Abstract: Expansion of share repurchase emerged in America after the 1980s of the last century, primarily as mechanism of payment of surplus cash to shareholders. Regarding this, it is not surprising that different models of purchase incurred in that market. Comparative review share repurchase a fixed price, the purchase on the open market and Dutch auctions, we examined which methods produces the greatest effect signaling ie. transmitting information from managers to shareholders. What do the managers convey to investors repurchasing shares of their companies? On the basis of the analytes all successful share repurchase which were done Serbian corporations from 2011. to 2014. year, we found that their stocks are undervalue.

Keywords: share repurchase, methods of share repurchase, effect signaling

1. Introduction

During the last three decades of the last century, share repurchase recorded a dramatic growth. It has produced numerous scientific studies that have compared the different methods of share repurchase. Since the alternative methods of repurchase of own shares are applied depending on the goal, it is logical that different methods of repurchase are the consequences of the different changes of the shares price after the repurchase. At the same time, it should not be considered that certain methods of share repurchase lead to founded movement of the average value of the shares, but it should take on mind that the selection of method of repurchase is made based on the aim sought to be realized by repurchasing. Purchase programs are implemented by companies with different performances, which are at different stages of the life cycle, in which repurchase is carried out in a variety of economic and financial conditions.

If the market is perfect, than shares can not be repurchase at prices lower than their real value. However, in times of crisis, the market shares price may fall below the real value

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and the only companies, who have the free cash, make decision to share repurchase. Of course, a crisis is characterized by a decline in demand, which means that companies do not invest in new capacities, and if the company has free cash, repurchase of own shares often makes the most rational solution. The chosen method of share repurchase greatly affects the signalling effect.

The paper is structured as follows. The first, we theoretical explain all the stages of the life cycle of the company, in order to determine when the company has surplus cash. In the second part, we explained the impact of the repurchase of own shares to effect signalling. We also explored the impact of the repurchase of own shares on the share price in the case of companies on the capital market in the Republic of Serbia during the period 2011.-2014. year. In the last part we have elaborated in detail the method of purchase of own shares, taking account the impact of each method to effect signaling.

2. The life cycle of company and payout policy

Companies should make investment and financial decisions, before they make decision of the payout of the free cash. However, the payments should be changed during the life cycle of the company. In the following graph, it is given the life cycle of the company and the corresponding payout policy that is most likely to be found at every stage. On the next Figure 1. we show the life cycle of the company.

Figure 1. The life cycle of the company
A young company in the development has plenty of profitable opportunities. If the firm is successful in the marketplace, the demand for its products will create growth in sales, earnings, and assets, and firm will move to next stage (Stage II). At this stage sales and return on assets will be growing at an incredible rate, and earnings will still be reinvested. During this period for the company is more efficient to hold and invest the entire profit. There is no reason that the company payout cash to investors, because it would have to be replaced with new debt or issue new shares. By holding the cash, the company avoids the costs of issuance of securities and reduce the tax shareholders.

Shareholders have not been worried about the unnecessary, excessive investment, because there are good investment opportunities, and the rewards of managers are linked to share price. It means that the company in the initial stage of development (Stage I) does not pay dividends or share repurchase. At the beginning of the second stage, a big commitment to customers and the company leads to running the organization, gaining clients and their comeback. This allows a significant inflow of fresh money and paying debts. The company starts to expand in many directions and has at its disposal a number of investment projects. In the early part of Stage II, stock dividends may be instituted and, in the latter part of Stage II, low cash dividends may be started to inform investors that the firm is profitable but cash is needed for internal investments.

After the growth period the company enters to next stage, Stage III. The expansion of sales continues, but at a decreasing rate, and returns on investment may decline as more competition enters the market and tries to take away the company’s market share. During this period the company is more and more capable of paying cash dividends, as the assets expansion rate slows and external become more readily available. As the company develops, projects with positive NPV are becoming fewer comparing to the available cash. The company starts to accumulate cash. Now investors are starting to care more for the compensation of managers and over-investment. Perhaps the most convincing argument, that supports the payout surplus cash to shareholders, is that this is the way to prevent the managers to abuse or squander the funds available, under the assumption that the company has a large amount of free cash flows but only a few investment opportunities. The shareholders do not believe the managers spend cash surpluses at smart way and they fear that money will be spend on building an even larger office building, not in a profitable project. Then shareholders begin to put pressure on the company to pay out cash. Sooner or later, the managers agree - otherwise the share price would stagnate. In such cases, investors may demand higher dividend or share repurchase, not because they are valuable in themselves, but because they encourage a lot more cautious and value-oriented investment policy. The company can payout the excess cash through the repurchase of own shares, but initiating a regular cash dividend sends stronger and more soothing signal about financial discipline. The dividend payout ratio usually increases from a low level of 5 to 15 percent of earning to a moderate level of 20 to 30 percent of earning. (Block, Hirts, 2002, 517)

Finally, at the Stage IV, maturity, the company maintains a stable growth rate in sales similar to that of the economy as a whole. In fortunate cases companies suffer declines in sales if product innovation and diversification have not occurred over the years. The company in the mature stage of the life cycle, can payout or more dividends or make a larger share repurchase. Dividends might range from 35 to 50 percent of earnings. (Block, Hirts, 2002, 518) These percentages will be different from industry to industry, depending
on the individual characteristics of the company, such as operating and financial leverage and the volatility of sales and earnings over the business cycle.

3. Share repurchase and signaling effect

Corporate managers use the share repurchase to signal his optimism about the future prospects of the company in the market. There are two different versions of signalling. According to one, the share repurchase is intended to convey manager’s expectations about future earnings of the company and increase cash flow - this view is not shared in the market. Another version considers that managers do not try to convey new information to the market, instead, they express their disagreement with the market values of their current performance. In any case, managers believe that the shares are undervalued.

Disagreement between the two versions is certainly the cause of disagreement between the share price and its true value. In the first case, it is the inability of companies to convincingly communicate with the market about its future prospects. In the second case, the market does not reflect all publicly available information on the current share price i.e. the market is inefficient.

The information/signalling hypothesis has three immediate implications: (1) repurchase announcements should be accompanied by positive price changes; (2) repurchase announcements should be followed (though not necessarily immediately) by positive news about profitability or cash flows; and (3) repurchase announcements should be immediately followed by positive changes in the market's expectation about future profitability. Many studies show that repurchases are associated with a positive stock price reaction.

Corporations repurchase shares when they have accumulated excess cash or when they want to substitute debt for equity. Shareholders applaud payout of excess cash when they worry that the firm would otherwise fritter the money away on perks or unprofitable empire building. Shareholders also know that firms with large quantities of debt to service are less likely to squander cash. A study by Comment and Jarrell, who looked at the announcements of open-market repurchase programs, found that on average they resulted in an abnormal price rise of 2% (Comment, Jarrell 1991, 1245). Stock repurchases may also be used as a signal of manager’s confidence in the companies future. It is argued that repurchases occur when managers believe their firm's stock is undervalued, thus signalling positive news about the firm and its future performance. The most, but not all, of the empirical evidence supports this view. Several authors report that repurchases are negatively related to prior price declines which may lead management to believe their stock is undervalued. Related to this, estimate that 74% of firms announcing fixed-price tender offers are undervalued (Jun, Jung, Ralph, Walkling 2009, 213). Also supporting the signalling argument, some authors find that stock repurchases convey information about a firm's future earnings and risk changes. Lie and McConnell (1998) find some evidence that earnings improve following both Dutch-auction and fixed-price self tender offers.

We were analyzed all successful share repurchase which were done Serbian corporations from 2011. to 2014. year. During this period, companies have implemented a total of 155 repurchases of own shares. We calculated the changes in stock prices month
and three months before and after the repurchase. The results, we obtained, are presented in the next Table 1.

Table 1. The average change in prices of shares of companies that were repurchased its own shares on the capital market of the Republic of Serbia in the period from 2011 - 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>The average change in the price of shares before the share repurchase</th>
<th>The average change in the price of shares after the share repurchase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 months</td>
<td>1 month</td>
</tr>
<tr>
<td>2011.</td>
<td>-3.85%</td>
<td>-2.04%</td>
</tr>
<tr>
<td>2012.</td>
<td>-0.76%</td>
<td>1.02%</td>
</tr>
<tr>
<td>2013.</td>
<td>-3.16%</td>
<td>-1.17%</td>
</tr>
<tr>
<td>2014.</td>
<td>2.23%</td>
<td>1.49%</td>
</tr>
<tr>
<td>The average</td>
<td>-1.39%</td>
<td>-0.18%</td>
</tr>
</tbody>
</table>

Specifically, in 2011 the share price was, on average three months before the repurchase, lower by 3.85% compared to the share price on the day of opening offer for repurchase of own shares. A month before the acquisition of own shares price was lower by 2.04%. However, only after a month since the company began its repurchase, price of their shares began to grow by 0.66%. Three months after the buyback of own shares the price increased by 2.4%. In 2012, the situation was somewhat different. Namely, price was lower for the 0.76% three months ago, but a month before the purchase price was higher by 1.02%. A month after the repurchase, price has fallen by an average of -0.38%, but three months after the share repurchase price increased slightly to 0.68%. In 2013, the situation was similar in 2011. The share price was lower by 3.16% and 1.17%, three and one month before the repurchase, respectively. While the month and three months after the repurchase price, on average, increased by 1.57% and 4.94%, respectively. In 2014, the stock price, month and three months, was higher than the day of the beginning of the repurchase of own shares, and to 1.49% and 2.23%, respectively. A month after the acquisition of own shares, the share price dropped to a minimum of 0.15%, but three months after the purchase, price recorded the highest growth, compared to the three previous years, and an average of 5.48%. As we can see, the share price prior to repurchase, on average, were lower compared to the day of the beginning of repurchasing, and by 1.38% and 0.18%, three months and one month, respectively. Which suggests that the capital market is not effectively evaluated share price. However, the month after repurchase, share prices start to grow by an average of 0.43%. In all four years, as we can see in the table, the share price three months after the repurchase have risen, and that an average of 3.38%. This suggests that the market has recognized a signal which managers sent to investors, that their stocks are undervalue. Also there has been a growth in the share price after the repurchase of own shares, which is consistent with the hypothesis of signaling.

4. The effect of the chosen method of repurchase (acquisition) of shares to effect signaling
There are three main ways to repurchase stocks. The most common method is for the firm to announce that it plans to buy its stock in the open market, just like any other investor. However, sometimes companies offer to buy back a stated number of shares at a fixed price, which is typically set at about 20 percent above the current market level. Shareholders can then choose whether to accept this offer. This is a fixed-price tender offer. Finally, repurchase may take place by Dutch auction. Chosen method of share repurchase has a lot of importance to signalling effect. Regardless of whether it is a fixed price tender offer, the purchase on the open market or Dutch auction, each method has different information content.

### 4.1. Fixed-price tender offers

Before 1981, all public offer of purchase of own shares were made through the fixed price tender -FPT. The procedure of repurchase of own shares depends on the number of shares that the company intends to repurchase and the time period in which they are repurchased. Within FPT, companies offer repurchase in advance a certain number of shares at a fixed price, for a limited period of time, with the necessary publication. The competent Commission requires that companies publish all information that could affect the share price.

Share repurchase using FPT method is more expensive method compared to other methods. Generally, companies must hire investment bankers to structure a offer, lawyers who will register a offer by the competent authorities (SEC), and some companies that will manage repurchasing. Furthermore, managers usually pay a premium of 24.8% to the cost (Lakonishok, Vermaelen), or 16.8% compared to Comment and Jarrell (1991, 1251). In principle, the announcement of the low purchase price leads to the insufficient offer of shares, while the announcement of high prices (high premium) leads to repurchase pro-rata. However, due to the large number of shares which should be repurchased in the short term, the share repurchase has significant effects on shareholder's wealth. Namely, if the repurchase price is below market value, shareholders who participate in the tender will be at a loss, while those who do not trade, they will profit, if the repurchase price is higher than the estimated value, the situation is the opposite. This only encourages the collection of information among shareholders. Obtained information asymmetry will cause adverse selection, and will require the company to offer a premium how to make sure that the tender offer to be success. Brealey and Myers (2011, 445) stated that the offered price is usually higher than the market price of shares, on average by 20%. Vernimmen stated that this premium generally ranges between 5% and 15%. This tender's premium reduces the value of the remaining shares. However, unlike other methods, the FPT method is the most expensive but repurchase a large number of shares in the short term. The largest part of the repurchase is fulfilled completely.

If the repurchase of own shares carries out through tender offers, then it sends a message to shareholders that the stock is undervalued, whereas the amount corresponding to the approved premium undervalued. Studies have shown that after the announcement of the share repurchase program at prices above the market price, the company have recorded a higher growth in the value of stocks, which are on average around 11% (Todorović, M., 2010,395). Management at a higher hierarchical level as a rule, then do not sell its shares,
but on the contrary, collect a shares before the announcement of the program repurchase. It is pointed out that managers who want to signal their private information often decide to purchase the shares at a fixed price.

In Serbia, the process of share repurchase is closer determined in the Law on Companies (Official Gazette, 36/2011, 99/2011, 83/2014 и 5/2015). The companies in Serbia can not repurchase its own shares on the open market (can’t the Dutch auction, can’t the direct negotiations), which means that the shares can be repurchased only outside the stock exchange. Specifically, paragraph 1. member 285 of the Companies Law explicitly states that a public limited company may repurchase its own shares only through an offer to all shareholders pro-rata. Each formal offer to shareholders must include the type, class and number of shares that it wishes to acquire, the price that company is willing to pay, the manner and dates of payment of the price, the procedure and the deadline by which shareholders can respond to the company's offer, which may not be less than 15 days. Article 282 Companies Law, in detail, determines the conditions repurchase of own shares, while 284 members of the Companies Law taxatively (item 1-6) listed exceptions to the conditions for share repurchase. Although there are many exceptions, at first glance it seems that our law is very liberal. However, prescribing a single method for the share repurchase Serbian enterprises are very limited. The strictness of the Law on Companies greatly affect limiting the possibility of Serbian companies to take advantage of the positive effects that provide different methods of repurchase its own shares. Otherwise, due to the fact that share repurchase decreases own capital of company, and is often followed by abuses, several restriction have been proscribed relating to elimination of dangers that threat or occur a company, or to shareholders (investitors) and capital market.

4.2. Open market repurchase

During the 1980s, programs of open market repurchase have become incredibly popular relative to all other common forms of payment surplus cash, which is approximately 90% of all announced repurchases, or about the same value as all dividend payments (Odded, J., 2005, 271). In the Anglo-Saxon world, this is the most common method of acquiring own shares. According to some research, open market repurchase exceeds the fixed-price tender offers in ratio of 10:1.

Using OMR, corporation announces that will repurchase of own shares on the market at pre-defined time interval, by pre-specified total value. The company appears like any other investor buying shares through a broker, so giving them tasks with specific instructions. When a company repurchases stocks on the open market then the shares repurchase at market price, therefore, does not offer the premium that would be required in a tender offer. Thus, it appears that this method represents the cheapest way of share repurchase, because the company determines the total amount that will be buy and at what price.

The company is not required to use this method but it is available as a matter of choice. Also, companies are not obliged to real repurchase the offered number of shares, most of them just announced the repurchase of its shares. The fact that it was announced repurchase, with the OMR method, does not follow through with the actual repurchase, does not mean that management has some unethical or improper motive. Namely, the
companies intend to repurchase a smaller number of shares after the share price starts to rise rapidly after the share repurchase. This is in accordance with the thinking that management wants to take advantage when a stock is undervalued, but also to abstain from share buyback if the market becomes effective. Or, alternatively, it may mean that companies have found another growing option for investment, which will make repurchase less attractive at the moment. Moreover, all companies should approve repurchase OMR, if allowed by law, in order to obtain the benefit when the stock is undervalued, regardless of whether they really want and purchase action.

The companies announce their intention to repurchase their shares and so starting with the repurchase of a long period, which typically lasts from one to two years. Given the time period, the company has a lot more freedom in deciding on the number of shares that wants to buy and at what price. Therefore, it is considered that this is the most flexible method of purchase. However, the long period of acquisition of own shares is considered to be lack of purchase on the open market, which is especially true if the company intends to buy a larger package of shares.

Repurchase of shares on the open market is excellent tool for cash payments to shareholders, but it is not most efficient tool for signaling importance undervalued stocks. The reason for this is that a direct repurchase on the open market does not offer a premium and is implemented over several months (in some cases for years).

4.3. Dutch auction repurchase

Dutch auction repurchase was created in 1981 as an alternative to the fixed price tender offer. Already in 1989 in the United States has been applied in 75% of the repurchase transaction. Dutch auction, might be described as a financial hybrid - combining some features of the open-market repurchase with others of traditional fixed price tender offer. Similar to the share repurchase at the open market, DAR auctions are significantly less risky for managers in relation to the fixed price tender offer, because of that they have a smaller effect signaling.

In this method, the company not only sets one fixed price, but it sets the whole range of prices within the means of which shareholders can choose the price at which they will trade. In addition, the company also determines the total number of shares it wants to buy at the specific time interval. Shareholders can then declare the number of shares that they are willing to sell and the minimum price they are willing to accept within a certain range. Each shareholder must individually estimate whether and at what price, in a given range, to sell their shares. The price at which a shareholders decide to sell shares represents it is a cost of their booking. Generally, the choice of higher reservation price increases potential shareholder’s earnings if their shares would be accepted for repurchase, or concomitantly reduces the likelihood that their shares would not be accepted. When the offer period expires, the company makes the schedule of all the submitted shares at the specified price range. Then the company determines the lowest repurchase price that it will repurchase the desired number of shares. It should be noted that all desired shares will be repurchased at the same price, regardless of what the price was booking, for purposes of equal treatment of all shareholders. Thus, the specificity of the Dutch auctions is that the company does not know in advance the repurchase price.
The finding that Dutch auctions elicit a lower positive stock return than do fixed-price offers is consistent with the signalling-based hypothesis. On the other hand, the DAR method has lower premiums, on average, to 12.8% above the current market price, which is an average of 1/3 smaller than the FPT-a (Lie, E., McKonel, J. 1998, 178). In addition, dutch auctions are less credible because of the relatively low minimum repurchase prices. Also, dutch auctions are less effective because of less information content of undervalued stock prices.

Dutch auctions, as a rule, are more frequently used by larger companies, and is more represented in some years from the fixed prices tender offer. The first company which implemented this method was Todd Shipuards, at 1981. First, it was planned FPT offer of 28 $ per share, for 10% of the shares ie. 5.5 million shares held by shareholders. However, the investment bank Bear Stearns recommended to implement DAR repurchase method, which was resulting in a lowering of the repurchase price of $ 26.5, or savings of $ 8.25 million (Todorović, M., 2010, 392).

Similar to the open market repurchase, DAR auctions are significantly less risky for managers in relation to the offer of a fixed price, and because of that they have a smaller effect of signalling. The fact is that the Dutch auction repurchase has a lower rate of return on average 8%, due to the smaller effect of signaling. The Dutch auction repurchase is less credible and less informative than the fixed price tender offer as a vehicle for signalling the stock price. In addition to being less credible because of the relatively low minimum share repurchase prices, they have less information content of undervalued stock prices. Of course, signalling the undervaluation of stocks is not the only motive for the repurchase of own shares, even if this is the traditional view when it comes to the tender offer. It is pointed out that managers who want to signal their private information the most often decide to share repurchase at a fixed price tender offer.

5. Conclusion

Shares repurchases are transactions that occur more frequently and in increasing volumes, mainly in mature corporations with different motives, using different methods of purchase.

Based on the analysis of all successfully completed the purchase of own shares of Serbian companies in the time period from 2011. – 2014. year, we came to the conclusion that stock prices were undervalued during the period month and three months before the purchase. However, one month and three months after the acquisition of own shares, the share price of observed companies, on average began to grow. This is consistent with the hypothesis of signaling that share repurchase leads to increase of share prices after the repurchase.

Based on the in detail explained methods of share repurchase, we could come to the following conclusions. We discuss three forms of repurchases: Dutch-auction, fixed-price tender offers and open market repurchases, and compare the relative signaling power of each form. They find that average excess return for open market repurchase announcements is 2% and average excess returns for both Dutch-auction and fixed-price self tender offer are significantly greater at 8% and 11%, respectively. The repurchase of
own shares on the open market is an excellent tool for cash payments to shareholders, but it is not the most efficient tool for signaling importance of undervalued stocks. This is because direct purchase on the open market offer no premium and lasts for several months, in some cases for several years.

Similar to the open market purchase, DAR auctions are significantly less risky for managers compare to the fixed price offer, but also with smaller signaling effect. Dutch-auctions are less effective to signal undervaluation than fixed-price tender offers because they expose the personal wealth of managers less to false signal risk. Dutch-auctions are used by large firms, which have low demand for signaling undervaluation. Announcement stock returns and repurchase premiums are negatively related to recent firm-specific stock performance, supporting the signaling theory.

This implies that fixed-price self tender offer is an effective form of offer to signal undervaluation. Of course, signaling of undervalue of stock is not the only motive for the share repurchase, even if this is the traditional view when it comes to the tender offer.

However, it is stated that managers who want to signalize their private information, in the most cases choose repurchase of shares at fixed price.

References

Payout policy, share repurchase and signaling effect – analyzing data of all successful share repurchase at capital market of republic of Serbia from 2011. to 2014. year


POLITIKA ISPLATE, OTKUP SOPSTVENIH AKCIJA I EFENAT SIGNALIZINJA – ANALIZA SVIH USPEŠNO SPROVEDENIH STICANJA SOPSTVENIH AKCIJA NA TRŽIŠTU KAPITALA REPUBLIKE SRBIJE U PERIODU OD 2011. DO 2014. GODINE


Ključne reči: otkup (sticanje) sopstvenih akcija, efekat signaliziranja, metode otkupa.