

REPO: ITS ROLE IN GOVERNMENT SECURITIES MARKETS

POLICY AND OPERATIONAL ISSUES ARISING



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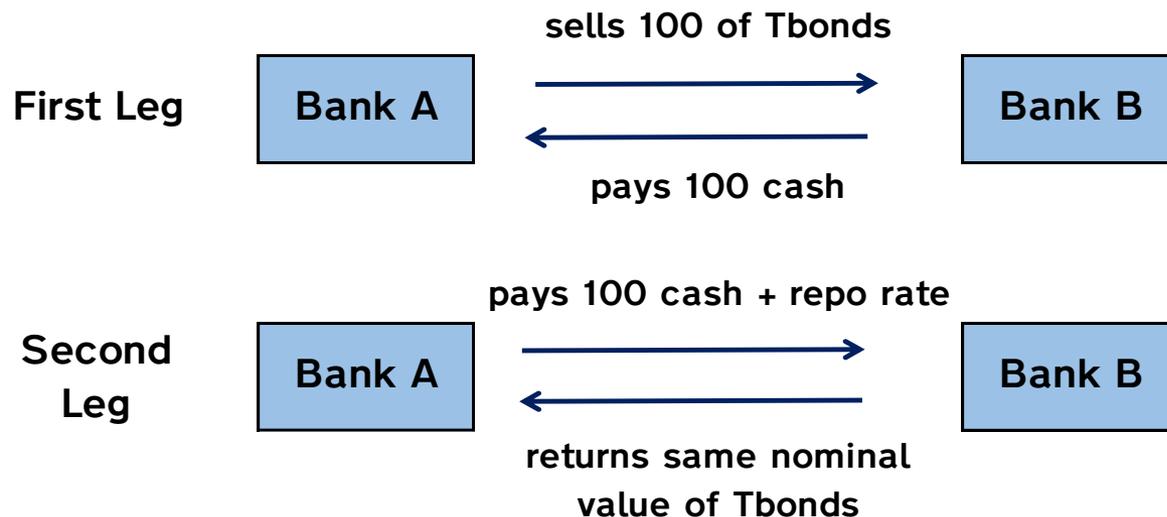
Agenda

- ❑ Terminology and Typology
- ❑ Why repo is important to market development – and valuable to both debt and cash managers
- ❑ Repo operations: risks and how to manage them
- ❑ Transactions in practice: policies and processes
- ❑ Some issues arising

What is Repo

- ❑ A repo (or “repurchase”; or sometimes “sale and repurchase”) transaction is a purchase or sale of securities with a simultaneous agreement to reverse the transaction at an agreed date and price in the future
- ❑ The interest rate implied by the difference between the sale and the “repurchase” price is the repo rate
- ❑ In economic terms it is the same as collateralised lending/borrowing, but
 - Unlike a collateralised loan it legally involves the transfer of an asset (which gives the lender better access to the collateral in the event of default)
 - It is more flexible: it maintains liquidity – the loan is effectively securitised and can be on-sold – and it allows for margining

Classic Repo



- ❑ Repo may be with “general” collateral or a specific bond (eg needed to cover a short – the repo rate will usually be less)
- ❑ If initial margin (“haircut”) is required, collateral of $100/(1-V)$ will be paid – where V is the margin – see later.
- ❑ If a coupon is paid during the term of the repo, it will be handed over to the seller (the value of the collateral may need to be restored as the accrued price falls). Markets often avoid collateral near a coupon date for this reason
- ❑ Interest may be fixed or variable rate

Types of Repo and Repo-like Transactions

❑ Sell-Buy back

- Also a spot and forward repurchase; repo rate is implied in repurchase price
- Not subject to legal agreement – seller may not have a legal right to coupon payment, and no provision for variation margin
- Risk in the event of insolvency – depending on documentation

❑ Stock Lending

- Lending bonds for a fee (against collateral – cash or other securities)
- May be used by DMOs to help their PD/MMs cover a short
- No interest rate risk, fewer systems requirement; often preferred by non-banks

❑ “Held in Custody” repo

- Cash taker may retain security in a segregated account rather than transfer it
- Facilitates substitution but adds to credit risk

❑ Third Party (or tri-party) repo

- A custodian bank or international CSD stands in the middle as agent
- May supply services – revaluation, automatic remargining, collateral pooling

Why Repo is Important

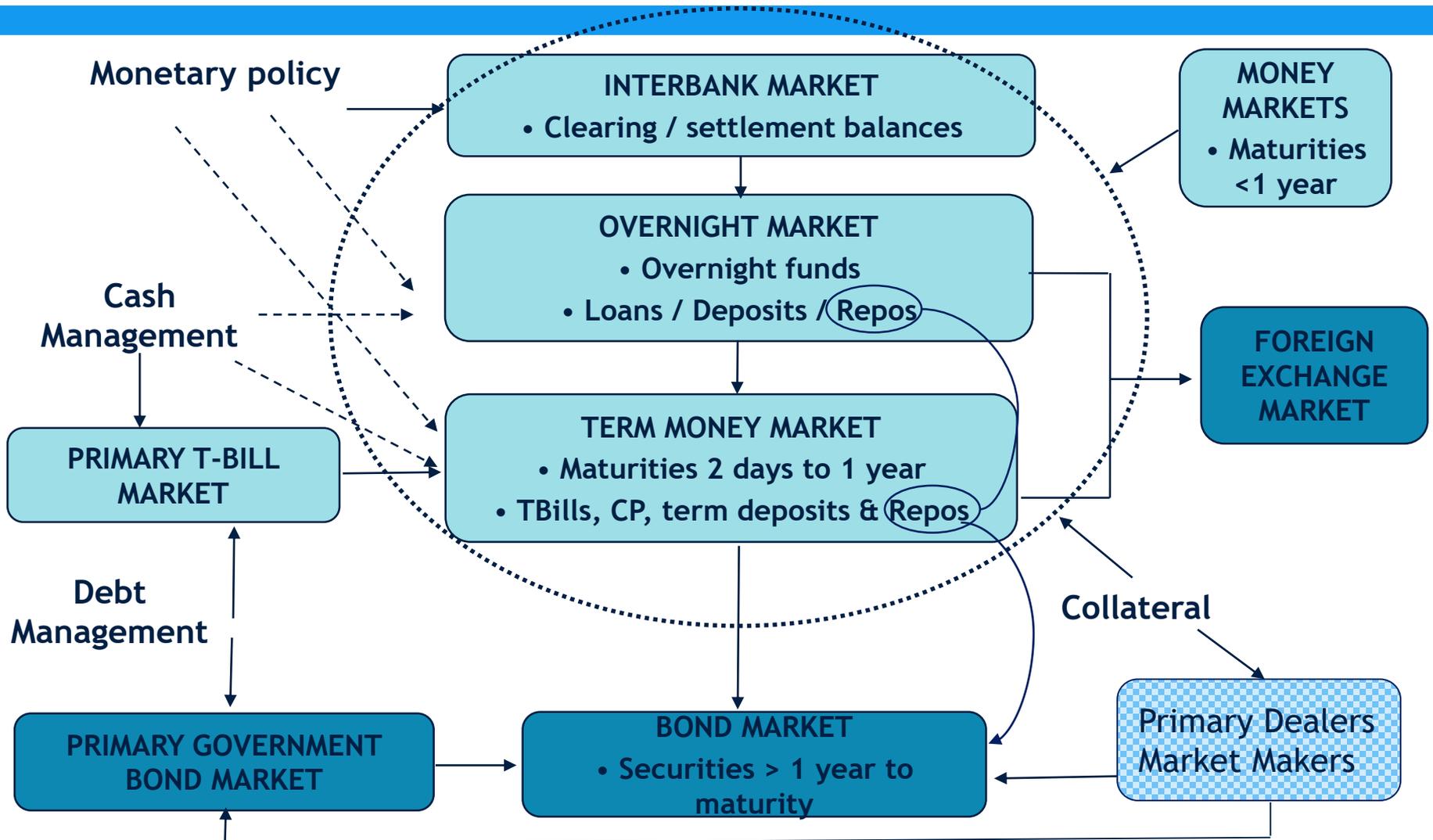
❑ Money Market

- Reduces credit concerns; helps to develop interbank market
- Flexibility => ideal instrument for monetary policy operations

❑ Supports debt and cash management

- Supports debt and money market development
 - Ability of lender to use collateral promotes activity and liquidity
 - Facilitates short-selling – the security sold can be repoed in as collateral
- Promotes arbitrage between debt and money markets
 - Creates a more continuous yield curve
- Provides mechanism for financing positions
 - Primary dealers can repo out securities to finance purchases of same securities
 - Supports active risk management by participants
 - Reduces risk of auction failure
- For cash managers
 - Access to domestic short-term funding
 - Secure investment of excess cash balances

Debt and Money Market Interaction



How Repo is used by MoFs/Treasuries/DMOs

❑ Debt management

- Supporting market making
 - Bank quoting two way prices may sell a security that it does not hold in inventory; it may not be able to cover its short by buying that security in the market
 - Sometimes the market is distorted by a bank “squeezing” a bond in which it has a strong position - refusing to repo it
- DMO lends or repos newly created securities to relieve the short

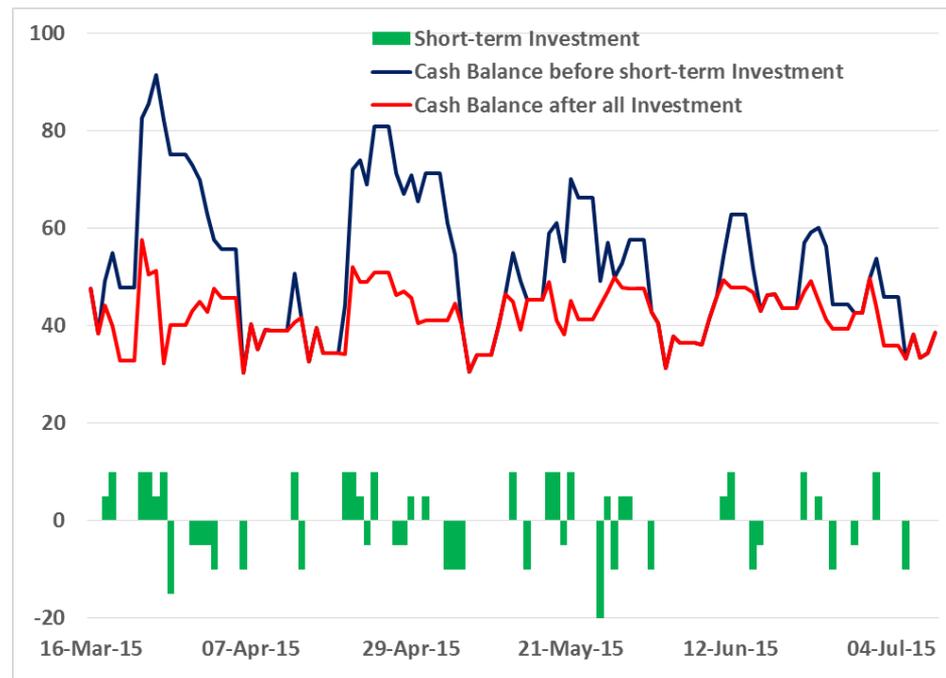
Securities Lending – Process

1. DMO creates Tbond in normal way
2. Repos or lends it to market maker – possibly one day only (could be rolled over)
3. Cash taken as collateral – maybe an offsetting repo (with general collateral) so that cash effect is neutral
4. Tbond cancelled when it is returned
5. DMO may “charge” market maker in interest or fee paid

How Repo is used by MoFs/Treasuries/DMOs

☐ Cash Management

- Short-term lending and borrowing allows cash managers to smooth cash flows across the TSA
 - reduces net interest costs and benefits monetary policy
- EMCs often use Tbills to rough tune cash flows – but can invest temporary cash surpluses with reverse repo
- Close coordination between debt and cash management essential



In the example:

- Assumes no more than 10 can be invested on any one day for no more than a week
- On average 10 is in investments every week with corresponding interest benefit
- Central bank's task much reduced

Risks

- ❑ Market
 - Seller (borrower) retains risk on collateral
 - Buyer (lender) has interest rate risk
- ❑ Credit Risk
 - It is low for the lender but it is not zero
 - Establishing the default may be cumbersome and add to cost
 - Wise to avoid concentration risk
 - In event of default, collateral may not realise full/expected value
- ❑ Liquidity
 - Risk that collateral may be difficult to sell
 - Although that is no firesale problem if collateral is Tbonds only
- ❑ Legal
 - Uncertainty of what happens in event of default/insolvency
- ❑ Operational
 - Who manages the collateral?
 - Back Office, Central Bank or other Agent, Custodian or CSD

Global Master Repo Agreement (GMRA)

- ❑ GMRA produced by the Securities Industry and Financial Markets Association ("SIFMA") and the International Capital Market Association ("ICMA")
 - Provides market participants with flexibility but establishes a market standard
 - Local annex covers local market conventions
- ❑ Main features:
 - Trades structured as outright sales and purchases, full ownership conferred of securities transferred – gives legal title in event of default
 - Allows the return of “equivalent” securities
 - Provides for initial and variation margin
 - Provides for close-out and set-off in the event of default (all transactions outstanding with a single counterparty can be netted into one if it defaults)
 - Coupon paid over to seller at time of payment
- ❑ Whole market should use same agreement
 - Otherwise fragmentation, e.g. between resident / non-resident banks, big / small banks
 - Some regional standards have been developed – but designed to be inter-operable

Credit Risk and Collateral

- ❑ Credit exposure in repo is much less than for an unsecured lending: but it is not zero
- ❑ Acceptable collateral
 - Governments usually insist on their own (or central bank's) securities
 - Collateral should have maturity longer than the term of the repo
- ❑ Haircuts or margin take account of risk that collateral will not realise full value of transaction
 - If initial margin is 20%, collateral of $100/(1-0.2)$ will be paid = 125
 - Variation margin is used during the life of the repo to maintain the value of the collateral – ensures that neither side is exposed
 - Initial margin is less common in developed markets; it may be 20-25% in less developed markets – often used to avoid complication of variation margin
- ❑ How to decide required haircut?
 - Sophisticated calculation assesses volatility of collateral price, frequency of margining, netting agreement with counterparty, how quickly position could realistically be closed out
 - In practice develop a simple table of haircuts (which depends on maturity of transactions and maturity of collateral); and also very loose rules on re-margining
- ❑ May assume risk of primary dealer default in [a week] is zero (although avoid concentration risk)
- ❑ As sophistication and number of transactions grows, can tighten and fine tune the rules

Managing the Collateral

- ❑ The collateral manager for a reverse repo must be able:
 - To value the collateral – ideally daily
 - To impose agreed initial margin, and confirm its receipt
 - To calculate variation margin (if agreed); and ensure collateral adjusted accordingly (which may be either way)
 - To handle substitution (of one bond for another) where that possibility has been agreed with the counterparty
 - To ensure that the second leg settles on time and cash is returned
 - To handle coupons paid during term of repo (although easier to never accept collateral close to coupon date)
- ❑ Options
 - The DMO back office – will depend on availability of trained staff and systems; many DMOs prefer to use an agent initially
 - Central bank – will often have connectivity to CSD, and is doing same as part of OMOs – will be able to provide service to government (at a price!)
 - CSD – some offer a tri-party facility
 - System automatically transfers collateral from a pool within the agreed parameters and returns it at the end of the transaction. Automatic facility also ensures that the value of the collateral is maintained, including by remargining .

Policy Decisions to be made before any Transaction

❑ Collateral

- Eligible collateral – which securities: categories and maturities
- Initial margin – fixed for all (and published?) or negotiated bilaterally
- Who is to manage it – back office, central bank, CSD

❑ Acceptable counterparties and credit risk

- Initially the primary dealers; maybe also central bank's OMO counterparties
- Scoring the repo against credit limits, concentration limits

❑ Bilateral transactions or an auction

- Auction preferable unless there is good money market liquidity and pre-trade transparency

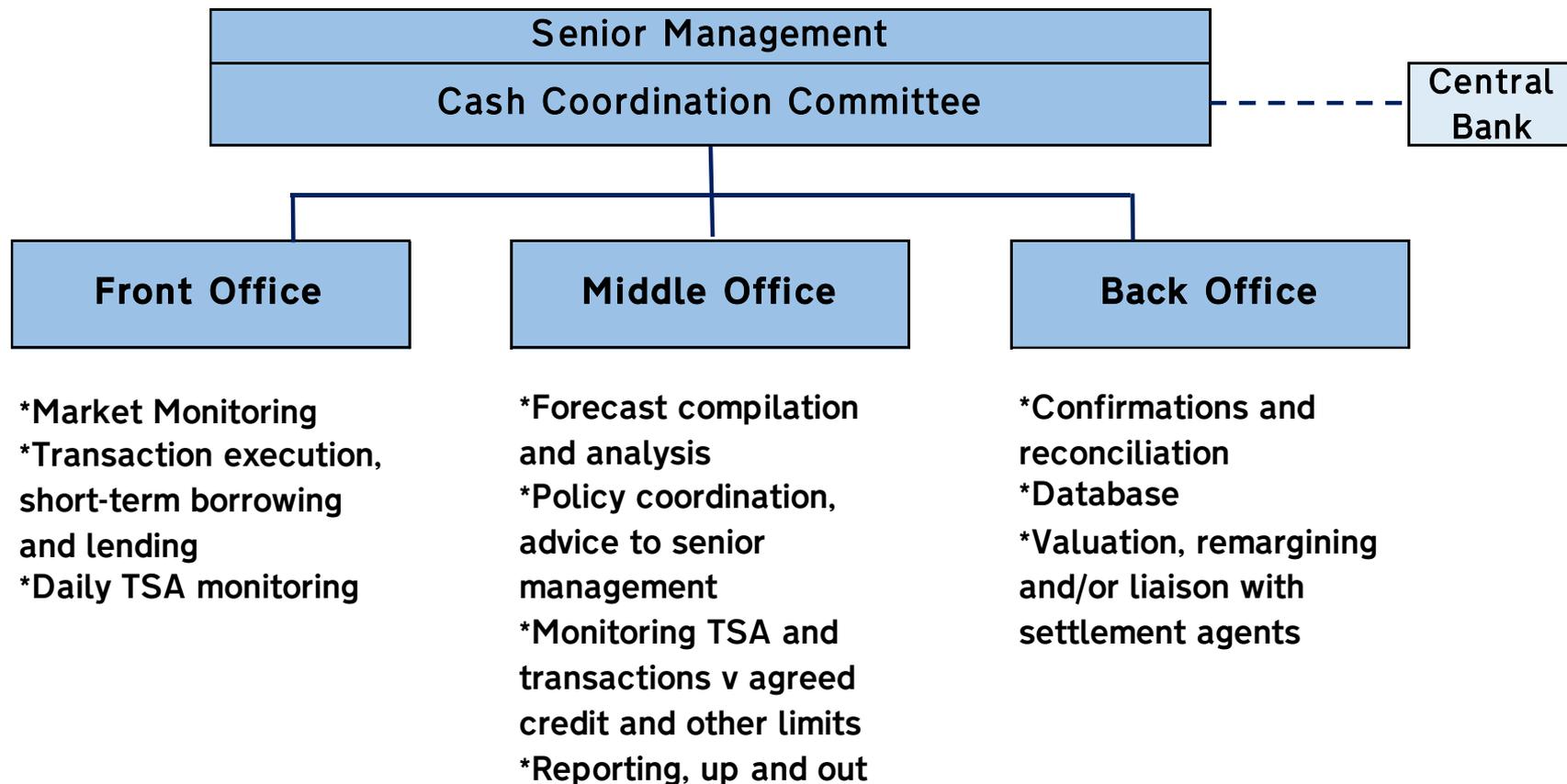
❑ The auction process

- Run from the DMO or with central bank as agent
- Use of systems already available in market (e.g. Bloomberg)
- Decide uniform or multiple price, minimum bid etc

Prior Tasks

- ❑ Legal provisions, and local regulations
 - Powers
 - Accounting and tax treatment
- ❑ Sign contracts with all likely counterparties
 - Based on local market practice – which should be based on GMRA
 - May need to encourage market to develop standard contract or local annex (through central bank or local bankers' association)
- ❑ “Contracts” with agents – central bank etc
- ❑ Capacity building
 - Internal responsibilities
 - Storing the data
 - Identify operational risks; design internal procedures, controls and manuals
 - Training, mock transactions

Transactions in Practice: Who does What?



Key Processes

Assume: GMRA signed, signatures exchanged, credit limits, collateral requirements, haircuts, etc previously established

1. MO updates cash forecast every [week]
 - Circulates internally with assessment of risks [also to central bank]
2. MO advice to senior management or cash coordination committee (CCC)
 - CCC agrees action over following [week] subject to interest rates and forecast remaining within expected range
3. FO monitors market, decides when to trigger transaction
 - FO or MO informs market (assuming an auction)
4. Bidding process
 - Decision signed off by senior management, announced to market
5. BO (or agent) confirms with successful counterparties, monitors settlement, inc agreed collateral, updates database
6. BO subsequently triggers return leg

Issues Arising: Interaction with Monetary Policy

- ❑ Government transactions must not cut across CB's own monetary policy operations
 - Should not be a problem: well-run cash management facilitates monetary policy ops
 - But should agree timing of respective operations, and the DMO's smoothing objectives
 - CB needs clear understanding of DMO's intentions over the period ahead
- ❑ Recommend some form of Memorandum of Understanding (MoU), to include:
 - Joint programme for the development of the money market
 - Including, where relevant, respective roles of central bank bills, Tbills and repo
 - Understandings about the times of day for respective operations and announcements
 - Information exchanges:
 - DMO's real time access to TSA data
 - DMO cash flow forecasts should be passed to CB
 - CB should know the parameters of expected DMO operations in the money market (e.g. the target end of day balance, significant changes in plans)
 - Public clarity concerning respective policy responsibilities,
 - CB's potential role as settlement agent (details addressed in service level agreement)

Issues Arising: Accounting Treatment

- ❑ Repo transactions are treated as collateralized loans under international accounting best practice
- ❑ Thus for government as cash lender:
 - Securities received as collateral are not part of government's balance sheet; changes in their market value have no effect on the balance sheet
 - The government has an asset in the form of the loan to the counterparty
 - Such assets should be distinguished from any other short-term lending
 - Statements should note that securities are held against the lending, with the market value of those securities also recorded
 - The interest earned on the loaned funds is recorded on an accruals basis during the term of the repo
 - This treatment should be explained in the notes to the Financial Statements

Issues Arising: Tax

- ❑ Tax treatment differs according to jurisdiction
- ❑ Principal issue is whether “sale” of securities triggers taxable event and/or results in transfer, sales or turnover taxes
 - Potentially distorts market between repo & collateralised loans
 - Tax treatment may depend on the term of the repo
- ❑ Preferred practice
 - Recognise substance of transactions, not legal position
 - Interest taxed as income, i.e. tax only the accounting profit
 - Coupon payments treated as benefit to seller or borrower, taxable date is dividend date
 - No withholding tax
 - GMRA designed for countries where no withholding tax - may need amendment where there is
- ❑ Confirm with local tax authorities before any transaction!

Thank You!