A2X CER

Capital Exposure Requirements

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A2X MARKETS

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Capital Exposure Requirement (CER)

Glossary

A2X	A2X markets
CER	Capital Exposure Requirement
Commit	Indication by the CSDP that the transaction will settle
CSDP	CSD Participant
EOD	End Of Day
VWAP	Volume Weighted Average Price

Introduction

With the go-live of A2X, A2X has introduced a new risk management methodology, referred to as the Capital Exposure Requirements (CER).
How this differs from current market conventions, A2X does a risk exposure calculation over the full settlement cycle and computes a figure which members may cover with cash or securities before 12h00 on the next business day.

Capital Exposure Requirements

From the moment a trade is executed on A2X, A2X starts calculating a Capital Exposure Requirement to cover any exposures on A2X over the full settlement cycle.
The exposures include –

- T for net principal transactions, unallocated transactions, partially allocated transactions, over allocated transactions and uncommitted settlement orders for non-controlled clients; and

- T+1 for net principal transactions (which includes unallocated transactions, partially allocated transactions and over allocated transactions) and uncommitted settlement orders for non-controlled clients; and

- T+2 for uncommitted net principal transactions, uncommitted trades where principal assumption has been implemented and any transactions that have undergone Rolling of Settlement or Failed Trade Procedures; and

- T+3 for any transactions that have undergone rolling of settlement or failed trade procedures in terms of the rules.

NOTE – if a SLB is done by A2X as lender of last resort it is risk managed separately.i.e.it is not included in the Capital Exposure Requirement.
The Capital Exposure Requirement is typically calculated as part of the EOD process. However, where there are large market movement or large trades executed by member, this calculation may be done intra-day with a call for capital from the member. The main difference here would be that A2X would use a VWAP as opposed to the EOD closing price to the mark-to-market.

Capital Exposure Requirement calculations

As noted above, A2X will determine the capital exposure requirement on principal trades, unallocated transactions, partially allocated transactions, over allocated transactions and uncommitted settlement orders for non-controlled clients by –

- the mark-to-market price movement from the trade price on T of the equity securities to the closing price at EOD T or T+1 or T+2 or T+3; and
- adverse price movement of the equity securities from EOD on T until settlement, based on a potential value at risk exposure factor.

Where there is a favourable mark-to-market movement which exceeds the value at risk exposure factor there will be no exposure requirement.

Generation of Transactions

Once the calculation has been completed a Capital Exposure Requirement report is generated to the member. See attached for the format of the report.
The report will detail if it is a call or refund based on the balance held the previous EOD.
The member will have the choice to place cash or securities against the exposure.
If securities –

- The member must be enabled on Strates Collateral Management System
- A2X will generate the exposure to Strates Collateral Management System
- If there are insufficient securities to cover the exposure

If cash –

- A2X will generate cash calls through Strate and the members CSDP

Although the functionality around securities collateral is covered in a separate document, it is worth noting the following for the purposes of this document –

- For go-live A2X will only take the top equity securities. This will be expanded to include liquid government bonds in due course.
- A VAR haircut is applied to the securities collateral. The VAR calculation is the same applied to the Capital Exposure Requirements.
- A2X will be using an out-and-out cession construct.

- Where there is a corporate action, any securities that have been ceded affected by such corporate action will be substituted. Where there are not securities to be substituted this will result in a cash call.

Capital Exposure Deposit

Members may elect to establish a Capital Exposure Deposit with A2X. Where this is done, A2X will only call for cash or securities where the exposure calculation exceeds the Capital Exposure Deposit.

Interest

Any cash held will be invested on daily call and any interest earned will be paid to the members.
An administration fee will be calculated monthly on cash and securities and charged to the member.
The administration fee will be recover any charges levied on A2X by Strate, the CSDPs or bank.

Risk Factors calculated by VAR calculation

Price Volatility Risk

The more volatile a security price, the greater the chance of an insufficient margin to offset the losses incurred. More formally, volatility can be defined as a measure of the degree to which price fluctuates have occurred in the past or can be expected to occur in the future. The more volatile the security, the greater the deviation from the mean or average value prices.

VaR is highly suited to the margin calculation problem, in that it measures the worst expected loss that an institution can suffer over a given time period, under normal market conditions at a given confidence interval. This is ideally suited to quantifying the exact risk over a 2-day period, using a 99.95% confidence interval.

This means that the VaR figure for any security would quantify the maximum loss for an exposure over 2 days with a very high degree of confidence. Put differently, there is only a 0.05% chance that the A2X could lose more than the specified amount over the 2-day period. This VaR figure can be expressed as a specific Rand amount for margining purposes, or expressed as a percentage of the current MtM value. This is both computationally efficient as well as generally accepted risk quantification.

Spread Risk

Spreads are computed using the bid and offer prices for a security. The wider the spread, the greater the gap between the bid and offer prices. Generally speaking, the more liquid a security, the smaller the spread, and the lower the potential spread risk or cost is when dealing in that security. For example, Naspers is very liquid with a relative spread of less than 1%, while less liquid shares may have spread percentages in excess of 40%. This means that the costs of "crossing" the bid offer spread are higher for less liquid shares. This is particularly problematic where less liquid shares are margined. Should there be a default in the market, the spread may have widened. Moreover, given a large transaction, the spread may widen as the party attempts to transact in the market. Clearly, this risk and cost needs to be taken into account given the exposure.

Liquidity Risk

Liquidity risk is defined as the inability to liquidate or purchase large positions in the market due to a lack of willing buyers or sellers. For margining purposes, a 2-day factor may be insufficient to compensate the exchange for losses if the trade takes more than 2 days to liquidate.

Given the dynamic nature of market liquidity, it is also important to monitor each security's liquidity on a daily basis and compare this to the exposure. Each trade therefore has a "trade-out" period that needs to be considered for risk purposes. A 2-day VaR risk figure is meaningless unless this can be adjusted for the trade-out period, where this is longer than 2 days.

Impact Cost Risk

Where positions or trades are large, the risk of impact costs is raised. A buyer of securities incurs impact costs where the volume purchased is high relative to the total volume traded on the day. For example, where a buyer wishes to purchase 1 million shares on a given day, and only 2 million shares trade on any given day, the probability of impact costs is high. As the buyer makes up 50% of the market, his role changes from price taker to price maker. His action starts to affect the course of the markets and sellers raise their offers when they realize that a large buy order exists in the market.

The required exposure factor clearly needs to take into account the potential impact costs of any position and adjust the margin accordingly with the potential costs.

Directive D: Capital Exposure Requirements

1. Capital Exposure Requirements

1.1. A2X will calculate the capital exposure for the full settlement cycle daily at the end of each business day.

1.2. The capital exposure will be calculated on -

1.1.1 T for net principal transactions, unallocated transactions, partially allocated transactions and uncommitted settlement orders for non-controlled clients; and

1.1.2 T+1 for net principal transactions and uncommitted settlement orders for non-controlled clients; and

1.1.3 T+2 for uncommitted net principal transactions, uncommitted trades where principal assumption has been implemented and any transactions that have undergone Rolling of Settlement or Failed Trade Procedures; and

1.1.4 T+3 for any transactions that have undergone rolling of settlement or failed trade procedures in terms of the rules.

1.2 A member may post securities or cash for the calculated capital exposure.

1.2.1 Each member will mandate its bank or CSDP, to the satisfaction of A2X, to accept instructions from A2X on behalf of the member for cash and securities collateral; and

1.2.2 Ensure that sufficient cash is available in the designated account to meet any daily capital exposure calls.

1.3 A2X will publish from time to time, the securities which will be accepted by A2X as collateral for the purposes of this directive, as well as the haircuts on such securities to cover the capital exposure.

1.4 A member may establish a capital exposure deposit, by means of cash, securities or bank guarantee, to be utilised by A2X in meeting the member's daily capital exposure requirements. The cash and securities deposit and bank guarantee will be held in good faith and will only be returned on the request by the member; provided that A2X is satisfied that the returned portion of the margin deposit is no longer required.

1.5 A2X will determine the capital exposure requirement on principal trades, unallocated transactions, partially allocated transactions and uncommitted settlement orders for non-controlled clients by -

1.5.1 the mark-to-market price movement from the trade price on T of the equity securities to the closing price at EOD T or T+1 or T+2 or T+3; and

1.5.2 the potential adverse price movement of the equity securities from EOD on T until settlement, based on a value at risk margin factor.

1.6 The capital exposure requirements across instruments and across non-controlled clients' accounts will not be netted.

1.7 The capital exposure requirement due by a member will first be applied to the member's capital exposure deposit and any shortfall will result in a capital exposure call.

1.8 Where the member has elected to provide securities collateral, A2X will initiate a securities collateral call or return by sending the capital exposure to Strate's Collateral Management System. Securities will be transferred to A2X by means of an out-and-out cession.

1.9 A2X will initiate a cash capital exposure call by sending the necessary settlement order messages to the member's CSDP to instruct the transfer of funds for the same day value.

1.10 The capital exposure requirement will be payable by the member to A2X before 12h00 on each business day and will be repayable by A2X to the member before 12h00 on each business day.

1.11 Interest will be calculated and payable to members monthly in arrears on funds held as a capital exposure deposit and/or capital exposure call.

1.12 An administration fee will be calculated and payable by members monthly in arrears on cash and securities held over the previous month.

Broker	Principal/Client	Exposure Time Period	Side Purchase/Sale	Instrument	Quantity	Traded Price	Proceeds	Mark-to-Market price	Consideration	VAR %	Risk Factor	Value of transaction	Exposure calculation	Exposure
Broker A	Principal	T	Purchase	AGL	100 000	120,34	12 034 000,00	115,43	11 543 000,00	6,00%	692 580,00	10 850 420,00	1 183 580,00	1 183 580,00
Broker A	Principal	T+1	Sale	PGR	120 000	101,21	12 145 200,00	121,34	14 560 800,00	5,00%	728 040,00	15 288 840,00	-3 143 640,00	3 143 640,00
Broker A	Principal	T+2	Sale	LON	50 000	0,54	27 000,00	0,40	20 000,00	7,00%	1 400,00	21 400,00	5 600,00	0
Broker A	Client 1	T	Purchase	BIL	54 000	1,23	66 420,00	1,25	67 500,00	4,00%	2 700,00	64 800,00	1 620,00	1 620,00
Broker A	Client 2	T	Purchase	ATL	20 000	12,34	246 800,00	14,40	288 000,00	10,00%	28 800,00	259 200,00	-12 400,00	0
Broker A	Client 3	T+1	Sale	AGL	10 000	31,23	312 300,00	32,00	320 000,00	12,00%	38 400,00	358 400,00	-46 100,00	46 100,00
	Total for Peregrine													**4 374 940,00**

Brett Kotze:
This should exclude all charges

Brett Kotze:
If it is a purchase - it is the Consideration minus the Risk Factor as it is assumed that when we sell the shares out a loss equivalent to the VAR% would be incurred.

If it is a sale - it is the Consideration plus the Risk Factor as it is assumed that when we buy the shares in a loss equivalent to the VAR% would be incurred.

Brett Kotze:
Purchases - if a positive value add to exposure. If a negative value zero value out.

Sales - If a negative value change to a positive value and add to exposure. If a positive value zero it out