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RESERVE BANK OF INDIA
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To

All Standalone Primary Dealers,

Dear Sir / Madam,

Master Circular- Capital Adequacy Standards and Risk Management Guidelines for Standalone Primary Dealers

The Reserve Bank of India (RBI) has, from time to time, issued guidelines/instructions to the standalone Primary Dealers (PDs) with regard to their Capital Adequacy Standards and Risk Management. The enclosed Master Circular incorporates all the guidelines/instructions/circulars on the subject issued up to June 30, 2015. A list of circulars consolidated is enclosed as Annex G. The banks undertaking PD activities departmentally should follow the guidelines on capital adequacy requirement and risk management, applicable to the banks, issued by Department of Banking Regulation, RBI. This Master Circular has also been placed on RBI website at https://mastercirculars.rbi.org.in/.

Yours faithfully

(C.D.Srinivasan)
Chief General Manager

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CAPITAL FUNDS & CAPITAL REQUIREMENTS

General Guidelines

1 General

Capital adequacy standards for standalone Primary Dealers (PDs) in Government Securities (G-Sec) market have been in vogue since December 2000. The guidelines were revised on January 07, 2004, keeping in view the market developments, experience gained over time and introduction of new products like exchange traded derivatives. The present circular has been updated with the guidelines on capital funds and capital requirements issued since then.

2 Capital Funds

2.1 Capital funds include Tier-I and II capital.

2.2 Tier-I Capital

Tier-I capital means paid-up capital, statutory reserves and other disclosed free reserves. Investment in subsidiaries (where applicable), intangible assets, losses in current accounting period, deferred tax asset and losses brought forward from previous accounting periods will be deducted from the Tier-I capital.

In case any PD is having substantial interest/exposure (as defined for NBFCs) by way of loans and advances not related to business relationship in other Group companies, such amounts will be deducted from its Tier-I capital.

2.3 Tier-II Capital

Tier-II capital includes the following:

(i) Undisclosed reserves and cumulative preference shares[1] (other than those which are compulsorily convertible into equity). Cumulative preferential shares should be fully paid-up and should not contain clauses which permit redemption by the holder.

(ii) Revaluation reserves, discounted at a rate of fifty five percent.

[1] Cumulative preference shares (prefs) will accumulate any dividend that is not paid when due and no dividends can be paid on ordinary shares until the entire backlog of unpaid dividends on cumulative prefs is cleared.

(iii) General provisions and loss reserves (to the extent these are not attributable to actual diminution in value or identifiable potential loss in any specific asset and are available to meet unexpected losses), up to a maximum of 1.25 percent of total risk weighted assets.

(iv) Hybrid debt capital instruments, which combine certain characteristics of equity and debt.

(v) Subordinated Debt (SD):

a. The instrument should be fully paid-up, unsecured, subordinate to the claims of other creditors, free of restrictive clauses, and should not be redeemable at the initiative of the holder or without the consent of the Reserve Bank of India (RBI).

b. SD instruments with an initial maturity of less than 5 years or with a remaining maturity of one year or less should not be included as part of Tier-II capital.

c. SD instruments eligible to be reckoned as Tier-II capital will be limited to 50 percent of Tier-I capital.

d. The SD instruments may be subjected to progressive discount at the rates shown below:

Residual Maturity of Instruments	**Rate of Discount (%)**
Less than one year	100
One year and more but less than two years	80
Two years and more but less than three years	60
Three years and more but less than four years	40
Four years and more but less than five years	20

2.4 Guidelines on SD Bonds (Tier-II Capital)

(i) The amount to be raised may be decided by the Board of Directors of the PD.

(ii) The PDs may fix coupon rates as decided by their Board.

(iii) The instruments should be 'plain vanilla' with no special features like options, etc.

(iv) The debt securities should carry a credit rating from a Credit Rating Agency registered with the Securities and Exchange Board of India (SEBI).

(v) The issue of SD instruments should comply with the guidelines issued by SEBI vide their circular SEBI/MRD/SE/AT/36/2003/30/09 dated September 30, 2003 (ref: www.sebi.gov.in/circulars), as amended from time to time, wherever applicable.

(vi) In case of unlisted issues of SD, the disclosure requirements as prescribed by the SEBI for listed companies in terms of the above guidelines should be complied with.

(vii) Necessary permission from the Foreign Exchange Department of the RBI should be obtained for issuing the instruments to Non-Resident Indians/Foreign Institutional Investors (FIIs). PDs should comply with the terms and conditions, if any, prescribed by SEBI / other regulatory authorities with regard to issue of the instruments.

(viii) Investments by PDs in SD of other PDs/banks will be assigned 100% risk weight for capital adequacy purpose. Further, the PD's aggregate investments in Tier-II bonds issued by other PDs, banks and financial institutions should be restricted to 10 percent of the investing PD's total capital funds. The capital funds for this purpose will be the same as those reckoned for the purpose of capital adequacy.

(ix) The PDs should submit a report to the Chief General Manager, Department of Non-Banking Regulation (DNBR), RBI, , giving details of the capital raised, such as, amount raised, maturity of the instrument, rate of interest together with a copy of the offer document, soon after the issue is completed.

2.5 Minimum CRAR ratio

PDs are required to maintain a minimum Capital to Risk-Weighted Assets Ratio (CRAR) of 15 percent on an ongoing basis.

3 Measurement of Risk Weighted Assets

The details of credit risk weights for various on-balance sheet and off-balance sheet items and methodology of computing the risk weighted assets for the credit risk are listed in **Annex A**. The procedure for calculating capital charge for market risk is detailed in **Annex B.**

4. Capital Adequacy requirements

4.1 The capital charge for credit risk and market risk as indicated in **Annex A** and **Annex B,** need to be maintained at all times.

4.2 In calculating eligible capital, it will be necessary first to calculate the PD's minimum capital requirement for credit risk, and thereafter its market risk requirement, to establish how much Tier-I and Tier-II capital is available to support market risk. Of the 15% capital charge for credit risk, at least 50% should be met by Tier-I capital, that is, the total of Tier-II capital, if any, should not exceed one hundred per cent of Tier-I capital, at any point of time, for meeting the capital charge for credit risk.

4.3 Subordinated debt as Tier-II capital should not exceed 50 per cent of Tier-I capital.

4.4 The total of Tier-II capital should not exceed 100% of Tier-I capital.

4.5 Eligible capital will be the sum of the whole of the PD's Tier-I capital, plus all of its Tier-II capital under the limits imposed, as summarized above.

4.6 The overall capital adequacy ratio will be calculated by establishing an explicit numerical link between the credit risk and the market risk factors, by multiplying the market risk capital charge with 6.67 i.e. the reciprocal of the minimum credit risk capital charge of 15 per cent.

4.7 The resultant figure is added to the sum of risk weighted assets worked out for credit risk purpose. The numerator for calculating the overall ratio will be the PD's total capital funds (Tier-I and Tier-II capital, after applicable deductions, if any). The calculation of capital charge is illustrated in PDR III format, enclosed as **Annex C**.

5 Regulatory reporting of Capital adequacy

All PDs should report the position of their capital adequacy in PDR III return (**Annex C**) on a quarterly basis. Apart from the Appendices I to V which are to be submitted along with PDR III return, PDs should also take into consideration the criteria for use of internal model to measure market risk capital charge (**Annex D**) along with the "Back Testing" mechanism (**Annex E**).

6 Diversification of PD Activities

6.1 The guidelines on diversification of activities by stand-alone PDs have been issued vide circular IDMD.PDRS.26/03.64.00/2006-07 dated July 4, 2006 and detailed in the Master Circular on Prudential Guidelines for Primary Dealers dated July 1, 2015.

6.2 The capital charge for market risk {Value-at-Risk (VaR) calculated at 99 per cent confidence level, 15-day holding period, with multiplier of 3.3} for the activities defined below should not be more than 20 per cent of the Net Owned Fund[2] (NOF) as per the last audited balance sheet:

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[2] In terms of the explanatory note to Section 45-IA of Chapter III-B of the RBI Act, 1934, NOF is calculated as (a) the aggregate of the paid-up equity capital and free reserves as disclosed in the latest balance-sheet of the company after deducting there from– (i) accumulated balance of loss; (ii) deferred revenue expenditure; and (iii) other intangible assets; and (b) further reduced by the amounts representing– (1) investments of such company in shares of– (i) its subsidiaries; (ii) companies in the same group; (iii) all other non-banking financial companies; and (2) the book value of debentures, bonds, outstanding loans and advances (including hire-purchase and lease finance) made

(i) Investment / trading in equity and equity derivatives

(ii) Investment in units of equity oriented mutual funds

(iii) Underwriting public issues of equity

6.3 PDs may calculate the capital charge for market risk on the stock positions/ underlying stock positions /units of equity oriented mutual funds using Internal Models (VaR based) as per the guidelines prescribed in **Appendix III** of **Annex C**. As regards credit risk arising out of exposure in equity, equity derivatives and equity oriented mutual funds, PDs may calculate the capital charge as per the guidelines prescribed in **Annex A.**

7 Risk reporting of derivative business

In order to capture interest rate risk arising out of Rupee interest rate derivative business, all PDs are advised to report the Rupee interest rate derivative transactions, as per the format enclosed in **Annex F**, to the Chief General Manager, IDMD, RBI, Central Office, Mumbai-400001, as on last working day of every month.

to, and deposits with,– (i) subsidiaries of such company; and (ii) companies in the same group, to the extent such amount exceeds ten per cent of (a) above.

Annex A
(See paras 3, 4.1 and 6.3)

CAPITAL ADEQUACY FOR CREDIT RISK

Credit risk is defined as the risk that a party to a contractual agreement or transaction will be unable to meet its obligations or will default on commitments.

Risk weights for calculation of CRAR

1. On-Balance Sheet Assets

All the on-balance sheet items are assigned percentage weights as per degree of credit risk. The value of each asset/item is to be multiplied by the relevant risk weight to arrive at risk adjusted value of the asset, as detailed below. The aggregate of the risk weighted assets will be taken into account for reckoning the minimum capital ratio.

		Nature of asset/item	Percentage weight
(i)	Cash balances and balances in Current Account with RBI		0
(ii)	Amounts lent in call/notice money market/ other money market instruments of banks/ Financial Institutions (FIs) including Certificate of Deposits (CDs) and balances in Current account with banks		20
(iii)	Investments		
	(a)	Government securities/Approved securities guaranteed by Central/State Governments [other than at (e) below]	0
	(b)	Fixed Deposits, Bonds of banks and FIs	20
	(c)	Bonds issued by banks/FIs as Tier-II capital	100
	(d)	Shares of all Companies and debentures/bonds/ Commercial Paper of Companies other than in (b) above /units of mutual funds	100
	(e)	Securities of Public Sector Undertakings guaranteed by Government but issued outside the market borrowing programme	20
	(f)	Securities of and other claims on PDs	100
	(g)	Subordinated debts issued by other PDs	100

(iv)	Current assets		
	(a)	Loans to staff	100
	(b)	Other secured loans and advances considered good	100
	(c)	Others (to be specified)	100
(v)	Fixed Assets (net of depreciation)		
	(a)	Assets leased out (net book value)	100
	(b)	Fixed Assets	100
(vi)	Other assets		
	(a)	Income tax deducted at source (net of provision)	0
	(b)	Advance tax paid (net of provision)	0
	(c)	Interest accrued on Government securities	0
	(d)	Others (to be specified and risk weight indicated as per counter party)	X

Notes:	*(1)*	*Netting may be done only in respect of assets where provisions for depreciation or for bad and doubtful debts have been made.*
	(2)	*Assets which have been deducted from capital fund, shall have a risk weight of `zero'.*
	(3)	*The PDs may net off the Current Liabilities and Provisions from the Current Assets, Loans and Advances in their Balance Sheet, as the Balance Sheet is drawn up as per the format prescribed under the Companies Act. For capital adequacy purposes, no such netting off should be done except to the extent indicated above.*

2. Off-Balance Sheet items

The credit risk exposure attached to off-Balance Sheet items has to be first calculated by multiplying the face value of each of the off-Balance Sheet items by ‘credit conversion factor (CCF)’ as indicated below. This will then have to be again multiplied by the weights attributable to the relevant counter-party as specified under on-balance sheet items.

	Nature of item	**CCF percentage**
(i)	Share/debenture/stock underwritten	50
(iii)	Partly-paid shares/debentures/other securities and actual devolvement	100
(iii)	Notional Equity/Index position underlying the equity Derivatives *	100
(iv)	Bills discounted/rediscounted	100
(vi)	Other contingent liabilities/commitments like standby commitments like standby facility with original maturity of over one year	50
(vii)	Similar contingent liabilities/ commitments with original maturity of upto one year or which can be unconditionally cancelled at any time	0

* For guidelines on calculation of notional positions underlying the equity derivatives, please refer to section A2, **Annex B** (Measurement of Market Risk)

Note: *Cash margins/deposits should be deducted before applying the Conversion Factor*

3. Interest Rate Contracts

3.1 General

The total risk weight for Interest Rate Derivative Contracts should be calculated by means of a two-step process:

(a) Compute counterparty credit exposure by converting the notional amount of the transaction into a credit equivalent amount by applying the current exposure method and

(b) The resulting credit equivalent amount is multiplied by the risk weight applicable to the counterparty or the type of asset, whichever is higher.

3.2 Current Exposure Method

(i) The credit equivalent amount of interest rate derivative contracts calculated using the current exposure method is the sum of current credit exposure and potential future credit exposure of these contracts.

(ii) Current credit exposure is defined as the sum of the positive mark-to-market value of these contracts. The Current Exposure Method requires periodical calculation of the current credit exposure by marking these contracts to market**,** thus capturing the current credit exposure.

(iii) Potential future credit exposure is determined by multiplying the notional principal amount of each of these contracts, irrespective of whether the contract has a zero, positive or negative mark-to-market value, by the relevant add-on factor indicated below according to the nature and residual maturity of the instrument.

Table 1: Credit Conversion Factor (CCF) for Interest Rate Derivative Contracts

Residual Maturity	**CCF (%)**
	Interest Rate Derivative Contracts
One year or less	0.50
Over one year to five years	1.00
Over five years	3.00

(iv) For contracts that are structured to settle outstanding exposure following specified payment dates and where the terms are reset such that the market value of the contract is zero on these specified dates, the residual maturity would be set equal to the time until the next reset date. However, in the case of interest rate contracts which have residual maturities of more than one year and meet the above criteria, the CCF or add-on factor is subject to a floor of 1.0 per cent.

(v) No potential future credit exposure would be calculated for single currency floating / floating interest rate swaps; the credit exposure on these contracts would be evaluated solely on the basis of their mark-to-market value.

(vi) Potential future exposures should be based on ‘effective’ rather than ’apparent notional amounts’. In the event that the ‘stated notional amount’ is leveraged or enhanced by the structure of the transaction, PDs must use the ‘effective notional amount’ when determining potential future exposure. For example, a stated notional amount of Rs. 5 crore with payments based on an internal rate of two times the applicable rate would have an effective notional amount of Rs 10 crore.

(vii) Bilateral netting of mark-to-market (MTM) values arising on account of such derivative contracts is not permitted. Accordingly, PDs should count their gross positive MTM value of such contracts for the purpose of capital adequacy.

4. Capital charge for repo/reverse repo transactions:

4.1 The repo-style transactions should attract capital charge for Counterparty credit risk (CCR), in addition to the credit risk and market risk. The CCR is defined as the risk of default by the counterparty in a repo-style transaction, resulting in non-delivery of the security lent/pledged/sold or non-repayment of the cash.

A. Treatment in the books of the borrower of funds:

(i) Where a PD has borrowed funds by selling / lending or posting, as collateral, of securities, the ‘Exposure’ will be an off-balance sheet exposure equal to the 'market value' of the securities sold/lent as scaled up after applying appropriate haircut as detailed in **paragraph 4.2 below**. The 'off-balance sheet exposure' will be converted into 'on-balance sheet' equivalent by applying a credit conversion factor of 100 per cent.

(ii) The amount of money received will be treated as collateral for the securities lent/sold/pledged. Since the collateral is cash, the haircut for it would be zero.

(iii) The credit equivalent amount arrived at (i) above, net of amount of cash collateral, will attract a risk weight as applicable to the counterparty.

(iv) As the securities will come back to the books of the borrowing PD after the repo period, it will continue to maintain the capital for the credit risk in the securities in the cases where the securities involved in repo are held under HTM category, and capital for market risk in cases where the securities are held under HFT category. The capital charge for credit risk / specific risk would be determined according to the credit rating of the issuer of the security. In the case of Government securities, the capital charge for credit / specific risk will be 'zero'.

B. Treatment in the books of the lender of funds:

(i) The amount lent will be treated as on-balance sheet/funded exposure on the counter party, collateralised by the securities accepted under the repo.

(ii) The exposure, being cash, will receive a zero haircut.

(iii) The collateral will be adjusted downwards/marked down as per applicable haircut.

(iv) The amount of exposure reduced by the adjusted amount of collateral, will receive a risk weight as applicable to the counterparty, as it is an on- balance sheet exposure.

(v) The lending PD will not maintain any capital charge for the security received by it as collateral during the repo period, since such collateral does not enter its balance sheet but is only held as a bailee.

4.2 Haircuts

(i) PDs should use only the standard supervisory haircuts for both the exposure as well as the collateral.

(ii) The standard supervisory haircuts (assuming daily mark-to-market, daily re-margining and minimum holding period of five business-days), expressed as percentages, would be as furnished in Table below.

(iii) The ratings indicated in Table 2 represent the ratings assigned by the domestic rating agencies. In the case of exposures toward debt securities issued by foreign central Governments and foreign corporates (if permitted), the haircut may be based on ratings of the International rating agencies as indicated in Table 3.

(iv) Sovereign will include Reserve Bank of India and DICGC which are eligible for zero per cent risk weight.

Table 2: Standard Supervisory Haircuts for Sovereign and other securities which constitute Exposure and Collateral

Sl. No.		Issue Rating for Debt securities	Residual Maturity (in years)	Haircut (in percentage)
A	**Securities issued / guaranteed by the Government of India and issued by the State Governments (Sovereign securities)**			
	i	Rating not applicable – as Government securities are not currently rated in India	≤ 1 year	0.5
			>1 year and ≤ 5 years	2
			>5 years	4
	Domestic debt securities other than those indicated at Item No. A above including the securities guaranteed by Indian State Governments			
	ii	AAA TO AA A1	≤ 1 year	1
			> 1 year and ≤ 5 years	4
			>5 years	8
	iii	A to BBB A2 and A3	≤ 1 year	2
			> 1 year and ≤ 5 years	6
			>5 years	12
B	**Cash in the same currency**			0

Table 3: Standard Supervisory Haircut for Exposures and Collaterals which are obligations of foreign central sovereigns / foreign corporates

Issue rating for debt securities as assigned by international rating agencies	Residual Maturity	Sovereigns (%)	Other Issues (%)
AAA to AA / A1	<= 1 year	0.5	1
	>1 year and < or = 5 years	2	4
	>5 years	4	8
A to BBB / A2 / A3 and Unrated Bank Securities	<= 1 year	1	2
	>1 year and < or = 5 years	3	6
	>5 years	6	12

(v) Where the collateral is a basket of assets, the haircut on the basket will be,

$$H = \sum a_i H_i$$

where a_i is the weight of the asset (as measured by the amount/value of the asset in units of currency) in the basket and H_i, the haircut applicable to that asset.

(vi) Adjustment for non-daily mark-to-market or remargining:

a. For repo style transactions, standalone PDs should use minimum holing period of five business days with daily remargining.

b. In case a transaction has different minimum holding period or margining frequency different from daily margining assumed, the applicable haircut for the transaction will also need to be adjusted by scaling up/down the haircut for 10-business days with daily margining indicated in Table 2 and 3 using the formula given in **paragraph 4.2 (vii)** below.

(vii) Formula for adjustment for different holding periods and / or non-daily mark-to-market or remargining:

Adjustment for the variation in holding period and margining / mark-to-market, as indicated in paragraph (vi) above will be done as per the following formula:

$$H = H_{10} \sqrt{\frac{N_r + (T_M - 1)}{10}}$$

Where:

H = haircut

H_{10} = 10-business-day standard supervisory haircut for instrument

N_R = actual number of business days between remargining for capital market transactions or revaluation for secured transactions

T_M = minimum holding period for the type of transaction

5 Capital requirements for exposures to Central Counterparties (CCPs)

5.1 Definitions

5.1.1 Counterparty Credit Risk (CCR) is the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default. CCR creates a bilateral risk of loss: the market value of the transaction can be positive or negative to either counterparty to the transaction. The market value is uncertain and can vary over time with the movement of underlying market factors.

5.1.2 Securities Financing Transactions (SFTs) are transactions such as repurchase agreements, reverse repurchase agreements, security lending and borrowing and, collateralised borrowing and lending (CBLO), where the value of the transactions depends on market valuations and the transactions are often subject to margin agreements.

5.1.3 Hedging Set is a group of risk positions from the transactions within a single netting set for which only their balance is relevant for determining the exposure amount or exposure at default under the CCR standardised method.

5.1.4 Current Exposure is the larger of zero, or the market value of a transaction or portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty, assuming no recovery on the value of those transactions in bankruptcy. Current exposure is often also called Replacement Cost.

5.1.5 A **central counterparty (CCP)** is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts. A CCP becomes counterparty to trades with market participants through novation, an open offer system, or another legally binding arrangement. For the purposes of the capital framework, a CCP is a financial institution.

5.1.6 A **qualifying central counterparty (QCCP)** is an entity that is licensed to operate as a CCP (including a license granted by way of confirming an exemption), and is permitted by the appropriate regulator / overseer with respect to the products offered. This is subject to the provision that the CCP is based and prudentially supervised in a jurisdiction where the relevant regulator/overseer has established, and publicly indicated that it applies to the CCP on an ongoing basis, domestic rules and regulations that are consistent with the CPSS-IOSCO Principles for Financial Market Infrastructures.

5.1.7 A **clearing member** is a member of, or a direct participant in, a CCP that is entitled to enter into a transaction with the CCP, regardless of whether it enters into trades with a CCP for its own hedging, investment or speculative purposes or whether it also enters into trades as a financial intermediary between the CCP and other market participants[3].

5.1.8 A **client** is a party to a transaction with a CCP through either a clearing member acting as a financial intermediary, or a clearing member guaranteeing the performance of the client to the CCP.

5.1.9 **Initial margin** means a clearing member's or client's funded collateral posted to the CCP to mitigate the potential future exposure of the CCP to the clearing member arising from the possible future change in the value of their transactions. For the purposes of these guidelines, initial margin does not include contributions to a CCP for mutualised loss sharing arrangements (i.e. in case a CCP uses initial margin to mutualise losses among the clearing members, it will be treated as a default fund exposure).

5.1.10 **Variation margin** means a clearing member's or client's funded collateral posted on a daily or intraday basis to a CCP based upon price movements of their transactions.

5.1.11 **Trade exposures** include the current[4] and potential future exposure of a clearing member or a client to a CCP arising from OTC derivatives, exchange traded derivatives transactions or SFTs, as well as initial margin. It also include cash transactions routed through a CCP.

5.1.12 **Default funds**, also known as clearing deposits or guarantee fund contributions (or any other names), are clearing members' funded or unfunded contributions towards, or underwriting of, a CCP's mutualised loss sharing arrangements. The description given by a CCP to its mutualised loss sharing arrangements is not determinative of their status as a default fund; rather, the substance of such arrangements will govern their status.

5.1.13 **Offsetting transaction** means the transaction leg between the clearing member and the CCP when the clearing member acts on behalf of a client (e.g. when a clearing member clears or novates a client's trade).

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[3] For the purposes of these guidelines, where a CCP has a link to a second CCP, that second CCP is to be treated as a clearing member of the first CCP. Whether the second CCP's collateral contribution to the first CCP is treated as initial margin or a default fund contribution will depend upon the legal arrangement between the CCPs. In such cases, if any, RBI should be consulted for determining the treatment of this initial margin and default fund contributions.

[4] For the purposes of this definition, the current exposure of a clearing member includes the variation margin due to the clearing member but not yet received.

5.2 Scope of Application

(i) Exposures to central counterparties arising from OTC derivatives transactions, exchange traded derivatives transactions, securities financing transactions (SFTs) and the settlement of cash transactions, will be subject to the counterparty credit risk treatment as indicted in this paragraph below.

(ii) When the clearing member-to-client leg of a transaction is conducted under a bilateral agreement, both the client PD and the clearing member are to capitalise that transaction.

(iii) For the purpose of capital adequacy framework, CCPs will be considered as financial institution and a standalone PD's investments in the capital of CCPs should not exceed 10% of its capital funds, but after all applicable deductions or any other limit as may be prescribed from time to time.

(iv) Capital requirements will be dependent on the nature of CCPs viz. Qualifying CCPs (QCCPs) and non-Qualifying CCPs.

  (a) Regardless of whether a CCP is classified as a QCCP or not, a standalone PD should have the responsibility to ensure that it maintains adequate capital for its exposures. A standalone PD should consider whether it might need to hold capital in excess of the minimum capital requirements if, for example, (i) its dealings with a CCP give rise to more risky exposures or (ii) where, given the context of that PD's dealings, it is unclear that the CCP meets the definition of a QCCP.

  (b) Standalone PDs may be required to hold additional capital against their exposures to QCCPs, if in the opinion of RBI, it is necessary to do so.

  (c) Where the standalone PD is acting as a clearing member, the PD should assess through appropriate scenario analysis and stress testing whether the level of capital held against exposures to a CCP adequately addresses the inherent risks of those transactions. This assessment will include potential future or contingent exposures resulting from future drawings on default fund commitments, and/or from secondary commitments, if permitted, to take over or replace offsetting transactions from clients of another clearing member in case of this clearing member defaulting or becoming insolvent.

  (d) A standalone PD must monitor and report to senior management and the appropriate committee of the Board (e.g. Risk Management Committee) on a regular basis (quarterly or at more frequent intervals) all of its exposures to

CCPs, including exposures arising from trading through a CCP and exposures arising from CCP membership obligations such as default fund contributions.

(e) Unless Reserve Bank requires otherwise, the trades with a former QCCP may continue to be capitalised as though they are with a QCCP for a period not exceeding three months from the date it ceases to qualify as a QCCP. After that time, the PD's exposures with such a central counterparty must be capitalised according to rules applicable for non-QCCP.

5.3 Exposures to Qualifying CCPs (QCCPs)

(i) Trade exposures

Clearing member exposures to QCCPs

a. Where a standalone PD acts as a clearing member of a QCCP for its own purposes, a risk weight of 2% must be applied to the standalone PD's trade exposure to the QCCP.
b. The exposure amount for trade exposure in respect of OTC derivatives transactions, exchange traded derivatives transactions and SFTs should be calculated in accordance with the Current Exposure Method (CEM) for derivatives as detailed in **paragraph 3.2** above and rules for capital adequacy for Repo / Reverse Repo-style transactions prescribed in **paragraph 4** above.
c. Where settlement is legally enforceable on a net basis in an event of default and regardless of whether the counterparty is insolvent or bankrupt, the total replacement cost of all contracts relevant to the trade exposure determination can be calculated as a net replacement cost if the applicable close-out netting sets meet the requirements given below **in paragraph 5.5** of these guidelines.
d. Standalone PDs should have to demonstrate that the conditions mentioned in **paragraph 5.5** of the guidelines are fulfilled on a regular basis by obtaining independent and reasoned legal opinion as regards legal certainty of netting of exposures to QCCPs. Standalone PDs may also obtain from such QCCPs, the legal opinion taken by the QCCPs on the legal certainty of their major activities such as settlement finality, netting, collateral arrangements (including margin arrangements); default procedures etc.

Clearing member exposures to clients

The clearing member will always capitalise its exposure to clients as bilateral trades, irrespective of whether the clearing member guarantees the trade or acts as an intermediary between the client and the QCCP. However, to recognize the shorter close-out period for cleared transactions, clearing members can capitalize the exposure to their clients by multiplying the exposure at default by a scalar which is not less than 0.71.

Client PD exposures to clearing member

I. Where a PD is a client of the clearing member, and enters into a transaction with the clearing member acting as a financial intermediary (i.e. the clearing member completes an offsetting transaction with a QCCP), the client's exposures to the clearing member will receive the treatment applicable to the paragraph "clearing member exposure to QCCPs" of this section (mentioned above), if following conditions are met:

(a) The offsetting transactions are identified by the QCCP as client transactions and collateral to support them is held by the QCCP and / or the clearing member, as applicable, under arrangements that prevent any losses to the client due to:

i. the default or insolvency of the clearing member;
ii. the default or insolvency of the clearing member's other clients; and
iii. the joint default or insolvency of the clearing member and any of its other clients.

The client PD must obtain an independent, written and reasoned legal opinion that concludes that, in the event of legal challenge, the relevant courts and administrative authorities would find that the client would bear no losses on account of the insolvency of an intermediary under the relevant law, including:

- the law(s) applicable to client PD, clearing member and QCCP;
- the law of the jurisdiction(s) of the foreign countries in which the client PD, clearing member or QCCP are located
- the law that governs the individual transactions and collateral; and
- the law that governs any contract or agreement necessary to meet this condition (a).

(b) Relevant laws, regulations, rules, contractual, or administrative arrangements provide that the offsetting transactions with the defaulted or insolvent clearing member are highly likely to continue to be indirectly transacted through the QCCP, or by the QCCP, should the clearing member default or become insolvent. In such circumstances, the client positions and collateral with the QCCP will be transferred at the market value unless the client requests to close out the position at the market value. In this context, it may be clarified that if relevant laws, regulations, rules, contractual or administrative agreements provide that trades are highly likely to be ported, this condition can be considered to be met. If there is a clear precedent for transactions being ported at a QCCP and intention of the participants is to continue this practice, then these factors should be considered while assessing if trades are highly likely to be ported. The fact that QCCP documentation does not prohibit client trades from being ported is not sufficient to conclude that they are highly likely to be ported.

Other evidence such as the criteria mentioned in this paragraph is necessary to make this claim.

II. Where a client is not protected from losses in the case that the clearing member and another client of the clearing member jointly default or become jointly insolvent, but all other conditions mentioned above are met and the concerned CCP is a QCCP, a risk weight of 4% will apply to the client's exposure to the clearing member.

III. Where the client PD does not meet the requirements in the above paragraphs, the PD should be required to capitalize its exposure to the clearing member as a bilateral trade.

IV. In case a standalone PD as a client enters into a transaction with the QCCP with a clearing member guaranteeing its performance, the capital requirements for client PD should be calculated as if client PD has entered into a bilateral contract with the clearing member.

Treatment of posted collateral

(a) In all cases, any assets or collateral posted must, from the perspective of the PD posting such collateral, receive the risk weights that otherwise applies to such assets or collateral under the capital adequacy framework, regardless of the fact that such assets have been posted as collateral. Where assets or collateral of a clearing member or client are posted with a QCCP or a clearing member and are not held in a bankruptcy remote manner, the PD posting such assets or collateral must also recognise credit risk based upon the assets or collateral being exposed to risk of loss based on the creditworthiness of the entity[5] holding such assets or collateral.

(b) Collateral posted by the clearing member (including cash, securities, other pledged assets, and excess initial or variation margin, also called over-collateralisation), that is held by a custodian[6], and is bankruptcy remote from the QCCP, is not subject to a capital requirement for counterparty credit risk exposure to such bankruptcy remote custodian.

(c) Collateral posted by a client, that is held by a custodian, and is bankruptcy remote from the QCCP, the clearing member and other clients, is not subject to a capital requirement for counterparty credit risk. If the collateral is held at the QCCP on a client's behalf and is not held on a bankruptcy remote basis, a 2% risk weight will be

[5] Where the entity holding such assets or collateral is the QCCP, a risk-weight of 2% applies to collateral included in the definition of trade exposures. The relevant risk-weight of the QCCP will apply to assets or collateral posted for other purposes.

[6] In this paragraph, the word "custodian" may include a trustee, agent, pledgee, secured creditor or any other person that holds property in a way that does not give such person a beneficial interest in such property and will not result in such property being subject to legally-enforceable claims by such persons, creditors, or to a court-ordered stay of the return of such property, should such person become insolvent or bankrupt.

applied to the collateral if the conditions established in paragraph on “client PD exposures to clearing members” of this section are met (mentioned above). A risk weight of 4% will be made applicable if a client is not protected from losses in the case that the clearing member and another client of the clearing member jointly default or become jointly insolvent, but all other conditions mentioned in paragraph on “client PD exposures to clearing members” of this section are met.

(d) If a clearing member collects collateral from a client for client cleared trades and this collateral is passed on to the QCCP, the clearing member may recognize this collateral for both the QCCP - clearing member leg and the clearing member - client leg of the client cleared trade. Therefore, initial margins (IMs) as posted by clients to clearing members mitigate the exposure the clearing member has against these clients.

(ii) Default Fund Exposures to QCCPs

(a) Where a default fund is shared between products or types of business with settlement risk only (e.g. equities and bonds) and products or types of business which give rise to counterparty credit risk i.e., OTC derivatives, exchange traded derivatives or SFTs, all of the default fund contributions will receive the risk weight determined according to the formulae and methodology set forth below, without apportioning to different classes or types of business or products.

(b) However, where the default fund contributions from clearing members are segregated by product types and only accessible for specific product types, the capital requirements for those default fund exposures determined according to the formulae and methodology set forth below must be calculated for each specific product giving rise to counterparty credit risk. In case the QCCP’s prefunded own resources are shared among product types, the QCCP will have to allocate those funds to each of the calculations, in proportion to the respective product specific exposure i.e. exposure at default.

(c) Clearing member PDs are required to capitalise their exposures arising from default fund contributions to a qualifying CCP by applying the following formula:

Clearing member PDs may apply a risk-weight of 1111% to their default fund exposures to the qualifying CCP, subject to an overall cap on the risk-weighted assets from all its exposures to the QCCP (i.e. including trade exposures) equal to 20% of the trade exposures to the QCCP. More specifically, the Risk Weighted

Assets (RWA) for both PD *i*'s trade and default fund exposures to each QCCP are equal to[7]:

*Min {(2% * TEi + 1111% * DFi); (20% * TEi)}*

Where;

-TEi is PD *i*'s trade exposure to the QCCP; and

-DFi is PD *i*'s pre-funded contribution to the QCCP's default fund.

5.4 Exposures to Non-qualifying CCPs

(a) PDs must apply the Standardised Approach for credit risk according to the category of the counterparty, to their trade exposure to a non-qualifying CCP[8].

(b) PDs must apply a risk weight of 1111% to their default fund contributions to a non-qualifying CCP.

(c) For the purposes of this paragraph, the default fund contributions of such PDs will include both the funded and the unfunded contributions which are liable to be paid should the CCP so require. Where there is a liability for unfunded contributions (i.e. unlimited binding commitments) the Reserve Bank will determine the amount of unfunded commitments to which an 1111% risk weight should apply.

5.5 Requirements for Recognition of Net Replacement Cost in Close-out Netting Sets

A. For repo-style transactions

The effects of bilateral netting agreements covering repo-style transactions will be recognised on a counterparty-by-counterparty basis if the agreements are legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of whether the counterparty is insolvent or bankrupt. In addition, netting agreements must:

(a) provide the non-defaulting party the right to terminate and close-out in a timely manner all transactions under the agreement upon an event of default, including in the event of insolvency or bankruptcy of the counterparty;

(b) provide for the netting of gains and losses on transactions (including the value of any collateral) terminated and closed out under it so that a single net amount is owed by one party to the other;

(c) allow for the prompt liquidation or setoff of collateral upon the event of default; and

[7] The 2% risk weight on trade exposures does not apply additionally, as it is included in the equation.

(d) be, together with the rights arising from the provisions required in (a) to (c) above, legally enforceable in each relevant jurisdiction upon the occurrence of an event of default and regardless of the counterparty's insolvency or bankruptcy.

B. For Derivatives transactions

(a) PDs may net transactions subject to novation under which any obligation between a PD and its counterparty to deliver a given currency on a given value date is automatically amalgamated with all other obligations for the same currency and value date, legally substituting one single amount for the previous gross obligations.

(b) PDs may also net transactions subject to any legally valid form of bilateral netting not covered in (a), including other forms of novation.

(c) In both cases (a) and (b), a PD will need to satisfy that it has:

(i) A netting contract or agreement with the counterparty which creates a single legal obligation, covering all included transactions, such that the PD would have either a claim to receive or obligation to pay only the net sum of the positive and negative mark-to-market values of included individual transactions in the event a counterparty fails to perform due to any of the following: default, bankruptcy, liquidation or similar circumstances;

(ii) Written and reasoned legal opinions that, in the event of a legal challenge, the relevant courts and administrative authorities would find the PD's exposure to be such a net amount under:

- The law of the jurisdiction in which the counterparty is chartered and, if the foreign branch of a counterparty is involved, then also under the law of the jurisdiction in which the branch is located;
- The law that governs the individual transactions; and
- The law that governs any contract or agreement necessary to effect the netting.

(iii) Procedures in place to ensure that the legal characteristics of netting arrangements are kept under review in the light of possible changes in relevant law.

(d) Contracts containing walkaway clauses will not be eligible for netting for the purpose of calculating capital requirements under these guidelines. A walkaway clause is a provision which permits a non-defaulting counterparty to make only limited payments or no payment at all, to the estate of a defaulter, even if the defaulter is a net creditor.

6. Foreign Exchange (FE) Contracts (*if permitted*)

Like the interest rate contracts, the outstanding contracts should be first multiplied by a conversion factor as shown below:

Aggregate outstanding FE contracts of original maturity	Conversion Factor
Less than one year	2%
For each additional year or part thereof	3%

This will then have to be again multiplied by the weights attributable to the relevant counter-party as specified above. Foreign exchange contracts with an original maturity of 14 calendar days or less, irrespective of the counterparty, may be assigned "zero" risk weight as per international practice.

7. Single Name Credit Default Swaps (CDS) on Corporate Bonds

For CDS related transactions, standalone PDs may follow the capital adequacy guidelines issued vide circular IDMD.PCD.No.2301/14.03.04/2011-12 dated November 30, 2011 and as updated from time to time.

Annex B
(See paras 3 and 4.1 of the main guidelines)

MEASUREMENT OF MARKET RISK

Market risk may be defined as the risk of loss arising from movements in market prices or rates away from the rates or prices set out in a transaction or agreement. The objective in introducing the capital adequacy for market risk is to provide an explicit capital cushion for the price risk to which the PDs are exposed to in their portfolio.

2. The capital charge for market risks should be worked out by the standardised approach and the internal risk management framework based Value at Risk (VaR) model. The capital charge for market risk to be provided by PDs would be higher of the two requirements. However, where price data is not available for specific category of assets, PDs may follow the standardised approach for computation of market risk. In such a situation, PDs should disclose to RBI, details of such assets and ensure that consistency of approach is followed. PDs should obtain RBI's permission before excluding any category of asset for calculations of market risk. PDs would normally consider the instruments of the nature of fixed deposits, commercial bills etc., for this purpose. Such items will be held in the books till maturity and any diminution in the value will have to be provided for in the books.

Note: *In case of underwriting commitments, following points should be adhered to:*

a. *In case of devolvement of underwriting commitment for G-Sec, 100% of the devolved amount would qualify for the measurement of market risk.*
b. *In case of underwriting under merchant banking issues (other than G-Sec), where price has been committed/frozen at the time of underwriting, the commitment is to be treated as a contingent liability and 50% of the commitment should be included in the position for market risk. However, 100% of devolved position should be subjected to market risk measurement.*

3. The methodology for working out the capital charges for market risk on the portfolio is as below:

A. Standardized Approach

Capital charge will be the measure of risk arrived at in terms of paras A1 – A3 below, summed arithmetically.

A1. For Fixed Income Instruments

Duration method would continue to apply as hitherto. Under this, the price sensitivity of all interest rate positions viz., Dated securities, Treasury bills, Commercial papers, PSU/FI/Corporate Bonds, Special Bonds, Mutual Fund units and derivative instruments like IRS, FRA, IRF etc., including underwriting commitments/devolvement and other contingent liabilities having interest rate/equity risk will be captured.

In duration method, the capital charge is the sum of four components namely:

a) the net short or long position in the whole trading book;

b) a small proportion of the matched positions in each time-band (the "*vertical disallowance*'');

c) a larger proportion of the matched positions across different time-bands (the "*horizontal disallowance*'') ;and

d) a net charge for positions in options, where appropriate.

Note 1*: Since short position in India is allowed only in derivatives and G-Sec, netting as indicated at (a) and the system of `disallowances' as at (b) and (c) above are applicable currently only to the PDs entering into FRAs / IRSs / exchange traded derivatives and G-Sec.*

However, under the duration method, PDs with the necessary capability may, with RBI's permission use a more accurate method of measuring all of their general market risks by calculating the price sensitivity of each position separately. PDs must select and use the method on a consistent basis and the system adopted will be subjected to monitoring by the RBI. The mechanics of this method are as follow:

(i) first calculate the price sensitivity of all instruments in terms of a change in interest rates between 0.6 and 1.0 percentage points depending on the duration of the instrument (as per Table 1 given below);

(ii) slot the resulting sensitivity measures into a duration-based ladder with the thirteen time-bands set out in Table 1**;**

(iii) subject the lower of the long and short positions in each time-band to a 5% capital charge towards vertical disallowance designed to capture basis risk;

(iv) carry forward the net positions in each time-band for horizontal offsetting across the zones subject to the disallowances set out in Table 2.

Note 2: *Points (iii) and (iv) above are applicable only where opposite positions exist as explained at Note 1 above.*

Table 1	
Duration time-bands and assumed changes in yield (%)	
Zone 1	
0 to 1 month	1.00
1 to 3 months	1.00
3 to 6 months	1.00
6 to 12 months	1.00
Zone 2	
1 to 2 years	0.95
2 to 3 years	0.90
3 to 4 years	0.85
Zone 3	
4 to 5 years	0.85
5 to 7 years	0.80
7 to 10 years	0.75
10 to 15 years	0.70
15 to 20 years	0.65
Over 20 years	0.60

Table 2				
Horizontal disallowances				
Zones	**Time-band**	**Within the zone**	**Between adjacent zones**	**Between zones 1 and 3**
Zone 1	0 – month	40%	40%	100%
	1 – 3 months			
	3 – 6 months			
	6 – 12 months			
Zone 2	1 – 2 years	30%		
	2 – 3 years			
	3 – 4 years			
Zone 3	4 – 5 years	30%		
	5 – 7 years			
	7 – 10 years			
	10 – 15 years			
	15 – 20 years			
	Over 20 years			

The gross positions in each time-band will be subject to risk weighting as per the assumed change in yield set out in Table 1, with no further offsets.

A1.1 Capital charge for interest rate derivatives

The measurement system should include all interest rate derivatives and off balance-sheet instruments in the trading book which react to changes in interest rates, (e.g. FRAs, other forward contracts, bond futures, interest rate positions).

A1.2 Calculation of positions

Derivatives should be converted into positions in the relevant underlying and subjected to market risk charges as described above. In order to calculate the market risk as per the standardized approach described above, the amounts reported should be the market value of the principal amount of the underlying or of the notional underlying.

A1.3 Futures and Forward Contracts (including FRAs)

These instruments are treated as a combination of a long and a short position in a notional government security. The maturity of a future contract or an FRA will be the period until delivery or exercise of the contract, plus - where applicable - the life of the underlying instrument. For example, a long position in a June three-month IRF taken in April is to be reported as a long position in a government security with a maturity of five months and a short position in a government security with a maturity of two months. Where a range of deliverable instruments may be delivered to fulfill the contract, the PD has flexibility to elect which deliverable security goes into the maturity or duration ladder but should take account of any conversion factor defined by the exchange. In the case of a future on a corporate bond index, positions will be included at the market value of the notional underlying portfolio of securities.

A1.4 Swaps

Swaps will be treated as two notional positions in G-Sec with relevant maturities. For example, an IRS under which a PD is receiving floating rate interest and paying fixed will be treated as a long position in a floating rate instrument of maturity equivalent to the period until the next interest fixing and a short position in a fixed-rate instrument of maturity equivalent to the residual life of the swap. For swaps that pay or receive a fixed or floating interest rate against some other reference price, e.g. a stock index, the interest rate component should be slotted into the appropriate re-pricing maturity category, with the equity component being included in the equity framework.

A1.5 Calculation of capital charges

Allowable offsetting of matched positions - PDs may exclude from the interest rate maturity framework altogether (long and short positions, both actual and notional) in identical instruments with exactly the same issuer, coupon and maturity. A matched position in a future or forward and its corresponding underlying may also be fully offset, and thus excluded from the calculation. When the future or the forward comprises a range of deliverable instruments, offsetting of positions in the future or forward contract and its underlying is only permissible in cases where there is a readily identifiable underlying security which is most profitable for the trader with a short position to deliver. The leg representing the time to expiry of the future should, however, be taken into account. The price of this security, sometimes called the "cheapest-to-deliver", and the price of the future or forward contract should in such cases move in close alignment.

In addition, opposite positions in the same category of instruments can in certain circumstances be regarded as matched and allowed to offset fully. To qualify for this treatment the positions must relate to the same underlying instruments and be of the same nominal value. In addition:

(i) **For futures**: offsetting positions in the notional or underlying instruments to which the futures contract relates must be for identical products and mature within seven days of each other;

(ii) **For swaps and FRAs**: the reference rate (for floating rate positions) must be identical and the coupon closely matched (i.e. within 15 basis points); and

(iii) **For swaps, FRAs and forwards**: the next interest fixing date or, for fixed coupon positions or forwards, the residual maturity must correspond within the following limits:
- less than one month hence: same day;
- between one month and one year hence: within seven days;
- over one year hence: within thirty days.

PDs with large swap books may use alternative formulae for these swaps to calculate the positions to be included in the duration ladder. One method would be to first convert the payments required by the swap into their present values. For that purpose, each payment should be discounted using zero coupon yields, and a single net figure for the present value of the cash flows entered into the appropriate time-band using procedures that apply to zero (or low) coupon bonds; these figures should be slotted into the general market risk framework as set out earlier. An alternative method would be to calculate the sensitivity of the net present value implied by the change in yield used in the duration method and allocate these sensitivities into the time-bands set out in Table 1. Other methods which produce similar results could also be used. Such alternative treatments will, however, only be allowed if:

- the supervisory authority is fully satisfied with the accuracy of the systems being used;
- the positions calculated fully reflect the sensitivity of the cash flows to interest rate changes and are entered into the appropriate time-bands;

General market risk applies to positions in all derivative products in the same manner as for cash positions, subject only to an exemption for fully or very closely-matched positions in identical instruments as defined in above paragraphs. The various categories of instruments should be slotted into the maturity ladder and treated according to the rules identified earlier.

A2 Capital charge for equity positions[8]

A2.1 Equity positions

This section sets out a minimum capital standard to cover the risk of holding or taking positions in equities by the PDs. It applies to long and short positions in all instruments that exhibit market behavior similar to equities, but not to non-convertible preference shares (which will be covered by the interest rate risk requirements). Long and short positions in the same issue may be reported on a net basis. The instruments covered include equity shares, convertible securities that behave like equities, i.e., units of Mutual Funds and commitments to buy or sell equities. The equity or equity like positions including those arrived at in relation to equity /index derivatives as described in following sections may be included in the duration ladder below one month.

A2.2 Equity derivatives

Equity derivatives and off balance-sheet positions which are affected by changes in equity prices should be included in the measurement system. This includes futures and swaps on both individual equities and on stock indices. The derivatives are to be converted into positions in the relevant underlying.

[8] As per the circular IDMD.PDRS.26/03.64.00/2006-07 dated July 4, 2006 on "Diversification of PD Activities", PDs have been allowed to calculate the capital charge for market risk on equity and equity derivatives using the Internal Models approach only.

A2.3 Calculation of positions

In order to calculate the market risk as per the standardized approach for credit and market risk, positions in derivatives should be converted into notional equity positions:

- futures and forward contracts relating to individual equities should in principle be reported at current market prices;
- futures relating to stock indices should be reported as the marked-to-market value of the notional underlying equity portfolio;
- equity swaps are to be treated as two notional positions

A3 Capital Charge for Foreign Exchange (FE) Position (*if permitted*):

PDs normally would not be dealing in FE transactions. However, as they have been permitted to raise resources under FCNR (B) loan route, subject to prescribed guidelines, they may end up holding open FE positions. Such open positions in equivalent rupees arrived at by marking to market at FEDAI rates will be subject to a flat market risk charge of 15 per cent.

B. Internal risk management framework based method

The PDs should calculate the capital requirement based on their internal risk management framework based VaR model for market risk, as per the following minimum parameters:

(a) ***VaR*** must be computed on a daily basis at a 99th percentile, one-tailed confidence interval.

(b) An instantaneous price shock equivalent to a 15-day movement in prices is to be used, i.e. the minimum "holding period" will be fifteen trading days.

(c) Interest rate sensitivity of the entire portfolio should be captured on an integrated basis by including all fixed income securities like G-Sec, Corporate/PSU bonds, CPs and derivatives like IRS, FRAs, IRFs, etc., based on the mapping of the cash flows to work out the portfolio VaR. Wherever data for calculating volatilities is not available, PDs may calculate the volatilities of such instruments using the G-Sec yield curve with appropriate spread. However, the details of such instruments and the spreads applied have to be reported and consistency of methodology should be ensured.

(d) Instruments which are part of trading book, but found difficult to be subjected to measurement of market risk may be applied a flat market risk measure of 15 per cent. These include units of Mutual Funds, unquoted equity, etc., and should be added arithmetically to the measure obtained under VaR in respect of other instruments.

(e) Underwriting commitments as explained at the beginning of the Annex should also be mapped into the VaR framework for risk measurement purposes.

(f) The unhedged FE position arising out of the foreign currency borrowings under FCNR (B) loans scheme would carry a market risk of 15 per cent as hitherto and the measure obtained will be added arithmetically to the VaR measure obtained for other instruments.

(g) The choice of *historical observation period* (sample period) for calculating VaR will be constrained to a minimum length of one year and not less than **250** trading days. For PDs who use a weighting scheme or other methods for the historical observation period, the "effective" observation period must be at least one year (that is, the weighted average time lag of the individual observations cannot be less than 6 months).

(h) The capital requirement will be the higher of:

   a) the previous day's VaR number measured according to the above parameters specified in this section; and

   b) the average of the daily VaR measures on each of the preceding **sixty** business days, multiplied by a multiplication factor prescribed by the RBI (**3.3** presently).

(i) No particular type of model is prescribed. So long as the model used captures all the material risks run by the PDs, they will be free to use models, based for example, on variance-covariance matrices, historical simulations, Monte Carlo simulations or Extreme Value Theory (EVT), etc.

(j) The criteria for use of internal model to measure market risk capital charge are given in **Annex D**.

Annex C
(See paras 4.7, 5 and 6.3)

PDR III Return - Format

Statement of Capital Adequacy - Quarter ended -
Name of the Primary Dealer :
Statement - 1 (Summary) **(Amount in Rs.)**

(i) Total of Risk Weighted Assets(RWA) for Credit Risk (Appendix I)

(ii) (a) Tier-I Capital funds (after deductions)
(b) Tier-II Capital funds eligible
(c) Total of available Tier-I & II capital funds

(iii) Minimum credit risk capital required
i.e. **(i)** x 15 per cent

(iv) Excess of Tier-I & II capital funds available
for market risk capital charge i.e. **(ii)** (c) – **(iii)**

(v) The Market Risk capital charge worked
out as the higher of the amounts under the
Standardised method and the one as per
internal risk management framework based VaR model
(Appendices II and III)

(vi) Capital funds available to meet **(v)**
i.e: excess of Tier-I and Tier-II as at **(iv)** above,

(vii) ***Over all Capital Adequacy***
(a) Total RWA for credit risk i.e. **(i)**
(b) Capital charge for market risk i.e. **(v)**
(c) Numerical Link for **(b)** = 6.67
i.e.(reciprocal of credit risk capital ratio of 15%)
(d) Risk Weighted Assets relating to
Market Risk i.e. **(b)** x **(c)**
(e) Total Risk Weighted Assets i.e. **(a)** + **(d)**
(f) Minimum capital required i.e. **(e)** x 15%
(g) Total Capital funds available i.e. **(ii)** + **(vi)**
(h) **<u>less</u> :** Capital funds prescribed by other regulators/
licensors e.g. SEBI/ NSE/ BSE/OTCEI
(i) Net capital funds available (**g – h**)
for PD business

(viii) Capital to Risk-Weighted Assets Ratio (CRAR) % **(i / e) * 100**

Following Appendices are to be sent along with the PDR III Return:

Appendix I - Details of the various on-balance sheet and off-balance sheet items, the risk weights assigned and the risk adjusted value of assets have to be reported in this format. The format enclosed is purely illustrative. PDs are required to adhere to the guidelines on activities permitted to be undertaken by PDs while diversifying business activities.

Appendix II - Details of the market risk charge using the standardised model as per the format enclosed.

Appendix III - Details of market risk using the VaR based internal model as per the format enclosed.

Appendix IV - Details of back-testing results for the previous quarter, giving the details of VaR predicted by the model, the actual change in the value of the portfolio and the face value of the portfolio.

Appendix V - Details of stress testing, along with details of the change in the value of the portfolio for a given change in the yield, in the format enclosed.

Appendix I

CREDIT RISK

A. BALANCE SHEET ITEMS

FUNDED RISK ASSET	BOOK VALUE Rupees	RISK WEIGHT %	RISK ADJUSTED VALUE
I. Cash balances and balances in current account with RBI		0%	
II. Amount lent in call/ notice money market and balances in current account with banks		20%	
III. Investments			
(a) Government securities/ Approved securities guaranteed by Central / State governments other than at (e) below		0%	
(b) Fixed deposits, Bonds and Certificates of Deposit of banks, PDs and Public Financial Institutions		20%	
(c) Bonds issued by banks / PDs / public financial Institutions (as specified by DBR) as Tier-II capital		100%	
(d) Shares of all companies and debentures / bonds / commercial papers of companies other than in (b) above/ units of mutual funds		100%	
(e) Securities of Public Sector Undertakings guaranteed by Central / State Govts. but issued outside the market borrowing programme *Note: In case where the guarantee has been invoked and the concerned state government has remained in default, PDs should assign 100% risk weight.*		20%	
(f) Securities of and other exposures on PDs in the Government Securities market including bills rediscounted		100%	
(g) Subordinated debts issued by other PDs as Tier-II capital		100%	
IV. Current Assets			
(a) Loans to staff		100%	
(b) Other secured loans and advances considered good		100%	
(c) Others (to be specified)		100%	
V. Fixed Assets (net of depreciation)			
(a) Assets leased out		100%	
(b) Fixed Assets		100%	

VI. Other assets			
(a) Income-tax deducted at source (net of provision)		0%	
(b) Advance tax paid (net of provision)		0%	
(c) Interest due on Government securities		0%	
(d) Others (to be specified and risk weight indicated as per the counter party)		X%	

AA. TOTAL RISK-WEIGHTED BALANCE SHEET ASSETS

B. OFF-BALANCE SHEET ITEMS

FUNDED RISK ASSET	BOOK VALUE Rupees	CREDIT CONV FACTOR %	RISK WEIGHT %	RISK ADJ VALUE
i. Share/ debenture/ auction stock underwritten				
- Government/ any exposure guaranteed by Government		50	0	
- Banks/ Financial Institutions		50	20	
- PDs		50	100	
- All others		50	100	
ii. Partly-paid shares/debentures including actual devolvement and other securities				
- Government/ any exposure guaranteed by Government		100	0	
- Banks/ Financial Institutions		100	20	
- PDs in the Government securities market		100	100	
- All others		100	100	
iii. Notional Equity/Index Positions underlying the equity derivative		100	100	
iv. Repurchase agreements where the credit risk remains with the PD				
- Government/ any exposure guaranteed by Government		100	0	
- Banks/ Financial Institutions		100	20	
- PDs		100	100	
- All others		100	100	
v. Other contingent liabilities/ commitments like standby facility with original maturity of over one year				
- Government/ any exposure guaranteed by Government		50	0	
- Banks/ Financial Institutions		50	20	
- PDs		50	100	
- All others		50	100	
vi. Interest Rate Swaps*				
Original maturity of less than 1 year		0.5		
Original maturity of 1 year and above but less than 2 years		1		
Original maturity of 2 years and above but less than 3 years		2		
Original maturity of 3 years and above but less than 4 years		3		
Original maturity of 4 years and above but less than 5 years		4		
Original maturity of 5 years and above but less than 6 years		5		
Original maturity of 6 years and above but less		6		

than 7 years *(Every additional year – Credit Conversion Factor increases by 1%)*				
vii. <u>Foreign Exchange Forward Contract*</u>				
Original maturity of less than 1 year$		2		
Original maturity of more than 1 year and less than 2 years$ *(Every additional year – CCF increases by 3%)* *$ Risk depends on the counter party*		5		

Note: Cash margins/deposits should be deducted before applying the credit conversion factor
**:Risk weights would be as per the counterparty*

BB. TOTAL RISK-WEIGHTED OFF-BALANCE SHEET ASSETS

C. TOTAL RISK-WEIGHTED BALANCE SHEET & OFF-BALANCE SHEET ASSETS

Appendix II

PDR-III Quarterly Return

Statement 2

MARKET RISK CAPITAL STATEMENT
(Appreciation in book value not recognized)

Standardised Method

A. Interest rate Instruments & Equity /Equity like instruments

INSTRUMENT	Maturity Date	POSITION (FV)	BOOK PRICE	BOOK VALUE	MODI FIED DURA TION	DURATION BUCKET	ZONE	YIELD	ASSUMED CHANGE IN YIELD (bps)	CHANGED YIELD	CHANGED PRICE	CHANGE IN PRICE	MARKET RISK CHARGE
(Including equity positions) (1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total of A													
B. Unhedged Foreign Exchange Position													**15%**
Total of B													
Total (A+B)													

	Position (Marked to Market value)	Market Risk Measure (15% of the position)
C. Unhedged Foreign Exchange Position		

D. Asset items subjected to flat charge of 15% for market risk measurement

Memo items:

Items of assets which, with the approval of RBI, have been classified as investment items and not subjected to market risk measure:

	Asset	Book Value	MTM/NAV
1.			
2.			
3.			

Appendix III

VaR Calculation

Details of the VaR calculation – for the last 60 days				
	Total			
Date	**Portfolio Value (Rs.)**	**VaR (Rs.) One Day**	**VaR with holding period**	**VaR with holding period as a percentage of portfolio**
(a) Average of 60 day VaR (with holding period)				
(b) 3.3 times the 60 day average VaR (with holding period)				
(c) Last day's VaR				
(d) Market Risk Measure {higher of (b) and (c) above}				

Appendix IV

Back Testing of VaR Model

For the last 250 trading days

Backtesting Report as part of PDR III for Quarter ended…………………..

	Actual	Hypothetical
No. of observations (excluding holidays)	250	250
No. of failures, i.e. No. of times VaR underpredicted the actual trading/hypothetical MTM losses	…..	…..

DATE-WISE BACKTESTING RESULTS

(Rs. in crore)

S. No.	Date	1 day VaR Entire Portfolio	Mkt. Value Entire Portfolio	Mkt. Value Next Day Same Portfolio	Difference	Failure (Y/N)	Actual P/L	Failure (Y/N)
1								
2								
3								
4								
.								
.								
.								
.								
.								
.								
250								

The daily VaR preceding holidays should be up-scaled by the square root of number of intervening holidays. For, example, if the Friday is followed by 2 holidays, then the one VaR figure for Friday should be multiplied by square root of 2.

Appendix V

Details of Stress Testing

		STRESS TEST AS ON:	
Name of the PD:			
ASSETS (All tradable interest rate related assets)			
		MTM Value (Rs. Crore)	**Weighted Average Mod. Duration (years)**
1	G-Sec and T-Bills		
2	Corporate/PSU/FI Bonds		
3	Receiving leg in respect of FRA/IRS		
4	Other tradable interest rate instruments		
Total MTM value of assets (Va)			
Weighted Average Mod. Duration of the assets (Da)			
LIABILITES (excluding NOF)			
		MTM Value (Rs. Crore)	**Weighted Average Mod. Duration (years)**
1	Net borrowing Call, notice & term money		
2	Net borrowing in Repo (including LAF of RBI)		
3	Net Borrowing through CBLO		
4	Borrowing through ICDs		
5	Borrowing through CPs		
6	Borrowing through Bond issuances		
7	Credit lines from banks/FIs		
8	Paying leg in respect of FRA/IRS		
9	Other tradable interest rate liabilities		
Total MTM value of liabilities (Vl)			
Weighted Average Mod. Duration of Liabilities (Dl)			

Mod. Duration of NOF (Dn) = (Va*Da - Vl*Dl)/(Va-Vl)	

Percentage change in NOF = (-) Dn*Change in interest rates (1%)	

Change in NOF = (-) Dn* Change in Interest rates (1%)*NOF	

Other details:		
Net interest income in the current year so far		
Trading profits/loss in the current year so far		
Unrealised MTM (Net gain/loss on cash positions)		
Unrealised MTM (Net gain/loss on derivative positions)		
Other income, if any (Details to be specified) ***		
NOF deployed in fixed income and related instruments		
Total NOF (Break-up to be furnished)		

Note: NOF should be determined as per the definition prescribed in this regard. The MTM gains or losses should be adjusted in the NOF.

***Details of Other Income

Capital funds of the firm as on the date of stress test

(Rs. in crore)

i.	Tier-I Capital	
ii.	Tier-II Capital	
iii.	**Total Capital (i+ii)**	
iv.	**Details of Deductions**	
a.	Investment in subsidiaries	
b.	Intangible assets	
c.	Losses in current accounting period	
d.	Deferred tax assets	
e.	Losses brought forward from previous accounting periods	
f.	Capital funds prescribed by other regulator	
v.	**Total Deductions(a+b+c+d+e+f)**	
vi.	Net Total Capital Funds (iii-v)	
	Less	
vii.	Change in NOF due to one per cent increase in yields	
viii.	**Net capital funds available after providing for change in NOF**	
ix.	Risk-weighted assets for the credit risk of the firm	
x.	Risk-weighted assets for the market risk of the firm	
xi.	**Total risk-weighted assets (ix+x)**	
xii.	**Capital adequacy ratio as on the date of stress test (viii/xi)**	

Annex D
(See para 5)

Criteria for use of internal model to measure market risk capital charge

A General criteria

1. In order that the internal model is effective, it should be ensured that :

   - the PD's risk management system is conceptually sound and its implementation is certified by external auditors;
   - the PD has sufficient number of staff skilled in the use of sophisticated models not only in the trading area but also in the risk control, audit, and back office areas;
   - the PD has a proven track record of reasonable accuracy in measuring risk (back testing);
   - the PD regularly conducts stress tests along the lines discussed in Para B.4 below

2. In addition to these general criteria, PDs using internal models for capital purposes will be subject to the requirements detailed in Sections B.1 to B.5 below.

B.1 Qualitative standards

The extent to which PDs meet the qualitative criteria contained herein will influence the level at which the RBI will ultimately set the multiplication factor referred to in Section B3 (b) below, for the PDs. Only those PDs, whose models are in full compliance with the qualitative criteria, will be eligible for use of the minimum multiplication factor. The qualitative criteria include:

a) A PD should have an independent risk control unit that is responsible for the design and implementation of the system. The unit should produce and analyze daily reports on the output of the PD's risk measurement model, including an evaluation of the relationship between measures of risk exposure and trading limits. This unit must be independent from trading desks and should report directly to senior management.

b) The unit should conduct a regular back testing programme, i.e. an ex-post comparison of the risk measure generated by the model against actual daily changes in portfolio value over longer periods of time, as well as hypothetical changes based on static positions.

c) Board and senior management should be actively involved in the risk control process and must regard risk control as an essential aspect of the business to which significant resources need to be devoted. The daily reports prepared by the independent risk control unit must be reviewed by a level of management with sufficient seniority and authority to enforce both reductions in positions taken by individual traders and reductions in the PD's overall risk exposure.

d) The PD's internal risk measurement model must be closely integrated into the day-to-day risk management process of the institution. Its output should accordingly be an integral part of the process of planning, monitoring and controlling the PD's market risk profile.

e) The risk measurement system should be used in conjunction with internal trading and exposure limits. Trading limits should be related to the PD's risk measurement model in a manner that is consistent over time and that it is well-understood by both traders and senior management.

f) A routine and rigorous programme of stress testing should be in place as a supplement to the risk analysis based on the day-to-day output of the PD's risk measurement model. The results of stress testing should be reviewed periodically by senior management and reflected in the policies and limits set by management and the Board. Where stress tests reveal particular vulnerability to a given set of circumstances, prompt steps should be taken to manage those risks appropriately.

g) PDs should have a routine in place for ensuring compliance with a documented set of internal policies, controls and procedures concerning the operation of the risk measurement system. The risk measurement system must be well documented, for example, through a manual that describes the basic principles of the risk management system and that provides an explanation of the empirical techniques used to measure market risk.

h) An independent review of the risk measurement system should be carried out regularly in the PD's own internal auditing process. This review should include the activities of the trading desks as well as the risk control unit. A review of the overall risk management process should take place at regular intervals (ideally not less than once a year) and should specifically address, at a minimum:

- the adequacy of the documentation of the risk management system and process;
- the organization of the risk control unit ;
- the integration of market risk measures into daily risk management;
- the approval process for risk pricing models and valuation systems used by front and back-office personnel;

- the validation of any significant change in the risk measurement process;
- the scope of market risks captured by the risk measurement model;
- the integrity of the management information system;
- the accuracy and completeness of position data;
- the verification of the consistency, timeliness and reliability of data sources used to run internal models, including the independence of such data sources;
- the accuracy and appropriateness of volatility and other assumptions;
- the accuracy of valuation and risk transformation calculations;
- the verification of the model's accuracy through frequent back testing as described in (b) above and in the **Annex E**.

i) The integrity and implementation of the risk management system in accordance with the system policies/procedures laid down by the Board should be certified by the external auditors as outlined at Para B.5.

j) A copy of the back testing result should be furnished to RBI.

B.2 Specification of market risk factors

An important part of a PD's internal market risk measurement system is the specification of an appropriate set of market risk factors, i.e. the market rates and prices that affect the value of the PD's trading positions. The risk factors contained in a market risk measurement system should be sufficient to capture the risks inherent in the entire portfolio of the PD. The following guidelines should be kept in view:

a) For *interest rates,* there must be a set of risk factors corresponding to interest rates in each portfolio in which the PD has interest-rate-sensitive on-or-off-balance sheet positions. Th*e risk measureme*nt system should model the yield curve using one of a number of generally accepted approaches, for example, by estimating forward rates of zero coupon yields. The yield curve should be divided into various maturity segments in order to capture variation in the volatility of rates along the yield curve. For material exposures to interest rate movements in the major instruments, PDs must model the yield curve using all material risk factors, driven by the nature of the PD's trading strategies. For instance, a PD with a portfolio of various types of securities across many points of the yield curve and engaged in complex trading strategies would require a greater number of risk factors to capture interest rate risk accurately. The *risk measurement* system must incorporate separate risk factors to capture spread risk (e.g. between bonds and swaps), i.e. risk arising from less than perfectly correlated movements b*etween Governmen*t and other fixed-income instruments.

b) For *equity prices,* at a minimum, there should be a risk factor that is designed to capture market-wide movements in equity prices (e.g. a market index). Position in individual securities or in sector indices could be expressed in "beta-equivalents" relative to this market-wide index. More detailed approach would be to have risk factors corresponding to various sectors of the equity market (for instance, industry sectors or cyclical, etc.), or the most extensive approach, wherein, risk factors corresponding to the volatility of individual equity issues are assessed. The method could be decided by the PDs corresponding to their exposure to the equity market and concentrations.

B.3 Quantitative standards

a) PDs should update their *data sets* at least once every three months and should also reassess them whenever market prices are subject to material changes. RBI may also require PDs to calculate their VaR using a shorter observation period if, in its judgement, this is justified by a significant upsurge in price volatility.

b) The multiplication factor will be set by RBI on the basis of the assessment of the quality of the PD's risk management system, as also the back testing framework and results, subject to an absolute minimum of 3. The document *`Back testing' mechanism to be used in conjunction with the internal risk based model for market risk capital charge',* enclosed as **Annex E**, presents in detail the back testing mechanism.

PDs will have flexibility in devising the precise nature of their models, but the parameters indicated at B.1, B.2 and B.3 above are the minimum which the PDs need to fulfill for acceptance of the model for the purpose of calculating their capital charge. RBI will have the discretion to apply stricter standards.

B.4 Stress testing

1. PDs that use the internal models approach for meeting market risk capital requirements must have in place a rigorous and comprehensive stress testing program to identify events or influences that could greatly impact them.

2. Stress scenarios of PDs need to cover a range of factors than can create extraordinary losses or gains in trading portfolios, or make the control of risk in those

portfolios very difficult. These factors include low-probability events in all major types of risks, including the various components of market, credit and operational risks.

3. Stress test of PDs should be both of a quantitative and qualitative nature, incorporating both market risk and liquidity aspects of market disturbances. Quantitative criteria should identify plausible stress scenarios to which PDs could be exposed. Qualitative criteria should emphasize that two major goals of stress testing are to evaluate the capacity of the PD's capital to absorb potential large losses and to identify steps the PD can take to reduce its risk and conserve capital. This assessment is integral to setting and evaluating the PD's management strategy and the results of stress testing should be regularly communicated to senior management and, periodically, to the Board of the PD.

4. PDs should combine the standard stress scenarios with stress tests developed by PDs themselves to reflect their specific risk characteristics. Specifically, RBI may ask PDs to provide information on stress testing in three broad areas as discussed below.

(a) Scenarios requiring no simulations by a PD

PDs should have information on the largest losses experienced during the reporting period available for RBI's review. This loss information could be compared to the level of capital that results from a PD's internal measurement system. For example, it could provide RBI with a picture of how many days of peak day losses would have been covered by a given VaR estimate.

(b) Scenarios requiring a simulation by a PD

PDs should subject their portfolios to a series of simulated stress scenarios and provide RBI with the results. These scenarios could include testing the current portfolio against past periods of significant disturbance, incorporating both the large price movements and the sharp reduction in liquidity associated with these events. A second type of scenario would evaluate the sensitivity of the PD's market risk exposure to changes in the assumptions about volatilities and correlations. Applying this test would require an evaluation of the historical range of variation for volatilities and correlations and evaluation of the PD's current positions against the extreme values of the historical range. Due consideration should be given to the sharp variation that at times has occurred in a matter of days in periods of significant market disturbance.

(c) Scenarios developed by a PD to capture the specific characteristics of its portfolio

In addition to the scenarios prescribed by RBI under (a) and (b) above, a PD should also develop its own stress tests which it identified as most adverse based on the characteristics of its portfolio. PDs should provide RBI with a description of the methodology used to identify and carry out stress testing under the scenarios, as well as with a description of the results derived from these scenarios.

The results should be reviewed periodically by senior management and should be reflected in the policies and limits set by management and the Board. Moreover, if the testing reveals particular vulnerability to a given set of circumstances, the RBI would expect the PD to take prompt steps to manage those risks appropriately (e.g. by reducing the size of its exposures).

B.5 External Validation

PDs should get the internal model validated by external auditors, including at a minimum, the following:

(a) Verifying that the *internal validation processes* described in B.1(h) are operating in a satisfactory manner.

(b) Ensuring that the *formulae* used in the calculation process as well as for the pricing of complex instruments are validated by a qualified unit, which in all cases should be independent from the trading desks.

(c) Checking that the *structure* of internal model is adequate with respect to the PD's activities and geographical coverage.

(d) Checking the results of the PD's back testing of its internal measurement system (i.e. comparing VaR estimates with actual profits and losses) to ensure that the model provides a reliable measure of potential losses over time. PDs should make the results as well as the underlying inputs to their VaR calculations available to the external auditors.

(e) Making sure that data flows and processes associated with the risk measurement system are *transparent and accessible.* In particular, it is necessary that auditors are in a position to have easy access, wherever they judge it necessary and under appropriate procedures, to the model's specifications and parameters.

Annex E
(See para 5)

BACK TESTING

"Back Testing" mechanism to be used in conjunction with the internal risk based model for market risk capital charge

The following are the parameters of the back testing framework for incorporating into the internal models approach to market risk capital requirements.

2. PDs that have adopted an internal model-based approach to market risk measurement are required routinely to compare daily profits and losses with model-generated risk measures to gauge the quality and accuracy of their risk measurement systems. This process is known as "back testing". The objective is the comparison of actual trading results with model-generated risk measures. If the comparison uncovers sufficient differences, there may be problems, either with the model or with the assumptions of the back test.

3. **Description of the back testing framework**

3.1 The back testing program consists of a periodic comparison of the PD's daily VaR measures with the subsequent daily profit or loss ("trading outcome"). Comparing the risk measures with the trading outcomes simply means that the PD counts the number of times that the risk measures were larger than the trading outcome. The fraction actually covered can then be compared with the intended level of coverage to gauge the performance of the PD's risk model.

3.2 Under the VaR framework, the risk measure is an estimate of the amount that could be lost on a set of positions due to general market movements over a given holding period, measured using a specified confidence level. The back tests are applied to compare whether the observed percentage of outcomes covered by the risk measure is consistent with a 99% level of confidence. That is, back tests attempt to determine if a PD's 99th percentile risk measures truly cover 99% of the firm's trading outcomes.

3.3 Significant changes in portfolio composition relative to the initial positions are common at end of trading day. For this reason, the back testing framework suggested involves the use of risk measures calibrated to a one-day holding period. A more sophisticated approach would involve a detailed attribution of income by source, including fees, spreads, market movements, and intra-day trading results.

3.4 PDs should perform back tests based on the hypothetical changes in portfolio value that would occur; presuming end-of-day positions remain unchanged.

3.5 Back testing using actual daily profits and losses is also a useful exercise since it can uncover cases where the risk measures are not accurately capturing trading volatility in spite of being calculated with integrity.

3.6 PDs should perform back tests using both hypothetical and actual trading outcomes. The steps involve calculation of the number of times the trading outcomes are not covered by the risk measures (“exceptions”). For example, over 200 trading days, a 99% daily risk measure should cover, on average, 198 of the 200 trading outcomes, leaving two exceptions.

3.7 The back testing framework to be applied entails a formal testing and accounting of exceptions on a quarterly basis using the most recent twelve months as on date. PDs may however base the back test on as many observations as possible. Nevertheless, the most recent 250 trading days' observations should be used for the purposes of back testing. The usage of the number of exceptions as the primary reference point in the back testing process is the simplicity and straightforwardness of this approach.

3.8 Normally, in view of the 99% confidence level adopted, 2.5 exceptions may be acceptable in the observation period of 250 days. However, in Indian context, a level of 4 exceptions would be acceptable to consider the model as accurate. Exceptions above this, would invite supervisory actions. Depending on the number of exceptions generated by the PD’s back testing model, both actual as well as hypothetical, RBI may initiate a dialogue regarding the PD’s model, enhance the multiplication factor, may impose an increase in the capital requirement or disallow use of the model as indicated above depending on the number of exceptions.

3.9 In case large number of exceptions is being noticed, it may be useful for the PDs to dis-aggregate their activities into sub sectors in order to identify the large exceptions on their own. The reasons could be of the following categories:

a) **Basic integrity of the model**

(i) The PD’s systems simply are not capturing the risk of the positions themselves (e.g. the positions of an office are being reported incorrectly).

(ii) Model volatilities and/or correlations were calculated incorrectly (e.g. the computer is dividing by 250 when it should be dividing by 225).

b) **Model's accuracy could be improved**

The risk measurement model is not assessing the risk of some instruments with sufficient precision (e.g. too few maturity buckets or an omitted spread).

c) **Bad luck or markets moved in fashion unanticipated by the model**

(i) Random chance (a very low probability event).

(ii) Markets moved by more than the likely prediction of the model (i.e. volatility was significantly higher than expected).

(iii) Markets did not move together as expected (i.e. correlations were significantly different than what was assumed by the model).

d) **Intra-day trading**

There was a large (and money-losing) change in the PD's position or some other income event between the end of the first day (when the risk estimate was calculated) and the end of the second day (when trading results were tabulated).

Annex F
(See para 7)

Monthly Return on Interest Rate Risk of Rupee Derivatives

As at end-month		
Name of the Bank/Institution:		
1. Cash Bonds	***Market Value (Rs. in Crore)***	***PV01 (Rs. in Crore)***
(a)	***(b)***	***(c)***
(a) HFT		*(See Note 1)*
(b) AFS		*(See Note 1)*
(c) HTM		*(See Note 1)*
Total [(a) to (c) above]		
2. Rupee Interest Rate Derivatives	***Notional Amount (Rs. in Crore)***	***PV01 (Rs. in Crore)***
(a) Bond Futures		*(See Note 1)*
(b) MIBOR (OIS)		*(See Note 2)*
(c) MIFOR		*(See Note 2)*
(d) G-Sec benchmarks		*(See Note2)*
(e) Other benchmarks (Please report separately)		*(See Note 2&4)*
(f) Forward Rate Agreements		*(See Note 3)*
Total [(a) to (f) above]		
3. Grand Total of (1) & (2)		
4. Tier-I Capital		

Note 1. PV01 may be taken as POSITIVE for long positions and NEGATIVE for short positions.
Note 2. PV01 may be taken as POSITIVE if receiving a swap and NEGATIVE if paying a swap.
Note 3. For FRAs, use the PV1 of the underlying deposit/instrument.
Note 4. In 2 (e) above, swaps on other benchmarks such as LIBOR may be reported separately for each benchmark

Annex G

List of Circulars Consolidated

No	Circular no	Date	Subject
1	IDMD.1/(PDRS) 03.64.00/2003-04	January 07, 2004	Capital Adequacy Standards and Risk Management Guidelines for Primary Dealers
2	IDMD.PDRS.No.06/03.64.00/2004-05	October 15, 2004	Capital Adequacy Standards – Guidelines on Issue of Subordinated Debt Instruments – Tier-II and Tier-III Capital
3	IDMD.PDRS.26/03.64.00/2006-07	July 4, 2006	Diversification of activities by stand-alone Primary Dealers - Operational Guidelines
4	IDMD.PDRS.No.148/03.64.00/2006-07	July 10, 2006	Risk reporting of derivatives business
5	IDMD.PDRD.No.4878/03.64.00/2008-09	April 1, 2009	Issue of Tier-II and Tier-III Capital
6	IDMD.PDRD.No./03.64.00/2009-10	April 9, 2010	Mail box clarifications - on conversion factor for off-balance sheet items
7	IDMD.PCD.No./03.64.00/2009-10	April 5, 2011	Mail box clarifications- Tier-III bonds issued by standalone PDs
8	IDMD.PCD.No.2301/14.03.04/2011-12	November 30, 2011	Guidelines on Capital Adequacy and Exposure Norms for Credit Default Swaps (CDS)
9	IDMD.PCD.No.4896/14.03.05 /2011-12	June 27, 2012	Phasing out Tier-III capital for standalone PDs
10	IDMD.PCD.No.2223/14.03.05/2012-13	January 30, 2013	Measures to enhance the role of standalone Primary Dealers in Corporate Bond Market
11	IDMD.PCD.11/14.03.05/2013-14	March 27, 2014	Capital requirements for standalone Primary Dealers' exposure to interest rate derivative contracts, repo/reverse repo transactions and central counterparties

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