

Analysis of Firms' Share Repurchases 'Causation: A Case Study of Starbucks

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ABSTRACT

This article explores the internal and external motivations of company's repurchase decision. In terms of methods, the author uses a combination of theory and empirical research methods and logically uses an analysis process from general rules to special cases to make the conclusions more accurate and have practical meaning. In the research process, the article firstly makes a theoretical analysis, summarizing and expanding various hypotheses about corporate share repurchase motives put forward by predecessors. In addition to analyzing the common signal transmission hypothesis, management incentive hypothesis, and other internal factors, the author also added external factors such as share liquidity and volatility, making the theoretical analysis more comprehensive and innovative. At the same time, to make the research more specific, this article selects Starbucks, a representative company, to analyze its repurchase behavior. In the case analysis, the article at first gives concrete indicators and indexes of each hypothesis based on theoretical research, transforming the qualitative analysis into quantitative research, making the research process clearer and more specific. The article selects Starbucks' financial data from 2009 to 2020 and obtains the corresponding indicator values through integration and calculation. Finally, to increase the conclusions' accuracy, the article selected several main factors through the previous analysis to conduct an empirical test and used Eviews software to perform regression analysis on time series data such as the number of share repurchases and company share prices. The regression results show that a company's number of shares repurchases is negatively correlated with the share price growth rate. The significance level is the highest, proving that the main motivation for corporate share repurchases is to increase the share price. Finally, this article summarizes Starbucks' share repurchase behavior based on relevant analysis results and non-financial information. It provides suggestions for other companies' share repurchase decisions, which have practical value.

Keywords: Share repurchase, Internal factors (motivation), External factors, Starbucks

1. INTRODUCTION

Share repurchase is a corporate governance tool. It refers to the behavior that listed companies buy back a certain number of shares issued by the company from the share market by means of cash.

Share repurchase originated in the United States in the 1950s. In the past, although the law allowed companies to buy back shares for a long time, it was not until the 1980s that many companies began to implement a large number of share repurchase plans. The large increase of share repurchase in the open

market promotes the rapid development of trading activities. [1]

Nowadays, share repurchase is a very common thing in the American share market. For example, according to the 13D document submitted on June 21, Warren Buffett, who is a world-famous investor and financial giant repurchased Berkshire's shares of \$5 billion from April 22 to June 21, which means that Berkshire's valuation may reach \$13.5 billion by the middle of this year. Therefore, share repurchase is very common in practice, and our literature wants to explore the motivation behind share repurchase. Reviewing the

previous literature, most of them only discussed internal or external factors alone, and rarely combined them. Therefore, we combine internal and external factors and filled the gap of research.

Specially, we chose Starbucks as a case study: Firstly, it is a successful multinational company. The key to success is inseparable from financial control and corporate governance. So, the study of Starbucks' governance experience will help bring enlightenment to other companies' corporate governance. Secondly, through the financial statements, we found that Starbucks has a lot of share repurchase behaviors. And in the past 10 years, there have been 1268 times share repurchases.

The analysis steps are as follows: Firstly, we review previous studies' internal and external factors to explore the motivation of share repurchase. Secondly, some key indicators are summarized to reflect these internal and external factors and quantify our research factors. Thirdly, analyze the Starbucks' annual report. Finally, we conclude that the study and considers the leading reasons and significance of Starbucks share repurchase.

2. LITERATURE REVIEW

Definition

It has been a lot of research exploring the motivation of the share repurchase in this period of time. We considered that the predecessors' research mainly discusses the internal factors and external factors of share repurchase by concluding the previous literature.

2.1. Internal Factors

We had searched for some relevant researches on the motivation of share repurchase and summarized their internal factors of the hypothesis of share repurchase motivation as follows:

2.1.1. Information Signaling Hypothesis

Company repurchasing shares to transmit the information that the share price has been underestimated and indicate that the company will have a wonderful future. In addition, it can also increase the share price and improve the image effect of the company. [2]

2.1.2. Leverage Hypothesis

Companies may reduce their equity capital through share repurchase. As they repurchase shares, it will reduce their issued and outstanding shares. Therefore, it may increase their financial leverage ratio. The companies can also establish an optimal capital structure that is perfectly suitable for them.

2.1.3. Free cash flow hypothesis:

When a company has large amounts of cash on hand and lacks investment opportunities, the company may probably execute a share repurchase program to reduce the agency cost. In other words, the company can allocate the excess cash to shareholders through repurchasing shares. [3] [4]

2.1.4. Financial flexibility hypothesis:

As a company is planning to execute a share repurchase program, the company might announce the number of repurchasing shares. But it will not announce the timing when they repurchase or the price they conclude the transaction whether repurchase the share or not all depends on the real financial condition of the company. Companies can choose the timing to repurchase shares appropriately. This can help the company easier to maximize its profit. Gauy & Harford (2000) [5] find that if the company has a relatively stable cash flow increment, it will choose to increase the dividend. When the cash flow increment is temporary, it will choose to repurchase shares. The market will adjust the expectation of stability according to how the company pays out cash.

2.1.5. Prevent hostile takeover hypothesis:

When the stocking price of a company is relatively low, the company may be the target of the whole market. In order to maintain control of the company, executives of the company will decide to execute a share repurchase plan. In this way, the stock price company may prevent hostile takeover from other companies. Dittmar (2000) [6] finds that the greater the risk of being acquired by other companies, the more likely they are to repurchase shares. Because repurchase shares can raise its stock price, it will pay more if another company wants to acquire the company.

2.1.6. Management incentives hypothesis:

According to historical literature based on this hypothesis, this hypothesis considered that repurchase share could provide a source of stock for incentive plans. Suppose the company adopts the incentive plan that in a stock option way, the quantity of share outstanding will be increased when management exercises authority and it also results in an increase in equity. However, if the company implements the incentive plan in a share repurchase way, it can reduce the equity. Moreover, it can prevent the dilution effect of stock options and increase the EPS. In other words, it will increase the value of shares.

2.2. External factors

In addition to internal factors, our team has found some external factors for the motivation of share repurchases, divided into four parts—the market liquidity and volatility of the stock market, the interest rate of the bond market, tax system, and the environment of the whole world.

2.2.1. The liquidity and volatility of stock market

We also take the impact of liquidity on the motivation of share repurchase into consideration. After studying the public share repurchase events in the market, Ben-Rephael & Wohl [7] find that firms are more likely to consume liquidity than to provide it, which means firms do not actively create the liquidity but will take advantage of the liquidity that exists.

Volatility is also an element that can affect the motivation of share repurchase. When the market is volatile, the company may be concerned that the shareholders no longer have confidence in them when the share price decreases. So, the companies tend to repurchase shares to stabilize their share prices.

2.2.2. The interest rate of the bond market

According to the data observation of the U.S. market for many years, although there have been some changes in monetary policy, we conclude that the interest rate in the U.S. is relatively low, and the interest rate is on a downward trend. Under the background of low interest rates, share repurchase can reduce the financing cost of corporate debt and increase the company's leverage ratio. So, many companies are likely to perform share repurchase in low-interest-rate markets to reduce equity investment.

2.2.3. The tax system & reform

By repurchasing shares, companies can pay less tax and enjoy tax benefits. The 2017 U.S. tax reform is a key factor for companies to implement share repurchase.

The federal corporate income tax was adjusted in the tax reform from 35% sharply dropped to 21%, and allows the immediate expensing of capital expenditures. In addition, the tax reform also concluded the One-time tax on unrepatriated earnings. Due to the prior system of international taxation encouraging companies to accumulate, all the unrepatriated profits in the past are

regarded as repatriated under the tax reform at a rate of 15.5% for liquid assets and 8% for illiquid assets, which was relatively low.[8] No matter the overseas profits are brought to the U.S. or not. What's more, the current global taxation system was transformed into a territorial taxation system. All these changes are attracting the capital back to the United States.

After the tax reform plan was enacted, many companies repurchased their shares.

2.2.4. Environment

The environment and trend of the commercial also have a deep influence on the decision of share repurchase. Company may predict that some regional market has huge potential. Thus, they through share repurchase for making acquisitions and take control of stores of the regional market. The company may repurchase many shares before acquisitions, but they don't hold the share as inventory stock. On the day of the transaction, the company can complete the acquisition by swapping shares, which means the company only needs to deal by shares, but not money. Completing the acquisition by swapping shares could reduce the risk of cash flow.

3. METHOD

3.1. Data descriptions

The data in this case analysis mainly comes from Starbucks' annual report and proxy statement. Our sample period begins in 2010 and ends in 2020. The analysis of the data in this paper mainly adopts a longitudinal comparison. Through the analysis of historical data of the Starbucks over the years, the trend is analyzed to explore the motive of stock repurchase.

3.2 Analysis

3.2.1. Index table

Before analyzing Starbucks' stock repurchase motives, to make the analysis process and results more accurate and intuitive, this article conducts a quantitative analysis of the relevant motivation hypotheses mentioned above and assigns relevant indicators to each hypothesis. The repurchase motivation of a specific company can be judged by calculating the value of the company-related index. The specific indicators are shown in the figure below:

Table 1. Internal index:

Internal Factors	Index	Explanation
Signal transmission	Share price	When Share price less than their forecast, company may use share repurchase to transmit a signal of devaluation.[9]
	Annual EPS forecast	
	Manger confidence (MC)= number of share owned by executives/ Total number of share	Also the higher the MC value of a company, the more confident they are in the company's stock price, and they will not think that the stock price is undervalued as well as imposing a repurchase plan.
Improve financial leverage	LEV = total asset / liability	Companies are more inclined to choose stock repurchase when the LEV is low[10]
Financial flexibility	Current ratio=current asset/current liability	The higher and stable this ratio, the higher financial flexibility of the company. Compared with issuing cash dividends, companies with lower financial flexibility are more likely to repurchase shares.[11]
	Interest coverage ratio=PBIT/total interest	
	Cash%=total cash/total asset	
Free cash flow (reduce agency cost)	FCF=EBIT-Taxation+ Depreciation& Amortization- Changes in Working Capital- Capital expenditure	The more cash a company remains, the higher the agency cost required. When the company's FCF is higher than the industry median but the sales growth rate is lower, the company's agency costs are the highest at this time[12], which will lead company to a repurchase plan.
	Sale growth rate= (Current Period Sales — Prior Period Sales) / Prior Period Sales	
Prevent hostile takeover	EPS= (Net income- dividend for preferred stock)/Weighted average number of common share	Combined with relevant non-financial information, when the company's share price is too low and faces a hostile takeover, stock repurchase can significantly increase the company's stock price.[10]
	Share price	
Management incentives	Number of stock options owned by managers	When managers have more stock options, the company tends to repurchase shares to increase its stock price.[13][14]

Table 2. External index:

External Factors	Index	Explanation
liquidity	Liquidity=monthly trading volume/total shares outstanding	The higher the liquidity, the more companies prefer to pay dividends through stock repurchase.[15]
Volatility	Difference between two bottom & top prices/Time difference	The higher the volatility of stock prices, the more companies tend to repurchase stocks to stabilize the market.

Interest rate	Interest rate LEV = total asset / liability WACC=(E/V) ×Re+ (D/V) ×Rd×(1-Tc)	Low interest rates reduce debt financing costs and increase leverage, as well as reduce the WACC. Thus, lower interest rates will prompt companies to adjust their financial leverage by repurchasing stocks.
Tax policy	Tax rate	According to relevant tax rate policies, repurchasing stocks can help companies and shareholders reduce tax burdens.

3.2.2. Index Analysis

Based on the indicators summarized above, this article sorts out and calculates the relevant data of Starbucks over the years and analyzes it through a line

chart to make the research results more intuitive. Detailed charts are shown below:

3.2.2.1. Internal factors

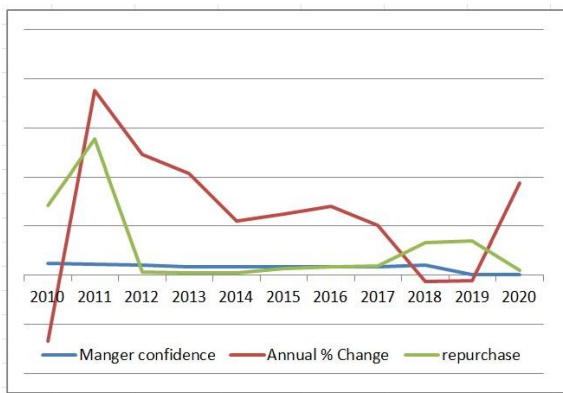


Figure 1 Signal transmission

According to the data and the trend shown in the figure, it can be seen that the number of company stock repurchases is roughly inversely proportional to the company's stock price level and has little correlation with managers' confidence. It shows that if the company's stock price does not perform well, Starbucks will repurchase the stock. Based on actual cases, in 2017 and 2018, Starbucks began to announce the recycling of many stocks. The analysis showed that at the rise of Luckin Coffee, Starbucks' sales revenue dropped significantly, and the stock price fell by more than 1% in the stock market. Repurchase stocks at this time have become a key act of Starbucks to stabilize the stock market.

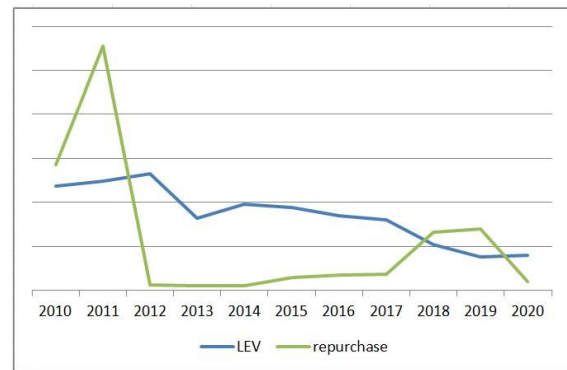


Figure 2 Improve financial leverage

According to the line chart, the LEV of Starbucks is roughly inversely proportional to the number of repurchases, indicating that the number of repurchases of Starbucks stock and the positive change in its financial leverage is contrary to the previous assumptions. The analysis shows that Starbucks' stock repurchase behavior due to other motives will greatly increase the company's leverage ratio, rather than leverage affects the company's repurchase behavior.

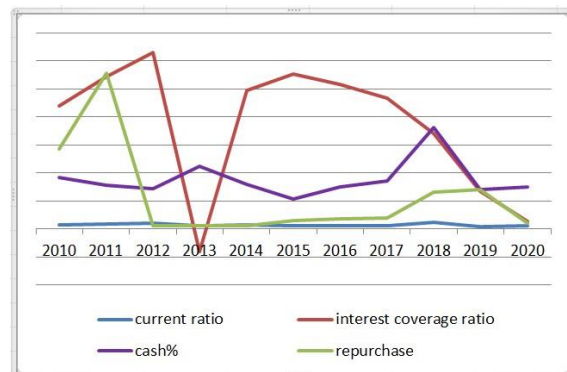


Figure 3 Financial flexibility

According to the analysis of relevant financial indicators, it can be found that there is no obvious proportional relationship between the numbers of stock repurchases of Starbucks and the amount of cash held

by the company. Analysis of the nature and behavior of the company shows that the amount of cash held by Starbucks has always been sufficient to support its repurchase. Therefore, the change in cash holdings did not significantly impact its previous stock repurchase behavior. However, in 2020, Starbucks' operations have been severely affected due to the coming of the epidemic, and operating income has dropped sharply. Therefore, Starbucks announced that it had suspended stock repurchases. The annual repurchase volume was only 20.3m, far less than the previous year's volume. It can be seen that financial flexibility is not completely without influence on Starbucks' stock repurchase decision, but given the size and nature of Starbucks, this motivation may only be prominent under special circumstances.

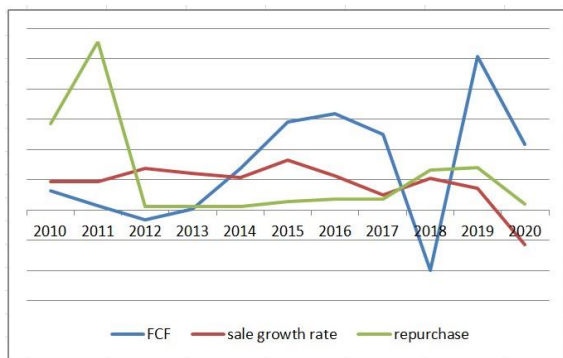


Figure 4 Free cash flow (reduce agency cost)

According to the line chart, FCF is proportional to sales growth. Even if there is a reverse change in individual periods, sales will continue to grow when FCF declines, indicating that Starbucks has lower agency costs, so reducing agency costs is not the main motivation of Starbucks' stock repurchase behavior. At the same time, it can be found that the number of repurchases of Starbucks is the same as the FCF changes. It can be seen that the company is more inclined to return shareholders when the company has rich cash flow, but it does not prove that FCF is the main motive.

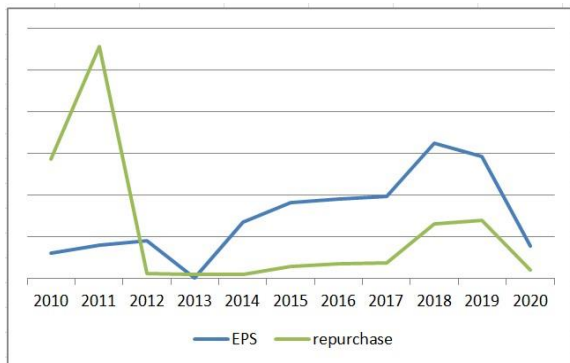


Figure 5 Prevent hostile takeover

Analyzing the chart, it can be seen that the number of stock repurchases of Starbucks in recent years is directly proportional to EPS, which is inconsistent with

the hypothesis in the previous article, indicating that the motive of Starbucks stock repurchase behavior does not include the prevention of hostile takeovers. Based on the analysis of specific circumstances, as a well-known global coffee company that has formed a brand effect and has stable operations, Starbucks is not threatened by a hostile takeover. Instead, the acquisition agreement reached with Nestlé in 2018 made it more profitable and increased EPS.



Figure 6 Management incentives

It can be seen from historical data that the number of Starbucks stock repurchases is positively correlated with the stock options held by its management, indicating that the more the company releases equity incentive plans, the greater the number of stock repurchases. Starbucks has gradually increased the form and quantity of its equity incentives in recent years, including investing a large amount of money in bean stocks for equity incentives starting in 2017. To prevent the dilution of equity and reduce EPS, Starbucks has also increased the repurchase quantity.

3.2.2.2. External factors

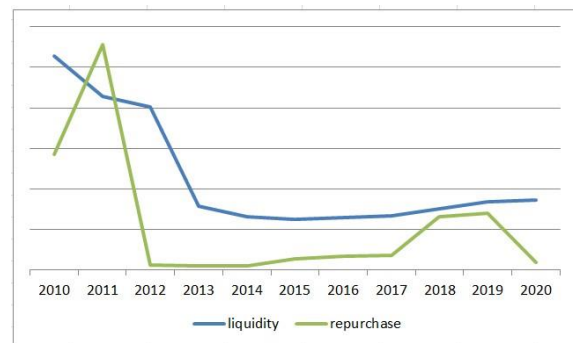


Figure 7 liquidity

According to the line chart, in recent years, the number of shares that Starbucks repurchased has been positively correlated with the liquidity of the stocks, indicating that the stronger the liquidity of its stocks in the stock market, the more Starbucks tends to use stock repurchases to pay dividends.

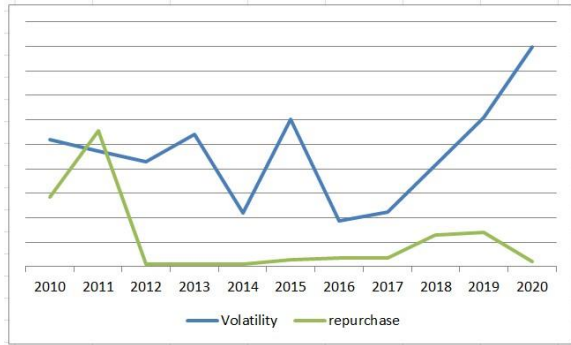


Figure 8 Volatility

According to the information in the figure, it can be seen that there is no obvious relationship between the numbers of stock repurchases of Starbucks and the volatility of the stock price. The analysis may be due to the limitations of the data used in this article, and the calculation interval of volatility is too long to obtain accurate results. Based on the actual situation, it can be seen that Starbucks will mainly adopt the method of repurchasing stocks when the stock price declines. When considering a stock repurchase, the fluctuation of stock price, especially the growth, will not be the factors.

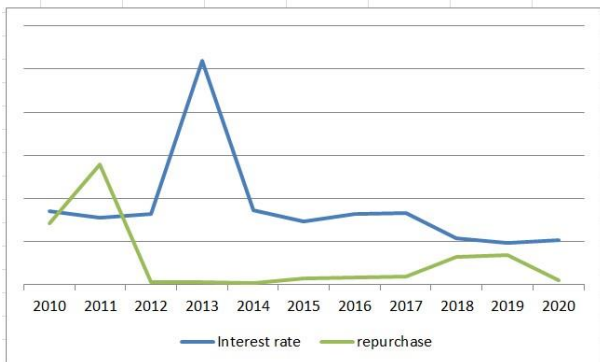


Figure 9 Interest rate

It can be concluded from the line chart that the number of shares purchased by Starbucks is inversely proportional to the interest rate, indicating that the lower the interest rate, the more Starbucks tends to repurchase shares, thereby reducing financing costs and increasing the company's leverage ratio.

3.2.2.3. Other non-financial factors

In addition to the various financial indicators mentioned above, there are many non-financial factors that affect Starbucks' operational and management decisions, such as the macroeconomic environment, long-term development strategies, etc., combined with financial data, have become the key factors that affect managers' decisions.

Taxation

Taxation has an important impact on the business and management decisions of companies. As far as stock repurchase is concerned, in addition to the tax benefits brought by the use of stock repurchase to issue dividends, Starbucks' repurchase plan has also been affected by the 2017 tax reform in the United States. According to the analysis of its repurchase behavior, it was found that Starbucks announced a large stock repurchase plan at the end of 2017. The time was consistent with the timing of the tax reform. It was also mentioned in the annual report of Starbucks that the tax rate reform in 2017 brought A large amount of preferential income. These preferential benefits are also mainly used in returns to shareholders, employees, and investors, including remuneration, incentive policies, bean stock, and stock repurchase.

High returns to investors

Starbucks has always been known for its high returns to investors and shareholders, bringing it a good reputation in the market and increased trust among investors. Especially since 2011, Starbucks has greatly expanded its Shareholder returns. The funds used for financing activities have increased from 346m in 2010 to 608m. According to the official statement, the increased part is mainly used for cash returns to shareholders, including cash dividends and many common stocks repurchases. In the long run, Starbucks' emphasis on giving shareholder returns has attracted more and more investors and has made it more competitive in the stock market.

Long-run strategy

As a global coffee giant, Starbucks has expanded its business coverage and opened up new markets during its development. As the most potential region, China has also become the main development target of Starbucks in recent years. In view of China's initial control policies on foreign-funded enterprises, Starbucks' main method to open the Chinese market is to take three steps from agency to the joint venture and finally achieve control. In order to quickly enter the market, Starbucks will relinquish its control in the initial stage and achieve full control through the gradual repurchase of shares after stable operations and deregulation by the government. For example, in 2011, Starbucks signed an agreement with Hong Kong Meixin Group, a joint venture partner in southern China, to acquire 30% of the equity of the joint venture held by Meixin Group, thereby obtaining 100% ownership of its business in China and realizing the Complete control of the area. In the subsequent operations, Starbucks has also gradually obtained the independence of operating in the mainland through repurchasing shares to avoid the diversion of interests. This has also become a major reason for the increase in company stock repurchases in recent years.

3.2.3. Empirical analysis

In order to make the analysis more convincing, this article also uses empirical analysis research methods to explore the main factors affecting Starbucks' stock repurchase.

3.2.3.1. Sample selection

For the selection of samples, considering that the special reasons of the 2020 epidemic will cause extreme values to affect the regression analysis, this article only selected the data up to 2019 when conducting empirical research to ensure the generality of the conclusions. At the same time, given the above analysis, the situation in 2011 is also relatively special, which will affect the analysis of the explanatory variables, so the data for 2011 is also excluded.

3.2.3.2. Variable selection

According to the above chart analysis, this paper selects the number of stock repurchases (Rep) as the dependent variable, and at the same time selects the stock price (Pri), management incentives (MI) and liquidity (Liq) as the independent variables for the empirical analysis. The specific explanation is as follows:

Number of stock repurchases (Rep) — — dependent variable: Starbucks' number of stocks

repurchased over the years can directly represent its stock repurchase behavior, so the number of stock repurchases is selected as the dependent variable.

Stock price (Pri) ———independent variable: With the development of Starbucks and the expansion of its sales activities, analyzing the price of its stocks shows that its stock price must be on the rise. Therefore, it is difficult to draw accurate causality if the stock price is selected as the explained variable. After analysis, this article chooses the growth rate of stock prices over the years as an explanatory variable in order to conduct empirical research more accurately. At the same time, since the stock repurchase plan announced by the company that year was a response to the stock price of the previous year, t-1 data was used for stock price changes in the regression analysis.

Management incentives (MI) ———independent variable: This article extracts from Starbucks' annual reports the number of options for management and employee incentive plans over the years to represent the management incentives given by the company.

liquidity (Liq)——independent variable : To ensure the correspondence of each indicator period, this article counts the monthly number of Starbucks stock transactions in each year and calculates an average number.

The specific content is shown in the following table:

Table 3. Variable description

Variable type	Variable name	Variable abbreviation	Variable definitions
dependent variable	Number of repurchases	REP	The number of shares that Starbucks has repurchased over the years
	Price growth rate	PRI	(Current year stock price - Last year stock price)/ Last year stock price
independent variable	Management incentives	OPT	The number of options Starbucks has given management over the years
	liquidity	LIQ	Monthly trading volume/total shares outstanding

Research methods and models

$$REP = c + \beta_1 PRI + \beta_2 OPT + \beta_3 LIQ + \varepsilon \quad (1)$$

This article uses Eviews to perform regression analysis on the above data. The specific regression model is as follows:

Table 4. Regression result

Variable	Coefficient	Std. error	t-Statistic	Prob.
C	57.99835	46.71547	1.241523	0.2695
PRI	-308.6338	35.06265	-8.802351	0.0003
OPT	0.096204	0.161160	0.596947	0.5765
LIQ	247.5192	68.23743	3.627323	0.0151
R-squared	0.972421	F-statistic	58.76677	
Adjusted R-squared	0.955874	Prob(F-statistic)	0.000255	

The empirical research results show that the number of Starbucks stock repurchases is inversely proportional to its stock price, and the regression results are very significant, which proves that one of Starbucks' stock repurchases is to increase the company's stock price. In addition, management incentives and stock liquidity are directly proportional to the number of Starbucks stock repurchases, but the significance is lower than the stock price, indicating that management incentives and stock liquidity in the stock market are also Starbucks 'motivations of starting a share repurchase.

4. CONCLUSION

4.1. Finding

We finally found that the motivation of Starbucks' final share repurchase is to improve the share price. And listed companies often raise their share prices through share repurchase. So the share price is an important reason to promote Starbucks reform, and managers have less influence than the share price.

4.2. Implications for Starbucks' share repurchase

According to our analysis, we have proved that the share price of Starbucks had a negative correlation with the quantity of its repurchase, and it is the most relevant factor to the motivation of Starbucks to implement the share repurchase plan. The second most relevant factor for Starbucks' share repurchase plan is Liquidity, which tends to pay dividends through share repurchase. The rest of the factors don't matter the motivation too much.

4.3. Implications for other companies to repurchase share

After the above analysis, it can be found that Starbucks' stock repurchase plans over the years are traceable and can also be used by other companies. First of all, when the stock price does not perform well, the company can take the way of repurchasing the stock to increase the company's stock price, which will give

investors confidence and benefit the company's operation and development in the long run. At the same time, if the company intends to provide a larger amount of equity incentives, It is also recommended that companies try to repurchase stocks first when cash flow permits to reduce the share capital that is circulated outside, so as to prevent the stocks from being greatly diluted when the options are exercised. What's more, the liquidity of stocks should also be considered when repurchasing stocks. If the company's stock liquidity has been weak, it should pay back to shareholders in the form of cash dividends.

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