# Stock Repurchases on a Second Trading Line ♦

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**Abstract:** This paper investigates stock repurchases implemented by Swiss corporations over the period 1993-2003. Because of the specific Swiss regulatory and fiscal environment, the most popular method for buybacks is unique to this market as shares are repurchased on a second trading line. Besides standard open market and tender offers, firms also buy their own stocks by distributing transferable put rights to their shareholders. This paper provides a comprehensive analysis of the buyback activity and institutional setting. It also analyzes the market reaction to the announcement and different phases of the repurchase process. The long term performance of repurchasing firms is also investigated. The results indicate that the market reacts positively to some repurchase announcements. In the long run, no abnormal performance is reported though.

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## 1. Introduction

Dividends and stock repurchases are the main methods for returning liquidity to shareholders. The latter way of returning cash is very popular in the U.S. and the amounts distributed to shareholders have grown continuously since the mid-80's. In other countries, such a trend has not been observed since stock repurchases are either forbidden or have only been recently authorized. There are a number of differences between dividends and stock repurchases. For instance, besides the payments of cash to shareholders, repurchases can also modify the capital and ownership structure of a company. They may generate some wealth transfers between shareholders and bondholders, as well as between tendering and non-tendering shareholders. Repurchases have therefore attracted the attention of academics who have analyzed a number of aspects. For instance the literature is rich with motives as to why firms might repurchase their own stocks. The non-exhaustive list includes tax benefits (Masulis, 1980), distribution of excess cash (see Jensen, 1986), adjustment of leverage ratios (Bagwell and Shoven, 1988), signal undervaluation (Vermaelen, 1981), takeover deterrence (Bagwell, 1991) or reduction of dilution effects of stock options (Fenn and Liang, 2001). In an empirical investigation of the U.S. market, Dittmar (2000) shows that firms repurchase stocks primarily to take advantage of undervaluation and distribute excess cash. Academic literature has also provided a detailed analysis of the consequences of repurchases in terms of stock prices, in particular it has analyzed the way the market perceives and reacts to this corporate action (for the most recent results see Peyer and Vermaelen, 2004). However most of the existing analyses and evidence are specific to the U.S. market and to its institutional setting. The available international evidence, which is rather scarce so far, seems to suggests that the whole repurchase process (causes, mechanisms and consequences) is significantly affected by the regulatory and fiscal environment (see for instance Rau and Vermaelen (2002) for the U.K.).

The present paper provides the first study of stock repurchases in Switzerland. This market is of particular interest because it has a series of characteristics that are not observed elsewhere. For instance, the preferred technique for buying back stocks is unique to this market as stocks are repurchased on a separate (second) trading line where the only buyer is the company itself

Another frequently-used technique is to repurchase stocks by distributing transferable put rights to all shareholders. This mechanism is certainly the most equitable way (from a shareholder perspective) to buy back shares. Paradoxically, it is used sparingly in other countries. We also document that the number of programs and the preferred type of method to repurchase stocks used are changing over time. We show that the origins of this evolution are to be found in the changes observed in the institutional setting (taxes and regulation) confirming therefore its importance and impact on repurchase activity. For all these reasons, this market represents an appealing investigation field to get new insights and a deeper understanding of share repurchases.

The remainder of the paper proceeds as follows. The next section reviews the existing evidence about international stock repurchase activity over the last decade in terms of number of programs and repurchase methods. Section 3 describes stock repurchases activity and methods in Switzerland since the authorization of share repurchase in 1992. It also describes the main features of the regulatory and tax environment. Section 4 presents evidence on market reaction to the different phases of stock repurchases programs while section 5 examines the long run performance of firms having bought their own shares. Section 6 concludes and discusses the future extensions of this paper.

## 2. International evidence on stock repurchase activity

Stock repurchases became popular in the U.S. in 1984 and since then the amount distributed and the number of programs have regularly increased (see Weston and Siu, 2003). For instance, in 1999, U.S. corporations announced their intention to launch more than 1200 programs which implied the redistribution of 140 billions USD to their shareholders. Different mechanisms are available for stock buyback. The most common method is without doubt repurchase on the open market. In this case, the company simply buys stocks on the market and accumulates them until it reaches the desired fraction of capital. The success of such programs can be attributed to their inherent flexibility. As these programs usually take place over a period of one year or more, the firm can buy its own stocks when it judges it is optimal. Fixed price tender offer is another method available for repurchasing stocks. Here the firm commits to buy back a given quantity of stock at a given price. This price is usually higher than the market price, and therefore the firm has to pay a premium. Peyer and Vermaelen (2004) report that the premium in a sample of 303 U.S. tender offers over the period 1984-

2001 is on average 20.74%. Such a mechanism is therefore costly for the firm but this premium is also a device that managers use to signal undervaluation to the market. A third way to repurchase stocks is by using Dutch auction offers. In this setting, the firm also announces the number of stocks it wants to purchase and specifies a range of prices. Shareholders are then invited to tender their stocks at any price within the price range. The firm then compiles the responses and sets the price at the lowest price that allows it to buy the number of shares sought in the offer. The purchase price is then paid to all shareholders that tender at or below that price. Peyer and Vermaelen (2004) report that the premium in a sample of 251 U.S. Dutch auctions offers over the period 1985-2001 is on average 14.72%. Panel B of Table 1 reports the relative importance of the different methods used by U.S. firms to purchase their own stocks and it appears that open market is by far the most popular method (used in 91.56% of all repurchase programs). Of course, all these results are based on U.S. data and a relevant question is whether firms outside the U.S. follow the same policy and repurchase their stocks as intensively. Academic literature on repurchases outside the U.S. is scarce. The main reason is simply that repurchases are not as popular and are even prohibited in some countries. We have collected the existing evidence and report it in Table 1.

[Insert Table 1 around here]

This table shows the number of programs that have been announced in different countries as well as the relative importance of the different methods used to repurchase stocks over the period 1990-2002. Stock repurchases have been authorized over the whole period in Canada, the U.K., and Australia. However the intensity of repurchase activity varies considerably across countries. In Canada, it reaches the same levels as in the U.S., when taking into account the fact that it is a smaller market with fewer companies listed on the exchange. In the U.K., the intensity of repurchases is surprisingly low. This fact can be attributed to a very stringent regulatory and tax environment as reported by Rau and Vermaelen (2002). These authors show for instance that British companies are not allowed to proceed to stock repurchases around earnings announcements. In Japan, France and Germany, repurchases were forbidden until 1995 and 1998 respectively. This was the case because stock market authorities feared that this operation could lead to price manipulation by repurchasing firms. Since that time, repurchases are authorized under a set of rules that are designed to avoid manipulation. Regarding the intensity of repurchase activity, it is of interest to notice that in France, repurchases have almost instantaneously become very popular. For the few countries with data available on the relative frequency of repurchase methods, it appears that open

market repurchases are the dominant method. This can be attributed to the flexibility and the relative low cost of this method.

## 3. Share repurchases in Switzerland

### *3.1 Repurchase activity*

Stock buybacks were prohibited in Switzerland until the revision of the corporate law in July 1992. The first repurchase took place in 1993 and since then 107 programs have been implemented on the Swiss exchange (SWX and Virt-X) over ten years. Swiss firms buy their own stocks with four different methods. Two are standard methods: open market and tender offers. The third involves the attribution of one (European-type) put option to all existing shareholders for every stock held. These (deep-in-the-money) put rights entitle the owner to sell its stocks to the company at a given (strike) price. Usually, these are very short-term options since their maturity is set three weeks after their attribution. Depending on the fraction of capital a firm seeks to acquire, a shareholder needs to hold a given number of options to have the right to sell one share at the strike price. For instance if a firm seeks to acquire 20%, a shareholder will need 5 options to sell one stock. These put rights are also traded on the exchange for a period of time. This gives the opportunity for shareholders that do not wish to tender their shares to sell their put options at a price equal to the intrinsic value of the option. This repurchase method has two important advantages over tender offers and Dutch auction offers. First, the firm avoids the rationing risk that is present in a tender offer and, by proposing a sufficiently high exercise price, is almost certain to buy back the exact fraction of capital it targets. Second, non-tendering shareholders are compensated by the proceeds of the options sold on the market. They do not suffer from a wealth transfer to exiting shareholders as in a tender offer or Dutch auction. It is therefore the most equitable way to buy back share with a premium. Surprisingly, this method has been used only sparingly (or not at all) in other markets. For instance Kale, Noe and Gay (1989) present some evidence that put rights have been used on a few occasions in the U.S. The fourth method used to repurchase shares in Switzerland has been initiated by Swiss Re in 1997. In this case, the firm opens a separate trading line where it is the only entity authorized to buy shares. The price has to be close to the price observed on the regular trading line except that the company is allowed to pay a premium that should not exceed 5% of the price prevailing on the first line at the moment of the repurchase. Repurchase on a second line is a method close to a classic open market repurchase, the two major differences being the separate trading line and the existence of a

small premium over the first line. The existence of this second trading line is due to the specific Swiss tax and regulatory environment, as will be discussed below.

[Insert Table 2 around here]

Table 2 presents the stock repurchase activity in Switzerland over the period 1993-2003. Only 83 programs are considered since we have excluded privately negotiated repurchases (11), repurchases with call options (1), repurchases by investment companies (10), which are merely closed-end funds and going private operations (2) Compared with the international evidence presented in section 2, repurchase activity seems to be modest on the Swiss market. However it has to be reminded that although the Swiss stock market is the tenth largest market in World according to its market capitalization, it is a small market in terms of number of companies listed on the exchange (approximately 250). This means that in 2001 for instance almost 10% of the companies have bought back their own stocks. The importance of repurchases in Switzerland is illustrated in Table 3 that shows the aggregate amount of cash distributed to shareholders in Switzerland in dividends and repurchases.

[Insert Table 3 around here]

It is interesting to notice that in 2002 more money has been paid to shareholders through repurchases than through dividends. Since 1997, the amount of cash distributed to shareholders has been very important compared to the amounts paid in dividends. Table 2 shows that repurchases have started very steadily in 1993. Share repurchases have been commonly used since 1997, with a record year in terms of number of programs in 2001 and in 2002 in terms of the distributed amount of cash. The most popular method is the second trading line, followed by tender offers, put option and open market. This contrasts with other countries where open market is the preferred method to repurchase shares. However, we note that there is some time-variation in the relative importance of the methods. Repurchases on second lines is the preferred technique since 1998. Tender offers had some success in the early years being even the preferred technique in 1997. Buyback with put rights were one of the two method used in 1993. However, they totally disappeared until 2000. After that, buyback with put rights were progressively used and they seem to be preferred to tender offers. Apparently firms have now realized that it is a more efficient and fair way to buy back shares in a short period of time. The explanation of these changes is to be found in the Swiss institutional setting. Before describing it, we provide some additional details about the programs and the motivation of the firms.

[Insert Table 4 around here]

Table 4 provides some descriptive statistics about the repurchase process in Switzerland. In terms of size, the largest programs are those on second lines and open market. These two methods also represent the longest programs since they last, on average, one and two years, respectively. In terms of fraction of capital, only reduced amounts are repurchased since 6.82% are targeted with second lines and 3.56% with open market. The major difference between the two types of program is to be found in the motivation of the repurchase. Stocks bought on second lines are cancelled but those bought on open market are held as treasury stocks. Put rights and tender offer are used to repurchase smaller amounts in absolute terms. In terms of fraction of capital repurchased they target slightly larger fraction of capital than open market and second lines. In terms of length, both are short programs since tender offer last ten days while repurchases with put rights last one month. Once shares are repurchased with one of these two methods, shares are in almost every case cancelled. The average premium paid with different methods provides some useful information. As expected, premium paid on second line with respect to the price paid on the first line are small and is around one percent. There is some variation among firms but it never exceeds the legal 5%. For tender offers, the premium is computed with respect to the price 5 days before the repurchase announcement. The average premium of 6.82% is very low compared to the figures observed in the U.S.. The premium for repurchases with put rights is computed as the ratio of the strike price of the put option to the price of the stock 5 days before the announcement. In this case the premium is substantial as it exceeds 35% on average. Such high premia are certainly offered to ensure the success of the repurchase program and are not detrimental to non-tendering shareholders since they can sell their put option.

[Insert Table 5 around here]

We also analyze the motives and goals of the repurchase as stated in the announcement of the program. As firms can state several goals to a repurchase program the number of answers exceeds the number of programs in Table 5. Interestingly, the main reason cited for stock repurchase is the redistribution of excess cash. It is exactly the same reasons found empirically by Dittmar (2000) for U.S. firms. She also finds that signalling undervaluation is the second major reason motivating repurchases in the U.S.. This contrasts with Switzerand, where it is the least cited motive for repurchases

### *3.2. Regulation and taxation in Switzerland*

Swiss corporate law sets the general framework for share repurchases. A general principle of this law is that all shareholders should be treated equally. More specifically, the law on stock

exchange regulates stock repurchases. This law states (i) that a repurchase should not exceed 10% of the capital, (ii) the daily volume of shares traded should not exceed 25% of the usual volume, (iii) share buyback should not take place 10 days before the publication of earnings, and (iv) the premium paid on a second trading line should not exceed 5%. Repurchases are supervised by the Swiss Takeover Board (TOB) as they are considered as a takeover of a company on its own shares. Any repurchase program exceeding 2% of the capital should get the approval of the TOB. To be authorized by the TOB, a given buyback program has to fulfil the above-mentioned conditions. Once the approval is granted, the program can be implemented on the stock exchange.

To repurchase its stock the board of a company first decides the buyback and then ask for approval at annual general meeting. Then the program has to be submitted and approved by the TOB. The program can then be implemented. Once the program is over, the cancellation of shares (if any) should again be approved by the annual general meeting since it affects the structure of capital.

The tax treatment of stock repurchase in Switzerland is very peculiar. Before discussing repurchases it is important to understand some general principles. Capital gains are not taxed for individual investors, while dividends are taxed as income. Technically, when paying dividends the company retains 35% of the amount of dividend, i.e., the so-called withholding tax, which is directly paid to the tax authorities. As long as the investor declares the dividend as income, he will be able to claim back his withholding tax. The dividend will then be taxed as ordinary income. Institutional investors are exempted from income taxes but are subject to withholding tax as any other investor. At the end of the fiscal year, they are entitled to reimbursement of the withholding tax. In this case, for institutional investors there is only an opportunity cost equal to the interest lost on the withholding tax.

The tax treatment of share buybacks depends on the purpose of the buyback. If the company is buying back shares to hold them as treasury stock, then no taxes are perceived from individual investors because the sale of a stock is considered as an ordinary sale and there are no taxes on capital gains. On the other hand, if a company buys back its shares to cancel them and reduce its capital, this is considered as a partial liquidation of the company and the buyback is treated as a dividend. Therefore, for individual investors, the difference between the market value paid by the company and the par value of the share is considered as income

and is taxed accordingly. As a result, when a company buys back stocks for the purpose of cancellation, it has to retain 35% of the price and pays this amount directly to the tax authorities. This amount is returned to investors as soon as the proceeds from the buyback have been declared as an income by the investor.

Finally, a company can hold its stock as treasury for 6 years (this period was initially set to one year in the law of 1992, then it has been extended to 2 years in 1995, and finally extended to 6 years in 1998). If the firm does not cancel the stocks after 6 years, it has to pay withholding taxes as it cannot identify the seller of the stock. This means that fiscal authorities consider that the amount paid to shareholders has been deduced from withholding tax but that it has not perceived it. As this amounts to paying an additional 53.84% tax (a rate called "gross for net") on the price paid to shareholders[1].

This specific tax regime is the reason which has led to the creation of the method of the second trading line by Swiss Re in 1997. The goal is to be able to immediately pay the 35% withholding tax when the stock is tendered and keeping an "open market" type of program. Actually, on the second trading line, shareholders selling their shares only get the price net of the withholding tax, i.e., 65% of the quoted price, so that the company does not bear the risk of paying additional taxes. This is possible since the companies knows for sure that it buys stocks from investors willing to tender their shares. This is impossible in a standard open market buyback.

The tax regime of the Swiss market also explains why individual investors are not likely to sell shares in a program with the purpose of stock cancellation as it will be taxed as income. Moreover the taxation rate is even higher than on ordinary income since the tax basis is computed as the difference between the repurchase price and the par value of the stock. Since it is very unlikely that a investors have bought the stock at par value, the tax basis is higher than it should be. This also means that the substitution hypothesis between dividends and buyback is likely to be irrelevant for these investors as stock repurchases are more heavily taxed for an individual investor than dividends.

[1] This is because tax authorities consider that the firm has paid the 65% of the price to the shareholders and therefore compute the withholding tax as 0.35 x (1/0.65) = 53.84%. This is why this rate is called gross for net, since they have considered the gross price as the net price.

This general setting is responsible for a series of features seen in repurchase activity in Switzerland. The creation of the method of the second line has just been discussed and is a response to the necessity of paying the withholding tax. Taxes are also responsible for the non-existence of open market repurchases until 1999, because of the very limited period of time during which stocks could be held without being taxed. Since 1998, this period has been set to a reasonable 6 years. Although it is a very efficient and fair method to buy back stocks, repurchase with put rights have disappeared between 1994 and 1999. This is due to the fact that tax authorities wanted to tax the put rights twice: on the attribution date and on the exercise date. The firm that initiated this type of buybacks (SGS) struggled with the tax authorities until 1999 to show that put rights should not be taxed twice. It finally won the battle at the Federal Court. Since then put rights are only taxed at the exercise and are used more frequently than tender offers.

In Table 4, tender offers display an average premium of 6.23% which is rather surprising for such an offer, especially since only 10% of the capital is sought. As a reminder, such offers in the U.S. display an average premium of more than 20% to make shareholders tender their shares. In fact, Swiss tender offers are not real tender offers, especially with such a heavy tax burden that discourages most of the shareholders to tender. In fact such low premia are due to the Swiss law that prevents an unequal treatment of shareholders. A high premium would create a wealth transfer from non-tendering to tendering shareholders and such a repurchase would probably not be authorized by the TOB. This also explains the relative popularity of repurchases with put rights and the existence of such a high premium since non-tendering shareholders are compensated by the proceeds of the sale of their put rights. It is of interest here to mention that because of the general equality of treatment principle, seasoned equity offerings (the symmetric operation of repurchases) in Switzerland have to be executed with rights (i.e. call options). In this logic, one would have expected that repurchases with put rights should also be mandatory. Surprisingly it is not the case.

**4. Short run market reactions**

Past research has shown that repurchase announcements lead to an increase in the value of the firm's stock. The magnitude of the reaction of the stock market depends on the methods used to implement the buyback. Typically, repurchase with tender offers and Dutch auction have a stronger reaction than open market repurchases. For instance, Comment and Jarrell (1991)

find an abnormal return of 12.3% for a 7-day period around announcement for tender offers. For Dutch auction this returns is 8.3% while for open market repurchase, Peyer and Vermaelen (2004) find a 2.39% abnormal return. The most common explanation of these differences in abnormal returns can be attributed to the premium paid in tender offer and Dutch auction. This premium is also used by the management to signal some undervaluation of the stock to the market. As there is no premium involved in open market, the market reaction can be attributed to other reasons such as the mitigation of agency costs due to the distribution of excess cash that would have been wasted by the management. We also conduct an event study on the Swiss market to compare our results to the existing literature and also to provide new evidence on the way the market reacts to repurchases with put rights and second lines since these have never been studied previously in the academic literature. Of course, the size of the sample used in this paper is limited, but in our opinion we will get new and valuable insights that will help us better understand the market reaction to repurchase announcement. We will also investigate different phases of the repurchase process: announcement of the program, beginning of the program and end/expiration of the offer. We should observe some effects on the announcement date but nothing should happen on the implementation date since there is no new information involved. At the expiration of the program we should observe some decline in stock prices for tender offers as discussed by Vermaelen (1981). The same line of reasoning should also lead to a decline in stock prices for repurchases with put rights, since at the expiration date the company will have to buy the stocks with the additional premium.

The empirical investigation is conducted on a sample of 83 announcements. It includes all companies quoted on SWX or Virt-X that have announced at least one share repurchase program over the period 1993-2003. Investment companies and privately negotiated offers are excluded from the sample. Announcement dates have been obtained from the Swiss Takeover Board (TOB) and correspond to the agreement date from the TOB as a company is not allowed to announce it before. The data on stock prices is obtained from *Thomson Financial Datastream*. As some Swiss companies have a capital structure including stocks with different voting rights and repurchase programs have to be launched on all type of stocks, we include all stocks targeted by the repurchase.

We conduct a standard event study by estimating abnormal returns with the market model on a 100-day period which ends 20 days before the event. The market index is the Swiss

Performance Index (SPI), a value-weighted index including all stocks available on the Swiss market. The cumulative abnormal returns computed 2 days before and after the event date are presented in Table 6.

Repurchase announcements have a positive impact on the market since all abnormal returns are positive. However abnormal returns are only statistically significant for repurchases with put rights with a 4.86% abnormal returns. It is interesting to note that the announcement of repurchases with tender offers do not generate any abnormal returns. This is in sharp contrast with the results obtained for the U.S. but remember the Swiss tender offers have a reduced premium compared to that observed in the U.S.. It is very unlikely that some signaling is involved with such a premium. On the other hand there is a high premium observed for offers with put rights. In this case there could be some attempt of signaling. To check the role of the premium, we have run a regression of abnormal returns on the premium observed in offers with put rights. We obtain a positive and statistically significant coefficient which means the important role of the premium for the market reaction.

The results obtained in Panel B at the beginning of the program are in accordance with our expectations for all repurchase methods except for second lines. As stated above, we do not expect any market reaction on that date since there is no new information disclosed to market participants. Surprisingly for second lines we find a positive and significant reaction of 3.2 % over the 5-day period. This result might be explained by a kind of market inefficiency. Actually the TOB decisions are not disclosed in the press. For second lines there is an announcement in the main media on the day the repurchase program starts. It might be that market participants are aware of the program only at that time. Since no significant premium is paid by firms in second lines, this reaction should not be attributed to signaling but more to the good news provoked by the redistribution of excess cash.

Panel C, presents the abnormal returns at the end of the program/expiration of the offers. Here we would expect no reaction for open market and second lines, but we would expect to see some decrease in stock prices, since the company has to pay the price of stocks with a premium. An almost mechanical reaction should be a price drop in tender offers and offers with put rights. The results show that there are no change for tender offers but this is due to the fact that the premia paid are very low and therefore the firm is not poorer at the expiration

of the offer. For offers with put rights there is a slight but significant decrease of -1.15% at the end of the program. This is due to the payment of a considerable premium.

Taken together these results are consistent with previous literature and the only surprise comes from the fact that the market reacts on the beginning date of second trading lines.

**5. Long-term performance of repurchasing firms**

Ikenberry, Lakonishok and Vermaelen (1995, 2000) report that for the U.S. and Canadian markets there is a 12%, respectively 21%, positive abnormal return over a four-year, respectively three-year, period. They interpret these results as being consistent with market underreaction to repurchase announcement and also to the signaling hypothesis. In order to provide a comprehensive picture of the market reaction to share repurchases in Switzerland, we conduct a long term event study over a 24-month period following the announcement month. In order to avoid the issues associated with event clustering, we use the Return Across Time and Securities proposed by Ibbotson (1975). Each event month *t* we run the following regression:

$$\left(R_{it} - R_{ft}\right) = a_t + b_t\left(R_{mt} - R_{ft}\right) + e_{it} \qquad \text{for i=1,....,N} \qquad (1)$$

where $R_{it}$ is the monthly return on security i in month t, with t=0 being the month of the repurchase announcement. $R_{ft}$ and $R_{mt}$ are the risk free rate and the return on the SPI index. The numbers reported in the Appendix and Figure 1 are sums of the intercepts of cross-sectional regressions over the relevant event-time periods.

[Insert Figure 1 around here]

The abnormal performance is computed for each method. Consistent with U.S. and Canadian evidence, repurchases that are implemented on the open market show positive abnormal performance over a 24-month period. This is also the case for repurchases on second trading lines. However, these cumulative abnormal returns are not statistically significant. Stock repurchases done by tender offer or with put rights do not display any abnormal performance. Contrary to the standard results in this literature we do not report any under-reaction to repurchase announcements on the Swiss market.

## 6. Summary and further research

This paper investigates share repurchases in Switzerland. Because of the specific institutional setting of this market, the repurchase activity and methods are different from what is observed elsewhere. For instance, the most popular method for buybacks is unique to this market as shares are repurchased on a second trading line where the only buyer is the company itselF Because of the corporate law that aims at preserving the most equitable treatment of all shareholders, repurchases with put rights are also frequently used. Tender offer are used as well but their premium is rather limited because of legal constraints. Finally, contrary to most other countries, open market repurchase are not used very frequently because of the existing taxation. The market reactions to different phases of the repurchase programs are analyzed. On the announcement date, the market reaction is on average positive for all methods but is only significant for offers with put rights. This is partly due to the high premia that are observed with this method. On the date the repurchase program begins, only programs on second trading line display some abnormal returns. This might due to some market inefficiency. At the expiration of the program, a significant drop in prices is observed for offers with put rights which is again due to the high premia paid in these offers. In the long run, there is no significant abnormal performance for repurchase.

However these results will be further extended in different directions. An analysis of the real motives behind repurchases in Switzerland will be offered. Most firms claim that they want to redistribute excess cash to shareholders. This will be tested formally by running an analysis à la Dittmar (2000) and it will be confronted with the many different motives for share repurchases that have been discussed in the literature. The second trading line provides a unique opportunity to observe whether managers act strategically when buying back shares as all trades can be observed. Whether managers trade after stock prices fall will be tested formally as well as other hypotheses that have been discussed in Ikenberry, Lakonishok and Vermaelen (2000) for Canada and Stephens and Weisbach (1998) for the U.S.. The results of these investigations will rely on daily data.

## Appendix: Long run performance of repurchasing firms

| Event month | Second lines | Tender offers | Put rights | Open market |
|---|---|---|---|---|
| -1 | 0.00% | 0.00% | 0.00% | 0.00% |
| 0 | 3.75% | 2.54% | 7.27% | 3.80% |
| 1 | 0.50% | -1.78% | 1.98% | 1.51% |
| 2 | 2.49% | -0.66% | -2.03% | 7.41% |
| 3 | 3.28% | -0.07% | -3.51% | 9.14% |
| 4 | 0.34% | 1.99% | -5.56% | 7.92% |
| 5 | 0.24% | 3.08% | -5.01% | 6.65% |
| 6 | -0.46% | 3.24% | -4.65% | 3.04% |
| 7 | 1.27% | 3.15% | -4.14% | 4.97% |
| 8 | 3.82% | 0.91% | -4.93% | 15.39% |
| 9 | 3.31% | -1.83% | -2.22% | 15.24% |
| 10 | 5.14% | -3.70% | -4.24% | 17.88% |
| 11 | 3.95% | -3.10% | -4.20% | 23.01% |
| 12 | 5.49% | -5.18% | 3.49% | 20.15% |
| 13 | 5.54% | -1.62% | 2.69% | 24.33% |
| 14 | 5.28% | -3.28% | 2.69% | 25.56% |
| 15 | 8.10% | -4.96% | 5.13% | 25.15% |
| 16 | 7.71% | -3.72% | -3.75% | 25.17% |
| 17 | 8.13% | -2.82% | -7.53% | 28.17% |
| 18 | 7.87% | -0.65% | -7.47% | 28.15% |
| 19 | 8.39% | -1.77% | -6.42% | 22.69% |
| 20 | 11.30% | -2.01% | -3.64% | 24.98% |
| 21 | 10.35% | -4.15% | -6.02% | 22.59% |
| 22 | 11.03% | -5.97% | -2.96% | 25.39% |
| 23 | 11.28% | -5.66% | -5.20% | 27.87% |
| 24 | 11.87% | -5.07% | -2.41% | 25.44% |

Note: Figures represent the cumulative average abnormal returns using the Returns Across Time and Securities method of Ibbotson (1975). Abnormal returns are computed with respect to the CAPM, with the market portfolio being the Swiss Performance Index. None of the cumulative abnormal returns are statistically significant.

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**Table 1: International share repurchase activity 1990-2002**

*Panel A. Number of programs announced*

| | U.S.A. | U.K. | Canada | Japan | Austral. | France | Germany |
|---|---|---|---|---|---|---|---|
| 1990 | 829 | 15 | 144 | F | 7 | F | F |
| 1991 | 337 | 9 | 92 | F | 9 | F | F |
| 1992 | 491 | 15 | 79 | F | 17 | F | F |
| 1993 | 517 | 7 | 62 | F | 3 | F | F |
| 1994 | 886 | 44 | 110 | F | 6 | F | F |
| 1995 | 899 | 48 | 166 | 2 | 9 | F | F |
| 1996 | 1170 | 35 | 129 | 12 | 26 | F | F |
| 1997 | 1032 | 50 | 172 | 36 | 49 | F | F |
| 1998 | 1570 | 25 | ? | 18 | 60 | 49 | 4 |
| 1999 | 1252 | ? | ? | 4 | ? | 387 | 51 |
| 2000 | ? | ? | ? | ? | ? | 400 | 67 |
| 2001 | ? | ? | ? | ? | ? | 391 | 63 |
| 2002 | ? | ? | ? | ? | ? | ? | 43 |

*Panel B. Repurchase mechanisms*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Open market | 91.56% | 70.71% | ? | 57.35% | 65.59% | ? | ? |
| Tender offer | 6.62% | 24.29% | ? | 32.35% | 6.01% | ? | ? |
| Dutch auction | 1.81% | - | ? | - | - | ? | ? |
| Other | - | 5.00% | ? | 10.30% | 27.41% | ? | ? |

Note: Panel A shows the number of programs that have been announced in a given year. For Canada, France and Germany, the figures are only for open market programs. A "?" indicates that the data is not available and a "F" indicates that stock repurchases were forbidden. Panel B shows the proportion of specific repurchase mechanisms that have been used to repurchase stocks. The presented figures are from the following papers: U.S.A: Grullon and Ikenberry (2000), U.K.: Rau and Vermaelen (2002), Canada: Ikenberry, Lakonishok and Vermaelen (2000), Japan: Zhang (2002), Australia: Mitchell, Izan and Lim (2004), France: Dereeper and Romon (2003) Germany: Hacketahl and Zdantchouk (2004)

**Table 2: Stock repurchase activity in Switzerland**

| | *Number of program by repurchase method* | | | | *Total* |
|---|---|---|---|---|---|
| | Second line | Tender offer | Put rights | Open market | |
| 1992 | - | - | - | - | 0 |
| 1993 | - | 1 | 1 | - | 2 |
| 1994 | - | 1 | - | - | 1 |
| 1995 | - | - | - | - | 0 |
| 1996 | - | - | - | - | 0 |
| 1997 | 1 | 8 | - | - | 9 |
| 1998 | 5 | 2 | - | - | 7 |
| 1999 | 5 | 3 | - | 4 | 12 |
| 2000 | 2 | 3 | 3 | - | 8 |
| 2001 | 11 | - | 7 | 1 | 19 |
| 2002 | 9 | 2 | 1 | 4 | 16 |
| 2003 | 7 | - | 1 | 1 | 9 |
| *Total* | 40 | 20 | 13 | 10 | 83 |

Note: This table provides the number of repurchase programs that have been announced by Swiss companies since the introduction of the new corporate law in 1992. It includes all repurchases announced by companies quoted on SWX or Virt-X except those by investment companies, privately negotiated repurchases, those using call options.

**Table 3: Cash distribution to shareholders in Switzerland 1993-2002**

| Year | Repurchases | Dividends |
|---|---|---|
| 1993 | 644 | 5,579 |
| 1994 | 247 | 6,562 |
| 1995 | 192 | 7,214 |
| 1996 | 0 | 7,872 |
| 1997 | 1,236 | 8,530 |
| 1998 | 4,910 | 9,932 |
| 1999 | 10,169 | 13,332 |
| 2000 | 7,800 | 16,674 |
| 2001 | 11,160 | 17,784 |
| 2002 | 18,307 | 10,661 |
| 2003 | 6,394 | 12,585 |

Note: Part of the data is from Vontobel (2004). The amounts are expressed in millions CHF They represent the aggregate amounts paid in repurchase programs and dividends. The numbers indicate the effective amounts paid during a year.

**Table 4: Descriptive statistics of Swiss stock repurchase programs**

| | Second line | Tender offers | Put rights | Open market |
|---|---|---|---|---|
| Number of programs | 40 | 20 | 13 | 10 |
| Average size of program (millions CHF) | 1083 | 208 | 466 | 976 |
| Average fraction of capital repurchased | 6.82% | 10.12% | 7.88% | 3.56% |
| Premium offered | 0.89% | 6.23% | 35.98% | - |
| Number of programs with capital reduction | 100.00% | 95.00% | 100.00% | 0.00% |
| Average length of Program (days) | 317.8 | 10.5 | 23.2 | 575 |

Note: The size of the program and the fraction of capital targeted are those announced by the company. The premium for second lines is computed as the ratio of the daily closing price paid on the second line with respect to the closing price on the main trading line. The premium for tender offers is computed with respect to the price 5 days before the repurchase announcement. The premium for repurchases with put rights is computed as the ratio of the put exercise price to the price of the stock 5 days before the announcement.

**Table 5: Motives for stock repurchase stated by management in the announcement**

| Motive | Number of statements | Proportion of total programs |
|---|---|---|
| Redistribution of excess cash | 62 | 74.70% |
| Improvement of financial ratios | 22 | 26.51% |
| Optimisation of capital structure | 14 | 16.87% |
| Provide stocks for ESOP/convertibles | 9 | 10.84% |
| Signalling undervaluation | 3 | 3.61% |
| *Total* | 110 | |

Note: The different motives are stated in the official announcement made by a company when announcing a repurchase program. The total number of program is equal to 83. Sometimes a company states several objectives for a repurchase program.

**Table 6: Market reactions to different phases of repurchase programs [-2;+2]**

| Second lines | Tender offers | Put rights | Open market |
|---|---|---|---|
| Panel A: Announcement of repurchase | | | |
| 0.99% | 1.34% | **4.86%** | 1.76% |
| Panel B: Beginning of the program | | | |
| **3.20%** | 0.84% | 0.98% | -0.45% |
| Panel C: End of program/expiration of the offer | | | |
| -0.34% | 0.87% | **-1.15%** | -0.72% |

Note: Figures in bold characters are significant at the 5% level. Figures represent the cumulative average abnormal returns over the interval 2 days before and after the event date. Abnormal returns are computed with respect to the market model using the Swiss Performance Index. The number of stock used to compute abnormal returns are: 46 for 2nd lines, 26 for tender offer, 15 for put rights, 10 for open market.

**Figure 1: Cumulative returns of repurchasing firms**