CASH FLOW FORECASTING PRACTICES IN SOUTH AFRICA

POLICY DIALOGUE ON STRENGTHENING THE CO-ORDINATION BETWEEN DEBT AND CASH MANAGEMENT, ACCRA

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National Treasury
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Content

Explain South Africa’s experience covering some main features of modern cash management

- Appropriate institutional arrangements and responsibilities
- Centralisation of cash balances, established TSA structure
- Ability to make accurate projections of inflows and outflows
- Information sharing between treasury units, revenue-collecting agencies, spending ministries, etc.
- Availability of bridging finance facilities
- Integration of debt and cash management

Cash Management institutional arrangement

Cash management road map

- Cash management function established in the National Treasury, 1995
  - Formalised an appropriate institutional framework
  - Improved operational efficiency
  - Establish appropriate Treasury single account structure
  - Establish capacity to forecast cash flows
  - Put in place bridging finance facilities
- Integrated with debt management, 1998
- Coordination of government-wide cash, 2004
- Non-interest bearing buffer eliminated, 2005
- Coordination with monetary policy, 2005

Formalised an appropriate institutional framework

- Principles
  - Adopted strategy of separating monetary and fiscal policy
  - Government cash flows should not have impact on the money market liquidity
  - Integrated debt and cash management
- As a result took over cash management responsibility from the South African Reserve Bank

Institutional arrangements and responsibilities

- Reserve Bank facilitate domestic/foreign payment cycle
- Commercial banks facilitate tax and non-tax receipt cycle
- Interest bearing cash balances with Reserve Bank/commercial banks
- Clear regulations for cash management arrangements
- Obligatory exchanges of data between National Treasury, spending agencies and tax revenue agencies
- Within National Treasury exchanges between:
  - Budget Office
  - Debt Management
  - Cash Management

Asset and Liability Management Divisional structure

- **NATIONAL TREASURY**
  - **ALM Division**
    - **Debt Management**
      - Debt Issuance and Management
      - RSA Retail Savings Bonds
      - Debt Operations
    - **Financial Operations**
      - Cash Management
      - Accounting and Information
      - Systems Integration
    - **Strategy and Risk Management**
      - Credit Risk
      - Country Risk
      - Sovereign Risk
    - **Governance & Financial Analysis**
    - **Sectoral Oversight**

South Africa's cash flow forecasting process

Cash flow forecasting involves

- Alignment of large expenditure and debt service (interest, redemptions) with revenue flows
- Long-and short-term cash flow forecasting
- Good communication between all government departments and tax collecting agency
- Close links with debt issuance unit and funding strategy

Improving accuracy of forecasting

- Electronic payments (phase out cheques)
- Transfer responsibility to agencies and departments
- Build a database of cash flows
- Eliminate human factor through system generated forecasts
- Variance analysis

Forecasting periods

Long-term

3-year annual forecast

3-year monthly forecast

Year 1	Year 2	Year 3
Months 1 2 3 4 5 6 7 8 9 11 12	*Months* 1 2 3 4 5 6 7 8 9 11 12	*Months* 1 2 3 4 5 6 7 8 9 11 12

Current year rolling monthly forecast

Year 1	
Months 1 2 3 4 5 6 7 8 9 11 12	• • • • • **Rolling into year two**

Short-term

90-day daily forecasts (or longer if needed)

Days

1 - 90

Current day firm forecasts (11:00 and 15:00)

Cash flow forecasting matrix

<table>
<tr><th rowspan="2">ITEM</th><th rowspan="2">ANNUAL</th><th rowspan="2">MONTHLY</th><th colspan="2">DAILY</th></tr>
<tr><th>Receipts</th><th>Payments</th></tr>
<tr><td>Opening balance</td><td>—</td><td>—</td><td colspan="2">Opening balance
• Rand
• US$</td></tr>
<tr><td>Budget deficit</td><td>Deficit figures</td><td>Revenue
• Tax revenue
• Non-tax revenue

Expenditure
• Debt-service costs
• Line Ministries
Local Foreign currency</td><td>Tax revenue
Non-tax
• Fx profits
• Dividends
• Other</td><td>Debt-service cost
• Domestic
• Foreign
Line Ministries</td></tr>
<tr><td>Loan redemptions</td><td>Total redemptions</td><td>Domestic

Foreign</td><td></td><td>Domestic
• Specific loans
Foreign
• Specific loans</td></tr>
<tr><td>Gross borrowing requirement</td><td>Total</td><td>Total</td><td></td><td>—</td></tr>
</table>

…Cash flow forecasting matrix

ITEM	ANNUAL	MONTHLY	DAILY Receipts	DAILY Payments
Short-term domestic loans	Total net increase	Net increase • Treasury bills • CPD • Bridging finance	 New issues New issues New issues	 Redemptions Redemptions Redemptions
Long-term domestic loans	Total domestic loans	Total domestic loans	Fixed rated Inflation-linked Retail bonds	
Foreign loans	Total foreign loans	Total foreign loans	Total foreign loans	
Change in cash balances	Change	Change	Closing balance • Rand • US$	
• Opening	Rand US$	Rand US$		
• Closing	Rand US$	Rand US$		

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Inputs for cash flow forecasts

Debt Management Unit
- Debt service costs
  - Interest
  - Redemptions
- Issuance calendar and amounts for domestic and foreign bonds

Cash flow forecasting model

Cash Management Unit
- Revenue cash flows
- Expenditure cash flows
- Short-term issuance calendar and amounts
  - Treasury bills
  - Bridging finance
- Change in cash balances

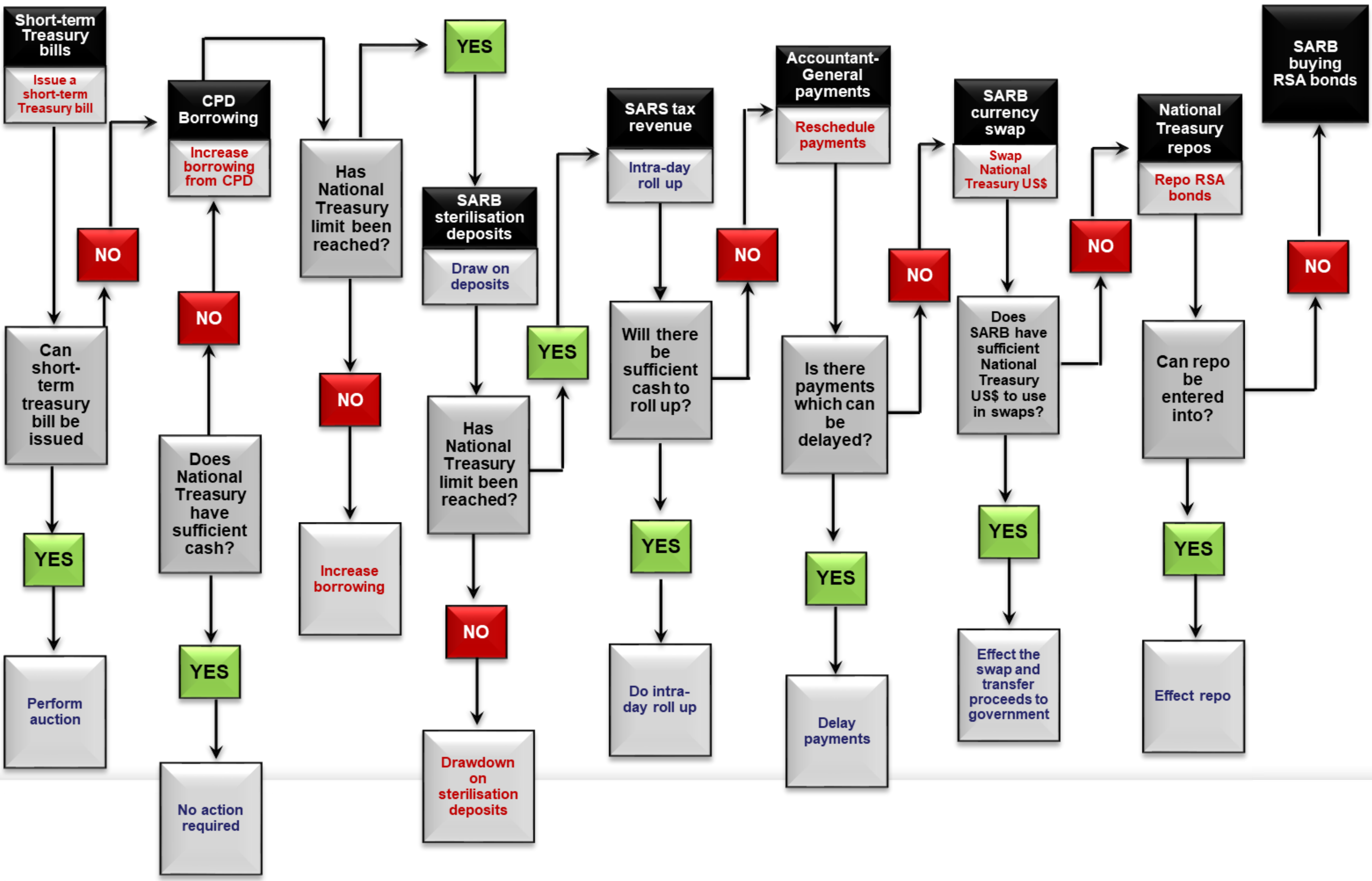
Reserve Bank
- Transactions to be effected for monetary management purposes

Bridging finance instruments

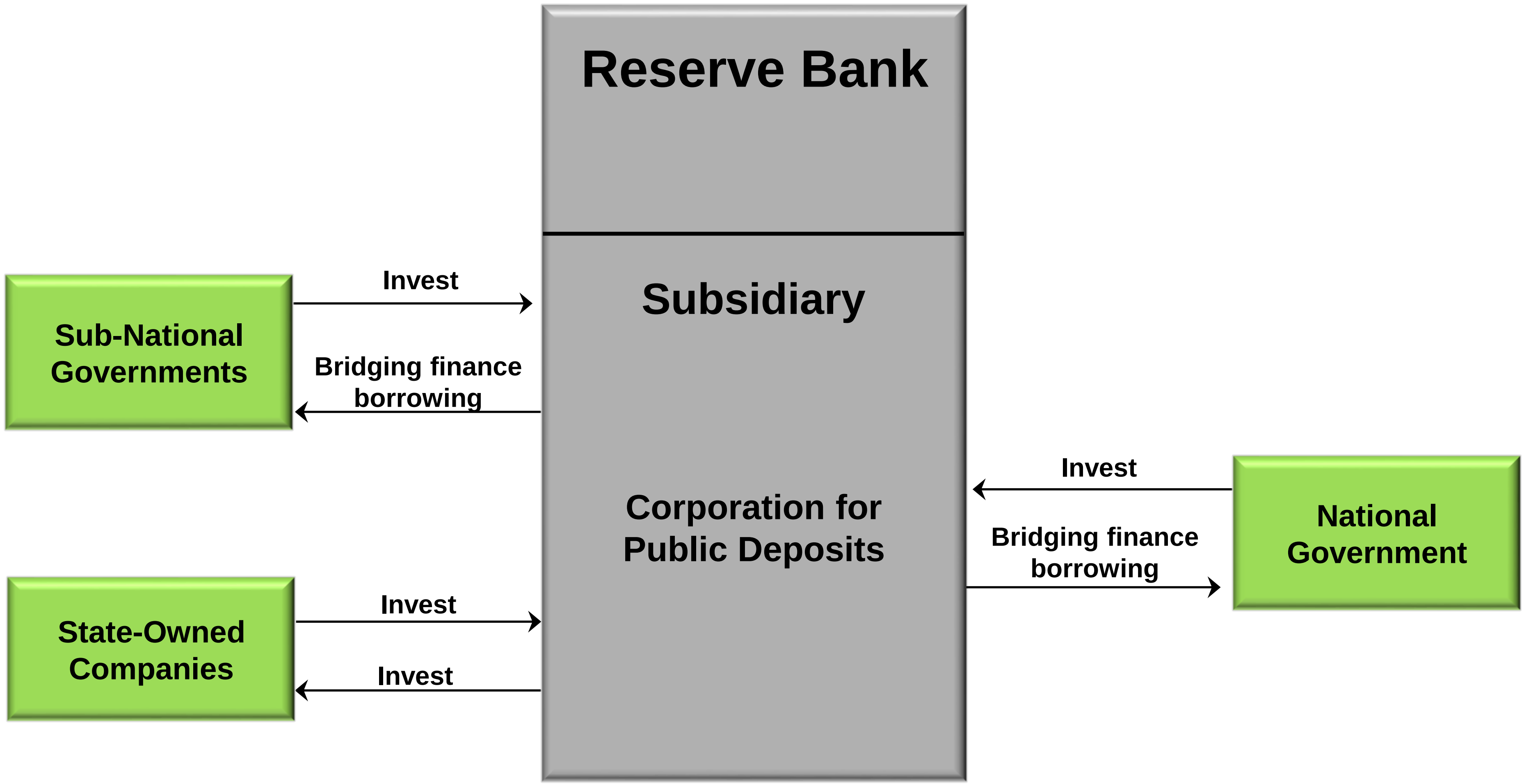
Bridging finance instruments

- Treasury bills 3-, 6-, 9-, 12-months and shorter
- Utilising surplus cash of wider Government (Provinces and State-Owned Companies)
- Use of Government's cash balances at SARB:
  - Sterilisation deposits (R67 billion)
  - Foreign exchange deposits (US$ 6.3 billion)
- Intra-day roll up of tax revenue
- Rescheduling of large expenditure
- Converting US dollar into rand (currency swaps)
- Repurchase (repo) facility in government bonds
- Reserve Bank buying government bonds

South Africa's bridging finance matrix to cover short-term cash pressures



Pooling of broader public sector cash



Integrating debt and cash management

Formulation of a medium-term debt management strategy

Cash Management:

- Aggregates “above and below the line” transactions (3 years)
  - Fiscal balance (expenditure/revenue) from Budget Office
  - Debt issuance strategy based on risk benchmarks
- Prepare monthly (3 years) borrowing strategy
  - Issuance profile is input to debt service cost calculations
  - Advance identification of funding pressures
  - Ensure appropriate cash buffers
- Provide short-term loan issuance strategy (including bridging finance)
- Settling coupon and maturity dates of new bonds to coincide with large revenue flows

Debt Management:

- Provide long-term loans issuance strategy (instruments, maturity and coupon), domestic and foreign
- Mitigate cash management problems that may assist when large bonds mature through a bond switch/conversion program

Development and execution of an annual borrowing plan

Cash Management:

- Responsible for short-term loan issuance plan (maturity, amounts in each maturity, etc.
- Forecasting of in-year “above and below the line” cash flows
- Determine the optimal weekly auction levels in short- and long-term loans
  - Stable and predictable bond issuance pattern reduces market uncertainty
  - Short-term variability in expenditure and revenue flows managed through short-term borrowing
  - Align large expenditure flow with revenue inflows
- Manage Treasury bill auctions
- Monitor revenue and expenditure trends against Budget
- Monitor weekly issuance against targets
- Provide information on short-term issuance and cash balances for monthly press statements
- Overnight bond repos could contribute to market development

Debt Management:

- Manage domestic bond auctions and global bond issuance
  - Which bonds to issue and when, taking into account market appetite
  - Occasional pressure to act opportunistically taking advantage of favourable market conditions and overfund
- Manage investor relation program
  - Arrange domestic and foreign roadshows
  - Maintain investor relations website
  - Coordinate investor visits
- Issuance strategy taking into account the following agreed hierarchy of risks; liquidity, refinancing and cost

Debt and cash coordination structure

- Established coordination structures not only for National but also State-Owned Companies

Committee	Cash Management	Debt Management	State-Owned Company Oversight
Regular fiscal framework forecasting	✓	✓	–
Regular Budget Coordination	✓	✓	
Quarterly Public Sector Borrowers’ Forum	✓	✓	✓
Weekly borrowing plan implementation	✓	✓	✓

Agenda:

- Market overview
- Bond auctions results
- Treasury bill auction results
- Progress with funding against target
- Local and foreign currency balances
- Funding by State-Owned Companies

Funding strategy sub-committee

Consultative process between SARB and National Treasury

Bilateral

(Minister and Governor)

Standing Committees

(Bank and National Treasury Officials)

Macroeconomic Standing Committee

Banking and Financial Markets Standing Committee

Financial and Regulatory Issues Standing Committee

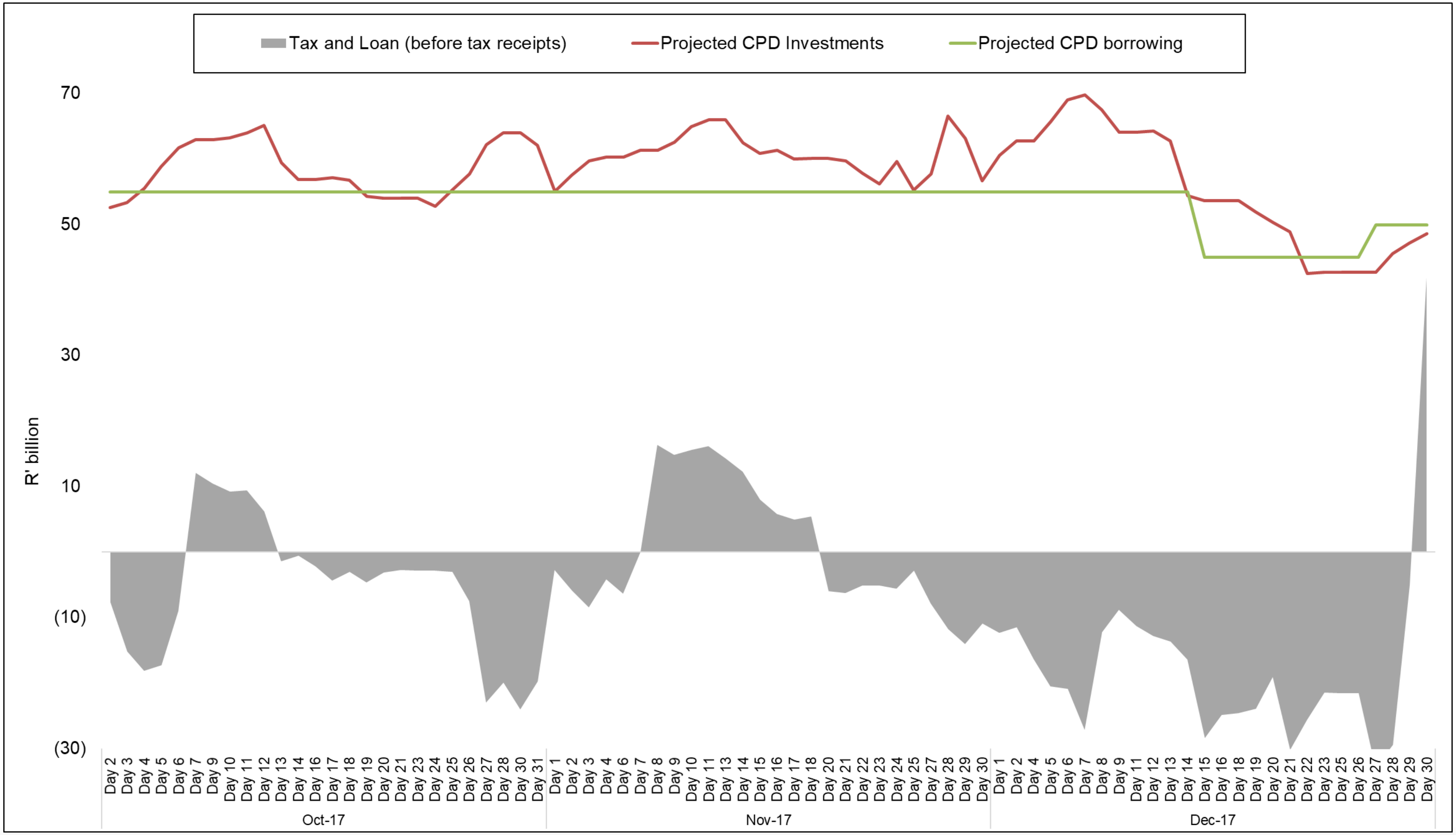
Banking Subcommittee

Financial Markets Subcommittee

Cash Management Operations Working Group

Dealing with cash pressures, September to December 2017

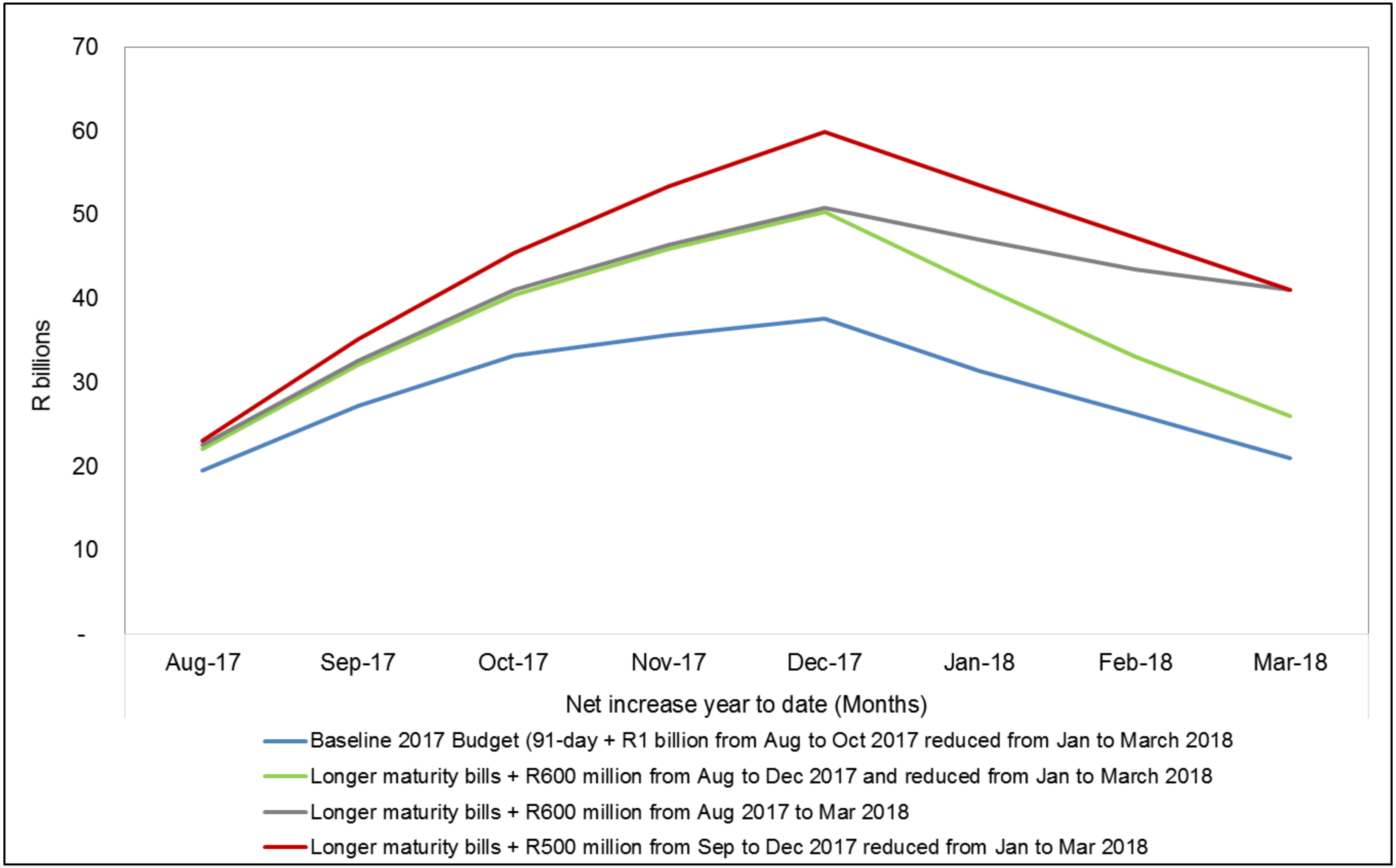
Projected cash pressures due to revenue and funding shortfall of R50 billion



Funding scenarios to cover revenue shortfall

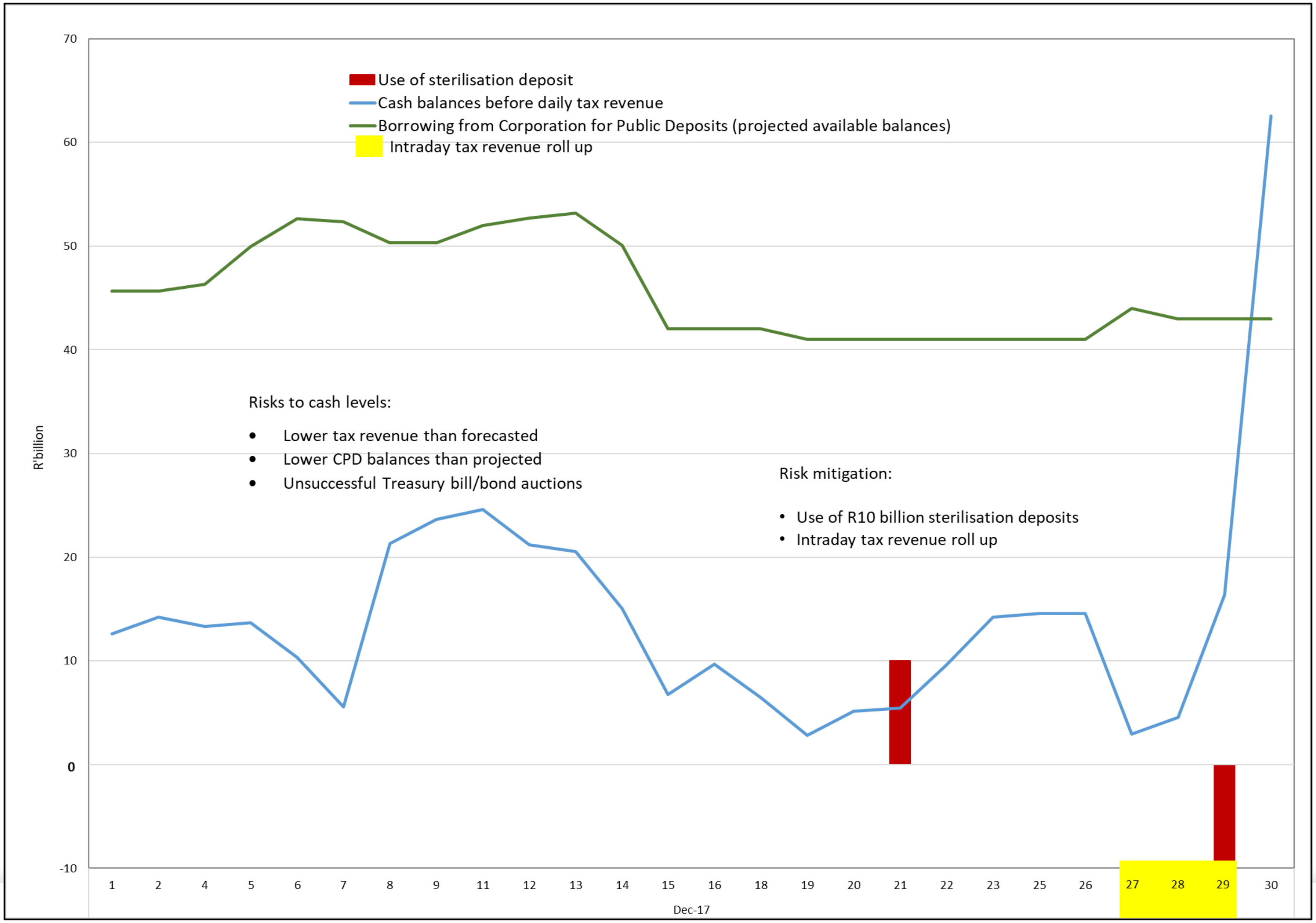
	Scenarios		
R billion	**1**	**2**	**3**
Revenue shortfall	-40.0	-45.0	-50.0
Funding shortfall	-6.0	-6.0	-6.0
Total shortfall	**-46.0**	**-51.0**	**-56.0**
Treasury bills	5.0	6.0	7.0
Domestic bonds	41.0	45.0	49.0
Bond switch auctions	*25.0*	*25.0*	*25.0*
Delayed foreign currency purchases	*10.0*	*10.0*	*10.0*
Domestic bond auction increase	*6.0*	*10.0*	*14.0*
Per week (cash proceeds):			
- September 2017(R million)	*28 x 110*	*28 x 110*	*28 x 110*
- November 2017(R million)	*19 x 315*	*19 x 530*	*19 x 740*
Total financing	**46.0**	**51.0**	**56.0**
Contingency: *Longer Treasury bill auctions not fully reduced in last quarter*	*15.0*	*14.0*	*13.0*
Total revenue shortfall which can be covered	***-55.0***	***-59.0***	***-63.0***

Net increase in Treasury bills to finance cash pressures



Projected cash balances and bridging finance, Oct – Dec 2017

Projected cash balances and bridging finance, Dec 2017



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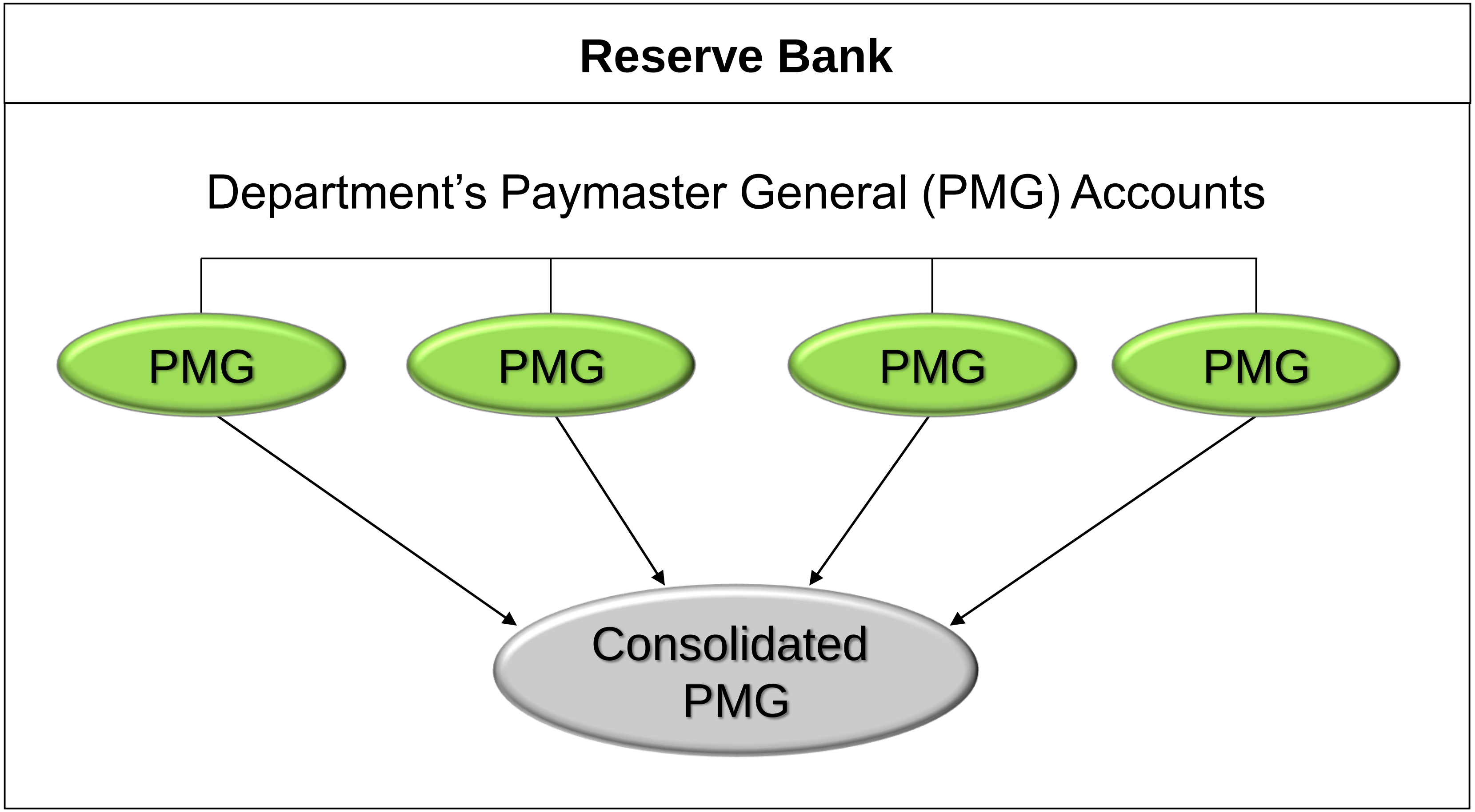
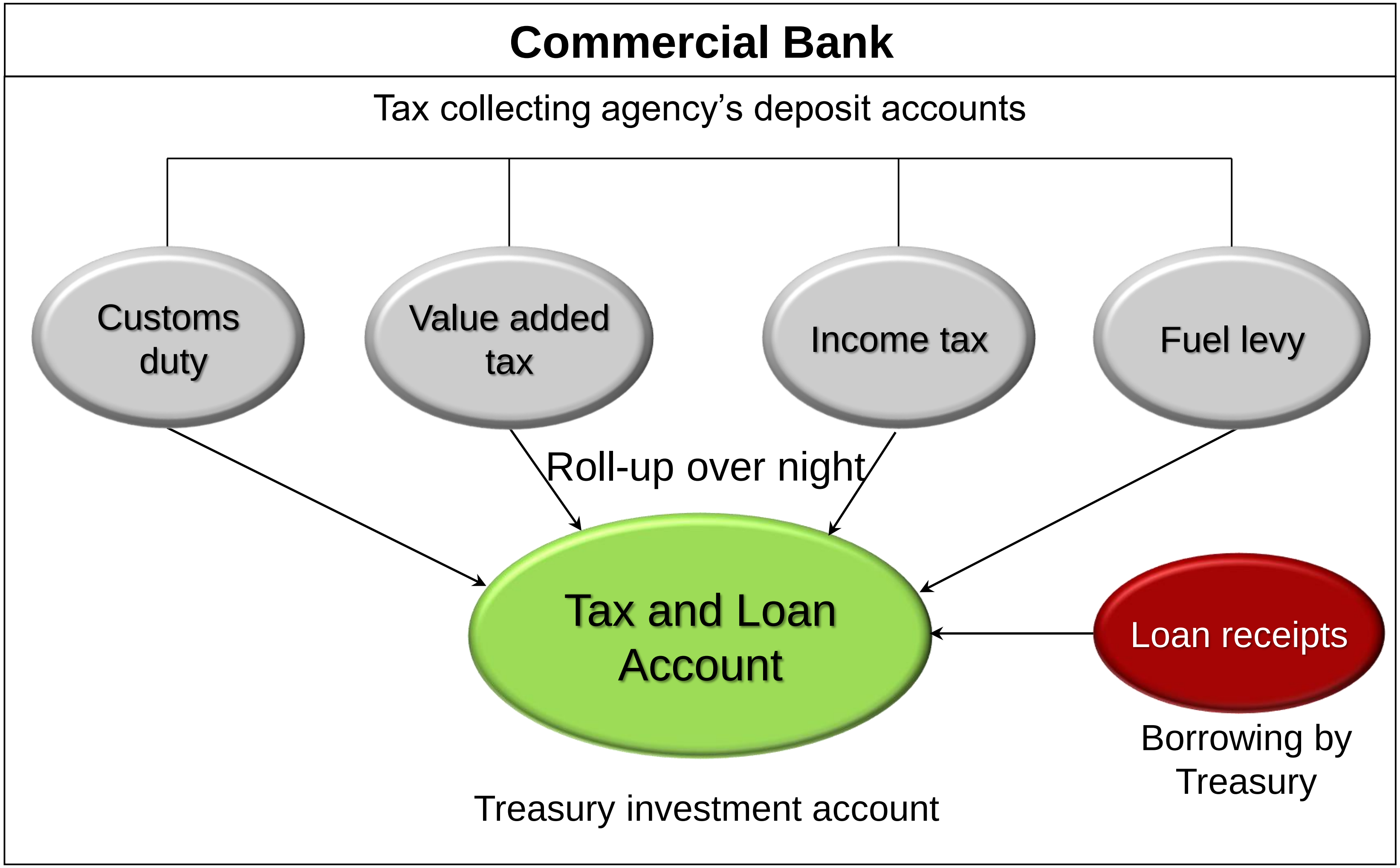
Thank you

Slides explaining TSA in detail

Payment cycle



Tax revenue receipt cycle



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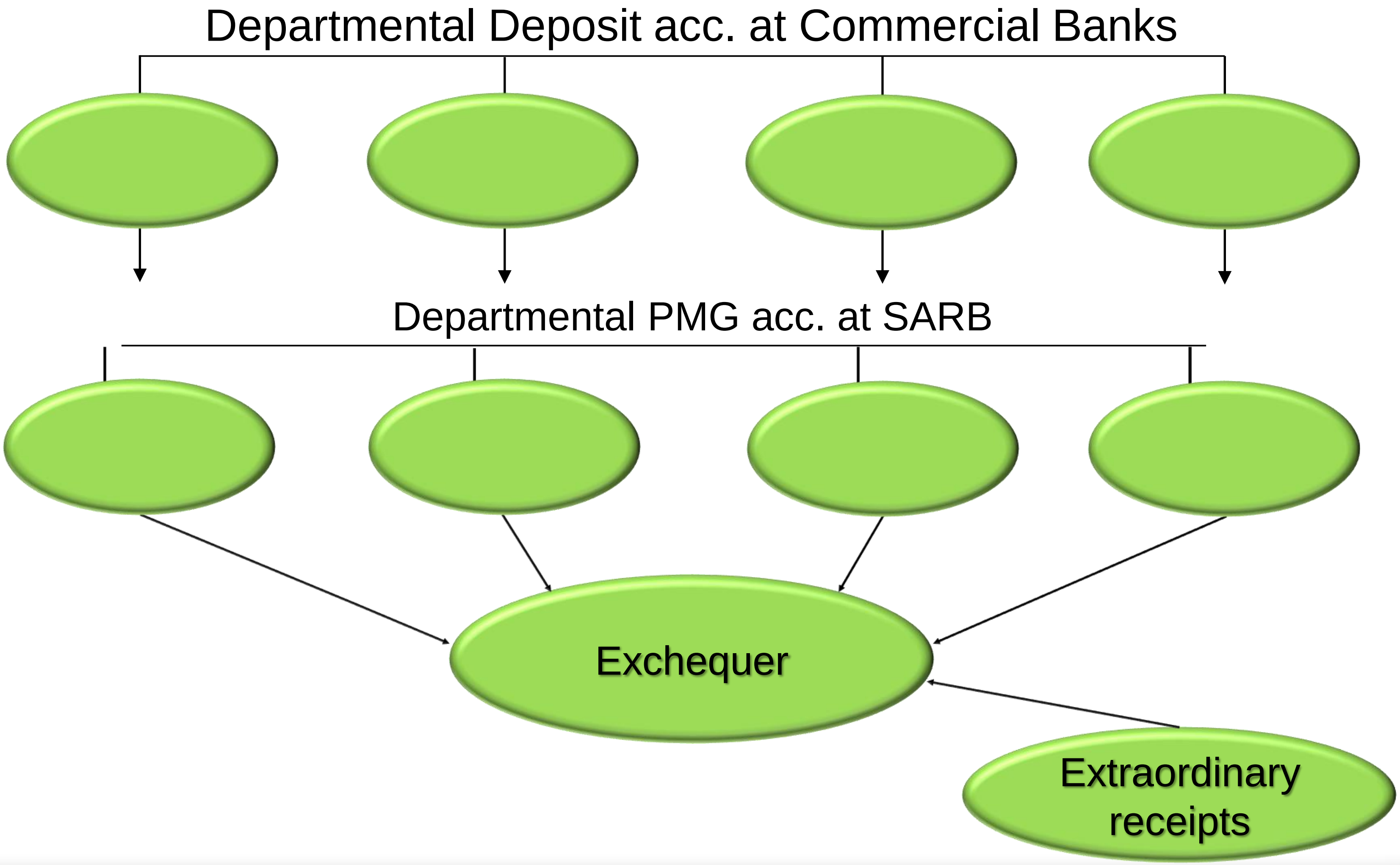
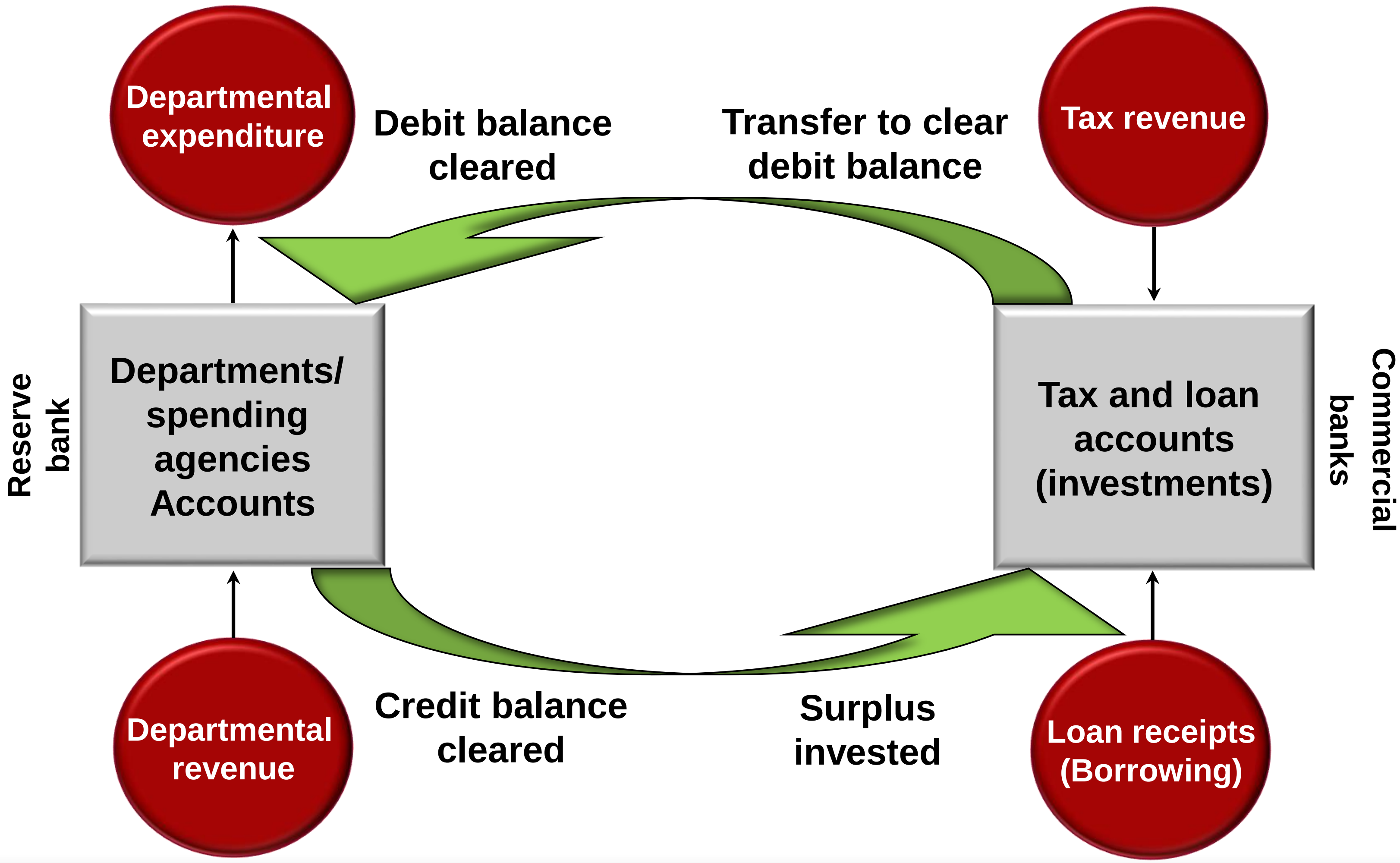
Departmental (non-tax revenue) receipt cycle



Daily settlement of local currency expenditure



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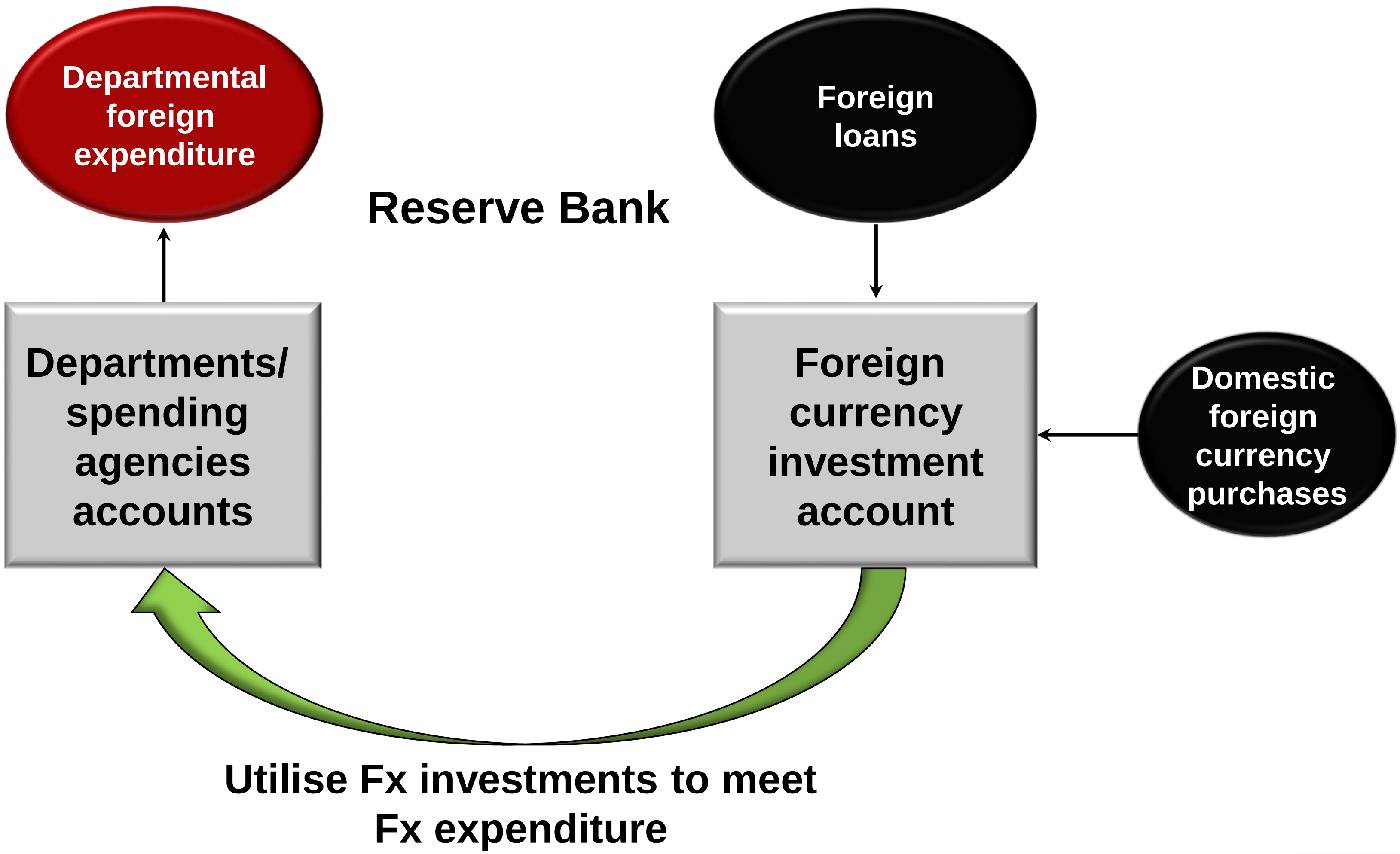
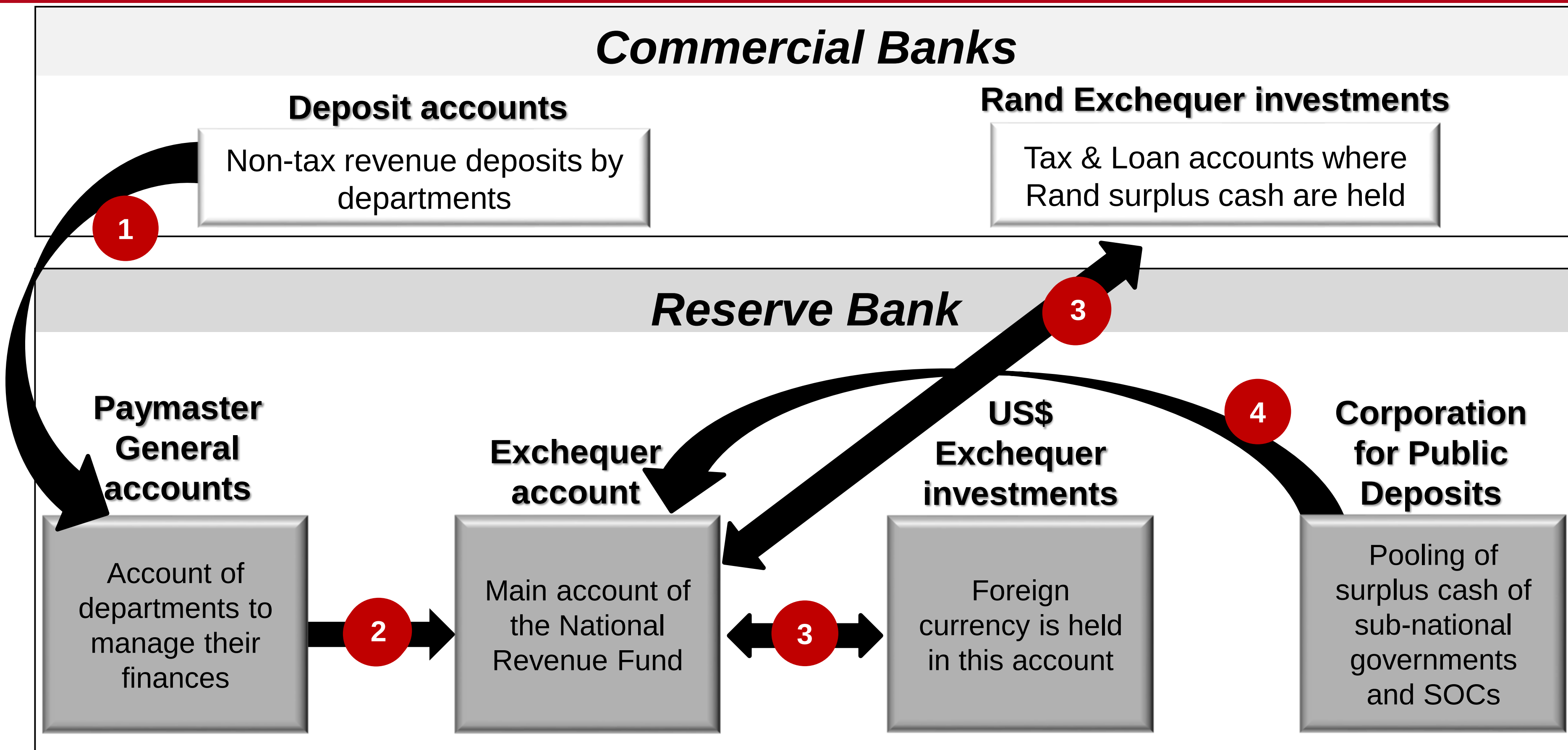
Daily settlement of foreign currency expenditure



South Africa's TSA account structure for the National Government

TSA account structure for the National Government



1. All non-tax revenue received by departments transferred to their PMG accounts 2 days later
2. PMG accounts go in overdraft during the day. End of day consolidated balance cleared to Exchequer account
3. Exchequer account funded to meet PMG Rand/foreign exchange commitments
4. Borrowing bridging finance from Corporation for Public Deposits

Examples of annual, monthly and daily cash flow forecast

- See handouts