DOES THE TYPE OF OWNERSHIP CONTROL MATTER: EVIDENCE FROM SHARE REPURCHASES PROGRAMS

Foued Hamouda*

Abstract

In this study, we examine effect of stock repurchase programs on firm performance and the importance of the ownership structure in explaining this relationship. The primary result shows that higher levels of repurchases in one year are associated with higher level of performance in the subsequent year. This finding is robust to different ownership structure. Besides, the finding that higher level of repurchases are followed by better financial performance in closely held firm could reflect manager's desire to signal undervaluation of stock. However, in the widely held firm the result are not consistent with the signalling hypothesis.

Keywords: Share repurchases, Performance, Ownership structure

*Institut Supérieur de Gestion de Tunis
41, Rue de la Liberté, Cité Bouchoucha 2000 le Bardo, Tunis –Tunisie
Tél : (+216) 22.65.94.98
E-mail : foha2001@gmail.com

1. Introduction

Appeared in the United States for more than eighty years, the stock repurchase programs in U.S knew an important development following the stock crash of October 1987. In the middle of the 80's the announcements of the buyback programs in the United States were about 25 billions dollars per year. Between 1996-1998 more than 4000 programs of buyback have been announced for an amount equal to 550 billions dollars. During the first quarter of 1999 alone, the *securities data company* recorded 350 announcements of repurchase programs for an amount of 40 billions of dollars. The repurchase programs passed thus for the first time the dividends amount in 1997(Grullon and Michaely 2002).

However, this growth is not limited in the United States. Other countries as Japan has recently instituted new reforms in the regulation allowing firms for the first time to repurchase their own shares. For example, during the spring 1996, the Toyota company began a first program authorizing firms to acquire 20,15 millions of its own shares for an amount close to 57 billions of yens. Before the success of this acquisition, the giant car manufacturer had announced in April 1997 its intention to renew the operation for an amount of 100 yens billions.

Finally, the phenomenon of the ("buyback") exists also in all Europe. Compared to the Dutch company D.S.M. or Swedish Northbanken company, the credit union *Spanish Banco Popular* has decided to start a repurchase program for 4,5% of its capital for an amount of 35 billions of pesetas during 1997. But the situation in Europe is very different: Whereas some countries that were familiar with this mechanism since several years, tempt today to break its expansion, (United Kingdom), others are still little accustomed to this technique and look currently to develop it. (Germany).

The studies were interested in market reaction following the announcement of the repurchase program (Stephens and Weisbach 1998; Jagannathan and Stephens 2001; Chan, Ikenberry et al. 2004). Ikenberry and al (1995) for example recorded a regenerative feedback of prices in the order of 12%, four years after the announcement of the program for companies listed on the NYSE, ASE and the NASDAQ stock exchange.

The main contribution of this article is to examine the relationship between repurchase program and firm performance based on actual repurchase rather than announcements. Besides, it shows how ownership structure is important in explaining the relation between repurchase and firm performance.

This article is organized as follows: section 2 analyses the relationship between the repurchases and firm performance. Section 3 deals with the role of the ownership structure in this relationship. Section 4 studies the theories explaining repurchase and performance. Finally, section 5 concludes the article and provides some suggestions for future research.

2. Stock repurchase programs and firm performance

Since some years, the growth of the buyback programs has indicated that it is an important tool of the total strategy of the firms. Very quickly the relationship between the repurchase and the firm strategy became a crucial and complex issue for the

management, the board of directors, the financial analysts and investors (Evans and Gentry 2003). Thus, what can a firm do with the excess of its cash flows? Does it have to reduce the level of its debt or increase the amount of its dividends, conduct additional investments or use this excess of cash for the repurchase of its share. Since the managers cannot observe the future effect of the repurchase on the financial performance, the dilemma of the decision-makers is to choose the way that will maximize more the future value of the firm.

Evans and Gentry (2000) studied the relationship between the repurchase program and the future value creation of the firm. They asked two fundamental questions, the first one was; does the implementation of the repurchase strategy create a long-term value for the corporation? And the second one was: is firms that adopted this strategy are better than those that didn't adopt it? They used the Tobin Q ratio as a measure for the performance and their methodology consisted in determining if there is a change in performance before and after repurchase. For a sample that covered the period 1976-1995 the results of their analysis didn't show that the repurchase strategy increases the future performance of the company (weak Tobin Q ratio). Instead, firms that adopted the repurchase programs recorded bad performance compared to those that didn't adopt this strategy. However they found that Tobin Q ratio is sensitive to the firm size. The more the size of the company is high the more the Tobin Q is better. In view of these two found observations, they conclude that their survey doesn't confirm the signal theory.

The results of these two authors contradict those of other studies; Ikenberry et al (1995) for example examined the long-term and short-term performance for a list of companies that announced open market repurchase programs. Based on a sample of 1239 announcements during the period 1980-1990 they concluded that the market reacts in a prudent manner following the announcement, leading the prices to fit weakly in the time (under- reaction Hypothesis). The market reaction measured two days before and two days after the announcement was 3.54%. Whereas the abnormal reaction for the four years that follow the announcement was of 12%. These authors show that the main incentive behind this, is the under-valuation of the stocks.

In 2000 these same authors studied the market reaction following the announcement of the buyback programs for companies listed on the Toronto Stock Exchange for the period 1989-1997. They thought that the Canadian data are a lot more interesting than those of the United States, because the Canadian firms were forced to publish every month the numbers of its share that were effectively repurchased. This helped them to explain the main determinants of the achievement rate of the program. While being based on the model of Fama French (1993) and the market model, the abnormal return have been calculated for different periods. The results showed that the abnormal return for the two methods are positive for the three years following the announcement and negative for the periods before the announcement.

Hirtle (2001) analysed the relationship between the repurchase program and the future performance for firms listed on the NYSE, NASDAQ and the AMEX stock exchanges. The originality of his analysis was to calculate the performance by measures others than those used by the whole study. Besides, the survey was about a long-term analysis that concerned the years from 1987 to 1998. Hirtle used the operational performance ROA (Return on Asset), ROE (Return On Equity) and the real growth of income. The results of his analysis show that higher level of repurchase was associated with superior future performance. His results were valid for different methods of repurchase measures.

Grullon (2000), while adopting return on assets (ROA) as measure of performance has also analysed this relation. But he found that firms announced repurchase program didn't have better future performance.

The survey of the relationship between the repurchase and the future performance is not analysed exclusively in the United States or in Canada. Zhang (2005) for example analysed firm performance after repurchase announcement in Japan. Like in the United States, he found a statistically significant abnormal return following the announcement. As well as a positive relation between the abnormal return and the amount of the repurchase, but he found a negative relation with firm size, the market to book ratio and the return before the announcement.

Lasfer (2000) likewise, studied the market reaction following the repurchase programs in United Kingdom and in the European continent. The analysis of the institutional structure shows that firms in United Kingdom seemed different from those of other countries. First of all and opposite to the all European countries, the United Kingdom has a system based on the market where the agencies costs and the problems of asymmetry information are raised. Besides it is a country governed by different laws that offer a better protection to the minority of shareholders. In the same way, the repurchased share are cancelled whereas in others country firms can choose between the withdrawal of the stocks or their detention as treasury share. According to this author these institutional differences tend to affect the market reaction following the announcement. The results of Lasfer show a big difference between the market reaction in United Kingdom and other countries in Europe. Market reaction in United Kingdom was much more eminent than the one in other countries. Between +21 days to +151 days after the announcement, the prices in United Kingdom continue to increase to reach 4.15% whereas for the other europeen countries, the prices decreased by 5.29%.

Mark and Stafford (1999) examined the long-term price performance after three major decisions undertaken by firms: The merger-acquisition and

seasoned equity offerings and the stock repurchases. These two authors showed that the standard measure of the performance by the *Buy and Hold* method, in conjunction with the bootstrapping procedure (Ikenberry, Lakonishok et al. 1995) is not an adequate methodology because it supposed the independence of the abnormal return of the events. However the events or the majority of decision undertaken by firms were not at random. So while being based on another methodology that took into account this dependence, the first implication of their results observed a weak abnormal performance after the setting up of these three events.

Mc Nally (1999) presented a signal model that explain the effect of the repurchase programs decision on insiders activities. He considered that the advantage of setting up such model permits us to have a deeper understanding of the working mechanisms of the signal. Mc Nally tested his model on a sample of 700 American firms and he found that firms which frequently repurchase their share have a higher level of future incomes. In the same way firms that are riskier or those that have a proportion of superior managerial ownership have important future incomes.

Based on the same analysis, Jagnnathans and Stephen (2001) considered that the performance of firms that often opts to the repurchase programs is different from those of other firms. They examined the operational performance of firms between those that frequently repurchase stocks and those that only repurchase occasionally or rarely. They found that the abnormal return for the first group is superior to the second group. This return is around 2.5% for the first and 1.37% for the second.

The results presented here generally over show a regenerative feedback of the market following the announcement of the repurchase program. As the managers are often those that take the management decisions and taking into account the importance of the agency theory within the firm, one can wonder if the managers can take advantage of this private information and purchase stocks for their own account or act on the other hand according to the interests of his shareholders. Chan Ikenberry and Lee (2001) studied the performance around the stock repurchase programs. The results of their analyses showed that there is no superior performance when managers buy the stocks for their own accounts. Indeed the evidence shows that managers don't use the informational advantage for personal earnings in conjunction with the repurchase program. But these internal transactions can have different effects to explain the incentive behind the repurchase. Indeed, the managers could be forced to buy or to sell some shares for liquidity constraint (Fried 2001) .

The relationship between the repurchase and performance is also studied with firm internal issues. Klein and Rosenfeld (1988) for example studied the association between repurchase and performance of the controlling team (turnover of the top managers). They tested the hypothesis that repurchase programs are followed by a high turnover rate of top managers; that is to say there is a negative relation between the repurchase and the performance of the top executives. The results of their analysis showed that firms adopting repurchases had recorded a higher level of manager's turnover over the average and this was during the first year after repurchase. However this high rate was not exclusively due to the repurchase but also to other factors notably by the takeovers in which the investors believe that they are able to manage better the firm.

2.1 Sample selection and Summary statistics

In order to answer the dilemmas found by the discussed empirical studies, I tested how repurchase programs are linked with firm performance. Contrary to the data frequently used by past studies, I collect information on actual repurchase programs rather than announcement. We collect firms announcing repurchase from the Bull sector website This allows us to examine the relationship between the stock repurchase and the future performance for longer period and to verify the main incentives of repurchase in the long term.

The database comes from the annual report published by each company (**FORM 10K**), and the quarterly reports (**FORM 10Q**) as well as proxy statement **DEF 14a** available on the www.sec.gov website. The estimated sample is constructed while selecting observations contained in the reports between 1996 and 2001 for a list of 672 firms that announced a repurchase programs. The relative data on the actual repurchases are available on the consolidated statement of cash flows, under the item "*repurchase of common stock*." we eliminated firms that have missing value on repurchase as well as firms that are implied in merger-acquisition. The final sample consists of 804 observations for 134 firms during 1996-2001 period. All statistics summary are presented in Table 1.

Figure 1 present the repurchases growth relative to dividends during the sample period in thousands of dollars. This figure shows that the growth of the repurchase is more important than dividends; It almost doubled between 1996 and 1999 for the selected sample. In the same way figure 2 shows an increase in repurchases relative to dividends with respect to capital proportion.

Table 1. Summary statistics

Variable	Observations			
	Mean	standard deviation	Minimum	Maximum
Repurchases	0.1166	0.1478	0.0000	1.1884
Dividends	0.0544	0.1935	0.0000	4.8963
ROE	0.2008	0.2866	-1.9565	6.1349
ROA	0.1705	0.4912	-9.7361	6.0000
Real growth of income	0.0410	0.3265	-0.9659	7.7796
Loan to assets ratio	0.1413	0.1523	0.0000	0.7700
Equity capital ratio	0.4323	0.2615	0.0277	0.9753
Assets size	6.2251	1.0291	3.8463	8.8126
Number	804	804	804	804

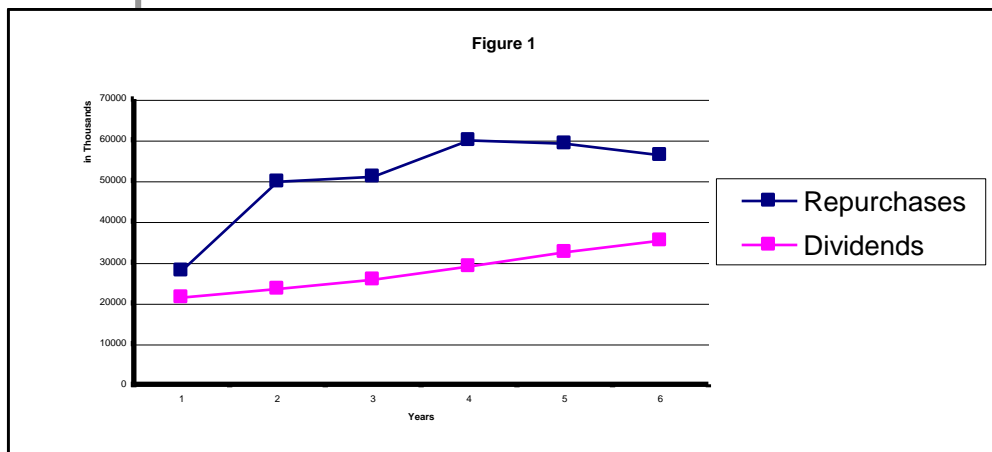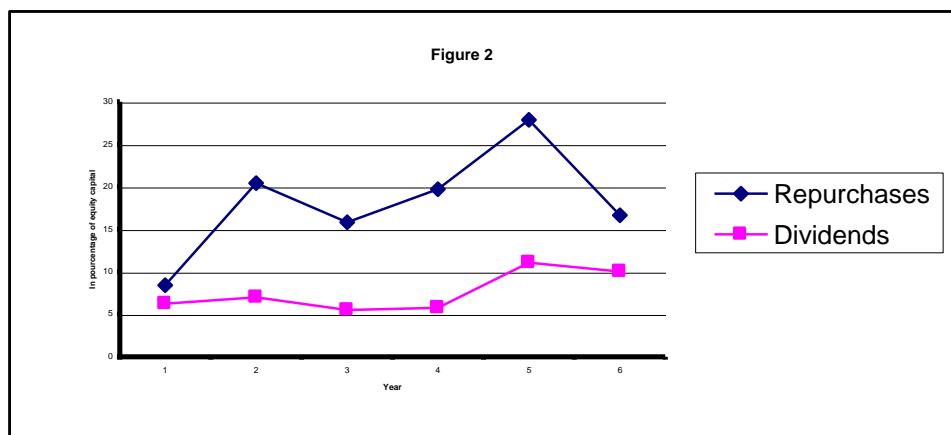**Fig.1.** Repurchase and Dividends Growth in Thousands of Dollars

Fig.2. Repurchase and Dividends Growth in Equity Capital

2.2 Methodology

To understand now the effect of the repurchases on firm performance, we used a simple reduced regression that join a set of performance variables on lagged control variables and repurchase variables. A positive and significant sign of β_2 means that an increase of the repurchases will enhance firm performance.

We used a variety of performance measures represented by ROE (Return On Equity), ROA (Return On Assets) and the real growth of income (Annual change in real net income divided by beginning of year equity capital). Table. 1 present the definition of variables.

Performance $_t$ = β_1 + β_2 Repurchases $_{t-1}$ + β_3 Dividends $_{t-1}$ + β_4 Asset size $_{t-1}$ + β_5 (Equity / Total assets) $_{t-1}$ + β_6 (Debts/ Total Assets) $_{t-1}$ (1)

Table 3 give results of regression (1). It shows that a higher level of repurchase is associated with a high level of firm performance. The coefficients of repurchases in the three regressions are positive and statistically significant. Moreover Table 2 shows a positive and significant relation between dividends and firm performance. So one could argue that repurchase programs and dividends distribution improve firm performance and constitute good strategies.

Table 2. Definition of variables used in the analysis

Repurchases: The Amount of share repurchased divided by beginning of year equity capital
Dividends : Cash dividends distributed divided by beginning of year equity capital.
ROE : Net Income divided by beginning of year equity capital.
ROA : Net Income divided by end of year equity capital.
Earnings Growth : Annual change in real net income divided by beginning of year equity capital.
Assets Size : Log of real total assets.
Equity Capital Ratio: End of year ratio of equity capital to total assets.
Loan-to-Assets Ratio: End of year ratio of total loans to total assets.

Table 3. The Impact of Stock Repurchases on Firm Performance

The sample counts 804 observations of 134 firms for the period 1996-2001. The repurchase is defined as the amount of share repurchased divided by beginning of year equity capital (lagged one year). The dividend is defined as cash dividend distributed divided by beginning of year equity capital (lagged one year). Symbols ***, ** and * indicate statistical significance at the 1%, 5% and 10% respectively, standard errors are in parenthesis.

	Dependant Variable		
	ROE	ROA	Real Growth in Income
Lagged payouts			
Repurchases	0.8398***	1.0218***	0.2167**
	(0.0717)	(0.1329)	(0.0930)
Dividends	0.5442***	0.6380***	-0.1193
	(0.1101)	(0.2040)	(0.1427)
Lagged Control Variables			
Assets Size	-0.0075	-0.0243	-0.0350**
	(0.0113)	(0.0209)	(0.0146)
Equity capital ratio	-0.0104	-0.0833	-0.1696***
	(0.0477)	(0.0884)	(0.0618)
Loan to assets ratio	0.2866***	0.3586***	-0.1350
	(0.0726)	(0.1345)	(0.0941)
$\overline{R}^2$	0.2267	0.1143	0.0155

VIRTUS *INTERPRESS* ®

Prob(F-statistic)	0.000000	0.000000	0.008823

3. The ownership structure and firm performance

The relationship between the ownership structure and the firm performance was well studied in the financial literature. This debate comes back to the Berle and Mean's (1932) thesis who suggested that a negative relation must be observed between shareholding diffusion and firm performance. The empirical studies done then provided contradictory results. Morck, Shleifer and Vishny (1988) for example examined the relationship between performance measures and ownership proportion. Based on two performance measures, they concluded a non monotonous relationship between performance and the ownership structure. Indeed, when the ownership is between 0% to 5% Tobin Q value increases, when the ownership is between 5% to 25% Tobin Q decreases and when the ownership exceeds 25%, Tobin Q increases once again. These results also apply to manager's ownership as well as to the members of the board. They explain that an increase in Tobin Q with the ownership structure reflects the convergence of interests between the managers and the shareholders, whereas the reduction of this ratio reflects the entrenchment hypothesis. Therefore, manager's interest becomes more close to the shareholders when the ownership increases beyond 0. So the value of the firm must increase until the fraction detained by managers becomes big enough to give the control of the firm. At this point, the manager's entrenchment begins to occur and the value of the company begins to decrease. Beyond 25% threshold the interests of the managers and the shareholders align again and drag an improvement of the performance. Morck and al also suppose that the entrenchment is an essential argument that explains the financial performance.

Some other works followed Morck and al (1988) to show the important role of ownership structure. Hermalin and Weisbach (1991) estimated the effect of the managerial ownership and the composition of the board of directors on the Tobin Q. They treated the managerial ownership and the composition of the board as endogenous variables and they found that there is no relationship between the board composition and the performance but a non monotonous relation between the managerial ownership and the performance, in fact there is a positive relation between 0% and 1%, a weaker relation between 1% and 5%, an increase in this relation between 5% and 20% and a reduction beyond 20%.

Similarly Cho (1998) has found similar results of a non-monotonous relation between Tobin Q and ownership fraction detained by managers. Indeed he estimated a system of three regressions in which - the ownership of the managers depends on Tobin Q, an investment value and a set of control variables. - Q depends on the managerial ownership, a value of investment and a set of control variables. And finally - The investment depends on the managerial ownership, Q and a set of control variables. His result indicates that Tobin Q affects the ownership structure. Himmelberg et al (1999) also found that the managerial ownership doesn't have an effect on the firm performance.

In another survey, Xu and Wong (1997) note that the ownership structure has a meaningful effect on the firm performance. First there is a positive relationship between the performance and the ownership concentration. Besides the effect of the ownership concentration is more raised for firms that are dominated by legal people (institutions) than those dominated by State. They noted that the work productivity has the tendency to decline when the state proportion in the capital increases.

Vishny and Shleifer (1997) consider that the ownership concentration enhance the legal protection. Indeed when the control right is concentrated in the hands of a weak number of investors with an important fraction of cash flow, some rigorous actions are going to be undertaken more easily by investors than when it is dispersed on a big number of investors. Therefore, one can overcome the free rider problem that affects the minority shareholders.

The ownership structures vary from country to another. In the United States for example big investors and stockholders majority are relatively rare. Probably because of the legal restrictions that bar a higher ownership and the exercise of control by the banks, the mutual funds of the insurances and the other institutions. In other countries, the stockholders majority constitutes the norm. In Germany, for example, the commercial banks control more that one-quarter of the vote in the vast majority of firms. Whereas in small firms the norm is the domestic and pyramidal control in which the owner controls 51% of the firm that itself controls 51% of its subsidiaries.

This increase of the ownership concentration in some countries was not realized accidentally. Indeed the advantages of the ownership concentration are theoretically clear. It provides investors the power and the possibility to control the management, and the possibility to maximize profit. So the ownership concentration can be considered as the most efficient path to solve the agencies problems into the firm. Besides, economics scale give advantages for banks and financial institutions to control auditing firms.

Ginglinger and L'her (2006) show that the corporate governance affects the informational content of the repurchase program. On the one hand the repurchase could be seen as a good signal since returning free cash flow to shareholders reduces the agencies conflicts between the managers and the shareholders. On the other hand the stock repurchase could deter takeover decisions. So firms that are characterized by a weak control can be subject to act to reinforce the control of the present shareholders.

Based on French companies, they found that market reaction is positive for the controlled firms and repurchase generating bigger ownership concentration is recognized as good news by investors when the control comes back to external investors. Indeed, the presence of foreign institutional investors in the capital and the existence of a majority secondary shareholder in the controlled firms is a good sign of the minority shareholders protection. This assures that the power is balanced between all shareholders. However the market reaction for firms controlled by the family is weaker, notably because the divergence between the control rights and the cash flow rights.

The identity of the secondary shareholder plays a determining role in the repurchase programs. Gomes and Novaes (2005) show that the existence of several majority stockholders protects minority shareholders. The second majority shareholder can guarantee that the repurchase program will benefit all shareholders. So the characteristics of the governance play an important role in explaining the relationship between repurchase program and firm performance and therefore reasons and effects of repurchase could be different from widely held firms and closely held firms. The second hypothesis is to examine how the ownership structure could affect the relationship between the repurchase and firm performance. in other words does this relation vary across different structure.

To test this hypothesis we are going to divide our sample into three sub-samples. The first sub-sample includes firms whose first five stockholders detain between 5% and 10% of firms equity. The second sub-sample is those whose first five stockholders detain between 10% and 20% of firm equity. And the third sub-sample include those whose first five stockholders detain more than 20% of firms equity. This separation allows us to determine the relationship between repurchases and firm performance. To do this, equation (1) is estimated for the three sub-samples. In order to have coherent and more precise results, two methods are proposed to divide our sample into three groups**.**

a. Method 1 (by average)

In this method groups are arranged on the basis of the mean structure during the whole sample period. That is, firm which records, for example, four years or more of diffused structure will be considered as a widely held firm[*].

Table 4 shows statistics value for the three groups. According to this table the vast majority of firms are closely held firms. The fraction of firms that belong to this structure is greater than 50%. This result indicates that firms adopting repurchase programs have more concentrated ownership.

Harford (1999) found that firms with low level of managerial ownership (firms with more agencies

conflicts) are those that prefer acquisition than repurchase. Similarly, McNally and Li (2007) found that Canadian firms use more repurchase when the level of ownership and the free cash flow is high and after a fall in prices.

Table 5 present results of the three regressions. Only repurchases and dividends coefficients are presented here. But as in table 3, all three regressions contain lagged controls variables. Results show a positive and significant relation between share repurchase and firm performance for all structures (the only exception is for the third regression). Indeed, the effect of repurchase increases significantly when moving from structure 1 (dispersed) to structure 3 (concentrated). In the ROA regression, the repurchase coefficient is increased twofold between structure 1 and structure 3. Thus, the more important the ownership concentration the more is the effect of repurchase on firm performance.

b. Method 2 (by observations)

In this second method the separation is made by observations[1] and analyzed as an independent variable. Every year when the ownership structure changes, the associated observations is imputed to the suitable structure.

The results of this method are given in table 6. Relation between repurchase and firm performance is statistically significant for the two regressions. Besides, as in table 5, repurchase coefficients increases as one move from widely held firms to closely held firms. The ROE coefficient moved from 28.16% to 40.39% between structure 1 to structure 2, and then increased for 59.56% between structure 2 to structure 3 to reach 99.95%.

In summary table 5 and 6 conclude that share repurchase is affect positively firm performance for the three types of structures. This result is more pronounced in concentrated structure than in dispersed structure. So one can argue that the motivation behind repurchase may be different between different ownership structure.

---

[*] The period analysis is of 6 years

[1] Observation mean year-firm

Table 4. Data Description for the three types of structures

Structure 1 counts 204 observations of 34 firms whose first five stockholders detain between 5% and 10% of firms equity. Structure 2 counts 186 observations of 31 firms whose first five stockholders detain between 10% and 20% of firm equity. Structure 3 counts 414 observations of 69 firms whose first five stockholders detain more that 20% of the firm equity.

	Structure 1	Structure2	Structure3
Firm proportion	25.4%	23.1%	51.5%
Average repurchase on equity capital	0.132653	0.113575	0.110234

Table 5. The Impact of Repurchase on Firm Performance For the Three Types of Structure (classified by average)

The variables used in these regressions are the same as those in table 3. The repurchase is defined as the amount of repurchased share divided by the beginning of the year equity capital (lagged one year). The dividend is defined as cash dividend distributed divided by the beginning of the year equity capital (lagged one year).. Structure 1 counts 204 observations of 34 firms whose first five stockholders detain between 5% and 10% of the equity firm. Structure 2 counts 186 observations of 31 firms whose first five stock holders detain between 10% and 20% of equity firm. Structure 3 counts 414 observations of 69 firms whose first five stockholders detain more that 20% of equity firm. Symbols ***, ** and * indicate statistical significance at the 1% , 5% and 10% respectively, standard errors are in parenthesis.

Dependent variable

	ROE	ROA	Real Growth of Income
			Structure 1
Lagged distributions			
Repurchase s	0.5487***	0.5796***	-0.1038
	(0.0868)	(0.0875)	(0.0759)
dividends	0.1535**	0.1527**	-0.0042
	(0.0695)	(0.0701)	(0.0608)
$\overline{R}^2$	0.2455	0.2748	0.0136
Prob(F-statistic)	0.000000	0.000000	0.202628
			Structure 2
Lagged distributions			
Repurchases	0.6625***	0.5810***	0.0962*
	(0.0798)	(0.0687)	(0.0540)
dividends	-0.1537	0.3071	-0.5088**
	(0.3547)	(0.3052)	(0.2401)
$\overline{R}^2$	0.3971	0.4436	0.0244
Prob(F-statistic)	0.000000	0.000000	0.122033
			Structure 3
Lagged distributions			
Repurchases	0.9805***	1.2810***	0.3023*
	(0.1192)	(0.2371)	(0.1658)
dividends	1.1559***	1.3746***	-0.1845
	(0.2306)	(0.4587)	(0.3208)
$\overline{R}^2$	0.2540	0.1256	0.0271
Prob(F-statistic)	0.000000	0.000000	0.013552

Table 6. The impact of Stock Repurchase on Firm Performance For the Three Types of Structures (classified by observation)

The variables used in these regressions are the same as those in table 3. The repurchase is defined as the amount of repurchased share divided by the beginning of the year equity capital (lagged one year). The dividend is defined as cash dividend distributed divided by the beginning of the year equity capital (lagged one year).. Structure 1 counts 179 observations whose first five stockholders detain between 5% and 10% of the equity firm. Structure 2 counts 143 observations whose first five stockholders detain between 10% and 20% of equity firm. Structure 3 counts 346 observations whose first five stockholders detain more that 20% of equity firm. Symbols ***, ** and * indicate statistical significance at the 1% , 5% and 10% respectively, standard errors are in parenthesis**.**

	Dependent variable		
	ROE	ROA	Real Growth of Income
Structure 1			
Distributions retardées			
Repurchases	0.2816***	0.3398***	-0.0263
	(0.0719)	(0.0723)	(0.0591)
dividends	0.8289***	0.9211***	-0.0036
	(0.1679)	(0.1688)	(0.1381)
$\overline{R}^2$	0.2209	0.2777	0.0186
Prob(F-statistic)	0.000000	0.000000	0.881370
Structure 2			
Distributions retardées			
Repurchases	0.4039***	0.3238**	0.1158
	(0.0924)	(0.1303)	(0.0719)
dividends	-0.0350	-0.0144	-0.0305
	(0.0915)	(0.1290)	(0.0712)
$\overline{R}^2$	0.1970	0.1164	0.0040
Prob(F-statistic)	0.000001	0.000528	0.355056
Structure 3			
Distributions retardées			
Repurchase s	0.9995***	1.2631***	0.4067**
	(0.1207)	(0.2316)	(0.1613)
dividends	0.1089	0.1353	-0.0106
	(0.0719)	(0.1380)	(0.0961)
$\overline{R}^2$	0.1950	0.0995	0.0166
Prob(F-statistic)	0.000000	0.000000	0.057791

4. The signaling and the free cash flow hypothesis

The increase of stock repurchase during these last years encouraged analysts to look for what cause this decision and what is the consequence on prices. In general the results of these researches showed that repurchase is associated with high prices and many reasons were offered to explain this relation grouped into two categories:

Researches in the first category support the idea that repurchase can transfer information on future firm performance. Stephen and Weisbach (1998) suggest for example that repurchase is related to undervalued stock and firms use repurchase to provide good signal of non-observed profitability. Similarly, Ikenberry and al (1995) suggest that firms should repurchase their share when they are

undervalued. Jagannathan et al (2000) found that firms that have more volatile cash flow prefer repurchase than dividends. This shows that firms use repurchase to distribute temporary profits and increase dividends only when they believe that incomes increase in a permanent way.

According to signalling theory, the signal of undervaluation is not believable unless it imposes substantial costs to managers when the stock is not really undervalued. However, according to some authors there is no cost for manager to announce false signal. The announcement of undervaluation is not believable and will be ignored in major cases. Starting from the idea that repurchase is equivalent to a operation in which the shareholders purchase the stocks directly from the sellers shareholders at the repurchase price (Fried 2001), managers who commit to repurchase shares and not to sell their stocks will be forced to pay in pro rata some share at the repurchase price. So if the value of the firm is effectively lower than the cost of repurchase, the stock repurchase is going to harm the managers because they are going to overpay for the repurchased shares. That is manager's decision to repurchase shares and not to sell transmits a believable signal that the value of the firm exceeds the price of the repurchase. Therefore, the cost of false signalling increases with the size of the repurchase and the proportion of the managerial ownership. The higher is the repurchase value the more is the managerial ownership and the more is the signal conveyed.

Under the second category post-repurchase performance could be explained by the agency problems between managers and shareholders. Grullon and Michaely (2004), for example, found that repurchase reduce the agency cost of the free cash flow particularly when the investment opportunities are weak. Dittmar (2000) found that firms repurchase shares to take advantage of the undervaluation and to distribute free cash flows.

4.1 Results from full sample

In this article we use the classical approach used by the many studies and notably by Dittmar (2000) to explain firm performance. We tested only free cash flow and signalling hypothesis for the three structures. For this, I construct a second model in which we are going to detect the relationship between the repurchase and under pricing or the free cash flow hypothesis. My methodology behind this model is to make the link between repurchases with firm performance and repurchases with undervaluation and free cash flow hypothesis. This model is presented as follow :

$$\textbf{Rep}_t = \alpha_t + \beta_1 \text{Cashflow}_{t-1} + \beta_2 \text{Cash}_{t-1} + \beta_3 \text{MKBK}_{t-1} + \beta_4 \text{InAsst}_{t-1} + \varepsilon \qquad (2)$$

Where:

Rep_t : The amount of repurchase in dollars on the equity book value at the end of year prior to repurchase.
Cash_{t-1} : Cash and cash equivalents divided by total assets.
Cashflow_{t-1} : Net income before taxes + depreciation to total assets.
MKBK_{t-1} : Market value of equity plus debt to book value of assets.
InAsst_{t-1} : Natural log of total assets.

According to the literature, small firms have more information asymmetry than the big one because they are less covered by the analysts and newspapers publications (Dittmar 2000). That is why we used InAsset in our regression.

The results of the regression are depicted in table 7. The coefficients show a negative and significant relation for the two signalling variables. For the two other variables the coefficients are less significant. These two results seem more coherent with the signalling hypothesis than for the free cash flow.

Table 7. The Relationship between Stock Repurchases and Free Cash Flows-Signalling hypothesis

The sample counts 804 observations for 134 firms between 1996-2001. The repurchase is defined as the amount of share repurchased divided by beginning of year equity capital (lagged one year). Cash and the cash flow represent variables of the free cash flow hypothesis. Asset Size and the market-to-book represent variables of the signaling hypothesis. Symbols ***, ** and * indicate statistical significance at the 1% , 5% and 10% respectively, standard errors are in parenthesis.

	Dependent variable
	Repurchase
Free cash flow Variables	
Cash flow	-0.000203
	(0.000342)
Cash	0.060531*
	(0.033891)
Signalling Variables	
Asset size	-0.011859***
	(0.003333)
Market-to-Book	-0.007118***

(0.001157)

$\overline{R}^{2}$	0.062297
Prob(F-statistic)	0.000000

4.2 Results from sub-sample

To understand the role of the ownership structure in this; equation (2) has been estimated for each of the three structures. Results of the first method are in table 8. All coefficients have good sign. Coefficients relative to the signalling hypothesis however remain more significant for structure 3. In summary, for the three types of structure, it seems that structure 3 is more linked to the signalling hypothesis than the two other structures.

Table 9 gives the results by the second method (by observations). The results continue to indicate that firms with concentrated structure are motivated by signalling that free cash flw, whereas firms with diffuse structure cannot be motivated by the signalling theory. However if one considers that the market to book ratio can be used as indicator of the investments opportunity, one can argue that having a diffuse structure are motivated by the free cash flow theory because, according to this theory one must expect a positive relation between the repurchase and the free cash flow and a negative relation between the repurchase and the investments opportunities. But the significance of these two variables remains doubtful.

As a result, the two table 8 and 9 suggest together that the relationship between the repurchase and firm performance is motivated by the choice of the managers to signal better performance. This is generally true for closed held firms than for widely held firms.

These results are consistent with those found by Hirtle (2001). In fact, the difference between the three structures can be explained by the difference of corporate governance aspects; for firms that have a concentrated structure, the agencies problems between the managers and the owners seem less significant and the problems associated with the excess of cash flow seem less severe. Thus, for these firms it seems less necessary to use the repurchase to face excess fund. Whereas for those that have a diffuse structure, the main incentive behind the repurchase may be to face agencies problems. Even though the results don't confirm this hypothesis it seems that a more adequate definition of the ownership structure by fraction detained by managers will give better results.

Table 8. The Relation Between Stock Repurchases and Free Cash Flows-Signalling hypothesis for the three type of structure (structure classified by average)

The variables used in these regressions are the same than those of table 7. The repurchase is defined as the amount of share repurchased divided by beginning of year equity capital (lagged one year).. Structure 1 counts 204 observations of 34 firms whose first five stockholders detain between 5% and 10% of the capital. Structure 2 counts 186 observations of 31 firms whose first five stockholders detain between 10% and 20% of the capital. Structure 3 counts 414 observations of 69 firms whose first five stockholders detain more that 20% of capital. Symbols ***, ** and * indicate statistical significance at the 1% , 5% and 10% respectively, standard errors are in parenthesis

	Dependent variable		
	Repurchases		
	Structure 1	Structure2	Structure3
Free cash flow Variables			
Cash flow	-0.000183	0.118318***	0.076836*
	(0.000193)	(0.045145)	(0.043579)
Cash	0.055675	0.076423	0.044604
	(0.069696)	(0.069955)	(0.049366)
Signalling Variables			
Asset size	0.001656	-0.003341	-0.023904***
	(0.004645)	(0.006521)	(0.007095)
Market-to-Book	-0.005742***	-0.005239*	-0.008308***
	(0.001425)	(0.002796)	(0.001749)
$\overline{R}^{2}$	0.071448	0.055037	0.079665
Prob(F-statistic)	0.002665	0.013869	0.000002

Table 9. The Relationship Between Stock Repurchases and Free Cash Flows-Signalling hypothesis for the three type of structure (structure classified by Observations)

The variables used in these regressions are the same than those of table 8. The repurchase is defined as the amount of share repurchased divided by beginning of year equity capital (lagged one year).. Structure 1 counts 179 observations whose first five stockholders detain between 5% and 10% of the capital. Structure 2 counts 143 observations whose first five stockholders detain between 10% and 20% of the capital. Structure 3 counts 346 observations whose first five majority stockholders detain more that 20% of capital. Symbols ***, ** and * indicate statistical significance at the 1% , 5% and 10% respectively, standard errors are in parenthesis

	Dependent variable		
	Repurchases		
	Structure 1	Structure2	Structure3
Free cash flow Variables			
Cash flow	-0.000246	0.087358*	0.051216
	(0.000327)	(0.047575)	(0.041008)
Cash	-0.028218	0.016148	0.068101
	(0.067558)	(0.068096)	(0.054899)
Signalling Variables			
Asset size	-0.004656	0.006585	-0.016650**
	(0.005674)	(0.007382)	(0.006434)
Market-to-Book	-0.004638***	0.000989	-0.006196***
	(0.01589)	(0.002993)	(0.001696)
$\overline{R}^2$	0.032968	0.028110	0.046891
Prob(F-statistic)	0.043752	0.414941	0.000423

5. Conclusion

This article examines the relationship between share repurchase and firm performance. The first result indicates that a higher level of repurchase is associated with a higher level of firm performance. This result is also true when the sample is divided according to ownership structure. Indeed for the two types of structure (concentrated and diffused), there is a positive relation between the repurchase and firm performance. This relation is more significant for closed held firms than for widely held firm.

The positive association found is explained by two theories; the first suppose that managers possess private information on future firm performance. It drives firm to return profit to shareholders by share repurchase programs probably to signal better future performance. The second theory shows that managers choose repurchase when the free cash flow is relatively high and the investments opportunities are low.

In our work, the results found that the relation between repurchase and firm performance is different between different structures. In companies with concentrated structure, high repurchase can be explained by managers desire to signal undervaluation. Whereas for firms with diffused structure results are weakly coherent with this hypothesis.

Whatever the approach used, the main contribution of this article is to permit the comparison between closely held firms and widely held firms when they repurchase their shares. This comparison provide useful insight in how is important the role of ownership in deciding repurchase.

1. References

2. Berle, A. A. and G. C. Means (1932). The Modern Corporation and Private Property. New York, NY.
3. Chan, K., D. Ikenberry, et al. (2004). "Economic sources of gain in stock repurchases." Journal of Financial and Quantitative Analysis **39**(3): 461-479.
4. Chan, K., D. L. Ikenberry, et al. (2001). Do firms knowingly repurchase stock for good reasons. University of Illinois at Urbana-Champaign.
5. Cho, M. H. (1998). "Ownership structure, investment, and the corporate value: An empirical analysis." Journal of Financial Economics **47**(1): 103-121.

6. Dittmar, A. K. (2000). "Why do firms repurchase stock?" Journal of Business **73**(3): 331-355.

7. Evans, J. and J. Gentry (2003). "Using Tobin's Q ratio to assess the strategy of repurchasing shares." Finance India **17**(1): 149.

8. Fried, J. M. (2001). "Open Market Share Repurchases: Signaling or Managerial Opportunism." Theoretical Inquiries in Law **865**.

9. Ginglinger, E. and J. F. L'Her (2006). "Ownership structure and open market stock repurchases in France." European Journal of Finance **12**(1): 77-94.

10. Gomes, A. R. and W. Novaes (2005). Sharing of Control as a Corporate Governance Mechanism, SSRN.

11. rullon, G. and R. Michaely (2002). "Dividends, share repurchases, and the substitution hypothesis." Journal of Finance **57**(4): 1649-1684.

12. Grullon, G. and R. Michaely (2004). "The Information Content of Share Repurchase Programs." Journal of Finance **59**(2): 651-680.

13. Harford, J. (1999). "Corporate Cash Reserves And Acquisitions." The Journal of Finance **54**(6): 1969-1997.

14. Hermalin, B. and M. S. Weisbach (1991). "The effects of board composition and direct incentives on firm performance." Financial Management **20**: 101-112.

15. Himmelberg, C. P., R. G. Hubbard, et al. (1999). "Understanding the determinants of managerial ownership and the link between ownership and performance." Journal of Financial Economics **53**(3): 353-384.

16. Hirtle, B. (2001). How Do Stock Repurchases Affect Bank Holding Company Performance?, SSRN.

17. Ikenberry, D., J. Lakonishok, et al. (1995). "Market underreaction to open market share repurchases." Journal of Financial Economics **39**(2,3): 181-208.

18. Ikenberry, D., J. Lakonishok, et al. (2000). "Stock repurchases in Canada: Performance and strategic trading." Journal of Finance **55**(5): 2373-2397.

19. Jagannathan, M. and C. P. Stephens (2001). Motives For Multiple Open-Market Repurchase Programs, SSRN.

20. Jagannathan, M., C. P. Stephens, et al. (2000). "Financial flexibility and the choice between dividends and stock repurchases." Journal of Financial Economics **57**: 355-384.

21. Klein, A. and J. Rosenfeld (1988). "Targeted Share Repurchases and Top Management Change." Journal of Financial Economics **20**: 493-506.

22. Lasfer, M. A. (2000). The market valuation of share repurchases in Europe. University Business School.

23. Li, K. and W. J. McNally (2007). "The information content of Canadian open market repurchase announcements." Managerial Finance **33**(1): 65-80.

24. McNally, W. J. (1999). "Open market stock repurchase signaling." Financial Management **28**(2): 55-67.

25. Mitchell, M. L. and E. Stafford (1999). Managerial Decisions and Long-Term Stock Price Performance, SSRN.

26. Morck, R., A., Shleifer, et al. (1988). "Management Ownership and Market Valuation: An Empirical Analysis " Journal of Financial Economics **20**: 293-217.

27. Shleifer, A. and R. W. Vishny (1997). "A Survey of Corporate Governance." The Journal of Finance(2): 737-783.

28. Stephens, C. P. and M. S. Weisbach (1998). "Actual Share Reacquisitions in Open-Market Repurchase Programs." The Journal of Finance **53**(1): 313-333.

29. Xu, X. and Y. Wang (1997). Ownership Structure, Corporate Governance, and Corporate Performance: The Case of Chinese Stock Companies, SSRN.

30. Zhang, H. (2005). "Share price performance following actual share repurchases." Journal of Banking & Finance **29**(7): 1887-1901.

VIRTUS *NTERPRESS* ®