Recommendations for a "Best Practice Guide to Repo Margining" issued by the European repo committee (ERC)

This document is based on the results from the German ACI working group "Market Usances" from February / March 2000.

Topics:

1. What prices are used?
2. How is the mark-to-market calculated?
3. At what value date is the margin call performed?
4. What deadlines are stipulated for margin calls?
5. What collateral has to be accepted?
6. How is interest paid on cash-margin?
7. At which margin level is a margin call carried out? Does the margin call only cover the threshold or is the asset secured up to a 100%? Is there a "Minimum-Transfer-Amount" (MTA)? To what extent do multi-branch contracts, netting, the spreading of threshold over different branches and mixed collateral classes (equity and bond business) impact margin call procedures?
8. Is a substitution of margin collateral possible?
9. Which trades have to be included into the daily "mark-to-market"
10. How are forward trades included in marking to market ?
11. How should future dividends and/or coupon payments effect the margining process?
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14. What happens if margin collateral is not delivered (event of default)?
15. Should margin collateral to be returned automatically?
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1. What rates constitute the basis for the margin calculation

In principle, the closing mid rate of the preceding day of the respective domestic securities exchange should be chosen as a basis for the calculation. However if the parties agree and if they are able to do so, they can also choose a pricing rate nearer or at the time when a marking to market is calculated. Due to the time difference for US securities, the rate of the day before last or the prices available till 5:00 p.m. CET the day before can be chosen. As the reports are often made in an overnight-batch, the closing rates of the preceding day in the US might not have been calculated when the report was produced.

As no closing rates are calculated for some securities, the counterparts should come to a bilateral agreement in these cases. In principle, an intra-day-margining with current rates should be made. For technical reasons, this is presently not yet possible for many market participants.

2. How is the mark-to-market calculated?

Observing the above mentioned rates, accrued interest as well as repo interest up to the reporting date should be additionally taken into account in the mark-to market calculation for bonds. The reporting date depends on the collateral-related value date-regulation according to recommendation no. 3.

Example:

Let there be only one Repo:

t_S:	Start date of the transaction Bond: 3,75% 01/04/09	January 14, 2000
t_C:	Last coupon date	01/04/00
t_0:	Today	01/18
t_v	Value date	01/20 (= t_0 + 2 business days)
t_P:	Date the Bond price refers to	01/17 (= t_0 – 1 business day)
NPA:	Nominal	100.000.000,00
CF_S:	Start cash	87.700.000,00
P:	Bond Price as of t_P	90,23
C:	Coupon	3,75
r:	repo rate	2,55%
	Interest method Cash	ACT/360
	Interest method Collateral	ACT/ACT (here: 366).

The value of the asset resp. collateral is calculated as follows:

$$AssetValue = CF_S \cdot \left(1 + \left(r \cdot \frac{t_V - t_S}{360}\right)\right) \qquad = \qquad 87.737.272,50$$

$$CollateralValue = NPA \cdot \left(\frac{P + \left(C \cdot \frac{t_V - t_c}{366}\right)}{100}\right) \qquad = \qquad 90.393.934,43$$

As the collateral value is higher than the asset value, the potential margin call should come up to 2.656.661,93 (= Asset Value - Collateral Value).

If the parties agree and are technically able to choose pricing rates nearer to or at the time they calculate the market value t_p can be the same as t_o. Referring to point 3 t_v can also be chosen as to + 1 business day or if same day then t_v equals t_o.

Recommendation: A report should be able to calculate the further development of the market value for the next days. This should lead to a reasonable prediction of the future degree of collateralization, which may possibly influence a margin call to be carried out (Example: coupon or dividend payments in the next days, expiring transactions).

3. At what value date are margin calls performed?

Margin in the form of securities should be delivered where possible on the same day or even in real time settlement. If the relevant settlement system does not support same day settlement then the nearest possible value day for margining should be chosen. However any period chosen for margining even if it is value two days is better than no margining.

For cash margin, payment should usually take place on the same day. In case this it not possible, payment should be made on the next possible date.

4. What deadlines are stipulated for margin calls?

A margin call should take place prior to 2:00 p.m. CET. If it is done later collateral for margin is due to settle one day later. Collateral for margin should be allocated and notified by the counterparty prior to 4:00 pm CET.

5. What collateral has to be accepted?

Stipulation of the collateral to be accepted is collateral with characteristics similar to or better than the collateral being repoed, reasonably acceptable to the counterpart, and applied on a reasonable basis.

6. How is interest paid on cash margin?

For Cash-Margin, the reference interest rate must additionally be agreed on. For the Euro, we propose an EONIA interest rate.

Note: The European Master Agreement (EMA) stipulates the payment of interest based on the interbank rate –10 basispoints. The usual market practice is presently EONIA. For this reason, a range of “flat” and “minus 10 BP” is to be assumed. For the American market, Fed Funds should be used as the basis rate. The counterparties should bilaterally agree upon the potential spreads, as well as the basis rate in other currencies.

7. Margin-level, threshold and minimum-transfer amount

The following recommendations are basically independent from the underlying contracts (single/multi-branch). However, if there are multi-branch contracts, it should in particular be ensured that the internal procedures should be adequate and appropriate. Thus, in the case of such constellations, the potentially different time zones and settlement-deadlines as well as a central margining have to be taken into account.

This shall apply in a similar manner to the product range. If several products are jointly dealt with under a single agreement, the margining should be carried out accordingly.

An amount of EUR 0.5 million as a threshold is regarded as usual to the market. If the exposure exceeds this amount, the subsequent margin call should be for the whole amount of the exposure, i.e. the threshold corresponds to the minimum-transfer-amount.

There is no recommendation on a standard margin threshold as counterparties may agree to thresholds based on their mutually agreed credit assessments.

8. Is a substitution of margins possible?

Possible option but has to be explicitly agreed upon on a bilateral basis between the counterparts. Settlement terms for such substitution should be in line with recommendation no. 3.

9. Which trades have to be included into the daily mark-to-market?

Again this has to be answered in line with recommendation no. 3.

Depending on the current best practice for the settlement of margin calls all open trades need to be considered.

For example if you choose a two day value for settlement of margin securities all trades which have maturity dates of more than two days or which start during the following two settlement days should be included.

Hence, all trades which expire in the following two days or start at a later date should be excluded.

If you choose same day margining period all trades that start t+1 or later are not part of margining. Trades that start at **t** should be included in the mark –to- market calculation. Trades that terminate at **t** should not be included in the calculation. If the transaction ends at a later date than **t** it should be included in the calculation.

10. How are forward trades included in marking to market?

Based on recommendation no. 9., forward trades are excluded from the margin calculation as long as their start date has not reached the value day for settlement of margin securities as defined above. This means, that if you are doing same day margining a forward trade should be included at start day and not before. If you choose any longer period forward trades will be included in the margining procedure as described in recommendation no. 9.

The resulting potentially higher exposure will be taken care of by existing “cover clauses” which are provided in all standard master contracts. Such regulations say: “A counterparty has to carry all cover costs that the fail to deliver causes to the other party.”

11. How should future coupon payments and/or dividends effect the margining process?

According to recommendation no. 9. dividend and coupon payments should to be included in the calculation of daily margins. Nevertheless the handling is dependent on the different transaction types (i.e. standard repo or buy/ sell-back).

Therefore a due bond coupon payment in a classic repo and a buy/sell-back with no repricing agreed (where the coupon is passed through) reduces the value of the underlying collateral.

As a consequence the collateral margin requirement is increased accordingly.

12. Is a trade “repricing” acceptable?

According to the GMRA a repricing is only permissible, if it is agreed explicitly on a bilateral basis.

13. How does “repricing” work?

Mark-to-market calculation remains the same according to recommendation no. 2. Instead of receiving or delivering any cash or security collateral, repricing is done by closing an existing trade at the repricing value date and reopening of this trade with new starting prices and the same repo rate. The new price should be an actual cash market price. The value date of the closing leg of the original trade has to be the same date as the value date of the starting leg of the “so called” new trade, also called repricing value date. The repricing value date can be chosen according to recommendation no. 3. The settlement should be done on a netted basis, which means that the closing leg of the original trade should be netted with the opening leg of the “so called” new trade. In fact only the difference of the cash amounts between closing leg of the original trade and the starting leg of the “new” trade should be settled. Repricing can be done for classic repo and buy/sell-back transactions. Repricing is simple if the counterparts only have one trade open. If there is more than one transaction open the counterparties have to agree which trade they want to “reprice”. Normally the trade with the highest exposure is “repriced”. As mentioned above the new price should be an actual market price, which could mean that counterparts have to “reprice” more than just one trade.

14. What happens if margin collateral is not delivered (event of default)?

A potential event of default arises in the instance of not paying/ delivering required margin collateral. In such a case it can be proceeded according to standard legal provisions (i.e. a default notice has to be given but no “grace period” is required).

15. Should margin collateral be returned automatically?

Excess margin collateral is not automatically returned but has to be recalled by the collateral provider. Settlement terms for such recall should again be in line with recommendation no. 3.

16. How to handle “Haircuts”?

Haircuts are used to protect from

- Default risk of the counterparty
- Default risk of the issuer
- Foreign exchange rate risks
- Country risks
- Market risk of the underlying securities

and to comply with

- Regulatory requirements

In general the consideration of haircuts requires an explicit bilateral agreement between the trading counterparties.

Be aware that if a haircut is agreed it is part of the margining procedure. This means that it has to exist throughout the whole lifetime of the trade. In practical terms this can only be taken into account by calculating the mark-to-market value with the agreed haircuts on the relevant securities.

Based on the Bloomberg Repo/Reverse Repo Analysis, the start cash amount calculation can be illustrated as follows:

$$StartCash = \frac{\frac{Nominal}{100} \cdot DirtyPrice}{1 + Haircut} = \frac{\frac{100.000.000}{100} \cdot 103{,}945283}{1 + 0{,}02} = 101.907.139{,}77$$

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