listed firms for 2001–2006, Ben-David et al. (2007, 2013) find that firms with overconfident CFO's increases the chance of engaging in share buyback activity and are less likely to disburse dividends as they perceive their firm's equity to be undervalued. The findings support the postulation of Burg et al. (2012), who also entangle the effect of MOC on share repurchases and dividends. Firms with overconfident managers adjust their corporate payouts towards a higher proportion of share repurchases to total payouts. As with share repurchases, the reason is attributed to its benefit arising from low mispricing and wealth transfer from short-term traders to long-term shareholders. Mispricing is defined as undervaluation before the buyback of shares (Chan et al., 2004; Ikenberry et al., 1995, 2000).

Deshmukh et al. (2013) find overconfident managers prefer to hold cash to fund future investment deals and thus distribute fewer dividends. However, share repurchases were not so prominent during the time the study is conducted (1984–1994). All these findings are consistent with the study of Banerjee et al. (2013), who suggest that institutional investors encourage this behavioural bias driven repurchase activities as they find it to be a medium for exit from the company at a premium (liquidating their holdings). This is in line with prior literature exploring institutional trading to discipline managers (Chang et al., 2013; Edmans, 2009; Edmans et al., 2013; Edmans and Manso, 2011; Gallagher et al., 2013).

Andriosopoulos et al. (2013) investigate the relationship between share buyback completion rate and information disclosure regarding MOC. Analysing UK firms, they find that CEO overconfidence significantly determines the share buyback completion rate and is positively associated with information disclosure. Overconfident CEOs disclose more information about their buyback intention and have a higher probability of completing the announced buyback programs. The analysis by Kumar et al. (2017) focuses on the firm's optimal information communication by combining the two aspects of voluntary disclosure and share repurchase policies. They analyse the joint determination of these two aspects by informed managers. Firms that stand to benefit significantly from repurchasing shares have the weakest motivation to disclose voluntarily.

2.9 Share repurchases and corporate governance

Chen and Lu (2015) suggest that a strong degree of corporate governance limits the managerial confidence and protects shareholder's interests. This, in turn, eases the adverse impact of MOC on the timing of open market share buyback discussed under share buyback and MOC. Firms with senior CEOs who hold external directorship along with a longer tenure in the firm are found to be positively associated with the buyback completion rate (Andriosopoulos et al., 2013). Contrary to US firms (Weimer and Pape, 1999), Swedish firms with dispersed ownership increase the propensity for stock repurchases to increase leverage (Jansson and Larsson-Olaison, 2010).

Chahine et al. (2012) examine corporate governance effect around share repurchase announcement. Specifically, the effect around the enactment of the Sarbanes-Oxley Act of 2002 is investigated. A favourable market reaction is observed for firms with good corporate governance practices. This reaction is more pronounced during the post-SOX Act implementation, especially in cash-constrained firms. The outperformance of strongly governed companies up to three years post repurchase announcement over weakly governed companies is supported by Caton et al. (2016). Companies with good governance practices are associated with a larger investment in CEO incentive compensation and merger and acquisition activity that also explains their increased performance. However, the authors find that the associations disappear in the sample subperiod starting in January 2001, attributing it to increased arbitrage activities and regulations (Chordia et al., 2014; Bebchuk et al., 2013). The results are contradictory to the findings of Chua (2010), who find firms in Singapore with weak corporate governance experiencing a strongly positive market reaction. This is explained by a reduction in agency costs for such firms with excess cash channelised towards share-repurchases.

In the study of Webb (2008), the bank's internal corporate governance measured by board structure and insider/director stock ownership is not found to impact market reaction significantly. In some cases, they are positively related to managerial decisions regarding share repurchases. Board independence is found to have a positive impact on the extent and size of the bank stock repurchase offer. Jiraporn and Ning (2006) shows evidence that firms with weak shareholder rights tend to buyback less stock. This is because by exploiting weak shareholder rights, managers can retain more cash that could be spent to extract their own private benefits. Complementary to this, John et al. (2015) suggest that firms substitute the degree of governance with cash payout policies to achieve an optimal blend of reduced agency cost and financial flexibility. So, strongly governed firms choose to share repurchase over cash dividends and leverage the financial flexibility derived from this choice to drive better performance. This choice is consistent with the study of John and Knyazeva (2006) and Brown and Caylor (2004).

Wu (2012) document the existence of wealth effect for corporate governance on repurchase announcements. He finds that well-governed Taiwan firms earn a higher premium after repurchase announcements that signal undervaluation. This is supported by a positive association between the quality of internal CG and the increased post-repurchase insider shareholdings that lends credibility to the repurchase announcement. External motivations such as engaging Big Four firms as auditors, listing requirements, and buyback regulations (pre-set buyback price ceiling and floor) also affect repurchase completion rate.

Table 1 Identification of research themes: summary of key empirical studies on share repurchases

Research theme	*Author (year)*	*Country (period of study)*	*Findings*
Determinants of share repurchase	Dittmar (2000)	USA (1977–1996)	Undervaluation is the primary driver for share buyback, followed by excess cash flows.
	Jagannathan and Stephens (2003)	USA (1986–1996)	Large firm size, less variability in operating income differentiates frequent repurchasers from infrequent repurchasers.
	Mitchell and Dharmawan (2007)	Australia (1996–2001)	Repurchases are motivated by the signalling hypothesis, followed by the leverage hypothesis.
	Yarram (2014)	Australia (2004–2010)	Three hypotheses motivated share buybacks signalling, leverage, and agency cost.
	Vafeas et al. (2003)	USA (1984–1989)	Evidence of downward earnings management before repurchase.
Methods of repurchases	Li and McNally (1999)	USA (1975–1989)	The choice of a tender offer depends on the level of financial slack and good monitoring, while weak business conditions or market turbulence calls for OMR.
	Comment and Jarell (1991)	USA (1984–1989)	OMR shows a weak signal of undervaluation than buybacks in the form of the tender offer.
	Varma and Munjal (2016)	USA (2004–2013)	Motives behind opting for tender offers were recognised as an increase in earnings per share (EPS) and capital restructuring.
Common stock buyback and market performance	Wang et al. (2013)	Taiwan (2000–2010)	Taiwan stock market reacts slowly to repurchase announcements with positive long-term price performance.
	Chatterjee and Mukherjee (2015)	India (2008–2012)	Persistence of negative returns pre and post repurchase announcement owing to institutional framework of the Indian market.
	Sivashanmugam and Sowmya (2019)	India (2000–2018)	A positive response is seen both pre and post repurchase in an open market offer while in a tender offer, positive reactions in pre-event dominate the post-repurchase period.
	Liang (2016)	USA (1990–2010)	Repurchasing firms having a high sensitivity to investor sentiments have a higher probability of being mispriced followed by increased post-repurchase stock performance.
	Kuntluru and Chacko (2019)	India (2016–2017)	The impact of buyback on short-term market returns are higher than the long-term market performance.
Share repurchase and uncertainty	Walkup (2016)	USA (1962–2009)	Firms with a high level of cash flows have the tendency to time the market to allow share buyback at prevailing lower prices due to a volatile market.
	Farrugia et al. (2011)	Australia (1996–2009)	Frequent repurchasers enjoy greater short-run and long-run returns compared to rare and occasional repurchasers.
	Buchanan et al. (2017)	USA (2010–2012)	Firm's repurchase activities do not vary significantly with uncertainty in tax policy changes. Share buyback tends to be more common one year before an impending dividend tax increase.
Share repurchase and intra-industry effect	Chang et al. (2005)	Taiwan (August 2000–October 2001)	The intra-industry effect is inversely related to rival's firm size while positively associated with the size of share repurchases, the similarity of cash flow pattern between rivals and repurchasing firms, and the magnitude of announcement period abnormal returns for repurchasing firms.
	Erwin and Miller (1998)	USA (1985–1990)	The intra-industry competitive effects are found to dominate contagion effects.
	Hertzel (1991)	USA (1970–1984)	The magnitude of the repurchasing firm's abnormal return determines the degree to which buybacks influence rival firms in the same industry.
Share repurchase and reputation	Ota et al. (2019)	Japan (2008–2017)	Forecast reputation (reputation based on prior earnings forecast accuracy) has a spill over effect on the market response to new repurchase announcements.
	Bonaimé (2012)	USA (1988–2007)	A positive correlation between prior repurchase completion rate and current completion rate as well as announcement returns.
Share repurchase and managerial overconfidence	Ben-David et al. (2007)	USA (2001–2006)	Firms with overconfident CFO's increases the chance of engaging in share buyback activity and are less likely to disburse dividends as they perceive their firm's equity to be undervalued.
	Shu et al. (2013)	Taiwan (2000–2008)	The study reveals a positive relationship between the level of managerial overconfidence and the intensity of SRP for 783 listed firms in Taiwan.
Share repurchase and corporate governance	Jansson and Larsson-Olaison (2010)	Sweden (2000–2004)	Swedish firms with dispersed ownership increase the propensity for stock repurchases to increase leverage.
	Han et al. (2014)	Korea (1996–2011)	Board composition accounts for the frequency in stock repurchases of Korea's unique chaebol business groups (family-owned business conglomerate), making the Anglo-American model of corporate governance reform effective.
Share repurchase and liquidity	Barclay and Smith (1988)	USA (1970–1978)	Consistent with the information asymmetry hypothesis, liquidity decreases after share repurchase.
	Wiggins (1994)	USA (1988–1990)	Bid-ask spread falls post-repurchase with depth remaining the same during repurchase.
	Ginglinger and Hamon (2007)	France (2000–2002)	Significant large spreads on repurchase day as compared to non-repurchase days.
	De Ridder and Råsbrant (2009)	Sweden (2002–2005)	Decrease in the bid-ask spread by 3% from non-repurchase days to repurchase days.

Notes: Table 1 shows a summary of some of the other existing studies on share buyback not explained elsewhere in the article. This table highlights the key findings of each study besides the year and country where the study was done. A combination of studies from both emerging and developed markets is presented.

Huang et al. (2010), in the context of Taiwan firms, further suggest that the interaction between corporate governance and institutional investor ownership would impact share repurchase decisions. Kosnik (1987) lays down board characteristics of firms that resisted or indulged in privately repurchasing a block of its stock from a minority shareholder at a premium above the market price (also called as paid greenmail). Such characteristics are a higher number of outside directors, a higher number of experienced directors, and more directors with inter-organisational networks. Liljeblom and Pasternack (2006) show that foreign ownership raises the frequency of stock repurchases among Finnish firms.

Abdul Latif et al. (2016) also find that board diversity proxy by the director's ethnicity is found to be inversely related to the frequency of share repurchases. This lends evidence to the efficacy of the amendment made in the Malaysian code of corporate governance in 2012 that recommends a greater board diversity as well as a larger board size to ensure greater monitoring and reducing the tendency of unwarranted managerial opportunistic behaviour.

Bonaimé et al. (2016) document a significant cost associated with repurchase-related financial flexibility. This cost is found to be positively correlated with earnings management and managerial entrenchment while negatively correlated with institutional control. This finding is consistent with the explanation of higher agency costs accounting for the higher cost of repurchase flexibility. The results also support the emergence of ARP (Bargeron et al., 2011), where repurchase timings are outsourced to an investment bank to minimise such costs.

Analysing 33 economies through the lens of investor protection, Haw et al. (2011) study the share buybacks in relation to the value of the firm and cash-holdings. It is observed that stock repurchases contribute more to firm value in countries with strong investor protection and vice-versa. Also, in a strong investor protection environment, the marginal value of cash increases with an increased percentage of repurchases in total payouts. This supports the findings of Faulkender and Wang (2006), who account for the increased marginal cash value to a difference in the tax treatment for dividend and capital gains in the USA.

3 Summary and concluding remarks

3.1 Insights, discussion, and summary

Easing of regulations, changes in tax structure, and the rising prevalence of shareholder value maximisation as an important corporate objective gaining significance in managerial compensation plans has led to worldwide exposure of share buyback activities. The massive global evidence that shares buyback leads to higher stock prices, irrespective of the repurchase method, both in the short-run and long-run may have also fuelled managers increasing its significance.

Analysis of share repurchases involves answers to these broad questions:

- Why do firms repurchase stocks?
- When do they repurchase stocks?
- Why do stock prices increase post-repurchase announcement?
- Does the choice of share repurchase method matter during repurchase?

- What are the firm characteristics that lead to the initiation of share repurchases?
- What are the macro-economic factors (if any) that influence share buybacks?

This study gives a comprehensive and condensed view of different kinds of literature that exists to answer these questions on share repurchases. The factors which drive repurchase decisions differ across countries based on their specific institutional framework. Different hypotheses influence share repurchases motives. Liquidity impacts share buyback differently in different countries. Managers engage in earnings management in the previous year of share repurchase to influence shareholders for buying their shares. Academic literature relating to different themes, as discussed above, offers support to different areas of research concerned with share repurchases. The practitioners, researchers, and academics in the area may peruse this study as a ready reference for understanding the share buyback mechanism and its market implications.

3.2 Research gaps and future scope

The previous studies which consider repurchases as a tool of market signalling are not convincing since it fails to distinguish between leverage and signalling hypothesis. This occurs due to a substantial similarity between exchange offers and buybacks. Hence, this requires further analysis to find a solution to it. Also, the assumption of the signalling model that the managerial incentives are equal across firms seems to be unrealistic. It calls for further research to examine the impact of executive reward schemes on the value of the information contained in the market after repurchasing, managerial choices regarding the value of the premium, and the fraction of shares repurchased.

Analysing the share buyback activity by segmenting based on industries would help further to frame better policies and norms to govern share repurchases. For example, banks and firms in consulting businesses gain more if firms repurchase shares rather than disseminate dividends (Hartholt, 2012). Regarding cross-country studies, there is a dearth of research been carried out on share repurchases in India and China. Future research scope exists in the form of development of an estimated model wherein post-buyback financial measures of the firm are predicted based on pre-buyback values as well as the financial soundness of the company. Very few studies talk about the wealth effect of share repurchases on bondholders and how a firm's reputation can influence share repurchases. So, that remains a potential area of research which can be taken up later.

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Notes

1. Expenditure in the form of repurchases rose from 4.8% in 1980 to 41.8% in 2000 (Barclay and Smith, 1988).
2. Such hypotheses include information signalling, leverage, personal taxation/dividend, bondholder expropriation (Vermaelen, 1981).
3. After multiple scams in the USA were uncovered, the purpose of the act is to maintain investor's confidence. The act increased the role of independent directors along with the necessary condition that all members of the audit committee should be independent directors in a public company.
4. Disclosure of an agency-based motive for stock repurchase in a public announcement is implausible.
5. Major contributions include: Brockman and Chung (2001) for Hong Kong, De Cesari et al. (2011) for Italy, Ginglinger and Hamon (2007) for France, Chung et al. (2007) for Switzerland, Miller and McConnell (1995) and McNally and Smith (2011) for Canada, and Råsbrant and De Ridder (2013) for Sweden.
6. According to competing market maker hypothesis, repurchases increase liquidity by creating a lower range/bound in the buyer side and diminishing bid-ask spread when the market is efficient. The information asymmetry hypothesis asserts that repurchases decline liquidity with the increase in bid-ask spread owing to more information possessed by managers than outsiders.