SIX Repo AG

Trading on SIX Repo AG – Theory
Preparatory Examination Documentation for Traders

April 2025

SIX Repo AG
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1.   **Trader license for SIX Repo AG**

1. What does the trader license for SIX Repo AG allow you to do?

The SIX Repo AG Trader Certificate allows you to trade on the CH Repo and OTC Spot Markets.

2. Can the certificate expire?

Yes. If you have not been registered as a trader at SIX Repo AG for a period of two years, you would be required to retake the trader examination in order to be readmitted.

3. What is the purpose of this document?

This document provides a step-by-step preparation for the theoretical component of the examination of the SIX Repo AG trader license. A second document covers the practical component. This document also serves as reference material.

4. Why is it necessary to sit the trader examination?

The aim of the SIX Repo AG training and examination is to ensure that only traders with expertise are admitted to trade on the markets of SIX Repo AG.

5. Can I take part in the training without sitting the exam?

The SIX Repo AG trader training is also open to non-traders.

6. Where does the examination take place?

At the training facilities of SIX, Pfingstweidstrasse 110, 8005 Zurich.

7. Could I also take the examination at my office without attending the course in Zurich?

Yes, provided that a Compliance Officer acts as supervisor. Our Repo Infodesk would be pleased to assist: repoinfodesk@six-group.com or tel.: +41 (0)58 399 2190

1.1   **Course modules**

1.1.1   **Module I – Theory and Regulations**

Fundamental aspects of repo trading

- Basic knowledge
- Collateral
- Risk management
- Motivations to trading and pricing

The „Swiss Value Chain"

- Operational benefits
- Prerequisits for participation
- The markets of SIX Repo AG
- Swiss reference rates

Monetary policy operations of the Swiss National Bank (SNB)

- Legal framework
- Monetary policy instruments
- Repo transactions with the SNB
- SNB Bills
- Swiss Confederation issues

Rules & Regulations

- Swiss Master Agreement and Global Master Repurchase Agreements
- Trading rules
- Product specifications
- General terms and conditions

1.1.2   **Module II – The trading platform**

Workspace

- Configurations
- Market Overview
- Activity Overview
- Own Trades, Public Trades

Trade entries

- Indication of Interest (IOI)
- Request for Offer (RFO)
- Quotes
- Offers
- Auktionen
- Cancellations
- Trade Closures
- Modifications

Best Practice

- Rules of the trading system in practice
- Alerts & Notifications
- Fat finger prevention

Data Management

- Historical Data
- Views & Filters

Technical Support

- Creating logfiles
- Making effective use of SIX Repo AG Support

2. Basic principles

2.1 History

The Federal Reserve Bank (Fed) was using repurchase agreements as early as 1913. When the United States introduced the Glass-Steagall Act in 1933, which separated commercial from investment banking, investment banks began to use their securities holdings to obtain funding on favorable terms, since they were no longer allowed to use client funds for this purpose. By the mid-1990s, the US repo market had become the strongest financial market segment. In contrast, the UK and Japanese repo markets only emerged in 1996, the German repo market in 1997 and the Swiss repo market in 1998. The abolition of the federal stamp tax on turnover (Umsatzabgabe) laid the foundations for the Swiss repo market.

In 1998, the Swiss National Bank (SNB) initiated triparty repo trading in conjunction with SIS SegaInterSettle AG (SIS) and the Swiss Stock Exchange (SWX). This facilitated fully automated, standardized repo trading, which at the time was unparalleled anywhere in the world. Once the SNB had extended its monetary policy strategy to repo trading in 2000, repo transactions became its main monetary policy instrument. A number of key factors have caused turnover in the global repo markets to grow exponentially:

- Repo transactions reduce counterparty credit risk.

- Reduced risk of default due to central counterparties (CCPs) or triparty repos.

- Central banks use repo transactions as one of their main monetary policy instruments.

- Banks and financial services providers use repo transactions to manage liquidity, cover short sales, build leveraged positions and hedge interest rates.

- Institutional investors, such as pension funds and investment funds, use repo transactions to invest surplus cash.

When the financial crisis erupted midway through 2007, both the unsecured money market and the repo market came under pressure as doubts spread about the intrinsic value of securities and current mark-to-market valuations. Strains on the US repo market spilled over to the international repo markets. The flight to quality precipitated by the financial crisis meant increased demand for higher-rated bonds and collateral in the form of liquid government bonds. Securities portfolios previously refinanced on a short-term basis were no longer accepted as collateral in the US repo market and subsequently the European repo market. Liquidity injections by central banks, partly through repo operations, helped alleviate the liquidity and financial crisis.[1]

[1] Further information is available in the following publications: Repurchase Agreements, Dr. Peter Csoport, Haupt Verlag 2001 and Finanzsystem im Wandel: neue Bedeutung der Repomärkte, Deutsche Bundesbank, Monthly Report, December 2013.

2.2 Main features of a repo transaction

A repo essentially consists of two transactions: the sale of collateral by the cash taker to the cash provider (spot transaction)combined with the simultaneous repurchase of collateral of the same type, quantity and quality at a future specified or unspecified time (forward transaction)[2] The purchase price corresponds to the market value of the collateral including accrued interest. The cash provider can dispose of the securities during the term. From the standpoint of the cash provider, the transaction is a „reverse repo".

[2] Cf. the legal definition of a repo in Article 31 (b) of the Investment Fund Ordinance of FINMA.

2.2.1 Terminology

The cash provider or purchaser of the collateral may also be referred to as the repo buyer, cash giver, securities taker or lender. The cash taker may also be referred to as the repo seller, cash receiver, securities provider or borrower. The date of the transaction is referred to as the contract date or business date. The initial transaction is the purchase of securities. This is normally referred to as the purchase date, while the date on which the securities are repurchased (final transaction) is the repurchase date. The interest rate paid on a repo transaction is referred to as the repo rate (or repo interest).

2.2.2 Stages of a repo transaction

Step 1

Two parties agree on the business date to sell securities at the purchase price on the purchase date and repurchase the securities at the repurchase price on the repurchase date.

Step 2

In the initial transaction on the purchase date, the cash provider transfers the cash to the cash taker and receives the securities from the cash taker as collateral.

Step 3

In the final transaction, the cash taker returns the cash plus the repo rate to the cash provider and in return receives the collateral from the cash provider.
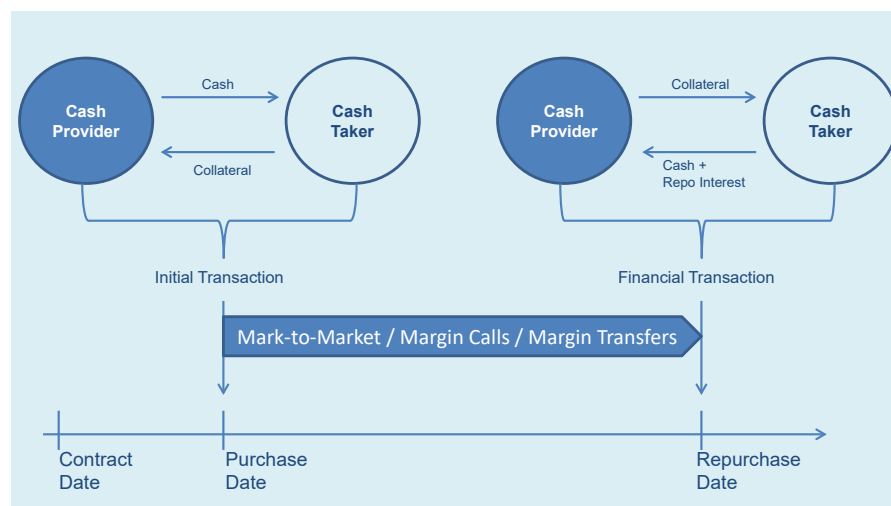
2.2.3 Legal vs. beneficial ownership

Although the legal title to the collateral passes to the cash provider in a repo transaction (legal owner), the cash taker remains the beneficial owner. The agreement to settle the sale and repurchase of the securities at the same price means that the cash taker bears the market risk associated with the securities during the repo period. For this reason, the cash taker receives the cumulative accrued interest as well asall distributed economic income (interest and dividends) and subscription rights. The cash taker must be placed in the same financial position as if he had never transferred the securities to the cash provider.

2.2.4 Economic aspects

From an economic standpoint, a repo comprises five key elements.

- Loan against collateral (securities)

- Simultaneous loan repayment and return of collateral

- Payment of a repo rate on the loan amount

- Transfer of economic benefits accruing from the securities throughout the term to the cash taker (borrower)

- Mark-to-market including margin calls/margin transfers

2.2.5 Legal advantages

From a legal standpoint, the advantage of repos is that they combine two securities transactions within a single legal structure. Multilateral master agreements are implemented internationally. The parties to these master agreements benefit from standardized definitions and generally accepted procedures in the event of counterparty default (close-out netting).

2.2.6 General Collateral (GC) vs. Special Repo

In the repo market, a distinction is made between general collateral (GC) and special repos. The distinction depends on the motives of the market participants, i.e. whether the transaction is cash-driven or securities-driven. With a general collateral (GC) repo, funding is the main focus. These transactions can be described as cash-driven, as the main reason for engaging in the transaction is to raise cash (see 2.7.2 cash-driven). The quality of the securities used as collateral influences the price (repo rate) rather than the individual securities. The cash provider usually accepts a collateral basket (general collateral) as security and agrees to accept the entire basket of securities. Baskets therefore contain securities of essentially equivalent quality in terms of issuer rating, issue currency and market liquidity (see 2.4.5 collateral baskets) [3].

[3] Further information is available in the following publications: Repurchase Agreements, Dr. Peter Csoport, Haupt Verlag 2001.

In contrast, special repos are securities-driven (see 2.7.3 securities- driven). With special repos the focus of the transaction is the borrowing or lending of specific securities, while the cash functions as collateral [4]. The cash provider needs the securities resulting from the repo transaction to offset short positions or delivery obligations (see 2.7.4 Repo trading in combination with other forms of trading). The security concerned is often a specific security for which demand outweighs supply in the market and is therefore relatively expensive (as opposed to GC). Negative interest rates frequently apply to compensate the cash taker for lending the security.

[4] Repurchase Agreements, Dr. Peter Csoport, Haupt Verlag 2001, p. 31

Nice-to-know!

This type of transaction is identical to a securities lending transaction which uses cash collateral (rebate)

2.2.7 Purchase price

In the initial transaction, the cash provider pays the market price of the collateral to the cash taker. The market value of the collateral is calculated on the basis of the dirty price. The dirty price includes the price of the bond as well as any interest that has accrued since issue of the most recent coupon payment.

2.2.8 Repurchase Price

The repurchase price is the purchase price plus the repo rate. In Switzerland the method of calculation is based on ACT/360.

Purchase Price =

$$\frac{\text{Nominal amount} \times \text{Dirty Price}}{100}$$

Repurchase Price =

$$\text{Purchase Price} \times \left(1 + i \times \frac{\text{Term}}{360}\right)$$

i = repo rate factor => 2% = 0.02

The purchase and repurchase dates are normally specified as T+n, where „T" stands for „today". If the purchase were to take place tomorrow and the repurchase the day after tomorrow (TomNext), the following would apply:

Purchase = T+1
Repurchase = T+2

Intraday Repo

Purchases/repurchases and the trade usually take place on the same day. However, intraday repos can also be transacted today for a future settlement date, which is normally the next day.

Purchase = T+0 / Repurchase = T+0

Overnight/Tomorrow Next/Spot Next

Purchase takes place today, repurchase tomorrow. An overnight transaction is a transaction that takes place on the same day.

- Overnight (ON): Purchase = T+0 / Repurchase = T+1
- TomNext (TN): Purchase = T+1 / Repurchase = T+2
- SpotNext (SN): Purchase = T+2 / Repurchase T+3

2.2.9 Maturities

The dates concerned are "business days", i.e. weekends and public holidays are not included in the number of days calculated. If an overnight transaction were concluded on a Friday (repurchase = T+1), the repurchase would take place on the following Monday. As the repo rate is calculated on an ACT/360 basis, the cash provider would therefore receive a higher return on an overnight transaction that extended over the weekend than on a weekday transaction.

Term Repo

A term repo is a repo with a standard term of more than one day. The following standard practices apply on the SIX Repo AG trading platform (purchase is T+2):

- 1 Week (1W)
- 2 Week (2W)
- 3 Week (3W)
- 1 Month (1M)
- 2 Month (2M)
- 3 Month (3M)
- 6 Month (6M)
- 9 Month (9M)
- 12 Month (12M)

Open Repo

Open repos are agreements without a specified repurchase date. Either party may close the trade unilaterally at any time. The following standard practices apply on the SIX Repo AG trading platform:

Purchase = T+2 / Repurchase = T+n

Non-Standard Repo

The purchase and repurchase dates can be chosen freely.
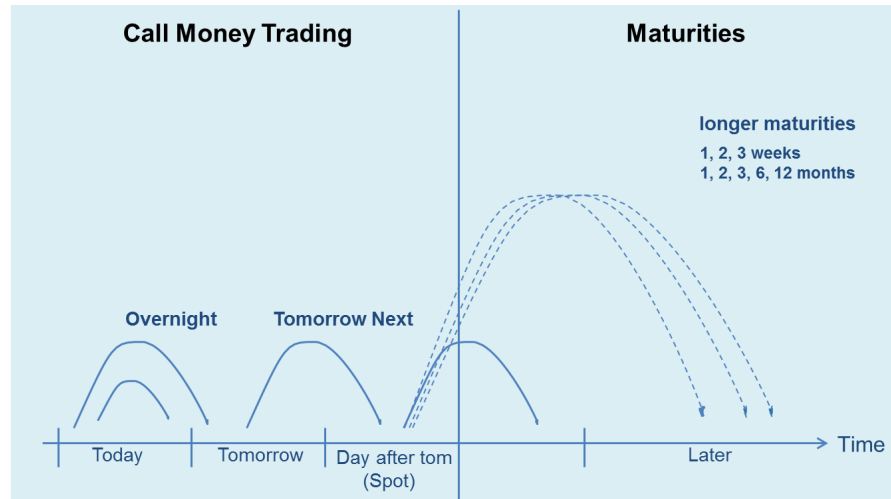
Source: Das Repo-Geschäft in Schweizerfranken und die Innovation des
Geldpolitischen Instrumentariums der Schweizerischen Nationalbank,
Thomas J. Jordan, SNB, Dezember 2006

2.2.10   Settlement

Bilateral Repo

Securities purchases and sales between the parties are carried out on a delivery versus
payment (DVP) basis. Settlement usually takes place through a central custodian,
central securities depository (CSD) or international central securities depository (ICSD).
The risks associated with a bilateral repo transaction are either managed by one of the
counterparties or both counterparties on a decentralized basis.

Hold-in-Custody Repo

Unlike in a bilateral repo, collateral is not transferred. The cash taker retains custody of
the securities pledged as collateral without delivering these to the cash provider.
Collateral is provided on a book-entry basis and mark-to-market is performed by the
parties. This type of repo carries the risk that the collateral held by the cash taker does
not exist or that the cash taker has provided the collateral to several counterparties at
once. This risk is normally offset by a higher rate of interest.

Central counterparty

If the repo is transacted through a central counterparty (CCP), the CCP acts as
counterparty to the cash taker and cash provider through the process known as
„novation". Repo trading through a CCP is usually anonymous, given that repo
transactions are undistinguishable in terms of counterparty risk. Managing risk is
simpler due to the fact that there are fewer counterparties. The work involved in
evaluating risk is more extensive than with a triparty service provider, as the CCP is
responsible for delivering to the counterparties. All this has an impact on costs. After
the financial crisis struck in 2008, there were growing demands from regulators for
greater transparency in the banking system.

Various rules and regulations were adopted, including EMIR and MiFid II, which encourage participants to settle transactions through central counterparties in order to avoid higher administrative and equity costs.

Triparty repo

In terms of risk, there are considerable advantages in a neutral third- party custodian taking responsibility for settlement (DVP) and risk management. The triparty service provider or triparty agent provides the following services:

- Settlement: delivery versus payment for the initial and final transactions

- Mark-to-market

- Margin calls / margin transfer

- Compensating the cash taker as beneficial owner: coupon payments / income resulting from corporate actions is provided to the cash taker.

- Defined standards for categorizing the quality of collateral (e.g. through baskets)

- Carrying out substitutions

- Monitoring the reuse of securities

- Collateral movement

- Collateral valuation

- Reporting

- Settlement in the event of default

Further information on triparty services for the CH Repo and OTC Spot Markets is provided in the „Swiss Value Chain" section.

2.2.11 Right of substitution

The parties to a repo transaction may agree that a right of substitution shall apply. This gives the cash taker the right, over the term of the repo, to substitute equivalent securities for the collateral provided. In the CH Repo Market of SIX Repo AG, a right of substitution in relation to bonds is only conferred under non-standard contracts (see *Definitions and Explanations,* Right of substitution under section 12.). A right of substitution must be agreed where the collateral consists of shares.

Sample question:

What does "mark to market" mean?

Answer:

a) automatic matching
b) automatic calculation of the purchase price
c) revaluation of collateral to reflect market prices

Answer: c)

„Mark to market" means calculating the current market value of the collateral provided to determine whether or not the variation margin has been breached. If the variation margin has been breached, a margin call will be triggered.

2.2.12 Right of Reuse

While the right of substitution is generally exercised by the cash taker, the cash provider generally has a right of reuse. This allows the securities to be used for other transactions, as the cash provider has legal title to the securities throughout the repo period. The cash provider is required to deliver equivalent securities on the repurchase date. In exercising the right of reuse, the cash provider must therefore ensure that collateral maturities match.

Sample question:

Does the cash taker retain beneficial ownership of the securities?

Answer:

a) Yes
b) No

Answer: a)

Although the legal title to the collateral passes to the cash provider, all costs and economic benefits, such as interest rate risk or coupon payments, remain with the cash taker.

2.3 Difference between repos and related transactions

Focusing on the differences between repos and economically related transactions gives us a better understanding of repos. An overview of the most common types of transaction and their features is provided below:

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	GC Repo	Special Repo	SLB	Sell/Buy-Back	SWAP	Lombard
Transaction	Buy/Sell	Buy/Sell	Lend/Borrow	Buy/Sell	Buy/Sell	Give Credit/ Take Credit
Collateral	General Collateral (GC) Baskets	Cash (Rebate)	Cash or Securities	Cash or Securities	Usually no collateral	Securities, Precious Metals, Debt Claims
Price	Repo rate	Repo Interest – Lending Fee	Lending Fee	Price Differential Purchase vs Repurchase	Compensation Payments	Lombard Interest
Transfer of Beneficial Ownership	No	No	No	Yes	No	No
Margining/ Mark-to-Market	Yes	Yes	Yes	No	Yes	individual

Quelle: Dr. P. Csoport, Repurchase Agreements, Haupt Verlag, 2001, S.11

2.3.1 Securities lending and Borrowing (SLB)

The SLB market is securities-driven. In the initial transaction, the lender transfers a security to the borrower and receives general collateral in return (cash collateral may also be provided = rebate). In the final transaction, the borrower returns the security to the lender plus a lending fee. At the same time, the lender transfers the collateral to the borrower.
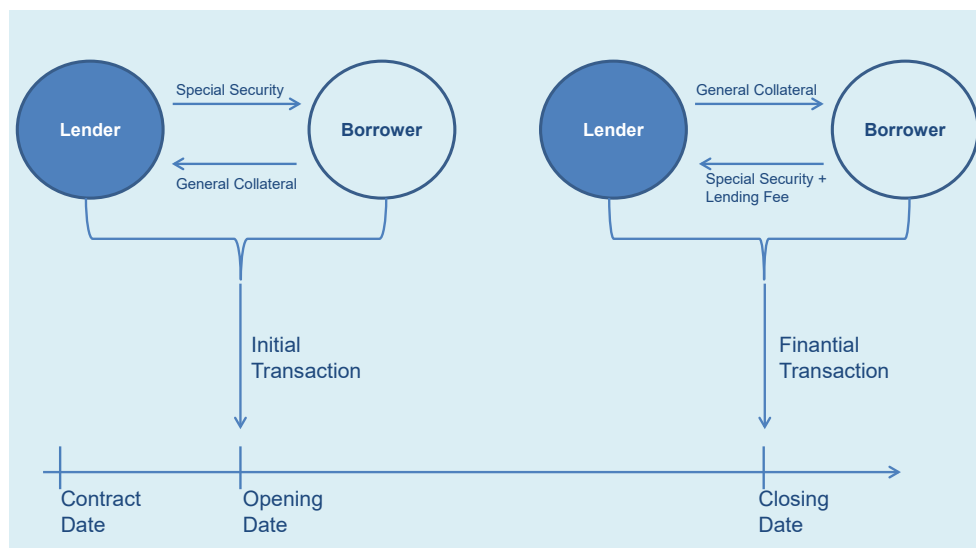
2.3.2 Sell/Buy-Back

Sell/buy-back transactions are usually cash-driven. A spot transaction is combined with an opposite forward spot transaction. No marking-to-market or margining occurs during the term. The repo rate is paid in the form of a predefined repurchase price. Legally, two separate transactions are effected, in contrast to a repo transaction.

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Accordingly, there is no standardized procedure that applies in the event of a participant's default. The range of securities used is more limited than for repos. This is because participants favor less volatile securities given that no mark-to-market is performed.

2.3.3 Swaps

The parties to a swap exchange payments rather than a payment against collateral. There are a wide variety of swap transactions, including interest rate swaps and currency swaps. Interest rate swaps are generally fixed against floating.

2.3.4 Lombard loan

A Lombard loan is a loan secured by medium to long-term securities. In contrast to a repo transaction, the collateral may not be reused.
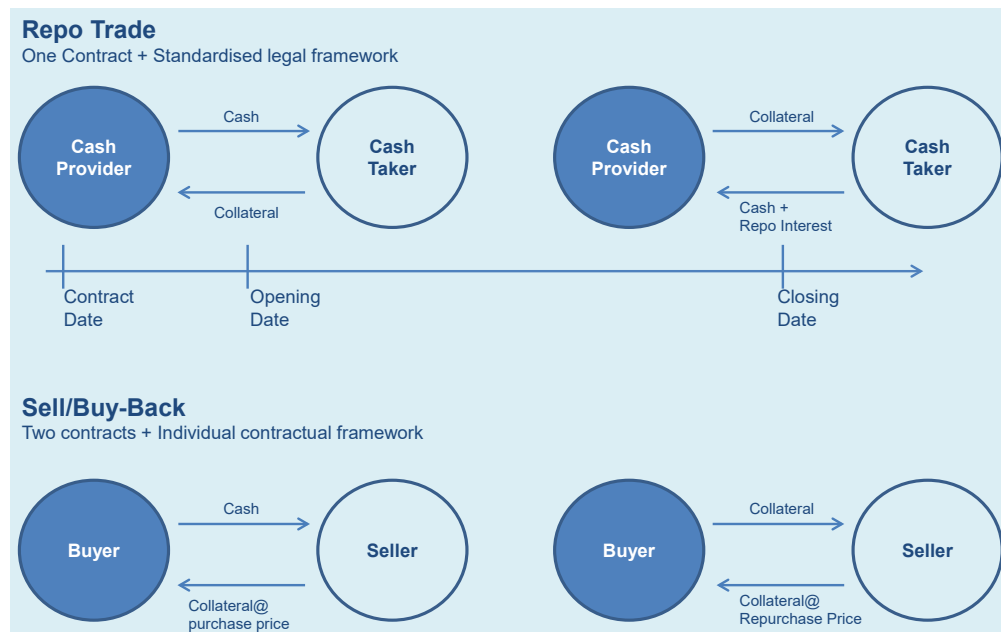
2.4 Collateral

„Collateral" essentially includes all assets that can be pledged by way of security. In existing repo markets, two main types of collateral are used:

- Bills and bonds
- Shares

Sample question:

On the basis of the following statements, decide whether the repo rate and/or haircut is likely to increase or decrease:

Standard & Poor's downgrades the rating for French government bonds from AAA- to AA+ due to their medium to long-term outlook.

Answer: Increase

A Swiss government bond issue is increased by CHF 350 million.

Answer: Decrease

Speculation regarding a Greek bond haircut has caused daily price fluctuations of up to 20 % over the past two weeks.

Answer: Increase

2.4.1   **Repo-Rate**

The repo rate is usually paid on the redemption date and is included in the final settlement amount. The repo rate will depend on the credit rating of the borrower, the currency and quality of the collateral and the term of the loan. It also affects the level of the haircut and the initial margin. (see 2.4.2 Difference between initial margin and haircut)

2.4.2   **Quality of collateral**

The following factors determine the quality of the collateral:

-   **Issuer credit rating**

The lower the probability of the issuer defaulting, the higher the quality of the collateral. Credit ratings are calculated by rating agencies (generally Moody's/Fitch/Standard & Poor's) and serve as general guidance for market participants.

-   **Volatility**

The greater the level of fluctuation in the value of the collateral, the larger the number of margin calls. This increases operational costs and makes the collateral less attractive.

-   **Liquidity**

The higher the issuer volume and the greater the market depth, the greater the likelihood of the cash provider selling the collateral on the market if the cash taker defaults. The more price quotes there are and the more frequently the collateral is traded, the fewer the adverse effects if a large volume of collateral needs to be placed on the market in the event of default.

2.4.3　Categorization of collateral

In order to understand why good collateral is in short supply, we need to categorize the collateral received for repo transactions based on issuer and geographical location. A wide range of categories can be identified based on specialist literature and expert opinions. However, only a brief overview of issuers is provided below.

1. Government and central bank bonds / supranational bonds, e.g. German government bonds / SNB Bills / European union (EU) bonds

2. Regional / municipal bonds e.g. bonds issued by the Canton of Ticino

3. Pfandbriefe / Asset-backed securities / mortgage bonds e.g.: Swiss Pfandbriefe issued by the Pfandbriefbank schweizerischer Hypothekarinstitute (Mortgage Bond Bank of the Swiss Mortgage Institutions) / jumbo Pfandbriefe

4. Cedula Agency bonds e.g. bonds issued by the European Investment Bank / Kreditanstalt für Wiederaufbau / European Financial Stability Facility (EFSF)

5. Corporate bonds e.g. bonds issued by Credit Suisse / ABN AMRO / etc.

6. Shares e.g. SMI/HDAX/SLII

Collateral may also be categorized according to maturity, bond rating or seniority. Swiss or German government bonds rated AAA are in much greater demand than government bonds from Greece (rated Caa3 by Moody's), Italy (rated Aa2 by Moody's) or other countries of southern Europe. It is important to note that the cash provider's interest in securing his loan with high-quality collateral is opposed to that of the cash taker. The price of a general collateral (GC) transaction is generally determined by the „worst" securities contained in the basket.

Strong demand for high-quality collateral will reduce the yield on the bonds concerned. The volumes of first-class collateral are insufficient to meet Europe's daily repo refinancing requirements (approx. EUR 5.5 billion in outstanding volume).

Sample question:

On the basis of the following statements, decide whether the demand for high-quality collateral will increase or decrease:

The economy is in good shape and banks have confidence in each other. To generate higher returns, many banks are shifting volumes to unsecured money markets.

Answer: Decrease

In the wake of the financial crisis, confidence between banks has evaporated. As a result, the unsecured money market has virtually dried up.

Answer: Increase

Regulators call on banks to reduce their risks. They create accounting and legal incentives for banks to fund themselves via the unsecured money market.

Answer: Increase

2.4.4 Repos under Basel III

While the Basel Committee on Banking Supervision (BCBS) defined regulatory capital requirements under Basel I, Basel II deals with risk measurement due to capital resource misallocations. The decisions made under Basel III are essentially a continuation of Basel II with the addition of standards defining minimum liquidity requirements and liquidity risk management. The Basel III reforms are designed to strengthen the resilience of the banking sector. Basel III covers two main areas: [5]

[5] Basel Committee on Banking Supervision reforms – Basel III, www.bis.org/bcbs/basel3/b3summarytable.pdf

- Regulatory capital, which includes for example the supervision of capital quality, leverage and risk management,

- Liquidity management by setting global liquidity standards (Liquidity Coverage Ratio, LCR und Net Stable Funding Ratio, NSFR) and supervisory monitoring.

High-quality liquid assets (HQLA)

There are three levels of HQLA. Level 1, level 2a and level 2b are implemented in Switzerland as follows:

Level 1

No haircut and can be included without limit

- Cash

- Central bank reserves

- Bonds issued (or guaranteed by) supranationals, governments and central banks assigned a 0 % risk- weight under Basel II

Level 2

No more than 40 % of total holdings

Level 2a

15 % Haircut

- Bonds issued (or guaranteed by) governments and central banks assigned a 20 % risk-weight under Basel II

- Corporate debt securities rated at least AA-

- Covered bonds rated at least AA-

Level 2b

25-50 % haircut, no more than 15% of total holdings

- Corporate debt securities
- Covered bonds
- Equities

The Liquidity Coverage Ratio (LCR) introduced under Basel III has increased the demand for high-quality collateral. The purpose of the LCR is to ensure that in a stress scenario banks have sufficient short- term liquidity to offset cash outflows for a period of one month. This requires banks to hold freely available, high- quality liquid assets that can also be sold in a crisis situation. SNB has taken the amended standards into account by introducing Basel III-compliant baskets.

Further information on Basel III is set out in Appendix I – Basel III and on the BIS website: www.bis.org

2.4.5 Collateral Baskets

With GC repos the financing aspect is the focus of the transaction and the securities are generally used purely as security. The specific securities transferred are of secondary importance to the quality of the collateral. For efficient settlement the securities are therefore grouped together in baskets. The cash provider agrees to accept all securities contained in a basket as collateral. The criteria of equivalent quality securities may refer to the credit rating of the issuer, the issue currency, the market liquidity or restrictions on securities that can be used in repo transactions.

There are a number of advantages to using a GC basket:

- Qualitatively equivalent securities
- High level of settlement standardization
- Reduced transaction costs
- Increased liquidity
- Greater efficiency in the use of collateral.

2.4.6 Margining/Mark-to-Market

Fluctuations in the value of the securities transferred during the repo period may cause a surplus or shortfall for the cash leg of the transaction, requiring daily mark-to-market valuations. The current market value of the securities determines their cash equivalent The parties offset any surplus or shortfall by making a margin transfer.

2.4.7 Difference between initial margin and haircut

Given the frequently high repo volumes, significant fluctuation in the market prices of collateral may make it difficult to sell the collateral at short notice. In the event of non-delivery or default, there is a risk that the value of the collateral will decline before it is marked to market and that as a result margin cannot be transferred to mitigate the effects on the collateral before it can be sold. The cash provider may therefore stipulate that the value of the securities must exceed the amount lent. The ratio of the nominal value to the collateral provided is referred to either as the initial margin (margin ratio) or haircut.

To avoid confusion, it is essential for traders to agree the method used prior to entering into the transaction. In the CH Repo Market, haircuts and initial margins are not used as standard.

Initial Margin

The initial margin is a percentage premium added to the nominal value of the collateral, creating over-collateralization. This involves multiplying the nominal value by the relevant factor.

Example:

Nominal value: 100.000.000

Initial margin: 2 % ==> margin ratio: 102 % (or a factor of

1,02) Collateral to be deposited = nominal value x 102 / 100 = **102.000.000**

Haircut

The haircut is usually applied on the cash and is expressed as a percentage discount on the nominal value of the collateral. The nominal value is therefore divided by the haircut factor.

Example:

Nominal value: 100,000,000

Haircut: 2 % (or a factor of 0.98)

Collateral to be deposited = nominal value / 98 x 100 = **102.040.816,33**

Need-to-know!

$$\text{Collateral} = \frac{(\text{Nominal value} \times \text{Initial Margin})}{100} \qquad \text{Collateral} = \frac{\text{Nominal value}}{\text{Haircut}} \times 100$$

Although at first glance it appears that we had a 2 % margin, the different calculation produces a collateralization difference of CHF 40,816.33, which would correspond to an initial margin of 2.04081633 %. Haircuts do not just apply to baskets but also to individual securities. With a number of repo types, the haircut will be applied individually to each security included in the basket.

In conclusion, both the initial margin and the haircut reduce the risk inherent in the collateral by creating over-collateralization in the case of the initial margin or a reduced cash payout in the case of a haircut.

2.4.8 Variation margin / margin maintenance limit (MML)

The purpose of the variation margin is to offset any net exposures between two counterparties during the repo period. In this context, an exposure means any surplus or shortfall on the cash leg of a repo transaction. „Net exposure" means the sum of all exposures arising from repo transactions with a specific counterparty. Small fluctuations in value frequently result in margin calls, pushing up transaction costs. The parties therefore agree a margin maintenance limit (MML) based on the principle of proportionality. Provided the market value of the collateral is within the range defined, no margin call will be triggered. However, once a limit has been exceeded, either the cash provider or cash taker must make a margin transfer, depending on whether there is a surplus or shortfall. The margin transfer may take the form of securities or cash.

Variation Margin / Margin Maintenance Limit
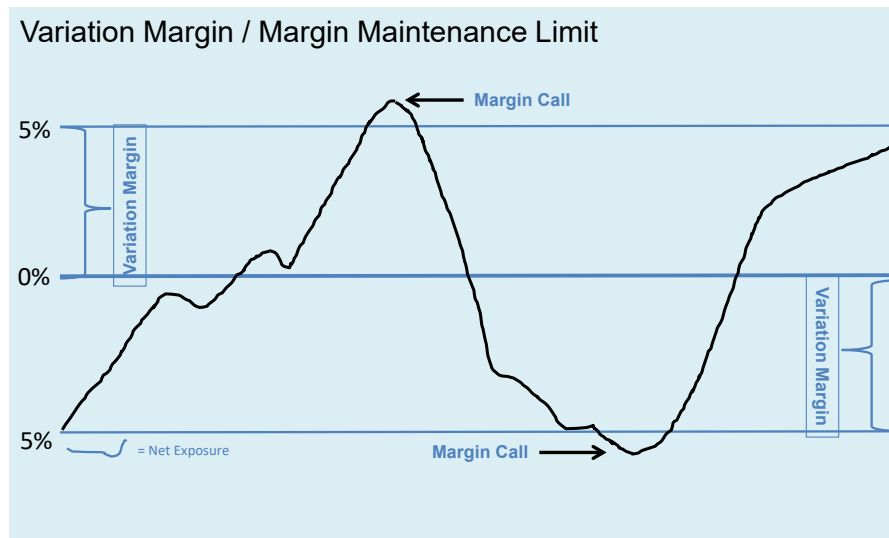
2.5 Risks associated with repo trading

Six categories of risk are defined below.

2.5.1 Definitions of risk

The provision of collateral in the form of securities substantially reduces the credit risk. The risks associated with repos are therefore much lower than those associated with other financial transactions. This enables smaller players with lower credit ratings to participate in the money market directly. The credit risk is shifted from the cash taker to the quality of the collateral and thus to market and liquidity risk.

Risk	Description	Factors
Credit risk	Counterparty cannot fulfil its delivery obligation	Term: the shorter the term, the lower the probability that the delivery obligation will not be fulfilled.
Market risk	Potential financial loss due to adverse changes in interest rates or collateral valuations	Unforeseen market volatility or price trends that differ from those calculated when the agreement was entered into, resulting in costs/losses.
Liquidity risk (=>refinancing risk)	Risk that the funds required for payment cannot be raised (or only at a higher cost)	The company's credit rating and the usability of the assets.
Operational risk	The failure of procedures, people and systems	Transaction, monitoring and IT risks. Failure of mathematical models Disasters (e.g. natural disasters, events of force majeure etc.) Reputational risk
Legal and regulatory risks	Enforceability of contracts	Legal, tax and regulatory changes
Systemic risk	Domino effect of unexpected events	In certain circumstances, the complex interrelationship between the above risks may mean that risks are mutually reinforcing, or even that risks are created.

2.5.2 Risk analysis

The aforementioned risks generally arise at the initial and final stages of a transaction as well as during the repo term.

Risks associated with the initial and final transactions
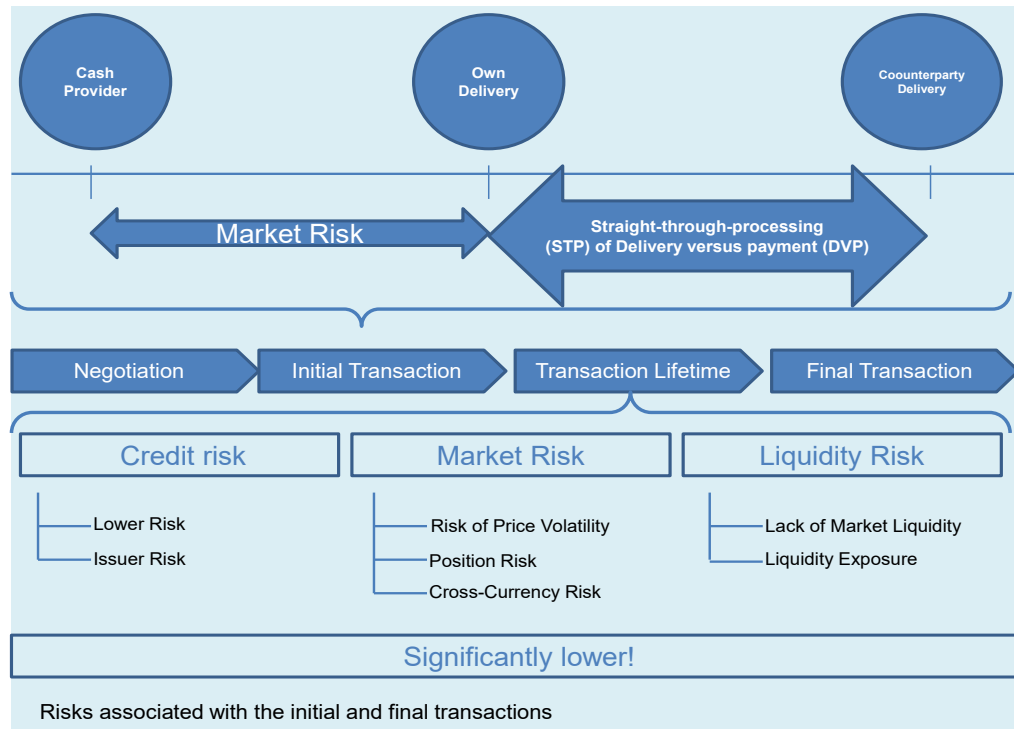
Given that the risks associated with the initial and final transaction are identical, a combined description is provided below. The initial transaction carries the risk that the value of the collateral will change after the price has been agreed but before actual delivery takes place. This would lead to a discrepancy between the purchase price and the current market value of the collateral, resulting in under or over-collateralization.

- Market risk

Following delivery, either the cash taker or cash provider will have a unilateral exposure until the back-to-back delivery occurs. During this period, there will be a credit (counterparty) risk, as the counterparty could still default on its delivery obligation. This is also closely bound up with the liquidity (refinancing) risks associated with the requirement to deliver assets or cash. If the counterparty defaults due to a liquidity risk, this entails a credit risk for the other party.

- Credit risk
- Liquidity risk

Risks during the term

During the repo term, either the counterparty or the issuer of collateral could file for insolvency. This would shift the risk, with the issuer risk partly displacing the counterparty risk which is reduced by the collateral.

- Credit risk

Fluctuations in the value of collateral, which cannot be offset by margin transfers, will result in a surplus or shortfall on the cash leg. Sharp fluctuations in the value of the collateral will affect the level of exposure and may create a credit risk.

- Market risk
- Credit risk

There is an ongoing risk of loss caused by the failure of IT components or human error.

- Operational risk

Mathematical models may fail or result in miscalculations. Failure to meet regulatory and tax requirements may also cause reputational damage and financial loss.

- Regulatory and legal risk

The risk of a „domino effect" is referred to as systemic risk.[6] The subprime crisis in 2007 is a striking example of how accumulated risk (default on subprime mortgage loans) resulted in losses for banks, leading to the bankruptcy of systemically important banks (Lehman Brothers in 2008) and ultimately triggering a global economic crisis. In this case, liquidity and market risks morphed into credit risk and ultimately into systemic risk.

It is therefore important to view the risks described in aggregate, rather than in isolation, as well as in terms of how they interact.

- Systemic risk

[6] Repurchase Agreements, Dr. Peter Csoport, Haupt Verlag, 2001, p. 103

Nice-to-know 1

The «repo 105» transactions carried out by the Lehman Brothers shortly before the filed for bankruptcy marked an inglorious episode in the history of repo trading. The "repo 105" transactions were recorded in the accounts purely as sales of securities. The transactions were designed to hide toxic securities, which Lehman Brothers in fact still held, creating the impression that it had huge cash reserves. This misled regulators in assessing the financial situation of Lehman Brothers.

Nice-to-know 2

In 2007, 2008 and 2009, the lack of confidence almost caused the unsecured money markets to dry up. Fortunately, bank could switch to the secured repo markets and raise funds there. This gave a huge boost to repo trading, especially in the triparty and central counterparty segments.

| 2.6 | **Accounting treatment of repo transactions** |

The balance sheet management of repo transactions will vary depending on the applicable accounting standards (IAS, US GAAP or national accounting standards).

The Rechnungslegungsvorschriften (RRV-EBK) (Guidelines on accounting standards issued by the Swiss Federal Banking Commission) require exchanged amounts of cash to be recorded on the balance sheet in Switzerland.

The accounting treatment of repo transactions in financial reports may differ from the accounting treatment of securities transactions. Banks may opt for either settlement date accounting or trade date accounting and choose between three different methods of accounting treatment. [7]

[7] Further information is available in: The Repo Transaction: An Innovation on the Swiss Financial Market : Aspects of Posting and Backing Repo Transactions, Dr. Roger Wechsler, April 1999, published by SBV, SNB, the Swiss stock exchange, SIS

- „Purchase/sale" accounting option: the legal structure of a repo consists in a spot sale and forward purchase (or spot purchase and forward sale).

- „SLB" accounting option: one of the main differences between the „securities lending and borrowing" option and the „purchase/sale" option, is that under the „securities lending and borrowing" method, the bank also recognizes forward claims and liabilities in the accounts.

- „Secured loan" accounting option: recognizing repos in the accounts as an „advance against collateral in the form of securities" or „cash deposit with a pledge of own securities" emphasizes the financing aspect of repo trading.

It would be beyond the scope of this course to provide any further detail on these three methods of accounting. However, further information is available in the SNB publication „The Repo Transaction: An Innovation on the Swiss Financial Market: Aspects of Posting and Backing Repo Transactions" by Dr. Roger Wechsler, April 1999.

For the cash taker, the accounting treatment of repos is as follows:

- Repos are treated as secured loans.
- Repos are on-balance sheet items.
- Bonds remain on the assets side of the balance sheet.
- Coupons revert to the cash taker.
- A repo cash position is created on the liabilities side.

For the cash taker, repo transactions have the effect of increasing the balance sheet total.

For the cash provider, the following positions are therefore created:

SIX Repo AG

- Repos are treated as secured loans.

- Repos are on-balance sheet items.

- The cash position is reduced on the assets side of the balance sheet and

- a loan backed by collateral is recognized on the assets side (claim under the repo transaction)

For the cash provider, repo transactions have no impact on the balance sheet.

From the perspective of the cash provider:

Assets		Liabilities
Cash and cash equivalents	- 100	
Reverse-Repo Transactions	+ 100	
	+ 0	

→ Balance sheet neutral

From the perspective of the cash taker:

Assets			Liabilities
Cash and equivalents	+ 100	+ 100	Repo-Transactions
	+ 100	+ 100	

→ Balance sheet extension

2.7   **Trading strategies with repo transactions**

2.7.1   **Operators**

Repos will essentially be of interest to the following departments within a financial institution:

Treasury

A bank's Treasury department is essentially in charge of treasury management. It is responsible for ensuring that cash mostly, but also securities, is supplied to the right place at the right time. Repos lend themselves to short to medium-term liquidity management because collateralization makes the market highly liquid and transparent, which, in contrast to unsecured markets, continues to operate at times of crisis. A treasurer who is instructed to supply cash will use the available collateral to act as cash taker in the repo market.

Cash Markets

The Cash Market is defined by the trading of money market instruments with maturities ranging from intraday to 12 months. Cash Market trading desks generally trade in swaps, FX (to some extent), repos and sell/buy-backs, with futures, derivatives etc. added to the mix depending on requirements. Repos provide a method for refinancing swaps or, alternatively, swaps can be used by cash providers to fund repos, allowing them to borrow collateral.

Fixed income / bond trading

Fixed Income desks can use repos to fund bond purchases (cash taker) or, alternatively, to cover short positions (cash provider).

Collateral Management

The Collateral Management department monitors and manages the available collateral in relation to capital ratios (see 2.4.4 Collateral under Basel III) and lends/borrows securities with matching maturities to cover trading positions and generate additional return from the collateral held. Repos and securities lending and borrowing transactions are used for this purpose.

Sample question:

Specials trading (securities-driven) is generally of interest to the following desks:

Answer:

a) Cash Markets
b) Fixed Income

c) Collateral Management

Answer: b) and c)

2.7.2 Cash-driven

Under cash-driven strategies, the focus is on financing, with the securities used as collateral. The cost of refinancing through repo trading is considerably lower than through the unsecured money market. Repo trading therefore facilitates the financing of spot and forward transactions by the cash taker, mainly in relation to bond trading, but also equity trading. For the cash provider, repos provide an attractive way of obtaining valuable collateral in return for cash.

The collateral provided can be

- lent, thus generating additional return in the form of a lending fee,
- sold to build market positions,
- and also used to refinance other repo transactions.

Cash-driven repos are GC repos for which a basket of securities is used as collateral (General collateral (GC) vs. special repos).

2.7.3 Securities-driven

With securities-driven repo transactions, the main focus of interest in determining the repo rate is the specific security. The security lent is therefore backed by cash collateral, while the interest rate is often negative. In this case, the cash provider compensates the cash taker with a negative interest rate on the cash amount.

2.7.4 Collateral up-/downgrades

Due to stricter capital adequacy requirements, the incidence of collateral swaps is increasing. This is a type of securities lending and borrowing in which high-quality liquid assets (HQLA) are exchanged for lower quality assets. There are three different types of swap:

- 1:1 ==> pecific security is exchanged for another security.

- 1:N ==> Specific security is exchanged for a collateral basket (or cash collateral = rebate).

- N:N ==>Two collateral baskets (different classes of collateral) are exchanged.

Banks can use the high-quality securities to satisfy regulatory liquidity requirements or increase their holdings of cash through repo trading.

> **Nice-to-know!**
>
> GC repos are cash-driven.
>
> Special repos are securities-driven.

2.7.5   Repo trading in combination with other transactions

Repos are not traded in isolation, but as part of a chain of different transactions. In addition to funding or covering spot market positions, repos are used in combination with related transactions (see 2.3 Difference between repos and related transactions).

It is essential that matched book trading is guaranteed at all times to enable a trader, for example, to finance a long-dated transaction with rolling overnight transactions.
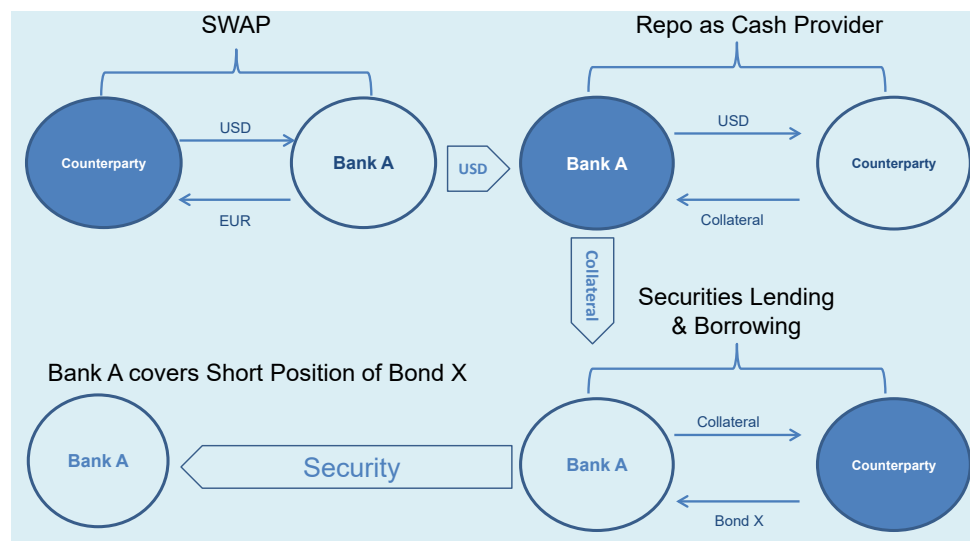
2.7.6   Increased return on risk-weighted assets

Because the credit risk is lower, repos require less capital and thus generate a higher return on risk-weighted assets.

2.7.7   Arbitrage

The most widely used fixed-income arbitrage strategies include swap- spread arbitrage, yield curve arbitrage, volatility arbitrage and capital structure arbitrage, all of which try to exploit perceived mispricing among one or more fixed-income instruments.

Swap-Spread-Arbitrage

Swap-spread arbitrage is based on positions taken due to the expected evolution of interest rates, for example swap rates, LIBOR or repo rates. These positions are responsive to interest rate differentials and the associated expectations.

Yield curve arbitrage

Yield curve arbitrage strategies seek to profit from shifts in the steepness of or kinks in yield curves by taking long and short positions on various maturities.

Volatility arbitrage

In their simplest form volatility arbitrage strategies seek to profit from the tendency of implied volatilities to exceed subsequent realized volatilities. This can be done, for example, by selling options on fixed income instruments and then delta-hedging the exposure to the underlying asset or other more complex volatility arbitrage strategies.

Capital structure arbitrage

Capital structure arbitrage strategies exploit the lack of coordination between various claims on a company, such as its debt and stock. The strategy involves buying one instrument of a company's capital structure and hedging that exposure by selling another. For example, a trader who believes that the debt of a company is overpriced relative to its equity, would short sell the company's debt and buy its stock. Capital structure arbitrage may also trade junior against senior debt or convertible bonds against stock. [8]

[8] 21 http://www.futuresmag.com/2013/10/01/10-events-that-changedthe-repo-market?t=financials&page=3

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Credit arbitrage

Credit arbitrage may, for example, involve lending GC securities and investing the cash in lower-rated, higher yielding bonds.

Market-making with matched or mismatched book trading

With large volumes of repos and reverse repos repo market making becomes possible. This is carried out through matched or mismatched book trading.

Basis Trading[9]

Basis trading is a financial trading strategy which consists of the purchase of a particular financial instrument, e.g. a bond, and the sale of its related derivative, e.g. a futures contract. In the repo market the main strategies include:

- cash & carry trading: purchase of bonds and sale of futures, or

- reverse cash & carry trading: short selling of bonds, with repo rate paid on the short sale, and purchase of futures.

The bonds involved are often special or cheapest-to-deliver bonds. [10]

[9] http://www.yieldcurve.com/Mktresearch/files/Repo3.pdf

[10] Further information: Repurchase Agreements, Dr. Peter Csoport, Haupt Verlag, 2001, p. 60 ff

Sample question:

Swaps are economically related to the extent that a temporary currency swap takes place:

Answer:

a) Yes
b) No

Answer: a)

Sample question:

Fixed income traders can use repos to finance short positions:

Answer:

a) Yes
b) No

Answer: a)

3. Swiss Value Chain for repo transactions

3.1 A joint venture

In April 1998, Sega Inter Settle AG (SIS) and the Swiss stock exchange (SWX) launched a globally unique project, in cooperation with Swiss National Bank (SNB), to incorporate repo trading into the Swiss Value Chain (SVC).

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The SVC is an integrated, automated infrastructure that enables trading as well as clearing and settlement for the securities and cash legs of transactions. The SVC for repo trading consists of the SIX Repo AG trading platform, CO:RE; the SIX SIS AG securities settlement system, SECOM; and the SIX Interbank Clearing AG payment system, SIC. Straight-through processing enables the fully automated settlement of Swiss franc repo transactions in real time on a delivery versus payment (DVP) basis. Risk management is also fully automated throughout the period by SIX SIS AG.
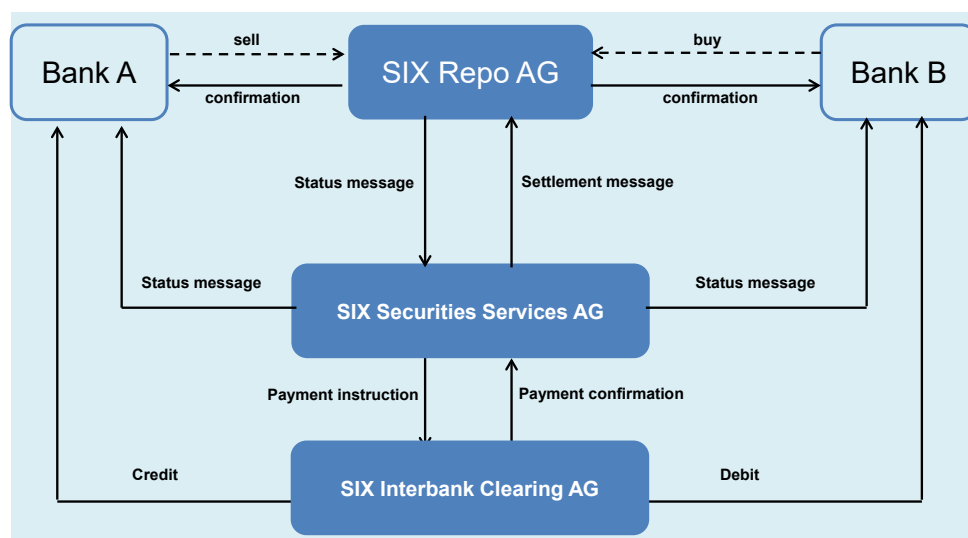
3.2 Operational benefits

The Swiss Value Chain is more than just a traditional triparty repo service. The high degree of standardization and the trading, settlement and payment services, which have been constantly upgraded since 1998, are unique in the world. This is due to the extremely high level of automation facilitated by straight-through processing (STP) and delivery versus payment (DVP).

3.2.1 Trading

The quotes of all participants are displayed in the Market Overview section of the SIX Repo AG trading system, which also clearly shows the price spreads and market depth.

Participants can send Requests for Offer (RFOs) and orders to other counterparties. Participants must accept each other on the trading platform before bilateral trading can take place. Once a transaction is concluded, the trading platform sends an electronic confirmation to the participant and the SECOM settlement system of SIX SIS AG.

- Further information is provided in Module II – The trading platform

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> ## Need-to-know!
>
> Participants must accept each other on the trading platform before bilateral trading can take place.

3.2.2 Settlement

SECOM is the central settlement platform of SIX SIS AG for Swiss and foreign securities transactions, while the Swiss SIC and euroSIC payment systems manage the payment streams from securities transactions. Settlements and payment streams from SIX Repo AG are also handled through SECOM and SIC. These real-time interfaces ensure that repo transactions are settled on a fully automated basis, thus meeting the Basel III requirements with regard to the prevention of operational risks. The simultaneous, final, and irrevocable delivery versus payment (SFIDVP) method also applies to repo settlements.

Initial and final transactions

SECOM receives the incoming settlement messages and sends confirmation of the trade registration to the participants via SECOM as well as to the trading platform. The trading platform provides a trade confirmation to participants.

The cash taker ensures via WebMax (the SIX SIS AG securities system) that sufficient collateral is available in the custody account in order to effect delivery. Only then can the initial transaction (purchase) be carried out. In the initial transaction, SECOM sends a payment notification to SIX Interbank Clearing (SIC). This triggers a debit or credit transaction, which is then confirmed to the participants and to SECOM.

Collateral management

A distinction is made between

- initial collateral
- margin collateral

The cash taker provides the initial collateral to the cash provider as part of the initial transaction (purchase). The cash taker may define a release list and automatic selection algorithm (GC Select) in WebMax for this purpose or make the allocation manually. The initial collateral imposes an obligation on the cash provider to return equivalent securities.

Margin collateral is used to equalize any over or under- collateralization in the event that the variation margin is exceeded (2.4.8 Variation margin / margin maintenance limit (MML). Participants receive a margin call once mark-to-market valuations have been performed and the variation margin has been breached. SIX SIS AG provides fully automated processing and posting of **corporate actions**.

> **Need-to-know!**
>
> Mark-to-Market valuations (**Margining / mark-to-market**) take place between 21:00 and 23:00 for the following day and between 12:00 and 13:00 for the afternoon (twice a day). Provided sufficient collateral is available, SECOM will perform margin transfers automatically.

3.2.3 SIX SIS AG risk management

The risk factors involved in settlement and payment transactions is assessed in this section.

- **Triparty repo:** as an independent triparty agent, SIS is responsible for managing the risks associated with all repos traded through the SIX Repo AG trading platform.

- **Straight-through processing:** from trading through to settlement, the systems communicate in real time through the CO:RE trading platform (SIX Repo AG trading platform), WebMax (SIX SIS AG collateral management), SECOM (SIX SIS AG settlement) and SIX SIC. Entries are normally made automatically and participants can track the progress of the transaction in real time using the Settlement Stati.

- **Collateral eligible for SNB repos:** the Swiss National Bank sets high standards with regard to the quality and liquidity of collateral eligible for SNB repos in SNB GC baskets (Baskets in the CH Repo Market). The high quality of the collateral reduces the liquidity risk.

- **Active management of limits by banks supported:** in contrast to central counterparties, participants can define their level of exposure in relation to the counterparty to any transaction. Restrictive admission requirements and operational benefits allow commercial banks to set generous limits.

- **Margining:** as described in the Variation margin / margin maintenance limit (MML) section, participants define the tolerance range for market price fluctuations over the term. If the margin maintenance limit is exceeded, a margin call will be triggered requiring the counterparty to transfer margin immediately to offset the difference in full.

- **Automatic margining:** SIX SIS AG performs valuations twice a day which trigger an automatic margin transfer. Securities margining takes priority solely because of the reuse option. Operational risks are also reduced as a result of the triparty repo service, straight-through processing, delivery versus payment and twice daily valuations combined with automated margin calls.

3.3   Participation

3.3.1   Requirements

All participants who wish to connect to the CH Repo system must:

- have access to the SIX Repo AG CO:RE trading platform (trading rights only granted to licensed traders)

- hold a custody account at SIX SIS AG and have access to the SECOM and WebMax settlement systems

- have an SIC connection for CHF at SIX Interbank Clearing AG (SIC) and

- hold a sight deposit account at the SNB

- agree to the Swiss Master Agreement (Multilateral Version)

- agree to the master agreement, Terms of Use and Trading Rules

SIX Repo AG generally admits the following participants:

- Banks

- Swiss securities traders within the meaning of SESTA and foreign companies with an

- equivalent status, which are regulated by a financial market supervisory authority in their country of domicile;

- Central banks;

- Domestic and foreign clearing and settlement companies;

- Insurance companies and administrators of collective

- capital investments domiciled in Switzerland or Liechtenstein;

- International organizations and other companies whose admission as a participant

- seems justified given the special circumstances;

- Branch offices of the above companies.

The admission criteria are set out in the Terms of Use for the Trading Platform.

> **Need-to-know!**
>
> The SIC account balance must always be equal to or higher than CHF0. There are no negative balances. If the available balance is insufficient, the repo transaction will be held in a queue until sufficient funds are available in the account.

3.3.2 Swiss Master Agreement

The multilateral principle applies to standardized repo trading as part of the Swiss Value Chain. By signing the Swiss Master Agreement, participants agree to the terminology used and the terms and conditions in effect in the CH Repo Market. The Swiss Master Agreement must be signed on a unilateral basis as a condition of participating in the SIX Repo AG repo market and must be lodged with SIX SIS AG. The Swiss Master Agreement, together with any transaction-specific terms or agreements, forms the legal basis for entering into a particular repo transaction.

Participants may sign other agreements or framework agreements (e.g. the Global Master Repurchase Agreement (GMRA) with Swiss Annex) and may agree on concluding a trade that the provisions of this agreement shall apply. Individual agreements may also be entered into. The constituent parts of the Swiss Master Agreement are based on the GMRA, although the agreement is governed by Swiss law. If the parties have concluded the Swiss Master Agreement alongside other framework agreements for repo trading the „Swiss Master Agreement for Repo Transactions (Multilateral Version)" will prevail unless the parties have agreed otherwise.

The advantage of this structure is that it achieves the highest possible level of standardization, while also leaving scope for individual solutions.

Sample question:

What risks are mitigated by the Swiss Value Chain?

Answer:

a) Operational risk
b) Liquidity risk
c) Credit/counterparty risk
d) Market risk

Answer: a), b), c)

3.4 **The markets of SIX Repo AG**

Since the second quarter of 2014, SIX Repo AG has provided a trading platform for the electronic trading of money market transactions. The trading platform includes the following market segments: the CH Repo Market and the OTC Spot Market for the issuance and trading of money market securities. Alongside the Swiss franc, the following 13 currencies are available:

AUD, CAD, CHF, CZK , DKK, EUR, GBP, HUF, JPY , NOK, NZD, PLN, SEK, USD

The markets of SIX Repo AG are not regulated. By international standards, the simultaneous access to the interbank market and the operations of the Swiss National Bank is unique.

3.4.1 **Trading**

The SIX Repo AG trading platform provides the following functions for CH Repo and OTC Spot trading:

- With a Request for Offer (RFO), a party notifies a selected potential counterparty in a nonbinding fashion that it wishes to conclude a contract or transaction.

- A party notifies a selected potential counterparty of principally non-binding prices for a contract using a quote. This can be a purchase and/or sales price. At the end of the trading day [ ] all quotes are deleted automatically

- An order is a binding offer for the conclusion of a contract or trade sent to a selected potential counterparty. This can be accepted (i) („take"), (ii) countered or (iii) rejected by the counterparty. The counterparty may submit a counteroffer. If an order is made on a quote, its available quantity is reduced accordingly (regardless of whether the order was accepted or not). An order may be given a term of validity.

- It is possible that selected potential counterparties are given the Auto-Hit Limit Management attribute for certain contract and trade types. Under these conditions, orders on quotes are accepted automatically. Partial executions are possible.

- The contract is accepted using the Take Order function.

Special functions provide the following for repo contracts or OTC spot transactions:

- A contract (trade) accepted via Auto-Hit Limit Management may be unilaterally canceled within a rejection period due to an insufficient or already exhausted credit line by using the Cancel Contract function, if applicable.

- A trade or transaction may be canceled before reaching the purchase date (for repos) or settlement date (for OTC spot transactions) by mutual consent by using the Trade Cancel function.

- A non-terminated contract (open repo) or a conditionally terminated contract (early termination allowed) may be closed or modified without prior announcement.

It should be noted that when trading on the platform, the participant is required only to make entries that are proven to have a commercial background and correspond to genuine economic supply and demand behavior.

Sample question:

A Request for Offer (RFO) is a binding contract.

Answer:

a) True
b) False

Answer: false: An RFO is always nonbinding.

3.4.2 **The trading day**

The Platform Operator defines the trading days for the trading platform in the trading calendar.

The trading day commences at 7:00 and ends at 18:00. Orders may be entered into the system from 6:00 onwards, but it is only possible to commence trading on the platform at 7:00.

Time (CET)	«Event»
06:00	«Start of business day»
07:00	«Start of trading»
18:15	«End of business day»

End of business day is 18:00, except

- SNB Auction (EFF) (18:00-18:15)
- Overnight (until 17:55)
- Intraday (until 16:45)

The procedures and cut-off times applying to foreign currencies vary. Please see para. 7 of the Terms of Use for the Trading Platform and the „Product Specification for Repo Market CH Repo": www.six-repo.com.

00:00	06:00	07:00		18:15	24:00
		Trading day			
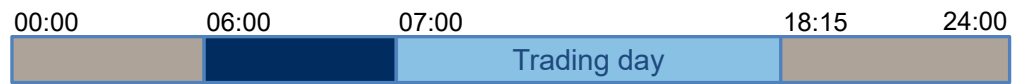
■ = Closed platform unavailable

■ = Pre-open: platform available, trading not yet possible

■ = Open: market open for trading

3.5   CH Repo Market

The CH Repo Market comprises the following segments:

- Interbank Repo Market (General Collateral & Special)

- Auction segment: exclusive access to SNB repo transactions (see Repo transactions with the SNB), but other repo participants may also use this.

The CH Repo Market provides high levels of standardization and flexibility that are truly world class. Alongside the Swiss franc, the following 13 currencies are available:

AUD, CAD, CHF, CZK, DKK, EUR, GBP, HUF, JPY, NOK, NZD, PLN, SEK, USD

Transactions in these currencies may in turn be combined with all available baskets, which contain securities that are also denominated in a range of currencies.

3.5.1   Product and contract types

The aim of the CH Repo Market is to offer a range of highly standardized contracts to facilitate the straightforward trading of collateral (baskets and / or securities) for cash by participants. The contract types available in the CH Repo Market are categorized according to the following criteria: [11]

Term	Collateral Type*	
	General Collateral (GC) - Basket	Special (SPC) – Security
Fixed	X	
Variable	X	X

* For GC contract types, the collateral seller may additionally specify a security from the basket for delivery.

[11] SIX Repo AG, Product Specification for Repo Market CH Repo

3.5.2   Standard contracts

Standard contracts with different maturities and in different currencies can be traded. Details of these standard contracts can be found in the „Product Specification for Repo Market CH Repo".[12]

[12] Repurchase Agreements, Dr. Peter Csoport, 2001, Haupt Verlag, p. 30

Standard fixed-income contract types are fully standardized. The variable elements of the contract are:

- the cash amount,
- the repo rate.

The relevant attributes will vary depending on the type of order:

For quotes, the following information must be entered:

- Contract type,
- Cash amount or security size,
- Total cash amount or security size ("iceberg" quotes only),
- Repo rate or offset.

Information such as "Sell/Buy back" or "iceberg" may be added for quotes.

For orders, the following information must be entered:

- Contract type,
- Buy or sell option,
- Security size or cash amount,
- Repo rate,
- Addressee.

For a Request for Offer (RFO), it is only necessary to enter the

- contract type.

However, depending on the system setup, additional information may be required.

3.5.3   General collateral (GC)

General collateral (GC) repos are covered in section 2.

The following should be noted for GC repos in the Swiss repo market:

- GCs do not have a right of substitution, but a right of reuse,

- no haircut is calculated. All GCs have a coverage of 100 %, irrespective of the issuer or the counterparty rating,

- the minimum volume of a repo trade is CHF 1 million,

- the recommended maximum volume of a repo trade is CHF 100 million. It is recommended that transactions with a total volume of over CHF 100

- million should be divided into several tranches of CHF 100 million.

3.5.4   Collateral securities

Throughout the repo term, SIX SIS AG provides comprehensive, automated risk management. All open receivables and liabilities are valued several times daily (mark-to-market). Any net exposure is offset by automatically generated margin calls.

3.5.5   GC Baskets

SIX Repo AG allows repo trades on

- standard baskets,
- individual securities,
- custom baskets.

Standard baskets are generally composed of high-quality liquid assets (HQLA), which are comparable in terms of quality, risk, substitutability etc. The definition of standard baskets is based on the requirements of the SNB and SIX Repo AG trading participants. The vast majority of repo trading volume is attributable to transactions in standard baskets. Standard baskets are visible to all participants at all times.

Advantages of standard baskets are [13]

- standardization,

- the quality of the collateral, based on qualitatively equivalent criteria, such as issuer rating, issue currency, market liquidity,

- greater homogeneity and comparability of repo transactions,

- increased liquidity and efficiency of the repo market.

The standardization can be increased with the introduction of maturities and basket-dependent contract types.

GC baskets are managed by the basket owner. The Swiss National Bank is the owner of all baskets eligible for SNB repos. SIX Repo AG also provides the following baskets:

- Repo of SIX CH M EQUI SMI (ROS CH M EQUI SMI), SMI Equity Index Basket

- Repo of SIX DE M EQUI DAX (ROS DE M EQUI DAX), DAX Equity Index Basket

[13] Repurchase Agreements, Dr. Peter Csoport, 2001, Haupt Verlag, S. 30

A detailed list of baskets for the CH Repo Market is available on the websites of SIX Repo AG (www.six-repo.com), the SNB (www.snb.ch) and in the Product Specification for Repo Market CH Repo.

The assets eligible as SNB GC are high-quality liquid assets (HQLA) are as specified in the new Basel III liquidity rules. The SNB GC basket includes the following sub-baskets: [14]

- Level 1 High-Quality Liquid Assets (HQLA L1): includes Level 1 securities from the SNB GC

- Level 2A High-Quality Liquid Assets (HQLA L2A): includes Level 2a securities from the SNB GC

- Level 1 CHF High-Quality Liquid Assets (HQLA L1 CHF): includes CHF-denominated Level 1 securities from the SNB GC

- Level 2A CHF High-Quality Liquid Assets (HQLA L2A CHF): includes CHF-denominated Level 2a securities from the SNB GC

> **Need-to-know!**
>
> The baskets traded are not subject to a haircut, which has a positive impact on collateral costs for the cash taker.

- **See section** Collateral under Basel III

[14] http://www.snb.ch/de/ifor/finmkt/operat/repos/id/finmkt_operat_repos
http://www.snb.ch/de/ifor/finmkt/operat/repos/id/finmkt_repos_letter

The baskets, which are specifically tailored to Basel III, enable participants to manage their liquidity requirements efficiently in line with the Basel III changes.

The structure of the baskets provides arbitrage opportunities for participants.

For example:

1. Participant accepts CHF as cash taker and provides HQLA1 collateral

2. The cash taker lends the cash received, thus becoming the cash provider and receives HQLA2 collateral in return.

The repo rate for the first trade is lower than for the second, as the quality of the collateral for the second trade is lower and the cash provider requires a premium as compensation for the increased risk involved.

Sample question:

Why does HQLA basket trading make sense?

Answer:

a. HQLA baskets facilitate compliance with Basel III LCR.

b. It allows the cash provider to control the impact on its LCR precisely.

c. The repo rate attributable to the HQLA reflects the quality of the collateral and the realizability of collateral in HQLA baskets for accounting purposes.

d. HQLA securities do not need to be categorized by Back Office.

Answer: a), b)

3.5.6 Special repos in the CH Repo Market

Trading in special repos has already been covered in section 2.2.6 *General Collateral (GC) vs. Special Repo*. The relevance of special repos has increased under Basel III, because the shortage of high-quality collateral (see section *2.4.2 Quality of collateral*) may result in greater demand for specific securities.

In economic terms, a special repo is equivalent to a securities lending and borrowing transaction in which the loan of a security is backed by cash collateral (rebate).

Participants who have a particular reason to lend specific securities, e.g. to cover a short position or due to default on another transaction, will act as cash provider (borrower), while the counterparty is interested in actively managing the collateral it holds and generating a return from that collateral. Because the special repos are securities- driven, the cash provider (borrower) will compensate the cash taker (lender) with a negative interest rate for lending the security.

The majority of participants in Switzerland are asset-rich in the sense that they hold collateral. However, in many cases, collateral management is passive or non-existent. Viewed from the right perspective, this gives rise to opportunity costs. Trading in special repos on the CH Repo Market allows the cash taker (lender) to present the collateral held in the form of market quotes on a semi or fully automated basis. The flexibility of the Swiss Value Chain in providing 13 tradable currencies as cash collateral for special repos, combined with bonds/equities denominated in a range of currencies, creates attractive opportunities for arbitrage (see section 2.7 *Trading strategies with repo transactions*).

3.5.7   Right of substitution

There is no right of substitution for any of the standard GC contracts with predefined maturities (ON, TN, SN, 1W, 2W, 3W, 1M, 2M, 3M, 6M, 9M, 12M). Collateral provided as initial collateral by the cash taker (see Collateral Management) cannot therefore be changed during the life of the repo. However, it may be reused for the purpose of securing other transactions.

Where shares are used as collateral, it is mandatory for all equity standard contracts to include a right of substitution.

In the case of non-standard contracts, a right of substitution may be agreed with the counterparty.

Special repos are securities-driven, which means that there is no right of substitution.

Further information on

-   Contract terms (CT)
-   Trading currencies
-   Collateral

is set out in the Product Specification http://www.six-repo.com/dam/downloads/regulation/product-specification-ch.pdf

3.6   OTC Spot Markt

The OTC Spot Market creates direct synergies between the primary and secondary bond markets. The OTC Spot Market also provides a fully- automated and integrated process, from issue, trading and settlement in SECOM through to payment.

3.6.1   Primary market

Bond issuers hold auctions for new issues or increases to the size of existing bonds through taps. SIX Repo AG ensures that only issuers have access to the system as auctioneers. The issuer determines the group of addressees for participation. This allows syndicate banks participating in a new bond issue to manage the auction themselves or restrict access to the auction to members of the syndicate.

The Swiss National Bank uses the reliable infrastructure to issue:

-   Money market debt register claims (GMBF) Short-term debentures of the Swiss Confederation, issues on behalf of the Confederation

-   Federal bond issues Long-term debentures of the Swiss Confederation, issues on behalf of the Confederation

- SNB Bills Monetary policy instrument to absorb liquidity in CHF

3.6.2   Secondary market

Participants may quote issued money market debt register claims and SNB Bills directly on the secondary market and purchase or sell these on a spot basis.

Further information on

- Market segments
- Auction conditions
- Settlement

is set out in the Product Specification http://www.six-repo.com/dam/downloads/regulation/product-specification-otc-spot.pdf

> **Need-to-know!**
>
> Settlement on the secondary market is T+2.

3.7   Swiss Reference Rates

Together with SIX Swiss Exchange, the Swiss National Bank (SNB) has developed CHF reference rates as benchmarks for the Swiss franc. The relevant data is supplied from quotes and transactions from the repo interbank market on the SIX Repo AG trading platform. Internationally, overnight rates are of central importance in determining the yield curve. The Swiss Average Rate Overnight (SARON®) is therefore the most important index.

The Swiss Reference Rates include the Swiss Average Rates (SAR®) and the Swiss Current Rates (SCR®) and cover the maturity range of Overnight (ON) up to twelve months (12M). The first publication is made at 8:00 and the last at the end of the trading day (no earlier than18:00). SIX Swiss Exchange calculates and publishes the reference rates.

3.7.1   The SAR index family

The Swiss Average Rate (SAR®) is a volume-weighted average rate based on completed transactions and reference prices for a given trading day. The average rate is calculated continuously in real time and published every ten minutes. Furthermore, fixings are performed three times a day - at 12:00, 16:00 and at the end of the trading day (no earlier than 18:00). These fixings can be used as reference values for derivative financial products and for the valuation of fixed-income investments.

3.7.2   **The SCR index family**

The Swiss Current Rate (SCR®) is based on the rate for a transaction or specific quotes. In contrast to the calculation of the Average Rate, volumes are not taken into consideration. The Current Rate is calculated and published every three minutes. The Current Rate reflects the current price on the money market and is an indicator of short-term changes.

3.7.3   **Overview of the SAR and SCR indices**

The following indices are calculated and published according to the specifications: http://www.six-swiss-exchange.com/indices/data_centre/swiss_reference_rates/reference_rates_en.html

Description	Average Rate (SAR-)	Current Rate (SCR-)
Overnight ON	SARON	SCRON
Tom/Next TN	SARTN	SCRTN
Spot/Next SN	SARSN	SCRSN
1 Week 1W	SAR1W	SCR1W
2 Weeks 2W	SAR2W	SCR2W
3 Weeks 3W	SAR3W	SCR3W
1 Month 1M	SAR1M	SCR1M
2 Months 2M	SAR2M	SCR2M
3 Months 3M	SAR3M	SCR3M
6 Months 6M	SAR6M	SCR6M
9 Months 9M	SAR9M	SCR9M
12 Months 12M	SAR12M	SCR12M

4.   Monetary policy operations of the Swiss National Bank (SNB)

4.1   **Development of the Swiss repo market**

Before the introduction of repos, the main monetary policy instruments were currency swaps, the onward placement of federal funds, swaps involving money market debt register claims and Lombard credit. Of these, Swiss franc currency swaps against the dollar were the most important instrument. In the mid-1990s, the SNB was, for various reasons, almost forced into a fundamental review of its monetary policy instruments, due to the fact that all its instruments had certain drawbacks.

In 1996, the SNB decided to gradually switch all its regular instruments over to the repo, a flexible and efficient instrument that can be used to meet all monetary policy requirements. The abolition of stamp duty in 1997 paved the way for the emergence of a repo market in Switzerland.

This provided the opportunity to develop a new repo system from scratch which meets both the SNB's needs for the purposes of implementing monetary policy and also the banks' needs for the purposes of establishing an interbank market. The SNB concluded the first repos with the banks in April 1998.

With the introduction of trading through an electronic trading platform, combined with the settlement of repo transactions by SIX Securities Services, Switzerland now offers a globally unique trading platform for repo transactions, embedded within the Swiss Value Chain.

4.2 Legal framework

The Swiss National Bank has the task of providing the Swiss franc money market with liquidity (National Bank Act (NBA), Article 5 (2) (a)). The transactions that the SNB may conduct in the financial market are listed under Article 9 NBA. Essentially, the SNB can only conclude collateralized transactions. The Swiss National Bank (SNB) „Guidelines on Monetary Policy Instruments" provide further detail on the transactions outlined in Article 9 NBA and describe the instruments and procedures employed by the SNB for the implementation of its monetary policy. They also define the conditions under which transactions are concluded and which securities can be used as collateral for monetary policy operations. The Guidelines are supplemented by Instruction Sheets. The Instruction Sheets describe the conditions and procedures applying to the conduct of monetary policy operations and are aimed primarily at SNB counterparties.

The objective of Swiss monetary policy is to maintain price stability, taking account of the respective economic situation. The SNB implements its monetary policy by influencing the interest rate level of the Swiss franc money market.

4.3 Monetary policy instruments

For monetary policy instruments, a distinction is made between open market operations and standing facilities. In the case of open market operations, the SNB takes the initiative in transactions. The SNB can influence money market interest rates and provide liquidity to the banking system by means of the interest rate conditions and the volume of these operations. Open market operations comprise repurchase agreements, the issuance of SNB Bills as well as the purchase and sale of SNB Bills on the secondary market. Repos have proven their value due to the flexibility they provide, even in exceptional situations, in managing interest rates and liquidity.

In the case of standing facilities, i.e. intraday and liquidity-shortage financing facilities, the SNB merely sets the conditions under which commercial banks can obtain short-term liquidity. These two facilities are also concluded in the form of a repo transaction. If necessary, the SNB may also use other monetary policy instruments such as foreign exchange transactions.

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Sample question:

What procedure does the SNB use for its auctions?

Answer:

a) Volume tender
b) Variable rate tender

Answer: a) und b)

4.4 Open market operations of the SNB

4.4.1 Repos

The SNB can carry out repo transactions through auctions or bilaterally with individual counterparties. The auctions are conducted either by volume tender or by variable rate tender. In the case of volume tenders, the SNB's counterparties request a certain amount of liquidity at a predetermined price (repo rate). In the case of variable rate tenders, the SNB's counterparties inform the SNB of the amount requested and the interest rate that they are willing to pay for the auctioned liquidity. The rate tender may be allocated using the Dutch or American method.

4.4.2 SNB Bills

By issuing SNB Bills, the SNB can absorb and thus control the supply of liquidity. SNB Bills are issued through public auctions or private placement. Increases of issues are also possible. The auctions are conducted either by volume tender or by variable rate tender in the primary market segment of the trading platform. The maturity can be up to one year. The SNB can repurchase and resell SNB Bills during the term on the secondary market segment of the trading platform. Interest on SNB Bills is paid on a discount basis.

4.5 Standing facilities of the SNB

4.5.1 Intraday facility

Between 8:00 and 16.45, the SNB provides counterparties with interest-free liquidity (intraday) by means of repo transactions. Quotes are provided on the following contracts on the interbank repo market. This intraday liquidity facilitates the processing of payment transactions via Swiss Interbank Clearing (SIC) and foreign exchange transactions in the Continuous Linked Settlement (CLS) multilateral payment system. The cash amounts must be repaid no later than the end of the same bank business day.

Time (CET)	Contract Type	Subcategory (abbreviation)
08:00 – 16:45 hrs	CHF INTRADAY SNB	IN

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Between 07:30 and 17:55 on each business day, the SNB offers intraday liquidity for the next bank business day via a repo auction.

Time (CET)	Currency	Contract Type	Subcategory (abbreviation)
07:30 – 17:55 hrs	CHF	TOM INTRADAY SNB	TIN

4.5.2 Liquidity-shortage financing facility

The SNB provides a liquidity-shortage financing facility to bridge unexpected liquidity shortfalls. This facility can be used until the next bank business day (overnight) through special-rate repo transactions. The special rate is based on the SARON (Swiss Average Rate Overnight) plus an interest premium. On each bank business day, between 18:00 and 18:15, counterparties are invited by the SNB to obtain liquidity under the liquidity-shortage financing facility. During the day, between 08:00 and 17:55, counterparties may also obtain liquidity at any time under the liquidity-shortage financing facility through bilateral special-rate repo transactions at the contract O/N SNB special rate. [15]

Currency	Contract Type	Subcategory (abbreviation)
CHF	ON SNB SPECIAL RATE	ON

[15] Further information is available on the SNB website www.snb.ch

4.6 Issues on behalf of the Confederation

The SNB provides certain banking services to the Swiss government. On behalf of the Swiss government, the SNB issues money market debt register claims and federal bonds in the primary market segment of the OTC Spot Market on the SIX Repo trading platform. The issuance calendar as well as the Issue Conditions can be found on the websites of the SNB and the Swiss Federal Finance Administration (FFA). Money market debt register claims can be traded after issuance in the secondary market segment of the OTC Spot Market. The secondary trading of federal bonds takes place on SIX Swiss Exchange.

4.7 Counterparties of the SNB

Basically, all Swiss-domiciled banks with a sight deposit account at the SNB are accepted as counterparties. Other Swiss financial market participants and banks and financial market participants domiciled outside Switzerland may be accepted as counterparties in monetary policy operations, provided there is a monetary policy interest. Admission to the interbank market is also possible even if the financial market participants cannot participate in the SNB operations.

Sample question:

What facility is provided by the SNB for short term liquidity financing?

Answer:

a) Liquidity-shortage financing facility
b) Unsecured loan facility

Answer: a)

5. Overview of regulations

5.1 **Swiss Master Agreement**

The Swiss Master Agreement, together with the Annex, essentially governs the business relationship between one party and all other authorized parties on a multilateral basis. The parties to the Agreement may set out alternative or supplementary terms in writing in the Annex. The terms of any individual agreement between two counterparties in respect of a specific transaction will prevail over the terms of the Agreement and the Annex. The constituent parts of the Swiss Master Agreement are based on the GMRA, although the agreement is governed by Swiss law and falls under Swiss jurisdiction.

The Swiss Master Agreement applies to repos, but not to buy/sell-back transactions. In line with the GMRA, the Swiss Master Agreement governs single trades involving delivery versus payment (DVP).

Any repo transactions concluded under this Master Agreement meet the requirements of the Swiss Federal Tax Administration regarding repurchase agreements (repos and reverse repos) and are not subject to federal stamp duty.

In the event of insolvency, all individual trades will be deemed to have been terminated immediately prior to the event of insolvency. Payments or other obligations will be set off against any amounts receivable.

The notice period under the Swiss Master Agreement is 30 days.

The Swiss Master Agreement also contains provisions on

- Value compensation,
- Substitution,
- Distributions from issuers (interest, cash dividends),
- Termination of any or all transactions,
- Events of insolvency (in the absence of a payment on maturity or margin transfer),
- Claims for compensation,
- Duration and termination of the Agreement,
- Definitions.

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Further information is set out in the Swiss Master Agreement for Repo Transactions (Multilateral Version).

http://finmarundschreiben.files.wordpress.com/2012/09/rahmenvertrag-fc3bcr-repo-geschc3a4fte.pdf

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Need-to-know!

The wording here is different from the standard practice applying to the Swiss Value Chain. Margin calls are made immediately (insofar as collateral is available) (see Collateral Management)

5.1.1 Default / insolvency

There are different procedures for failure and default depending on whether the default of a participant, payment default or failure to deliver are involved. Both the Swiss Master Agreement and the GMRA permit participants to terminate any open repo transactions with a counterparty for good cause. Good cause is deemed to exist, for example, if:

- the cash provider fails to pay the purchase price on the purchase date

- the cash taker fails to pay the repurchase price on the repurchase date

- a counterparty fails to make any margin transfer that is required

- a counterparty fails to make compensation payments

- a counterparty indicates to the other that it is unable to, or intends not to, perform any of its obligations

- a counterparty is suspended or prohibited from dealing in securities

- a counterparty becomes insolvent

If the **cash taker fails to deliver** the securities on the agreed delivery date (initial transaction) (...), the cash provider may terminate the relevant agreement with immediate effect (...). Accrued repo interest will be payable and any consideration that has passed must be reimbursed to the terminating party.

If the **cash provider fails to deliver** the securities on the agreed delivery date (final transaction) (...) the consequences of default will take effect immediately (...).

The Master Agreement also provides that all individual agreements between two parties may be terminated in writing for „good cause". Good cause includes in particular

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- failure to pay the purchase price or repurchase price in due time

- failure to respond to a margin call

- failure to make compensation payments to the beneficial owner, i.e. the cash taker

- delay in payment, insolvency or a clear indication that a counterparty is unable or unwilling to meet its obligations

- failure to perform any other obligations (termination if failure not remedied within 30 days' after notice is given)

In the event of insolvency, all individual agreements will be deemed to have been terminated immediately prior to the event of insolvency.

Sample question:

What can a participant do if the counterparty fails to respond to a margin call?

Answer:

a) Nothing
b) Terminate the agreement

Answer: b)

5.2   **Global Master Repurchase Agreement**

The key features of this agreement are the following:

- The GMRA covers repo trades as well as buy/sell-back transactions.

- Margin maintenance includes cash margin and margin securities.

- The substitution provisions include an obligation to return „equivalent" collateral.

- Income payments, payments and transfers are defined.

- Events of default are extensively covered with regard to the definition of an event of default and the action to be taken in the event of default, including cash payments and the treatment of deliverable collateral.

The GMRA consists of a

- standard-form master agreement containing provisions that are applicable to all repos between the parties

- a number of annexes, and

- a confirmation for each transaction.

For additional detailed information on

- acts of insolvency
- initiation, confirmation or termination
- margin maintenance
- events of default
- definitions

and other issues, please refer to the ICMA „Global Master Repurchase Agreement"
(2011 version). www.icma.org

http://www.icmagroup.org/assets/documents/Legal/GMRA-2011/GMRA-
2011/GMRA%202011_2011.04.20_formular.pdf

5.3 Terms of Use for the Trading Platform

- **In this section, we will only focus on certain aspects of the Terms that have not been dealt with in previous sections.**

This document sets out the general terms and conditions of SIX Repo AG

5.3.1 Entering prices that have a genuine commercial basis

Participants are required only to make entries when trading on the platform that are
proven to have a commercial background and correspond to real economic supply and
demand behavior.

> **Need-to-know!**
>
> In practice, this means that participants only enter quotes once they have
> accepted Request for offers from counterparties to whom a limit has been
> granted.

5.3.2 Access to the platform / registration of traders

Participants must restrict access to persons who are of good repute and have sufficient
expertise and experience and appropriate qualifications. The desk administrators at the
banks are themselves responsible for the set-up of their traders and any modifications
to them.

> **Need-to-know!**
>
> Trading takes place between 07:00 and 18:00 hrs.

5.3.3 **Trading days and time**

The Platform Operator, SIX Repo AG, is entitled to suspend trading if required on technical or other grounds.

5.3.4 **Data**

SIX Repo AG is entitled to use the data for commercial purposes on an anonymous basis (e.g. for creating statistics). It may also make data available to the Swiss National Bank to fulfill its legal obligation.

> **Need-to-know!**
>
> Access rights to the system may only be used by authorized parties and may not be passed on under any circumstances.

5.4 **Trading Rules**

5.4.1 **Dealings by participants / binding nature of trades**

Before participants can trade, they must accept each other as counterparties on the trading platform. Trades conducted on the platform are binding.

5.4.2 **Trading**

As stated in section 3, a party notifies a selected potential counterparty in a **nonbinding** fashion that it wishes to conclude a contract or transaction by issuing a **Request for Offer (RFO)**.

> **Need-to-know!**
>
> Purely from a legal and formal perspective, quotes are essentially nonbinding. However, in practice, the prices entered by participants must be binding, as the Terms of Use for the Trading Platform stipulate that only prices with a genuine commercial basis may be entered into the system.

A party notifies a selected potential counterparty of principally non-binding prices for a contract using a **quote**. This can be a purchase and/or sales price. At the end of the trading day […] all quotes are deleted automatically.

> **Need-to-know!**
>
> It is important to follow correct practice. If you send an Request for offer in response to another participant's quote, you are obliged to accept the price quoted. You are allowed to adjust the amount but not the price.

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An **order** is a **binding** offer for the conclusion of a contract or trade sent to a selected potential counterparty. This can be accepted (i) („take"), (ii) ignored or (iii) rejected by the counterparty. The counterparty may submit a **counteroffer**. If an order is made on a quote, its available quantity will be reduced accordingly (regardless of whether the order was accepted or not). An order may be given a term of validity. It is possible that selected potential counterparties are given the **"Auto-Hit Limit Management"** attribute for certain contract and trade types.

Trades may **canceled by mutual consent**.

Open repos may be closed or modified unilaterally without prior announcement.

> **Need-to-know!**
>
> If participants have set up «Auto-Hit» and respond to a quote, this will result in a trade without the need for a counterparty to accept a Request for Offer first.

5.5 Product Specifications

The Product Specifications set out the contracts and currencies that may be traded, cut-off times and other specific features.

5.5.1 Taxes in the OTC Spot Market

Federal stamp tax: the federal stamp tax on issuance of a security (Emissionsabgabe) is borne by the issuer. Short-term debt instruments with maturities of up to one year are exempt from federal transfer stamp tax (Umsatzabgabe).

Withholding tax: earnings are subject to withholding tax. The tax is withheld by the issuer and remitted to the Swiss Federal Tax Administration. The tax is not payable if at the time of redemption the securities are held by a bank for its own account. Foreign banks must provide documentation certifying that they are holding the securities for their own account at least one business day prior to maturity.

Sample question:

A Request for Offer (RFO) constitutes a binding price.

Answer:

a) True
b) False

Answer: b)

Sample question:

Transactions in the OTC Spot Market are subject to stamp tax.

Answer:

a) True
b) False

Answer: b)

False. The federal stamp tax on issuance of a security (Emissionsabgabe) is borne by the issuer. Short-term debt instruments with maturities of up to one year are exempt from federal transfer stamp tax (Umsatzabgabe).

6. Example: sequence of a repo transaction from start to finish

6.1 Agreeing which master agreement will apply

The parties to the transaction must agree which contractual terms apply, i.e. one of the following options:

- Swiss Master Agreement for Repo Transactions (Multilateral Version)
- TBMA/ISMA Global Master Repurchase Agreement with Swiss Annex
- Separate terms

6.2 Trade

Using the example of a 7-day repo, we will assume that Bank A wishes to enter into a repo for 1 million Swiss Confederation bonds, while Bank B is looking for 1 million of the same security and is therefore willing to be the repo counterparty to Bank A.

Bank A (cash taker) places a Request for Offer on the SIX Repo AG trading platform and sends this to the counterparties with which Bank A holds a limit.

Bank B (cash provider) responds to the RFO by issuing an order, offering Bank A 12 basis points (bp). Bank A accepts the order.

Assuming that the trade is executed on Monday, 21 January 20xx:

- Bank B agrees to deliver the 1 million in cash on the settlement date (T+2, Wednesday, 23 January 20xx),

- Bank A agrees to deliver 1 million Swiss Confederation bonds on the settlement date (T+2, Wednesday, 23 January 20xx).

- The transaction is executed by the SIX SIS AG triparty service on a delivery versus payment (DVP) basis.

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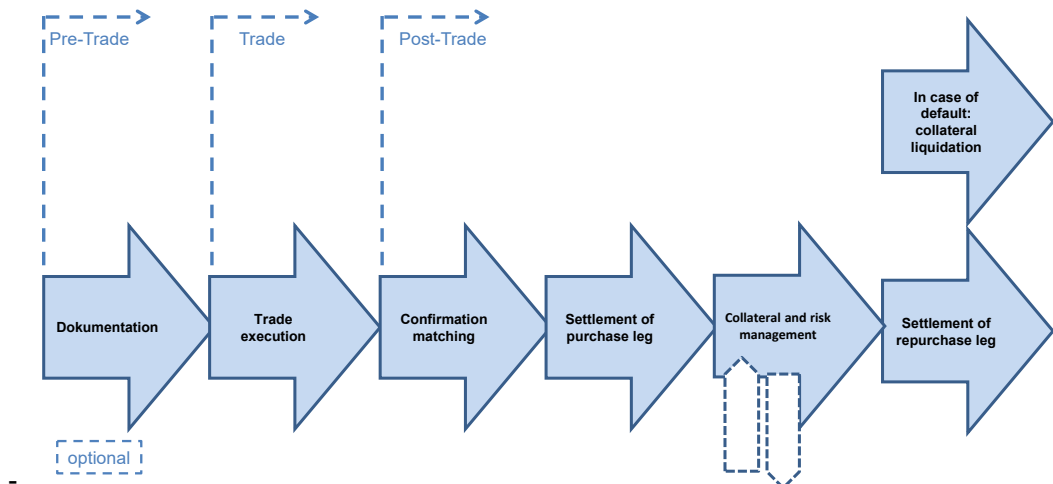
6.3 **Settlement on the purchase date**

On the settlement date (T+2, Wednesday, 23 January), the obligations are settled over the interface between the SIC payment system and SECOM securities settlement system of SIX SIS AG:

- Bank A and Bank B must have a collateral account and a cash account with SIX SIS AG.

- SECOM checks whether Bank A is in possession of the collateral and blocks 1 million of this security as appropriate.

- SIX SIS AG administers the securities deposit account and cash accounts of both parties.

- SIX SIS AG instructs SIX Interbank Clearing AG to check whether Bank B holds sufficient cash.

- As soon as SIX SIS AG receives confirmation of sufficient cash from SIX Interbank Clearing AG, SIX SIS AG will proceed to delivery versus payment.

- SIX SIS AG initiates delivery versus payment.

- If cash is missing, the transaction enters into a queue for later execution until sufficient cash is available and SIX SIS AG can proceed to delivery and payment.

6.4 **Custody**

Prior to settlement of the second, repurchase leg,

SIX Interbank Clearing AG administers the CHF cash accounts and SIX SIS AG is responsible for

- managing the custody accounts
- managing foreign currency cash accounts
- risk management – valuation service
- managing margins/haircuts as necessary.

SIX Repo AG only provides substitutions if specifically requested. Instead, collateral is reused. SIX SIS AG manages the process of reusing collateral.

6.5 Settlement on the purchase date

On the maturity date of the repo, SIX SIS AG carries out the reverse transaction, i.e. redelivery of collateral to Bank A, delivery of cash, including accrued repo interest, to Bank B. Since SIX SIS AG manages the custody account, delivery versus payment can be implemented immediately. No end-of-day novation or netting is undertaken, as all DVP transactions are carried out in real time.

6.6 Substitution

SIX SIS AG is responsible for managing substitution, insofar as this is referred to in the repurchase agreement.

6.7 Buy-In

In the exceptional case that the seller cannot deliver all of the securities on the settlement date, 23 January 20xx, a buy-in operation must be undertaken. The buy-in is triggered 4 days after the settlement date. Further information is available in the Late Settlement and Buy-in Rules of SIX x-clear AG, www.six-group.com [16]

[16] https://www.six-group.com/dam/download/securities-services/clearing/download-center/operational/clr-xcl-510-en.pdf

7. Training courses / Examinations

Each month, SIX Repo AG offers a training course and examination in German or English for prospective traders. The dates as well as details on time/location can be found on the website of SIX Repo AG www.six-repo.com

It is also possible for traders to sit the examination at their premises under the supervision of a compliance officer. More details on this can be found on the website of SIX Repo AG at www.six-repo.com.

8. Sources

8.1 SIX Repo AG

SIX Repo AG website: www.six-repo.com

- Terms of Use for the Trading Platform of SIX Repo AG
- Trading rules for the OTC Spot Market
- Trading rules for the Swiss Franc Repo Market
- Product Specification for Repo Market CH Repo
- Product Specification for the Repo Market OTC Spot

8.2   SIX Swiss Exchange

SIX Swiss Exchange website: www.six-swiss-exchange.com

8.3   SIX Securities Services

Rulebook SIX x-clear AG Clearing Services for Members domiciled in Switzerland: https://www.six-group.com/dam/download/securities-services/clearing/info-center/contractual-framework/xcl-300-e-rulebook-swiss-law-220801.pdf

General Terms and Conditions of SIX SIS AG (GTC SIX SIS): https://www.six-group.com/dam/download/securities-services/custody-and-settlement/info-center/clients/gtc/mg-general-agb-220201.pdf

Guidelines for participation in the CH repo market and OTC spot market, April 2022, https://sws.six-group.com/private/dam/downloads/services/repo/sg-six-repo-leitfaden-swiss-repo-otc.pdf

Rules and Regulations SIX x-clear AG - Operational Manual of SIX x-clear AG, Late Settlement and Buy-in Rules: https://www.six-group.com/dam/download/securities-services/clearing/download-center/operational/clr-xcl-510-en.pdf

Service Guide SIX SIS AG, CO:RE, Repo, August 2022

Service Guide SIX SIS AG, CO:RE, Multi-Currency-Repo, April 2022

8.4   Swiss National Bank

Swiss National Bank www.snb.ch

Federal Act on the Swiss National Bank (NBA), www.admin.ch/opc/de/classified-compilation/20021117/index.html

Ordinance to the Federal Act on the Swiss National Bank (NBO), www.admin.ch/opc/de/classified-compilation/20040259/201307010000/951.131.pdf

8.5   Bank for International Settlements – BIS

Basel III: Rahmenbedingungen zur Liquidität (Framework conditions on liquidity) www.bis.org/publ/bcbs199_de.pdf

Committee on Payment and Settlement Systems, Payment, Clearing and Settlement Systems in the CPSS Countries, Volume 1, September 2011, BIS, www.bis.org/publ/cpss97.pdf

8.6 FINMA

Swiss Financial Market Supervisory Authority www.finma.ch

Swiss Master Agreement for Repo Transactions (Bilateral Version),

Eigenmittelanforderungen für Kreditrisiken bei Banken (Capital adequacy requirements for credit risks within the banking sector), FINMA Circular 2008/19, Credit risks – banks

8.7 FSB – Financial Stability Board

FSB publication: Strengthening Oversight and Regulation of Shadow Banking, Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos, August 2013.

8.8 FSA – UK Financial Stability Authority

FSA Publication: Strengthening Oversight and Regulation of Shadow Banking, Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos, August 2013.

8.9 Websites

Khan Academy is on a mission to provide a free world-class education to anyone anywhere. With over 2600 videos covering everything from arithmetic to www.khanacademy.org on Repurchase Agreements (Repo transactions)

8.10 Frequently quoted works

Repurchase Agreements, Dr. Peter Csoport, Haupt, 2001
The Repo Handbook, 2nd edition, Moorad Choudhry, Butterworth Heinemann, 2010
An Introduction to Repo Markets, 3rd edition, Moorad Choudhry, Wiley & Sons LTD, 2006

9. Definitions and explanations

The following table gives definitions and explanations for the product terms and related terminology.

Definition	Explanation
Accrued interest	The interest accrued between the trade date and the settlement date. The payment amount due on the settlement date includes accrued interest.
Aggressor	Participant who responds to a quote or Request for Offer (RFO) that results in a trade. For trades that result directly from an order, both counterparties are considered

Definition	Explanation
	aggressors. See also non-aggressor.
ASP – Application Service Provider	Provider of an application for the exchange of information over a public network (e.g. Internet) or private network.
Auction	An auction is the process by which (ordinarily) the central bank (SNB) invites competing bids for paper or for cash in order to conduct its monetary policy. In a primary auction, the SNB offers interest-bearing Swiss Confederation and other bills to the market, thereby withdrawing liquidity from the market. In a repo auction, the SNB invites bids of collateral (usually) for Swiss francs, thereby providing liquidity to the market. The SNB defines certain quality criteria to which the collateral they will accept must adhere. Although it is typically the SNB that initiates and conducts an auction, in principle there is no reason why another participant could not conduct an auction to optimize their collateral or manage their cash positions.
Auto-hit	Indicates that an order sent in response to a quote will automatically be accepted. See also central trading allowed.
Basket	Contains a number of securities as specified by the basket owner. Baskets are used as collateral for General Collateral (GC) contract types. The collateral seller may additionally specify a security from the selected basket for delivery.
Cash amount	The cash amount transferred from the cash lender to the cash borrower on the purchase date and from the cash borrower to the cash lender on the repurchase date.
Cash borrower	One of the two counterparties to a repo trade. Borrows cash and sells collateral. See also collateral seller.
Cash lender	One of the two counterparties to a repo trade. Lends cash and buys collateral. See also collateral buyer.
Cash lot amount	Indicates the increment by which the cash amount may be increased above the minimum cash amount.
Collateral	Securities sold to the cash lender by the cash borrower on the purchase date and repurchased by the cash borrower on the repurchase date.
Collateral buyer	One of the two counterparties to a repo trade. Lends cash and buys collateral. See also cash lender.
Collateral seller	One of the two counterparties to a repo trade. Borrows cash and sells collateral. See also cash borrower.
Collateral type	Indicates whether the collateral is of the type basket or security. See also General Collateral (GC) and Special (SPC).
Collateral valuation	Indicates whether the collateral valuation, which determines the nominal amount of bonds or number of shares transferred in a repo, is negotiable or must be based on the collateral's market value on the purchase date.
Contract type	Sets out the terms of a given repo. A contract type is identified based on its trading currency and subcategory.
CUR	Currency. See also trading currency.
Currency business day	A currency business day is any day on which settlement in a specific currency is possible. Currency holidays largely correspond to national public holidays. For more information, see the Trading and Settlement Calendar and business day.
Day roll convention	Specifies whether the repurchase date will be rolled to the next or the previous currency business day if it happens to fall on a currency holiday. See also following modified.
DVP cut-off days	Delivery versus payment. Only relevant for contract types with a variable (negotiable) purchase date. Indicates the minimum interval in currency business days between the trade date and the purchase date that must be observed. The purchase date cut-off time (where defined) applies additionally. For instance, if the number of DVP cut-off days is 1 and the purchase date cut-off time for the respective trading currency is 13:00, then the earliest possible purchase date is T + 1 (where T is the current business date), and the trade must be concluded

Definition	Explanation
	by 13:00 on the current business day. Concluding the trade after the purchase date cut-off time may be possible, if the purchase date is greater than T + 1 (see trade after cut-off time).
LSFF – Liquidity Shortage Financing Facility / EFF – Engpassfinanzierungs-fazilität	The SNB functions as the lender of last resort under the terms of the National Bank Act. Under the emergency financing facility, the SNB can provide domestic banks with liquidity if they are no longer able to refinance their operations in the market. The EFF requires an overcollateralization of 110%. The SNB determines what collateral is sufficient. Apart from liquid bank assets, less-liquid bank assets with high credit ratings may also serve as collateral.
End-to-end convention	For monthly contract types (1M – 12M), the convention is to use the same date for the purchase and repurchase date (e.g. January 3 - June 3), unless the purchase date happens to be the last currency business day of the month. In this case the repurchase date will also be the last currency business day of the month (e.g. January 31 to February 28), if the end-to-end convention applies.
EONIA	EONIA is an effective overnight interest rate computed as a weighted average of all overnight unsecured lending transactions in the interbank market in euros.
EURIBOR	EURIBOR is a daily reference rate based of the average interest rates at which Eurozone banks offer to lend unsecured funds to other banks in the euro wholesale interbank market.
Evergreens	A contract provision that automatically renews the length of the agreement after a specified period unless notice for termination is given. Evergreens may be used for long-term repo agreements, e.g. a 30-day Evergreen will each day "renew" to a new 30-day period unless notice of termination is given. Then the existing 60-day period becomes fixed, and at the end of that 30-day period, the repo closes and is settled. At any renewal (typically daily), the repo rate may be newly determined. The prevailing repo rate up until that date applies up until this date, and from that date forward the new repo rate applies. New repo rates may be specified many times in the life of an Evergreen.
FINMA	The Swiss Financial Market Supervisory Authority FINMA is responsible for implementing the Financial Market Supervision Act (FINMAG) and financial legislation. As an independent supervisory authority, FINMA acts to protect the interests of creditors, investors and insured persons and to ensure the proper functioning of the financial markets.
Fixed-rate repo	The repo rate (interest rate) applying to the repo contract is a fixed percentage rate, i.e. not linked to an index or other variable.
Following	Day-roll convention whereby the payment date is rolled forward to the next currency business day if it happens to fall on currency holiday.
Following modified	Day-roll convention whereby the repurchase date is rolled forward to the next currency business day if it happens to fall on a currency holiday, unless the next currency business day falls into the next month, in which case the repurchase date is rolled back to the last currency business day prior to the currency holiday.
FSB – Financial Stability Board	The FSB, part of the Bank for International Settlements, has been established to coordinate at the international level the work of national financial authorities and international standard-setting bodies and to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies in the interest of financial stability.
GC Basket	A GC Basket is a list of security issues prescribed by an automatic repo trading system (ATS) or a central clearing counterparty (CCP) which users of those systems are able to trade. Trading a GC basket means users accept that, when they are (net) buyers, the (net) sellers have the right to deliver any of the issues in the GC basket. This allows negotiations between users to be restricted to amount, term and price, which simplifies and speeds up trading. In "GC financing" or "GC pooling" systems, the GC basket is defined by a CCP and the selection of issues for delivery is

Definition	Explanation
	automated. Where a GC basket is defined by an ATS sellers select the issues for delivery.
General collateral (GC)	Contract type where the collateral is a basket. The collateral seller may additionally specify a security from the basket for delivery. See also Special (SPC).
GMBF	Geldmarktbuchforderungen der Schweizerischen Eidgenossenschaft. Short-term usually discounted debt obligation issued by the Swiss Confederation. See also MMDRC
GMRA	A cross-jurisdiction contract framework that, when signed up to by both counterparties, forms the basis of the repo (and potentially other) trades that are agreed between them. See the ICMA GMRA page for details. GMRA is just one of many potential legal frameworks under which repos can be conducted. However, for a repo execution to take place, both parties must have signed up to the legal framework agreement, which will form the basis for the terms of the trade.
Haircut	The percentage by which an asset's market value is reduced for the purpose of calculating capital requirement, margin and collateral levels. When they are used as collateral, securities will generally be marked down by a standardized "haircut" percentage, since a cushion is required by the lending parties in case the market value of the security falls. See also the ECP haircut schedule for eligible assets and how to derive the haircut category, or alternatively the FSB proposal for Haircuts (Lend and Repo)
HQLA – High Quality Liquid Assets	HQLA is a Basel III term related to LCR (Liquidity Coverage Ratio) and to NSFR (Net Stable Financial Ratio) calculations. In summary, assets are considered to be HQLA if they can be easily and immediately converted into cash at little or no loss of value. There are three HQLA levels of assets defined – Level 1, the "best" quality of asset which can be included without limit, Level 2A which requires a 15% Haircut and Level 2B which may require a 50% Haircut. Level 2 can comprise up to 40% of the stock that is used to determine a bank's ability to absorb short-term shocks in times of financial and economic stress and level 2B. For full details, please see Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools
Index Linked Repo	Like a variable rate repo, the repo rate (interest rate) applying to the repo contract is rather linked to an external index, e.g. 1-week Libor + 20bp, SARON-2bp, EONIA-5bp
LCR – Liquidity Coverage Ratio	LCR has been developed by the Basel Committee to promote the short-term resilience of a bank's liquidity risk profile. LCR aims to ensure that a bank has an adequate stock of unencumbered high-quality liquid assets (HQLA), which consist of cash or assets that can be converted into cash at little or no loss of value in private markets to meet its liquidity needs for a 30 calendar day liquidity stress scenario. LCR = Stock of HQLA/Total net cash outflows over the next 30 calendar days $\geq$ 100%
LSFF	Liquidity shortage financing facility. Monetary policy instrument used by the Swiss National Bank (SNB). See also EFF
Margin	A margin is the collateral that the holder of a position must post to cover the uncollateralized (exposed value) position on their side of the contract. The need to post margin to square a position typically results from movements in the price (value) of the collateral underlying the contract.
Margin ratio	The collateral-to-cash amount ratio. At 100%, the collateral amount provided by the collateral seller equals the cash amount in terms of the collateral's value. See also collateral valuation.
Minimum cash amount	The minimum cash amount that applies for a given contract type.
Minimum duration	Minimum interval between purchase date and repurchase date in currency business days.
Minimum security size	Minimum nominal amount of the security (debt instrument) sold or bought.
Nominal currency	Currency in which the security (debt instrument) is denominated.

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Definition	Explanation
Nominal lost amount	Indicates the increment by which the security size may be increased above the minimum security size.
No. of payments	Number of times a repo interest payment is made.
Non-aggressor	Participant who posts a quote or Request for Offer (RFO) that results in a trade. See also aggressor.
Notes	A financial instrument that generally has a longer term than a bill, but a shorter term than a bond. However, the term of a note can vary significantly, and may not always fall neatly into this categorization. Notes are similar to bonds in that they are sold at, above or below face (par) value, make regular interest payments and have a specified term until maturity.
Order	Binding offer sent to a selected participant. Orders are used to initiate trading activity directly with a specific counterparty or to respond to a quote or Request for Offer.
OTC	An instrument traded in some context other than on the central limit order book of a regulated exchange, e.g. via a dealer/interdealer network.
Paper	Usually an unsecured, short-term debt security.
Payable 1st date	The due date of the (first) repo interest payment.
Periodicity	The interval at which repo interest payments are made.
Poster	Participant who posts a quote or Request for Offer that results in a trade.
Purchase date (PD)	Settlement date of the repo's near leg. The purchase date may be pre-defined (e.g. T + 1 for overnight contract types where T is the trade date), partially defined (e.g. purchase date $\geq$ T + 1), or fully negotiable.
Purchase date cut-off time	The time of day by when a trade must be concluded. Applies per currency to intraday, overnight, and any variable term contract type with a purchase date of T + 0 or T + 1 (where T is the trade date) or if the trade after cut-off time is set to no.
Quote	Generally non-binding offer sent to selected participants as specified by the participant to buy or sell a security at the quoted price.
Repo rate	Annualized rate of return on the cash amount (in %). For floating-rate and fixed relative repos, the repo rate offset is given in basis points (bp). 1 basis point = 0.01%. See also repo rate type.
Repo rate fixing frequency	Determines how often the repo rate is adjusted with respect to the referenced index (only applies to floating rate and fixed relative repos).
Repo rate type	There are three repo rate types: fixed, floating, and fixed relative. The repo rate of fixed rate repos does not vary. The repo rate of floating rate and fixed relative repos varies in accordance with the index to which the repo rate is pegged.
Repurchase date (RD)	Settlement date of the repo's far leg. The repurchase date may be pre-defined (e.g. all fixed term contract types), partially defined (e.g. a minimum term of PD + 2), or fully negotiable.
Repurchase date type	Only applies to variable term contract types. Indicates whether the repurchase date must be specified in pre-trading and cannot be modified later (fixed), can be specified in pre-trading or remain unspecified until post-trading as agreed (negotiable), or cannot be specified until post-trading (open). See also terminable on demand.
Request for Offer (RFO)	Non-binding offer sent to selected participants as specified by the participant.
Right of substitution (RoS)	Determines whether the collateral seller has the right to substitute the collateral specified for different collateral of equal value and credit rating.
Right of Reuse	Determines whether the collateral seller has the right to reuse the collateral.
SARON – Swiss Average Rate Overnight	SARON (Swiss Average Rate Overnight) is an overnight interest rate average referencing the Swiss franc interbank repo market. The reference rate is based on CH repo interbank market data.
SECOM	See SIX SIS AG.
Security currency	Currency in which the securities are denominated (bonds) or traded (equity).
Security price	The price negotiated for a security (expressed in % of the nominal).
Security size	Total nominal amount of the security (debt instrument) sold or bought.
Settlement date	The payment and settlement date. See section 7 for details.

Definition	Explanation
Settlm. Org. CT Cat.	Settlement organization contract type category.
Settlm. Org. CT Ref.	Settlement organization contract type reference. Unique contract type identifier.
Settlement type	Indicates the clearing and settlement conditions that apply for a given contract type, e.g. central counterparty or triparty.
Single Line (Single Security) Repo	A repo where the collateral is a single specified security (as opposed to a securities basket).
SIX SIS AG	SIX Securities Services. SIX SIS AG assumes two roles: on the one hand SIX SIS AG is the national Central Securities Depository (CSD) of the Swiss financial market. On the other hand, it is also an International Central Depository (ICSD), providing complete services for the clearing, settlement and custody of national and international securities. SIX SIS AG operates an online real-time settlement system (SECOM) allowing market participants to settle their transactions via a single technical interface.
SNB Bills	A short-term, usually discounted debt obligation issued by the Swiss National Bank.
SNB contract type	Contract type set up for Swiss National Bank (SNB) monetary policy operations. For the terms and conditions that apply to SNB auctions, please contact the Swiss National Bank (SNB).
SNB Monetary Policy Instruments	The SNB's monetary policy instruments comprise the operations and measures, as laid out in the National Bank Act and the "Guidelines on monetary policy instruments", that it requires to carry out its monetary policy. These include open market operations (repo transactions, foreign exchange swaps, foreign exchange market interventions, the issuance and repurchase of SNB Bills) as well as the liquidity-shortage financing facility and the intraday facility.
Subcategory	Uniquely identifies a contract type in combination with the trading currency.
Subcategory abbreviation	Abbreviation for a subcategory (e.g. IN for INTRADAY).
Substitution	The repo seller provides securities collateral to the repo buyer. Substitution is where the seller wishes to change the particular securities deposited with buyer (i.e. to substitute one security with another or others of equivalent value). The collateralized value is the same, but the securities which form that collateral are changed, or substituted. See Right of substitution
Term	As in contract type term: contract duration from purchase date to repurchase date.
Term	As in product term or contract term: a contractual provision.
Terminable on demand (ToD)	Indicates whether the contract type is terminable on demand. If so, then it is possible to terminate the contract prior to the agreed repurchase date (in case of intraday contract types, this means that the contract can be repurchased before end of business). If the repurchase date is not set, the contract must be terminable on demand. See also repurchase date type.
Trade after cut-off	Only applies to variable term contract types with a purchase date cut-off time. If set to yes, indicates that trades may be concluded after the purchase date cut-off time with a purchase date of > T + 1 (where T is the trade date).
Trade date (TD)	Date on which a trade is concluded.
Trading currency (CCY)	Currency in which the contract type is traded. Corresponds to the cash amount currency. The trading currency is a non-variable product term.
Triparty Service	An independent intermediary that administers a triparty repo between the buyer and seller of the repo contract.

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