NB RiskControl
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A Liquidity Indicator for Swiss Takeover Law

Table of contents

1. Introduction

In its decision of 16 March 2009 regarding *Harwanne Compagnie de participations industrielles et financières SA*, the Swiss Takeover Board (TOB) decided that the shares of Harwanne Compagnie de participations industrielles et financières SA must be deemed illiquid even though the liquidity criterion in Communication No. 2 of 3 September 2007 was formally met. Among other aspects, the TOB took into consideration the low volume and the fact that over 2/3 of the volume was generated by Harwanne's own trades (Decision of 16 March 2009 regarding *Harwanne Compagnie de participations industrielles et financières SA*, consid. 2.1).

Dr. Nicole Beiner has been mandated by the TOB to evaluate a new liquidity criterion. The present report summarizes the findings of the evaluation and the decisions of the TOB.

2. Legal foundations for the determination of the offer price in the case of an illiquid equity security (Art. 40 para. 4 SESTO-FINMA)

If a public takeover or exchange offer related to a Swiss Company whose equity securities (**securities**) are listed on a stock exchange is launched, and if the minimum price rules are applicable, the offer price is determined according to Art. 40 ff. of the Stock Exchange Ordinance FINMA (SESTO-FINMA).

According to Art. 40 para. 1 SESTO-FINMA, the offer price must be at least as high as the stock exchange price. The stock exchange price is defined here as the volume-weighted average price (VWAP) of all on-exchange transactions executed during the sixty trading days prior either to publication of the offer or prior announcement, as the case may be (Art. 40 para. 2 SESTO-FINMA).

However, the stock exchange price remains unconsidered if a listed security is illiquid (Art. 40 para. 4 SESTO-FINMA). In this case, the offer price must be based on the evaluation

established by an auditing company or a securities dealer (Art. 25 Stock Exchange Act, SESTA). However, Art. 40 para. 4 SESTO-FINMA does not assign any criteria according to which a security is to be regarded as liquid or illiquid.

3. Communication No. 2 of the Takeover Board on the concept of liquidity

On 3 September 2007, the TOB issued Communication No. 2, on the concept of liquidity. According to this, a security is considered liquid if it has been traded on at least 30 days out of a period of 60 trading days prior to publication of the offer or prior announcement (the 30/60 Rule). However, the TOB reserves the right to consider other criteria than this, should circumstances so justify. In particular, the TOB also considers taking account of trading volume during the reference period.

The liquidity indicator currently used by the TOB is a trading frequency indicator. While this indicator is easily computable with public data and easily comprehensible, it does not consider volume and may be impacted by market participants.

If the market for a security is irregular and of limited volume, and the security therefore is not very liquid or is even illiquid, the 30/60 Rule can be formally met with a minimal trading volume. One transaction for one share per trading day during 30 out of 60 trading days is theoretically sufficient to consider a security as liquid. The volume of securities traded remains unconsidered. The current liquidity criterion of the TOB therefore holds a certain potential for circumvention.

Additionally, when selecting the date on which the offer or the prior announcement is issued, the bidder has the possibility to influence the liquidity indicator, and therefore the decision on the liquidity status of the security, to some degree. This is mainly due to the short period under review and the liquidity indicator currently used.

In its decision of 16 March 2009 regarding *Harwanne Compagnie de participations industrielles et financières SA*, the TOB decided that the shares of Harwanne Compagnie de participations industrielles et financières SA were considered illiquid even though the 30/60 Rule was formally met. Among other aspects, the TOB took into consideration the weak trading volume and the fact that over 2/3 of this volume was generated by Harwanne's own trades (Decision of 16 March 2009 regarding *Harwanne Compagnie de participations industrielles et financières SA*, consid. 2.1).

4. Issue for the Swiss Takeover Board (TOB)

The issue for the TOB is to evaluate whether stock exchange prices of a security are close to its "true" price, especially during the last 60 trading days prior either to publication of the offer or prior announcement since the 60-day VWAP is taken as a reference price.

However, we know that, in a strongly efficient market[1], market prices of a security will be close to its "true" price if the liquidity premium is small, all things being equal. Therefore there are two main issues for the TOB.

The first is to assess whether there is a liquidity premium in the 60-day VWAP. In order to reach this objective, it is necessary to identify securities which are illiquid. However, since there is no single universally accepted definition of liquidity, it is difficult to obtain an exact formula for identifying illiquid securities. Therefore, the TOB needs to use liquidity indicators.

The second issue for the TOB is to assess the liquidity premium of illiquid securities. Again, since there is no exact liquidity formula, it is currently difficult to assess the liquidity premium and therefore the "true" price of the security solely from market prices. For this reason, according to Art. 40 para 4 SESTO-FINMA, the "true" price must be evaluated by an auditing company or a securities dealer.

5. Liquidity definition and impact on market prices

One can say that market participants perceive a financial asset as liquid if they can quickly sell or buy a large amount of the asset without adversely affecting its price ("ΔP"), at low cost).

Therefore, market participants perceive liquidity with three dimensions.

The first dimension refers to the speed of transactions. The less time market participants need to trade a defined quantity, the more liquid will be the security.

The second dimension refers to the number of shares (quantity) market participants can quickly trade. The larger the quantity that they can trade, the more liquid will be the security.

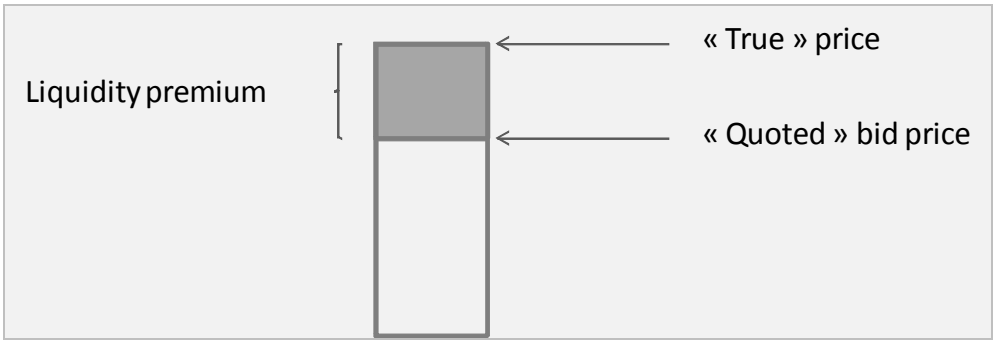
The third dimension refers to the price impact of an order, or in other words to the additional cost market participants have to bear to trade a certain number of shares. The smaller the price impact, the smaller the transaction costs and the more liquid the security will be.

Note that a security may be perceived as liquid by an individual investor but not by all investors collectively.

The consequence of illiquidity is that market participants will require a liquidity premium for securities considered as illiquid.

All things being equal, this liquidity premium will decrease the quoted (transaction) price relative to the "true" price of the security[2].

[1] An efficient market is a market where all information is included in the prices of securities.



6. Liquidity indicators: A brief survey

The TOB needs to use liquidity indicators in order to distinguish liquid from illiquid securities. The objective of this section is to briefly describe the main indicators used by market participants to assess the liquidity of a security.

1. Assessment of the tradability of the security.

Securities listed in an exchange are tradable (marketable or negotiable) by market participants. However, the level of effective tradability depends, among other things, on the quantity available to trade. The number of outstanding shares of a company is not always a good means to measure the quantity available to trade, i.e. to buy or to sell. Indeed, shares of a company can be held by strategic investors. These include holdings by officers and directors, founders, and employees, and controlling positions held by private individuals and investment companies. Therefore, market participants use the free float of a company to assess the tradability level of a security.

All things being equal, the smaller the free float, the less tradable the security and the lower the liquidity of a security will be. Indeed, it will be more difficult for market participants to quickly trade a large amount if the quantity available to trade this security in the market is small.

Note that indices providers usually require a minimum threshold of free float, i.e. tradability level, in order to include a security in an index. For example, share indices computed by SIX Swiss Exchange only include securities with a free float greater than 20%.

[2] Note that the quoted bid price may be higher than the "true" price of an illiquid security if the market is not efficient. In this case, the existence of asymmetric information in the market will induce uninformed investors to buy an illiquid security at a price higher than its "true" price.

2. Assessment of the trading activity of a security.

Trading activity of a security refers to the level of effective trades done by market participants on this security. It is very often used as an indicator to assess the liquidity of a security but also to estimate its price discovery process in the market.

Indeed, it is assumed that transaction prices of a security will be good estimates of its "true" price if the trading activity on this security is high, since any new information impacting the company will be quickly reported in the transaction prices.

In order to assess the trading activity of a security, market participants use frequency and volume indicators. Some of them consider on-exchange trades only and others consider on and off-exchange trades.

With these indicators, market participants can estimate how much time in average they must wait to trade a given number of shares. Therefore these indicators refer to the speed and quantity dimensions of liquidity.

The longer the trading time to complete their order, the less liquid the security will be perceived.

The trading frequency indicator used by market participants is usually the number of transactions over a given period (a day, a week, a month, a year).

The volume indicators used by participants are:

- The traded quantity (or the monetary value) over a given time horizon (a day, a week, a month, a year).
- The traded quantity (or amount) per transaction (min, max, average, median, etc.).
- The turnover rate of the security, defined as the traded quantity (or the monetary value) over the market capitalization or the free float of the company in quantity (or in monetary value).
- The turnover market ratio, defined as the turnover of the security in monetary value (CHF) over the total turnover of a market index in monetary value (CHF).

3. Assessment of the tightness of a security

The tightness of a security measures the cost of performing a transaction within a short period of time. It is an assessment of the market's ability to match supply and demand at low cost. We may say that tightness refers to the price impact dimension (ΔP) of liquidity but only for a small quantity of shares.

More specifically, market participants assess tightness with indicators mainly based on the bid-ask spread of a security.

- The quoted spread in amount. This is the difference between the ask and bid prices of a security. This ex ante indicator refers to the possibility that market participants can trade immediately at these prices with market orders. It is mainly used to analyze the bid-ask spread of a security over time.

- The quoted spread in percent. It is defined as the quoted spread in amount over the midpoint of the spread (quoted spread in amount/midpoint). This ex ante indicator is mainly used for comparison of the bid-ask spread between securities.

- The effective spread. This is the difference between the transaction price and the midpoint of the spread prevailing just before the trade. This ex post indicator refers to the price impact of an order relative to the bid-ask spread. It can be calculated in amount and/or in percent.

- The realized spread. This is the difference between the transaction price and the prevailing ask price for a market buy order or the difference between the transaction price and the prevailing bid price for a market sell order. This ex post indicator refers to the price impact of an order relative to the bid-ask spread. It can be calculated in amount and/or in percent.

4. Assessment of the depth and breadth of a security[3].

"Depth" refers to the existence of an abundant quantity immediately available to trade in the order book.

The quantity which is immediately available to trade mainly depends on the number of orders in the order book and the number of shares (quantity) placed by market participants in each of these orders.

Therefore, we can say that depth indicators will refer to the speed and quantity dimensions of liquidity. The deeper a security, the more liquid it is.

"Breadth" means there is an abundant quantity in the order book with minimal price impact.

Breadth will therefore depend on the depth of the security but also on the limit prices of orders registered in the order book.

Therefore, we can say that breadth indicators will refer to the speed, quantity and price impact" dimensions of liquidity. The broader a security, the more liquid it is.

[3] Note that some market participants do not always make a difference between depth and breadth. They use the notion of depth to simultaneously refer to quantity and price impact. This is why we have grouped the indicators of depth and breadth in the same section.

The indicator used by market participants to measure the depth of a security is:

- the quote size. In a dealer market, this is the quantity available to trade at the best bid and ask prices. In an order driven market, such as the Swiss Stock Exchange, this is the cumulative quantity available to trade in the order book.

The indicators used by market participants to measure the breadth of a security are:

- the normalized bid-ask spread. This is the difference between the bid and ask prices for the same or a similar quantity of securities.

- the weighted average bid-ask spread of the order book. Each limit price in the order book is weighted by the quantity available at this price. This indicator gives an estimation of the "ex ante" average transaction price if market participants want to trade all quantity available in the order book, and displayed, with a market order.

5. Assessment of resiliency**.**

A market is resilient if new order flows quickly correct order imbalances, which have usually induced prices to move away from the "true" price of the security.

The resiliency indicators attempt to measure the price impact (ΔP) of traded quantities (Q or ΔQ) on the return of a security. Therefore, these are "ex post" indicators which refer to the quantity and price impact dimensions of liquidity.

The main resiliency indicators used are:

- the Amihud indicator (return to volume ratio): $[(\Delta P/P)/(Q/\text{Free-Float})]$
- the Hui and Heubel indicator : $[(\Delta P/P)/(\text{Turnover}/\text{Free-Float}*P)]$
- the Kyle lambda: regression of ΔP on ΔQ
- the Market Efficiency Coefficient (MEC). It is calculated as [(Volatility over a given period)/(Daily volatility x $\sqrt{}$Length of the period)].

The table below summarizes the main dimensions of liquidity represented by the indicators described in this section.

	Tradability	Tightness	Depth	Breadth	Trading activity	Resiliency
Quickly	x		x	x	x	
Large amount	x		x	x	x	x
Price Impact (ΔP)		x		x		x

As we can observe, some of these indicators may seem redundant to assess the different dimensions of liquidity.

However, some constraints, as data availability and/or computation complexity, prevent market participants to easily compute tightness, depth, breadth and resiliency indicators. It is therefore implicitly difficult for TOB and market participants to use these liquidity indicators in order to easily identify illiquid securities.

7. Requirements for a new liquidity rule

The issue for the TOB is to use a liquidity indicator which fulfills the following criteria:

- The indicator must be in line with best market practice to assess the liquidity of a security[4].
- The data necessary to compute the liquidity indicator must be available to all market participants. The liquidity indicator must be easily computable (not complex and/or time-consuming).
- The liquidity rule must be easily comprehensible to all market participants.
- Market participants cannot affect the value of the liquidity indicator with their own trades only.[5]

8. A trading activity indicator to measure liquidity

The TOB has decided to consider a trading activity indicator to assess the liquidity of a security which takes into account volume and trading frequency. It has been decided to take the monthly median of daily volume relative to its free float.

- This liquidity indicator is best market practice. For example, it is already used by indices providers, such as the SIX Swiss Exchange and FTSE, to include a security in an index[6]. This indicator is also compliant with the recommendations of the International Monetary Fund (IMF) to assess the liquidity of a security[7].
- The data used to compute this liquidity indicator, i.e. daily volume and free float, is available to all market participants on the SIX Swiss Exchange website.
- This liquidity indicator is easily computable with a simple Excel spreadsheet (by using the "median" function).

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[4] In order to verify this, we must consider recommendations made by official organizations (IMF in our case) or code of conduct of professionals and current use of this indicator by other institutions which are already recognized by participants (like FTSE in our case).

[5] In order to prevent that, the use of the median instead of the mean and a year as a reference period is suggested. This minimizes the risk of manipulation. Theoretically, the bidder must constantly trade a certain amount of shares during 10 months out of the last 12 months in order to have an impact.

[6] See Ground Rules for the Management of The UK Series of the FTSE Actuaries Share Indices, Section 4. 10 c). See also Enhanced FTSE Liquidity Rule

[7] See for example: International Monetary Fund: Financial Soundness Indicators, 14 May 2003

- This liquidity indicator is easily comprehensible to all market participants.
- Use of the median, instead of the mean, prevents large and/or small infrequent transactions from affecting the value of the liquidity indicator.

In order to compute this monthly median, one first calculates the daily volume of the security relative to its free float for every day in the month. It is equal to the number of shares traded on-exchange divided by the free float of the security on this day. One then ranks these values; the middle value is the median for the month.

For example, a monthly median of daily volume equal to 0.04% for March means that the daily on-exchange volume of the security was at least equal to 0.04% of its free float every other day in March.

If there were 20 trading days in March, this indicator would mean that the daily on-exchange volume of the security was at least equal to 0.04% of its free float 10 days out of 20 days in March.

By definition, this indicator takes into account the volume and trading frequency of the security relative to its free float over a specific month, without being influenced by large and/or small infrequent transactions.

The advantages of using the month as reference period for the indicator are:

- The period is long enough to provide a meaningful measure of the central tendency of daily volumes (approx. 20 values for each month).
- The period is short enough to provide frequent updates of this indicator (12 values over a one-year period).
- The month is frequently used as a benchmark by market participants.

9. New liquidity rule

After having tested different parameters[8] with data covering more than 5 trading years (between January 5, 2004 and July 31, 2009) on Swiss securities, the TOB decided to adopt the following liquidity rule:

Securities included in the SLI Index are considered liquid.

Other securities may be considered as liquid if the monthly median of their daily volume relative to their free float is greater than 0.04% over 10 out of the last 12 months[9].

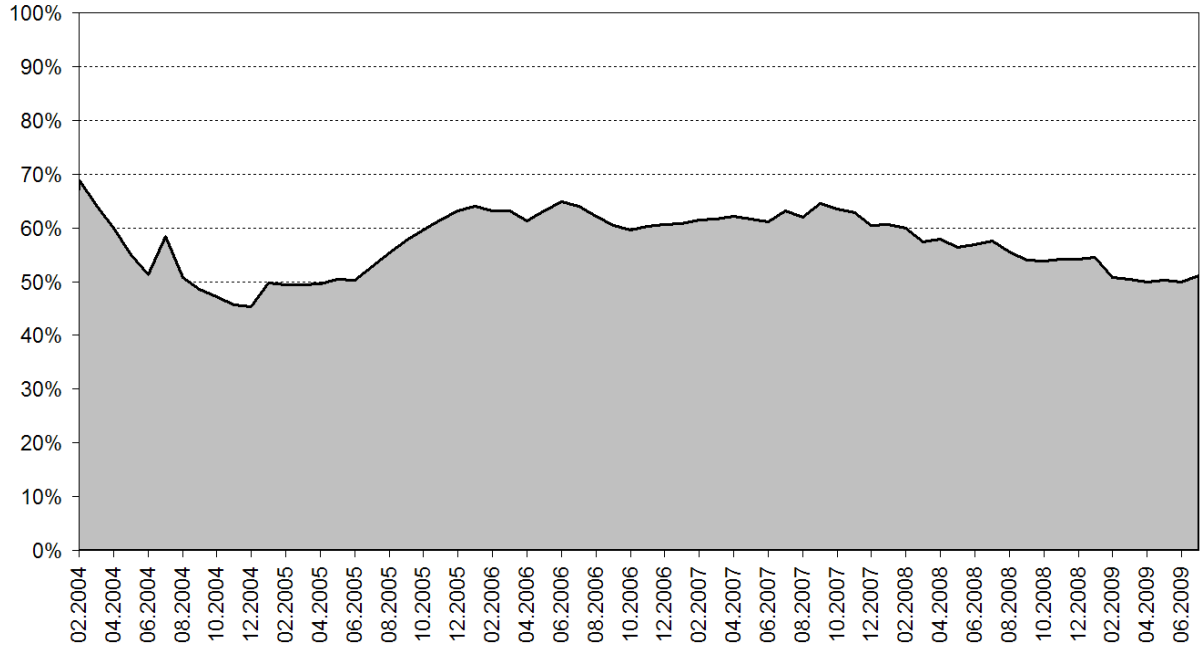
[8] By taking different value of threshold (0.03%, 0.04%, 0.05%) and the number of months for which this threshold should be met (8, 9, 10, 11, and 12 months).

The advantages of using a year as reference period for the rule are:

- The period is long enough to provide a meaningful indicator for the usual monthly trading activity of a security. Seasonality effects in trading activity have very little impact on the assessment of the liquidity of a security.
- The period is short enough to reflect the change in factors which may affect the trading activity of a given security.
- The year is frequently used as benchmark by market participants.

Moreover, a rule with a 12-month period prevents market participants from affecting the value of the liquidity indicator by heavily trading the stock during a short period of time.

The graphic below illustrates the proportion of securities listed on the SIX Swiss Exchange that fulfilled this liquidity rule between January 4, 2004 and July 31, 2009[10].



It is important to note that

- Securities which fulfilled the liquidity rule over the analysis period represent all together and in average approx. 97.5% of the Swiss market capitalization and approx. 99.75% of the Swiss market turnover.

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[9] An example for the computation of this liquidity rule is illustrated in Appendix 2.

[10] The list of securities which fulfilled and did not fulfill the liquidity rule on July 1, 2009 is in the Appendix 1.

- All securities included in the SMI Expanded, i.e. included in the SMI and/or SLI and/or SMIM fulfilled the liquidity rule.

10. Appendix 1

10.1. List of securities that fulfilled the liquidity rule on July 1st 2009

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0012221716	ABB LTD N	100%	40'486	SMI	x	x	L		
CH0042927431	ABSOLUTE INVEST I	81%	486					x	x
CH0021190902	ACINO HLDG N	92%	589			x	M		
CH0010532478	ACTELION N	89%	6'409	SMI	x	x	L		
CH0012138605	ADECCO N	64%	5'508	SMI	x	x	L		
CH0021194664	ADVANCED DIGITAL N	61%	129			x	S		
CH0008837566	ALLREAL N	44%	645			x	M		x
CH0034389707	ALPIQ HOLDING N	16%	1'911						x
CH0042927381	APE I	84%	288					x	
CH0012132509	ARBONIA I	100%	238			x	M		x
CH0021218067	ARPIDA N	100%	18			x	S		
CH0043238366	ARYZTA N	100%	2'858	SMIM		x	M		
CH0011339204	ASCOM N 10	74%	366			x	S		
CH0049864827	ATHRIS I	90%	387			x	M		
AT0000920863	AUSTRIAMICROSYS	100%	144			x	S		
CH0012530207	BACHEM N -B-	71%	334			x	S		x
CH0012410517	BALOISE N	100%	4'070	SMIM	x	x	M		
CH0009002962	BARRY CALLEBAUT N	35%	1'060	SMIM		x	M		
CH0011432447	BASILEA N	90%	813	SMIM		x	M		
CH0009236461	BASLER KB PS	100%	677			x	M		
CH0038389992	BB BIOTECH N	81%	1'152					x	x
CH0038390016	BB MEDTECH N	57%	295						x
CH0015251710	BC VAUD N	33%	1'018			x	M		
CH0001503199	BELIMO N	76%	458			x	M		
CH0021607004	BKW FMB ENERGIE N	26%	1'148			x	M		
CH0012684657	BOBST GRP N	52%	282			x	M		x
CH0002432174	BUCHER N	60%	697			x	M		
CH0025536027	BURCKHARDT N	81%	390			x	M		
CH0005092751	CASTLE ALT N	39%	176					x	x
CH0006937772	CHARLES VOEGELE I	91%	294			x	M		
CH0014345117	CIE FIN TR I	33%	238			x	S		
CH0012142631	CLARIANT N	100%	1'602	SMIM	x	x	M		
CH0025343259	COLTENE N	90%	151			x	S		
CH0004422975	CREINVEST I	61%	75						
CH0012138530	CS GROUP N	100%	58'876	SMI	x	x	L		
CH0011025217	CYTOS N	93%	63			x	S		
CH0030486770	DAETWYLER I	54%	291			x	S		
CH0008531045	DATACOLOR N	51%	21			x	S		
CH0010474218	DAY N	70%	29			x	S		
CH0023405456	DUFRY N	57%	455			x	M		
CH0022268228	EFG INTERNATIONAL N	31%	544	SMIM		x	M		
CH0003288229	EG LAUFENBURG I	13%	339						x
CH0016440353	EMS-CHEMIE N	40%	963			x	M		x
CH0001752309	FISCHER N	95%	763	SMIM		x	M		
CH0010567961	FLUGHAFEN ZUERICH N	62%	948			x	M		
CH0003541510	FORBO N	48%	271			x	M		
CH0015536466	GALENICA N	75%	1'540	SMIM		x	M		
CH0100185955	gategroup N	88%	374			x	M		

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0030170408	GEBERIT N	92%	5'258	SMIM	x	x	M		
CH0010645932	GIVAUDAN N	88%	5'048	SMIM	x	x	M		
GG00B247Y973	GOTTEX FUND N	36%	72			x	S		
CH0008012236	GURIT I	95%	199			x	M		
CH0012627250	HBM N	94%	291					x	
CH0012271687	HELVETIA HOLDING N	54%	1'386	SMIM		x	M		
CH0012214059	HOLCIM N	80%	13'238	SMI	x	x	L		
CH0030380734	HUBER+SUHNER N	72%	508			x	M		
CH0011029946	INFICON N	100%	204			x	S		
CH0006372897	INTERROLL N	64%	143			x	S		
CH0029758650	JULIUS BAER N	100%	9'108	SMI	x	x	L		
CH0011795959	KABA N	84%	649			x	M		
CH0100837282	KARDEX N	82%	141			x	S		
CH0010702154	KOMAX N 10	93%	178			x	M		
CH0012268360	KUDELSKI I	72%	637			x	M		
CH0025238863	KUEHNE+NAGEL INT N	44%	4'452	SMIM	x	x	M		
CH0003504856	KUONI N	94%	905			x	M		
LI0030195247	LIECHT LANDBK I	35%	702			x	M		
CH0012815459	LIFEWATCH N	82%	226			x	S		
CH0010570759	LINDT N	100%	3'359	SMIM		x	M		
CH0010570767	LINDT PS	100%	1'740	SMIM		x	M		
CH0025751329	LOGITECH N	87%	2'549	SMIM	x	x	M		
CH0013841017	LONZA N	100%	5'383	SMI	x	x	L		
CH0039821084	METALL ZUG AG	47%	267			x	S		x
CH0027700852	MEYER BURGER N	94%	493			x	M		
CH0012337421	MICRONAS N	100%	92			x	S		
CH0003390066	MIKRON N	30%	22			x	S		
CH0012583404	MOBILEZONE I	84%	214			x	S		
CH0011108872	MOBIMO N	91%	580			x	M		
CH0100699641	NATIONALV N	52%	276			x	S		
CH0038863350	NESTLE N	95%	150'966	SMI	x	x	L		
IT0004147952	NEWRON PHARMA N	100%	162			x	S		
CH0037851646	NOBEL BIOCARE N	100%	2'984	SMIM	x	x	M		
CH0012005267	NOVARTIS N	100%	117'906	SMI	x	x	L		
CH0000816824	OC OERLIKON N	38%	334	SMIM	x	x	M		
CH0038285679	ORASCOM DEVELOPMENT HLD AG N	42%	496			x	M		
CH0002168083	PANALPINA N	57%	1'141	SMIM		x	M		
CH0021783391	PARGESA I	35%	1'812	SMIM		x	M		x
CH0024608827	PARTNERS GROUP N	35%	957			x	M		x
CH0009115129	PERFECT N	22%	7			x	S		x
CH0027752242	PETROPLUS N	100%	1'277	SMIM	x	x	M		
CH0018294154	PSP N	75%	1'826	SMIM		x	M		
CH0004626302	PUBLIGROUPE N	70%	135			x	S		
CH0005589400	QUADRANT N	57%	136						
CH0018794492	REDIT N	60%	5			x	S		x
CH0045039655	RICHEMONT	100%	12'131	SMI	x	x	L		
CH0003671440	RIETER N	60%	530	SMIM		x	M		
CH0012032048	ROCHE GS	100%	105'384	SMI	x	x	L		
CH0038389307	SARASIN N-B-	66%	1'112			x	M		
CH0024638212	SCHINDLER N	30%	1'440			x	M		x
CH0024638196	SCHINDLER PS	100%	3'248	SMIM		x	M		x
CH0005795668	SCHMOLZ+BICKENBACH AG N	25%	236			x	M		

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0029926000	SCHULTHESS N	74%	468			x	M		
CH0010754924	SCHWEITER I	64%	374			x	M		x
CH0002497458	SGS N	68%	7'126	SMI	x	x	L		
CH0012885841	SHAPE N	94%	35					x	
CH0000587979	SIKA I	100%	2'560	SMIM		x	M		x
CH0012549785	SONOVA N	69%	4'017	SMIM	x	x	M		
CH0011484067	ST GALLER KB N	45%	971			x	M		
CH0012280076	STRAUMANN N	49%	1'548	SMIM		x	M		
CH0038388911	SULZER N	71%	1'706	SMIM		x	M		
CH0012255151	SWATCH GROUP I	100%	5'453	SMI	x	x	L		
CH0012255144	SWATCH GROUP N	44%	1'965	SMIM		x	M		
CH0014852781	SWISS LIFE HOLDING AG N	84%	2'794	SMI	x	x	L		
CH0008038389	SWISS PRIME SITE N	92%	1'268			x	M		
CH0012332372	SWISS RE N	92%	12'175	SMI	x	x	L		
CH0008742519	SWISSCOM N	45%	8'100	SMI	x	x	L		
CH0012324627	SWISSLOG N	100%	201			x	S		
CH0010675863	SWISSQUOTE N	60%	487			x	M		
CH0011037469	SYNGENTA N	100%	24'471	SMI	x	x	L		
US87162M4096	SYNTHES N	51%	6'353	SMI	x	x	L		
CH0012100191	TECAN GROUP AG N	90%	457			x	M		
CH0012453913	TEMENOS N	100%	1'089	SMIM		x	M		
CH0011607683	TORNOS N	95%	86			x	S		
CH0033361673	U-BLOX N	76%	124			x	S		
CH0024899483	UBS N	100%	39'414	SMI	x	x	L		
CH0001840450	VALARTIS GROUP I	50%	64			x	S		x
CH0014786500	VALIANT N	94%	3'133	SMIM		x	M		
CH0002088976	VALORA N	85%	585			x	M		
CH0006227612	VETROPACK I	95%	383			x	M		
CH0003245351	VON ROLL I	33%	374			x	M		
CH0012335540	VONTOBEL N	34%	640			x	M		
LI0010737216	VPB VADUZ I 10	71%	411			x	M		
CH0015940247	WALTER MEIER N	40%	40			x	S		x
CH0021892606	WINTERTHUR TECH N	87%	155			x	S		
CH0002352935	ZEHNDER I	100%	243			x	S		x
CH0021831182	ZUEBLIN IMM N	89%	193			x	S		
CH0011075394	ZURICH FINANCIAL N	100%	27'629	SMI	x	x	L		

10.2. List of securities that did not fulfill the liquidity rule on July 1st 2009

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0001366332	ACCU N	49%	3			x	S		x
CH0029850754	ADDEX N	61%	106			x	S		
CH0008967926	ADVAL TECH N	38%	68			x	S		
CH0019107025	AFFICHAGE N	39%	150			x	S		
CH0010947627	AIRESIS N	53%	26			x	S		x
CH0019199550	ALPINE SELECT N	48%	87					x	
CH0024590272	ALSO N	36%	63			x	S		x
CH0014424524	ALTIN N	95%	231					x	x
CH0009153310	APEN N	46%	12					x	x
CH0049864843	ATHRIS N	10%	23						
CH0001473559	BASELLAND KB PS	100%	542			x	M		
CH0002175773	BAUMGARTNER N	9%	4						x
CH0001642682	BC GENEVE P	54%	184			x	S		
CH0032991348	BC JURA I	37%	73			x	S		
CH0009691608	BEKB / BCBE N	49%	1'035			x	M		x
CH0004410418	BELL HLD AG N	34%	213			x	S		
CH0028422100	BELLEVUE GROUP N	60%	249			x	S		x
CH0018206117	BFW LIEGENSCHAFTEN N	100%	113			x	S		
IT0004069933	BIOXELL	100%	30			x	S		
CH0021273740	BK CA St. Gallen AG N	94%	214			x	S		
CH0018116472	BK COOP	26%	277			x	S		x
CH0001307757	BK LINTH N	26%	90			x	S		
CH0006227414	BONDPARTNERS I	45%	17			x	S		x
CH0012323868	BOSSARD I	85%	108			x	S		
CH0016233691	BT&T TIMELIFE	43%	3					x	x
CH0020327802	BURKHALTER N	50%	53			x	S		
CH0008207356	BVZ HOL N	74%	59			x	S		x
CH0009018133	CALIDA N	50%	46			x	S		
CH0002233275	CANON N	10%	14						x
CH0048854746	CASTLE PRIVATE N	77%	120					x	x
CH0001931853	CHAM PAPER GROUP N	59%	56			x	S		
CH0001625810	CI COM SA	100%	2			x	S		x
CH0008702190	CICOR TECH N	71%	29			x	S		
CH0020603475	CKW N	16%	351						x
CH0003825756	COMET N	100%	83			x	S		
CH0002657986	Conzzeta AG	29%	160			x	S		x
CH0002013826	COS I	80%	9			x	S		x
IT0004167463	COSMO N	26%	58			x	S		
CH0001624714	CPH N	43%	195			x	S		x
CH0011115703	CREALOGIX N	32%	19			x	S		
CH0020739006	DOTTIKON ES N	22%	59			x	S		x
CH0003322598	EDIPRESSE I	49%	82			x	S		
CH0003322606	EDIPRESSE N	2%	1						
CH0024736404	EDISUN POWER EUROPE N	81%	26			x	S		
CH0007162958	EEII I	8%	1						
CH0005319162	ELMA ELECTRONIC N	78%	76			x	S		
CH0012829898	EMMI N	39%	227			x	S		
CH0039651184	ENERGIEDIENST N	18%	309						x

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0034476959	ENR RUSSIA INVEST I	16%	11						x
CH0003583256	ESCOR I N	55%	13			x	S		
CH0009320091	FEINTOOL N	40%	61			x	S		
CH0011003594	GAVAZZI I	100%	51			x	S		
CH0012488190	GENOLIER N	66%	55			x	S		
CH0012703119	Global Natural Resources	40%	4			x	S		x
CH0012949464	GMSA N	74%	78			x	S		
CH0004870942	GOLDBACH MEDIA AG N	59%	121			x	S		
CH0001340204	GRAUB KB PS	100%	510			x	M		
CH0001609848	HARWANNE -B- I	31%	56						
CH0004647951	HUEGLI I	86%	121			x	S		
CH0001341608	HYPO LENZB N	100%	331			x	S		
CH0023868554	IMPLENIA N	88%	425			x	M		
CH0007249102	INFRANOR I	21%	4			x	S		x
CH0017313948	INTERSHOP I	52%	310			x	S		
CH0000140787	INTERSPORT N	9%	4						x
CH0012194780	IVF HARTMANN N	40%	47			x	S		
CH0000668472	JELMOLI N	64%	1'021			x	M		
CH0017875789	JUNGFRAUBAHN HLD N	59%	134			x	S		
CH0016271550	LECLANCHE N	27%	9			x	S		
CH0022427626	LEM N	74%	212			x	S		
CH0023497271	LENZERHEIDE N	58%	15			x	S		
CH0001639159	LO HLD OUC N	43%	69			x	S		x
CH0002045497	LOEB PS	100%	39			x	S		
CH0026205861	Looser Holding AG	39%	59			x	S		x
CH0011693600	LUZERNER KB N	35%	767			x	M		
CH0010892344	MACH HITECH I	100%	11					x	
CH0039542854	MESSE SCHWEIZ N	59%	92			x	S		
CH0010796842	METRAUX N	46%	31						
CH0009433175	MINDSET I	64%	14			x	S		x
CH0019624805	MYRIAD GROUP N	94%	206			x	S		
CH0005059438	NEBAG N	60%	39					x	
CH0003977193	NEUE AARGAUER BK N	1%	29						
CH0010819867	NEW VALUE N	80%	37					x	
CH0007036830	NEW VENTURE I	93%	31					x	
CH0030417312	NEWAVE N	56%	54			x	S		
CH0013592248	NORINVEST HOLDING N	23%	15			x	S		x
CH0003420806	O FUESSLI N	61%	173			x	S		
IL0010837818	ORIDION N	100%	62			x	S		
CH0006326851	OTI Energy AG	17%	2						
CH0002178348	PAX N	36%	50			x	S		x
CH0006328758	PELIKAN I	11%	5						x
CH0002906912	PERROT DUVAL I	100%	5			x	S		
CH0002906938	PERROT DUVAL PS	100%	2			x	S		x
CH0002187810	PHOENIX I	63%	213			x	S		
CH0013283368	PRECIOUS WOODS N	91%	117			x	S		
CH0006089921	PRIVATE EQUITY N	95%	91					x	
CH0010510862	PROGRESSNOW N	66%	2					x	
CH0016405836	RAETIA ENERGIE I	8%	104						
CH0016405844	RAETIA ENERGIE PS	100%	203			x	S		

				INDICES					
Final ISIN	Final Name	Free float	Market cap [MIO]	SMI® / SMIM®	SLI®	SPI®	SPI® Small / Mid / Large	Investment	Opting out
CH0012032113	ROCHE I	17%	4'166						
CH0025607331	ROMANDE ENERGIE N	26%	608			x	M		
CH0001347498	ROTHSCHILD I	25%	375			x	S		x
CH0027148649	SANTHERA N	89%	85			x	S		
CH0009062099	SCHAFFNER N	95%	76			x	S		
CH0002277314	SCHLATTER N	61%	36			x	S		x
IL0010855885	SHL TELEMEDICINE N	41%	29			x	S		
CH0002313200	SIA N	0%	1						
CH0014284498	SIEGFRIED N	67%	179			x	S		
CH0001319265	SNB N	88%	81			x	S		
CH0004699440	SOPRACENERIN N	39%	99			x	S		
CH0021483885	SPEEDEL HOLDING N	4%	37						
CH0002361068	STARRAGHECKERT N	33%	44			x	S		
CH0002492293	STE BANCAIRE PR I	26%	34			x	S		x
CH0002377130	SUNSTAR	22%	12			x	S		x
CH0006502162	SUSTAINABLE I	100%	139					x	
CH0010218953	SWISS SMALL CAP N	20%	6					x	
CH0002572268	SWISSMETAL I	95%	53			x	S		
CH0011178255	TAMEDIA N	28%	158			x	S		
CH0007317404	TEC-SEM N	48%	5			x	S		
CH0008305507	TITL BN BERG N	87%	43			x	S		
CH0002271010	USI GROUP N	35%	36			x	S		x
CH0034331535	USTER TECHNOLOGIES N	64%	52			x	S		
CH0021545667	VAUDOISE ASSU N	94%	169			x	S		
CH0001111076	VICTORIA JUNGFRAU N	44%	29			x	S		
CH0002609656	VILLARS N	46%	24			x	S		
CH0028200837	VZ HOLDING N	49%	199			x	S		
CH0000288735	WALLISER KB	100%	204			x	S		
CH0002619481	WARTECK N	75%	170			x	S		
CH0019396990	YPSOMED HLDG	29%	231			x	S		
CH0001308904	ZUGER KB I	50%	569			x	M		
CH0002661731	ZWAHLEN I	33%	5			x	S		

11. Appendix 2: Example for the computation of the liquidity rule

Data available from www.six-swiss-exchange.com

1) Daily volumes (5 years of historical data)

Adecco SA

Add to watch list
Add to alarm list
Add to my charts

Last trade CHF 53.00 1.34% Date / Time 16.11.2009 / 14:43:39

Overview | Chart | Market data | Share details | Ratios | Company details | Analysts

Summary | Intraday values | Historical values

Values at 14:43:11 / 16.11.2009 — Download prices and volumes

Date	Price	Volume	Date	Price	Volume	Date	Price	Volume
16.11.2009	53.00	491'763	25.09.2009	54.60	506'534	06.08.2009	52.35	445'567
13.11.2009	52.30	1'198'818	24.09.2009	54.15	863'286	05.08.2009	52.05	662'270
12.11.2009	51.85	406'097	23.09.2009	55.35	707'864	04.08.2009	51.70	345'119
11.11.2009	51.05	769'478	22.09.2009	54.95	669'849	03.08.2009	52.30	578'240

Source: http://www.six-swiss-exchange.com/marketpulse/shares/security_info_en.html?id=CH0012138605CHF1

2) Free float and adjustments

Historical index adjustments

Description	Download
Share indices review	
Bond indices review	
General Meeting / dividend-payments review	

Information about historical Index adjustments

Description	Download
Indexreview as for March 23rd 2009	
Indexreview as for September 22nd 2008	
Indexreview as for march 25 2008	

Source: http://www.six-swiss-exchange.com/trading/products/indices/forecast_en.html

=C2/D2

=MEDIAN(E2:E23)

	A	B	C	D	E	F
1	Date	Price	Volume on exchange	Free-float (in # of shares)	Daily trading activity	Monthly trading activity
2	30.10.2009	46	1'029'579	122'491'341	0.84%	0.71%
3	29.10.2009	47.6	1'259'774	122'491'341	1.03%	0.71%
4	28.10.2009	46.7	1'636'715	122'491'341	1.34%	0.71%
5	27.10.2009	48.86	1'151'067	122'491'341	0.94%	0.71%
6	26.10.2009	49.92	1'022'968	122'491'341	0.84%	0.71%
7	23.10.2009	50.85	945'898	122'491'341	0.77%	0.71%
8	22.10.2009	50.65	1'280'616	122'491'341	1.05%	0.71%
9	21.10.2009	50.85	3'431'606	122'491'341	2.80%	0.71%
10	20.10.2009	51.7	4'193'888	122'491'341	3.42%	0.71%
11	19.10.2009	54.6	508'832	122'491'341	0.42%	0.71%
12	16.10.2009	54.25	565'925	122'491'341	0.46%	0.71%
13	15.10.2009	55.05	537'085	122'491'341	0.44%	0.71%
14	14.10.2009	55.4	484'543	122'491'341	0.40%	0.71%
15	13.10.2009	55.2	471'917	122'491'341	0.39%	0.71%
16	12.10.2009	55.95	455'675	122'491'341	0.37%	0.71%
17	09.10.2009	54.95	360'389	122'491'341	0.29%	0.71%
18	08.10.2009	54.95	799'425	122'491'341	0.65%	0.71%
19	07.10.2009	53.45	637'424	122'491'341	0.52%	0.71%
20	06.10.2009	53.25	928'851	122'491'341	0.76%	0.71%
21	05.10.2009	51.4	571'137	122'491'341	0.47%	0.71%
22	02.10.2009	51.35	1'172'962	122'491'341	0.96%	0.71%
23	01.10.2009	53.4	800'096	122'491'341	0.65%	0.71%
24	30.09.2009	55.1	523'064	122'491'341	0.43%	0.55%
25	29.09.2009	05	628'379	122'491'341	0.51%	0.55%

	Month	Monthly trading activity
2009	October	0.71%
	September	0.55%
	August	0.53%
	July	0.61%
	June	0.69%
	May	0.80%
	April	0.86%
	March	0.97%
	February	0.96%
	January	0.75%
2008	December	0.65%
	November	0.92%

The monthly trading activity is greater than

0.04%
for
12 out of the last **12** months