Fundamentals of Cash Management

PEMPAL
Treasury Community of Practice

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November 2009

Overview

- Definitions
- Outline of a modern cash management framework
- Building blocks
- Benefits of an efficient cash management system
- Banking and payment arrangements
- Cash forecasting
- Managing cash balances-the basic requirements
- Integration of cash management with monetary policy
- Managing risk
- Institutional arrangements

Some definitions of cash management

- The strategy and associated processes for managing cost-effectively the government's short-term cash flows and cash balances, both within government, and between government and other sectors

(Williams 2004)

- Having the **right** money in the **right** place at the **right** time to meet the government's obligations in the most cost-effective way

(Storkey 2001)

Cash management framework
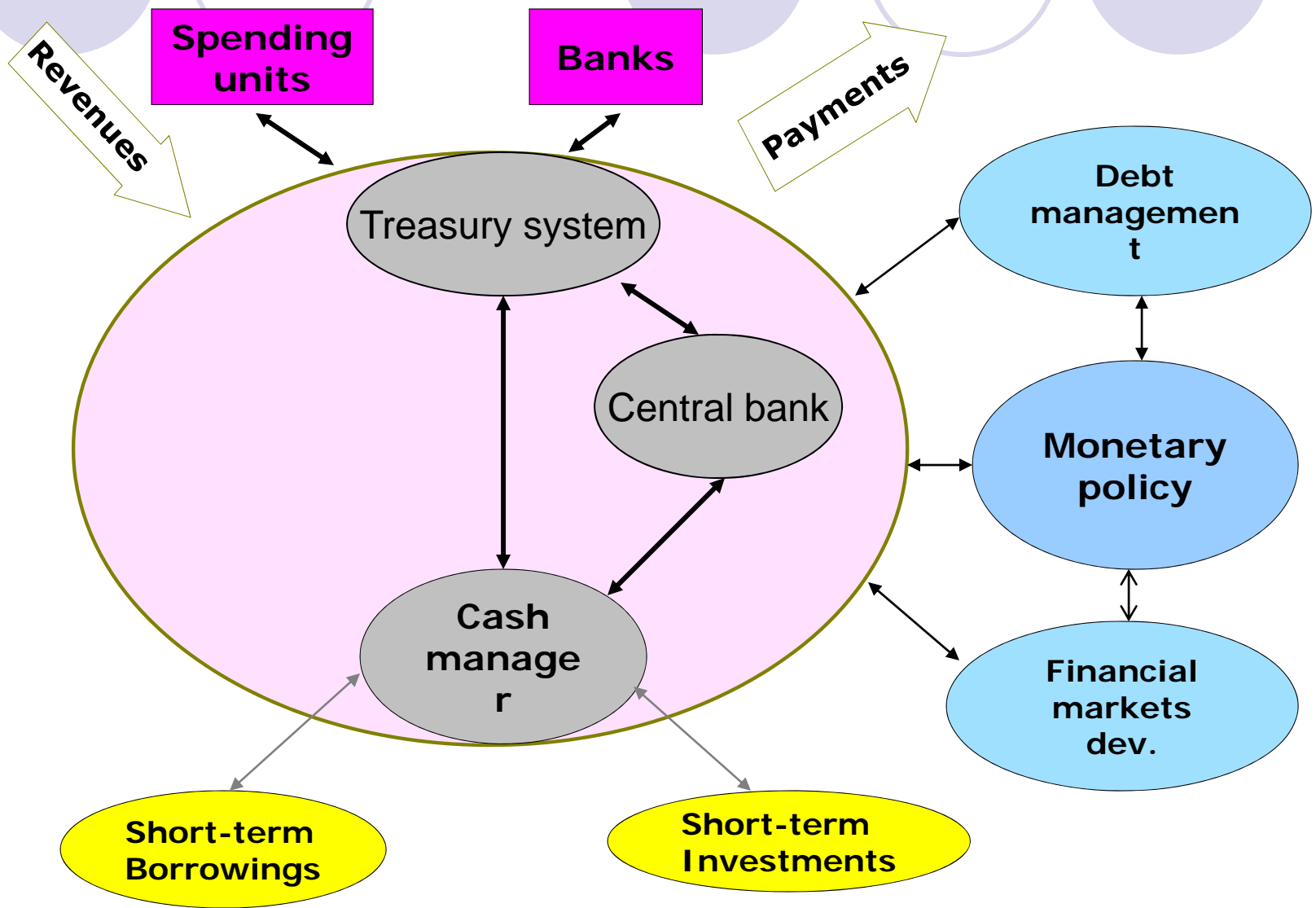
Main building blocks for cash management

- Control over receipts and expenditures

- Forecasting cash requirements

- Managing government cash balances – surpluses/deficits

Benefits of efficient cash management

- Ensure obligations can be met as they fall due

- Minimize idle balances and associated costs

- Contributes to development of short-term money markets

- Reduce liquidity impact from budget deficits/surpluses

- Separation of cash management from monetary policy

- Enhanced transparency of government flows

Common issues that hinder efficient cash management

- Budget execution focused on compliance with annual budget law rather than efficiency of resources
- Fragmented treasury system with many separate bank accounts-both in commercial banks and CB
- Cash rationing is the main expenditure control system-creates uncertainty of resource availability for BI's
- Spending units not concerned with borrowing costs
- Daily cash needs met by the central bank-less of an issue with EU applicant countries due to prohibition on CB borrowing
- Liquidity managed for monetary policy purposes

Key features of modern treasury operations

- Single treasury account
  - Normally in central bank
- Developed expenditure and commitment controls
- Well developed cash planning and forecasting function
- Centralized payments processing
- Fund and accounting controls through treasury ledger system
- Cash management separated from, but linked to, monetary policy
- Integration of cash and debt management

Single Treasury Account

- All budget revenues and expenditures go through TSA
- Budget institutions (BI's) do not have separate bank accounts
  - Apart from some necessary transaction accounts
  - Where transactional accounts are necessary balances are swept up into TSA periodically (preferably daily)
- BI's transactions managed through the treasury ledger system
- All monies seen as fungible to prevent inefficient use of public cash resources

Advantages of a TSA

- Provides complete, real time, information about government funds
- Serves to ensure transparency and reduce need for extra budgetary funds
- Improve incentives for, and behavior of, spending units.
- Facilitates effective reconciliation between the government accounting systems and cash flow statements
- Reduces the uncertainty about the cash reserves for liquidity management purposes, and the volatility of the cash flows
- Facilitates efficient payment mechanisms

Requirements for an efficient TSA

- Co-operation of the line ministries

- Development of an RTGS at the CB for high value transactions

- Major commercial banks and treasury connected to the RTGS

- Development of a small payments clearing system

Reasons For TSA To Reside At Central Bank

- Safe haven for government cash deposit

- Aids the efficient management of liquidity in the economy

- Cost effective banking arrangements

- No better alternative for economies in transition
  - Although not confined to developing or transition economies

Different Models for TSA Operations

A number of models exist :

- Use commercial bank branch networks to channel funds to/from regional treasury offices to the TSA at CB

- Use regional branches of the CB where a reliable commercial branch network is not available

- Regional treasury offices act as banks (only recommended where the commercial banking sector is regarded as too unstable)

- Use commercial banks branch network to clear funds directly between TSA and taxpayers/suppliers

TSA using Commercial Banking system network and RTOs

```
                        TSA at CB
                ┌───────────┴───────────┐
             Bank A                   Bank B
         ┌─────┴─────┐           ┌─────┴─────┐
      Branch 1    Branch 2    Branch 1    Branch 2
         │           │           │           │
    RTO and BIs  RTO and BIs  RTO and BIs  RTO and BIs
         │           │           │
   Taxpayer/    Taxpayer/    Taxpayer/
   supplier     supplier     supplier
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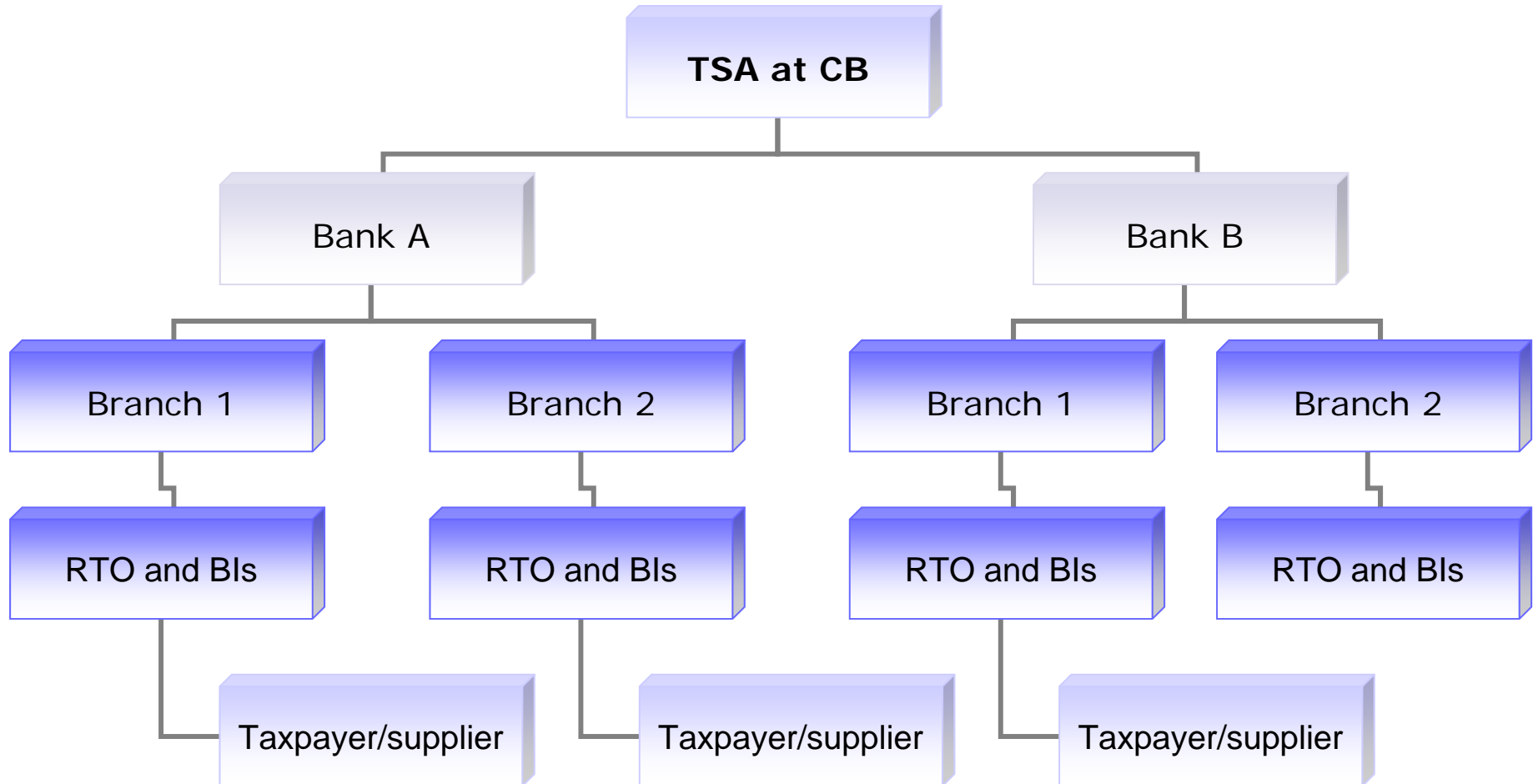
Use of regional CB offices
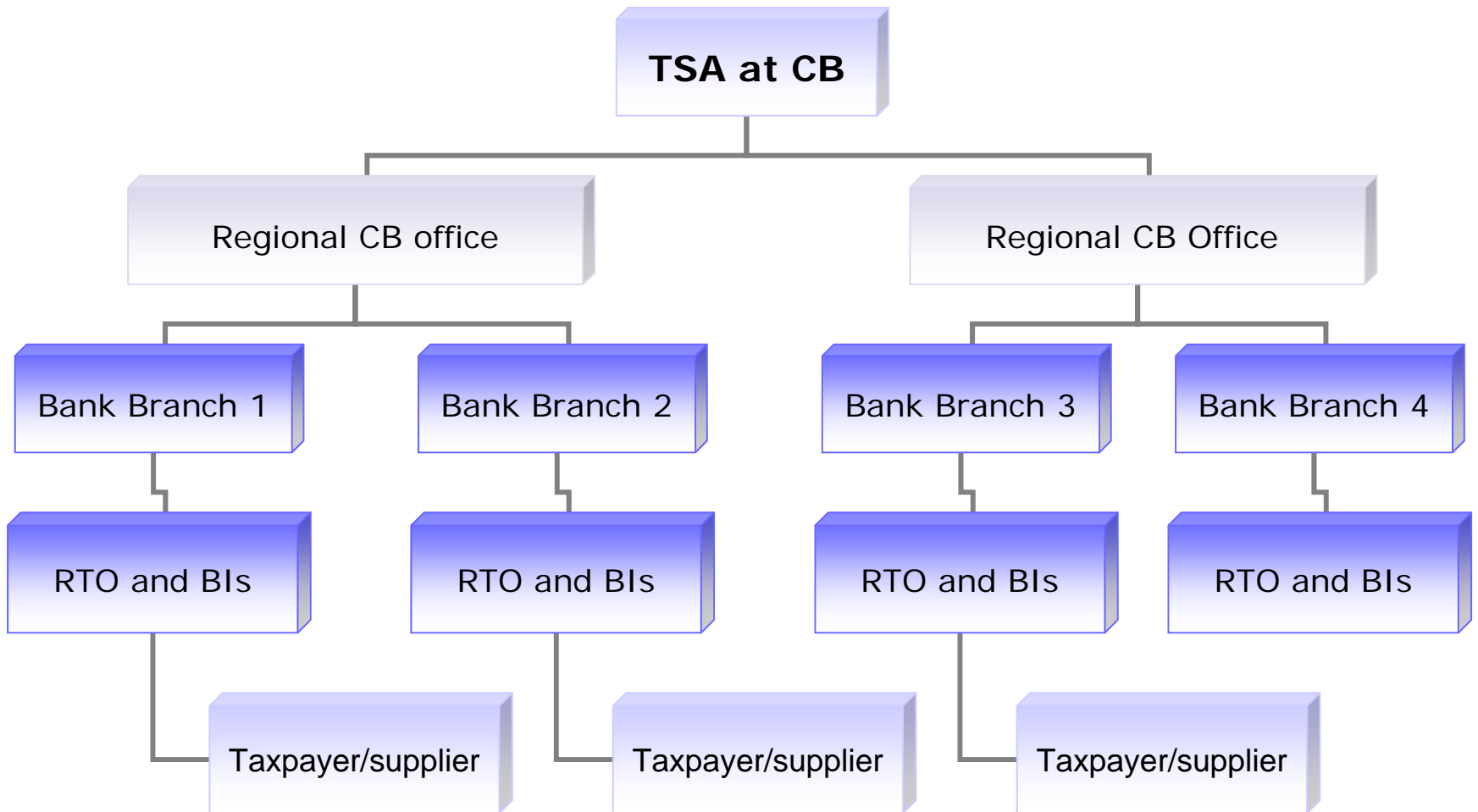
TSA using Commercial Banking network (no RTOs)

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Treasury and BIs ─────── TSA at CB
                              │
              ┌───────────────┴───────────────┐
           Bank A                           Bank B
         ┌────┴────┐                     ┌────┴────┐
     Branch 1   Branch 2            Branch 1   Branch 2
         │          │                   │          │
  Taxpayer/   Taxpayer/          Taxpayer/   Taxpayer/
  supplier    supplier           supplier    supplier
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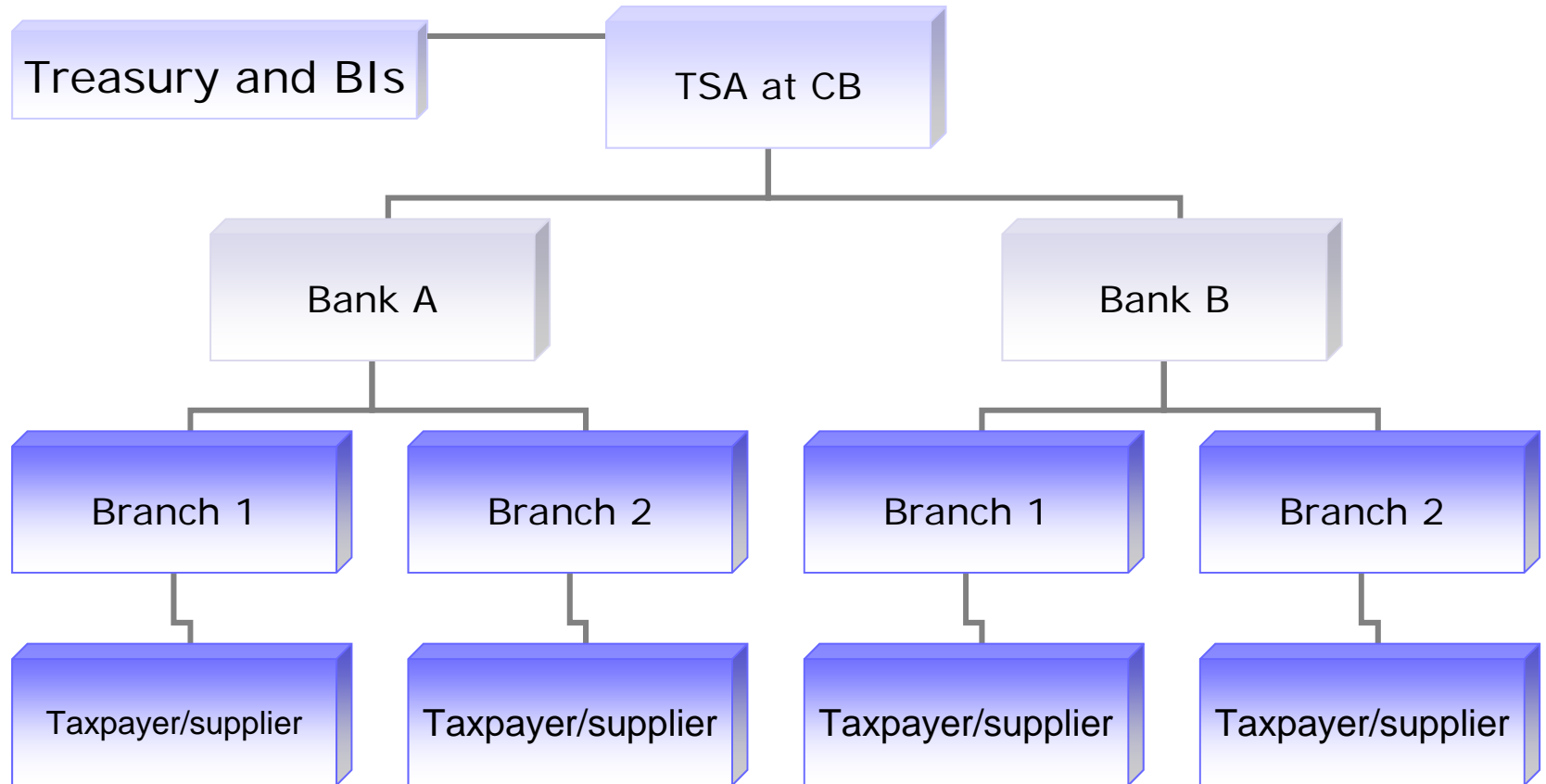
Swedish Government payment system
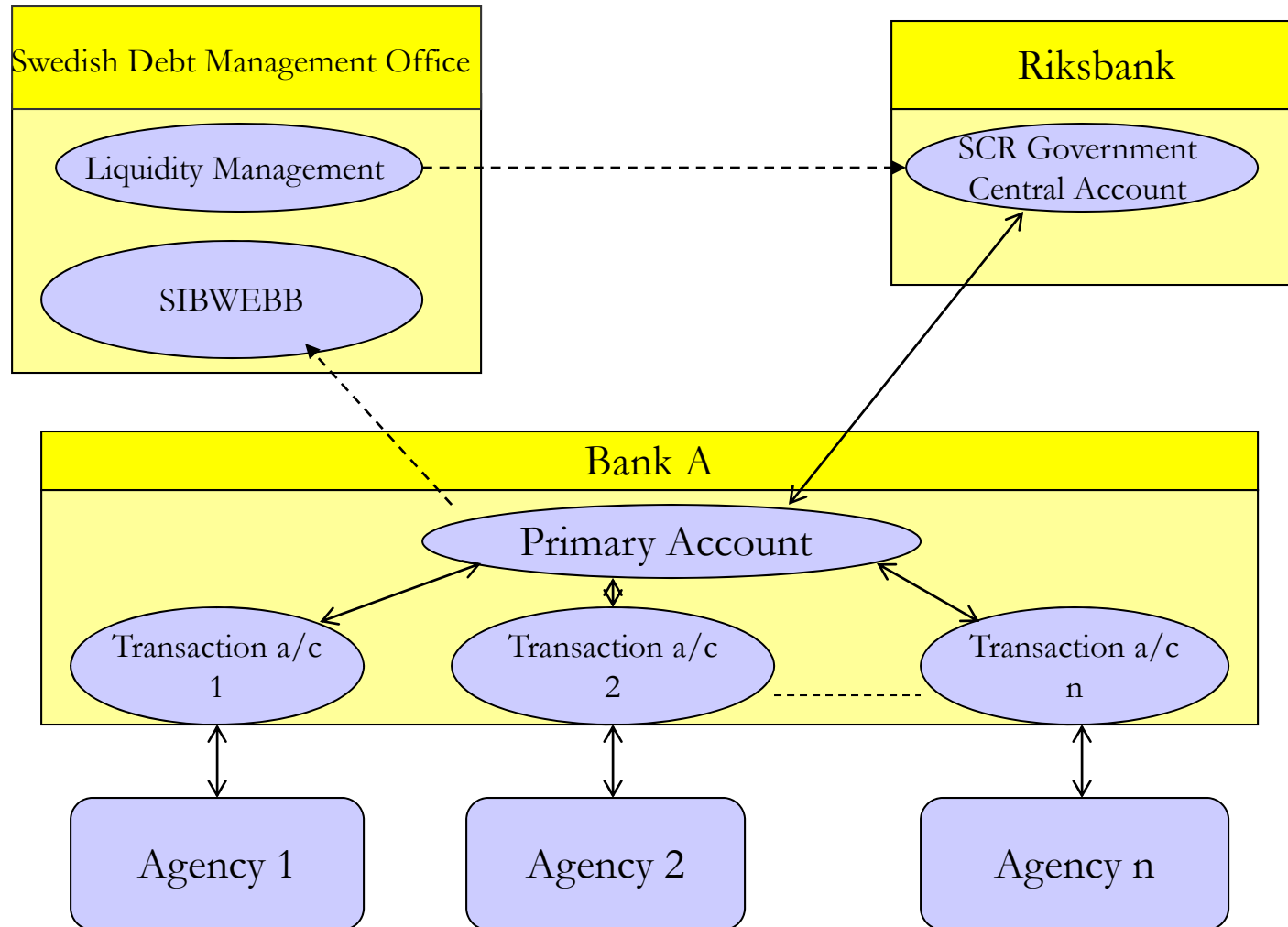
Cash Planning and forecasting

- Fundamentals of cash flow forecasting
- Forecasting revenue and expenditure
- Ensuring compliance of budget units
- Above and below the line forecasting
- Developing an information network
- Resourcing and responsibilities

Forecasting Cashflows

- MoF/Treasury/Debt Office forecasts government cashflows
  - Tax receipts (from revenue departments)
  - Expenditure (from spending departments)
  - Known transactions (e.g. interest payments/redemptions)

- Three outputs:
  - Forecasting the **annual fiscal position** (e.g. current surplus, net borrowing)
  - Agreeing **monthly profiles** for budget execution & monitoring
  - Forecasting **daily net flows** to help debt and cash managers
  - These operations share same data sources

Cash Forecasting

BI's advise on expected and actual flows

Budget, allotment, cash ceilings

Historical patterns, models etc.

Aggregate revenue and expenditure forecast

Banking data

Debt issuance, redemptions payments

Cash Balance Forecasts
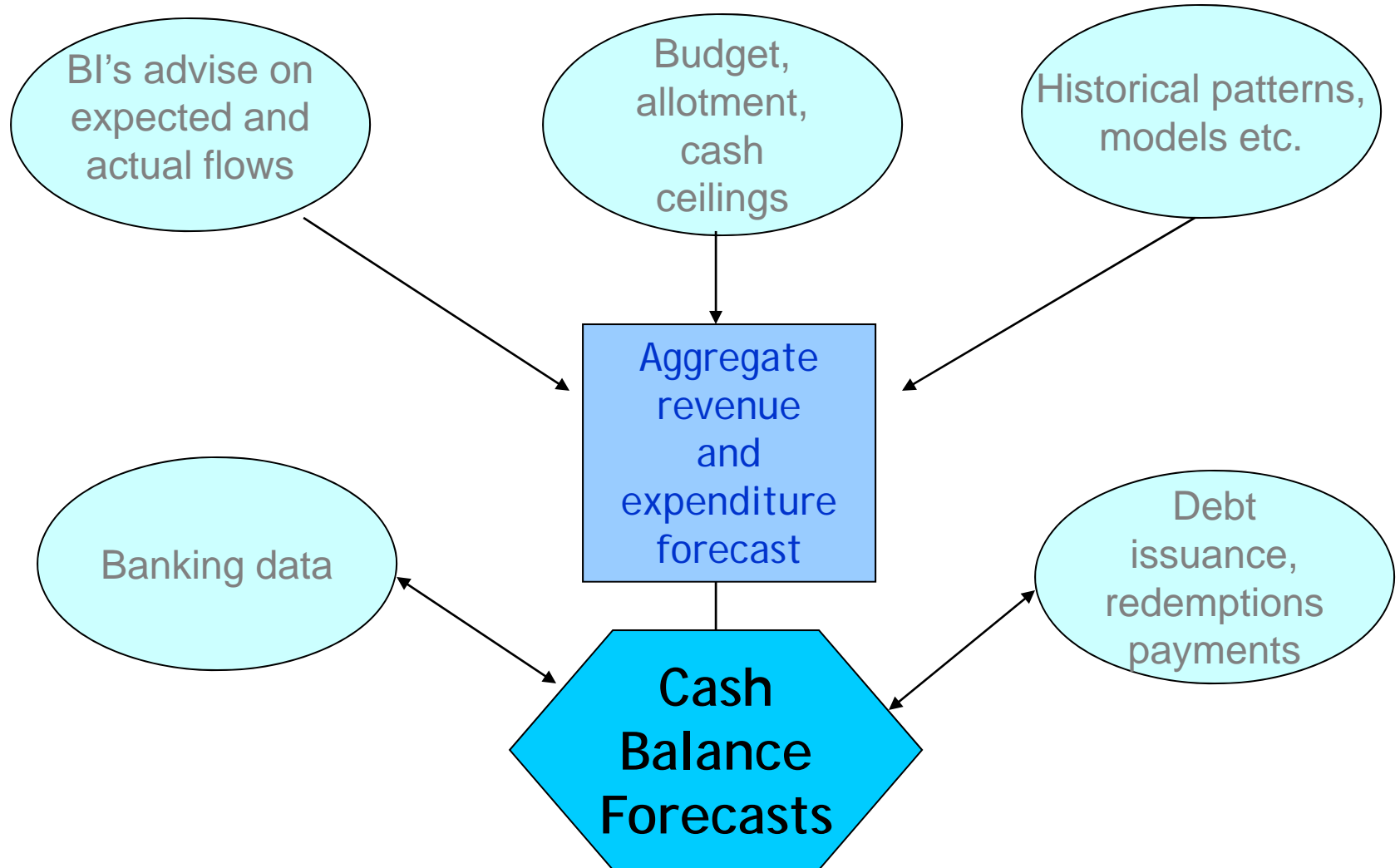
Daily Forecasting: Revenue

- Tax usually more variable and more unpredictable
- Some countries rely on Tax policy or Macrofiscal Units in MoF to supply revenue forecasts-however problematic
  - Macro Units typically focused on aggregate information as input to macro projections
  - Not focused on accuracy of receipts on a daily basis.
  - Revenue Admin Units closer to the coalface
    - Should be encouraged to develop forecasting capacity-although revenue admin have incentives to be conservative
    - Can compare against other information sources to build up accuracy over time
    - Need to differentiate between budget and cash management needs

Daily Forecasting: Revenue

- **Forecasts from the tax departments**
  - Monthly totals of tax receipts, by tax for [X] months ahead
  - Constrained by annual totals
  - Possible role for econometric analysis
  - Daily tax receipts for next month
    - 1-3 months if possible
    - Identify regular patterns (PAYE payments, VAT returns)
  - Payment profile around tax due dates (e.g. CT)
- **Non-tax revenue case by case**
- **Fix dates of major capital receipts (e.g. privatisation proceeds)**

Daily Forecasting: Expenditure

- **Expenditure forecasts from departments/agencies**
  - ○ Focus on largest departments [80/20 rule]
  - ○ Financing requirement for the month ahead
    - Significant large payments, by day
  - ○ Fix dates of major payments
    - Grants to sub-national government
- **Identify regular patterns**
  - ○ Funding social or welfare payments

Daily Forecasting: Expenditure

- Forecasts in some detail to allow for analysis of actual expenditures versus forecast

- Too high a level of aggregation makes it difficult to identify where the forecasting errors are concentrated

- Requirements to supply cash forecasting information should be uniform across budget institutions (BIs)
  - possibly use fiscal table as a basis

Opening Balance ....

Details	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
A. 1.0 REVENUES													
1.1 **Domestic**													
(a) *Tax Revenues*													
(i) Personal Income tax													
(ii) Import Dues													
(iii) Excises													
(iv) VAT													
(v) Property Taxes													
(vi) Other Tax Revenues													
(b) *Nontax Revenues*													
(c) *Other Revenues*													
(i) Special revenues													
(ii) Capital Revenues													
(iii) Transfers													
(iv) Other receipts													
1.2 **Foreign**													
(i) Grants													
(ii) Loans													
Total Revenues													
B. EXPENDITURE													
2.1 **Debt Service and other obligations**													
(i) Int. on Domestic Debt													
(ii) Int. on External Debt													
(iii) Transfers													
(iv) Other obligations													
2.2 **Current Expenditure**													
(i) Wages, Salaries and allowances													
(ii) Materials, goods and services													
(iii) Transfers to local govt units, and others													
(iv) Other recurrent expenditures													
2.3 **Capital Expenditure**													
(i) Acquisition of Capital assets													
(ii) Capital transfers													
(iii) Other capital expenditure													
2.4 **Loan Repayments**													
(a) External Debt													
(b) Domestic Debt													
2.5 **Other Expenditure & Payments**													
Total Expenditure													
C. FINANCING REQUIRED													
3(i) Existing Cash balances													
3(ii) Borrowings													
3(iii) Other Means													
D. CASH BALANCE C/F													

Ensuring Compliance

- Regular supply of profiles and forecasts from revenue and spending departments are essential
  - In developed countries, with strong MoF, supply of such information is part of long-established practice
  - Not so in some transition countries. Information is power may need to legislate to ensure compliance

- Carrots and Sticks
  - Some countries such as UK penalize ministries/agencies with poor forecasting records through restricting their ability to roll forward an annual under-spend
  - The surplus is distributed to those with a better record
  - The size of the penalty is linked to the extra costs to the DMO of late changes in the forecast
  - To be honest, UK is among only countries that has introduced the carrot and stick approach successfully

Ensuring Compliance
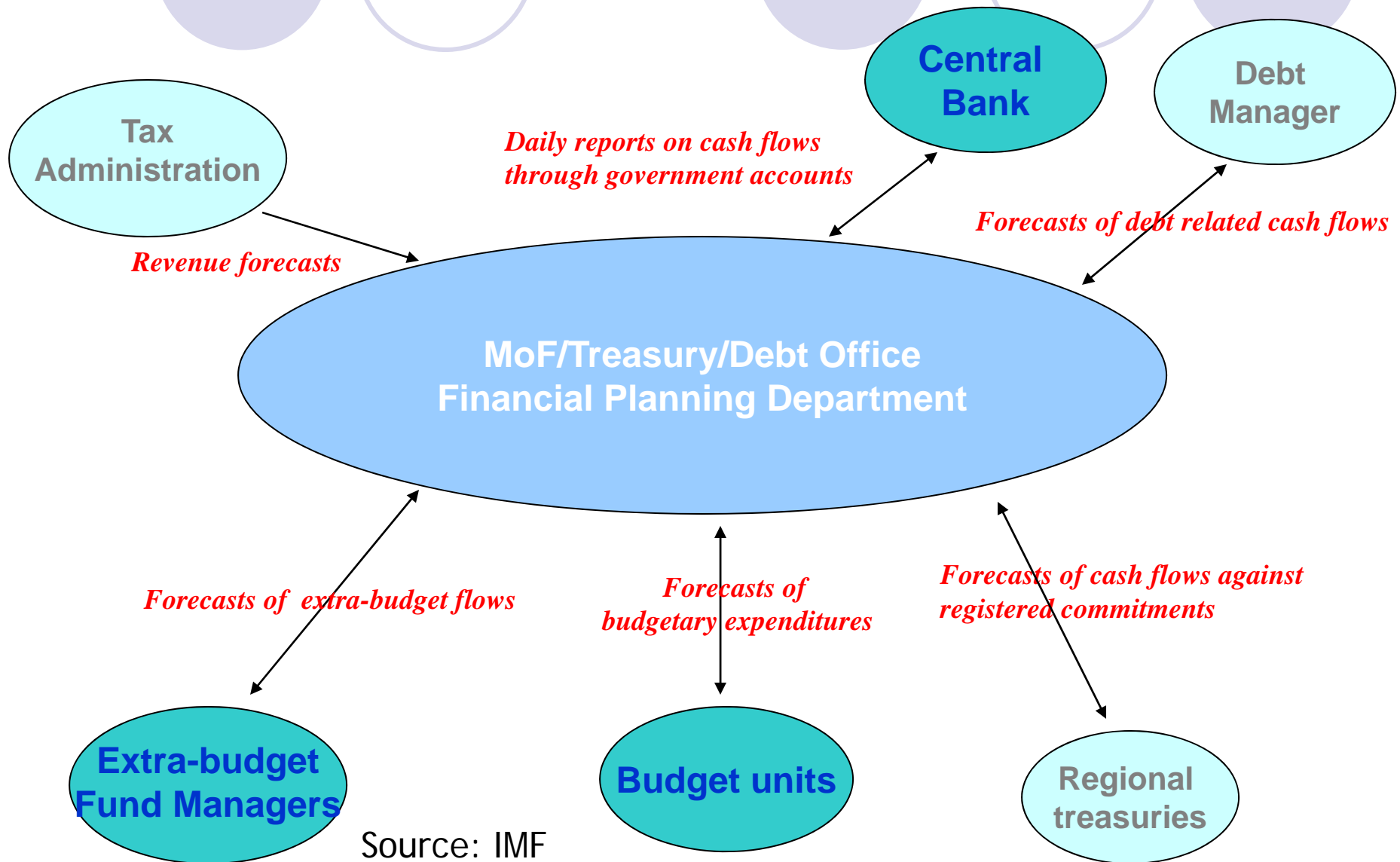
- Cash is important
  - Prevent departments from keeping interest receipts [unless redeposited in TSA], they have no incentive to hold unnecessary balances
  - Some countries charge departments for notional use of capital (although needs accrual accounting)-e.g. UK, Australia

Daily Forecasting: Below the Line

- Daily forecasts to cash managers for up to 10 weeks ahead
  - Forecast updated regularly (possibly weekly?)
  - Rolling forecast period during year
  - Forecast shows main components, but cash managers concentrate on the net daily position
- Debt/cash managers add below the line forecasts
  - Issuance, redemptions
  - [Government currency transactions (from central bank)]
  - Monitor TSA: adjust forecasts in light of actual outturn

Financial Planning Information Network

Tax Administration

Revenue forecasts

Daily reports on cash flows through government accounts

Central Bank

Debt Manager

Forecasts of debt related cash flows

MoF/Treasury/Debt Office
Financial Planning Department

Forecasts of extra-budget flows

Forecasts of budgetary expenditures

Forecasts of cash flows against registered commitments

Extra-budget Fund Managers

Budget units

Regional treasuries

Source: IMF

Daily Forecasting: Monitoring

- ## Daily monitoring
  - ○ Update forecast during day to forecast the end of day position

  - ○ Monitor actual transactions across TSA

  - ○ Outturn for the day known exactly the following morning, by analysing bank statements

  - ○ Analyse experience: e.g. do forecast errors imply timing changes within the month or changes in the level of activity?

  - ○ Time zone problems

Resource Requirements

- **Systems**
  - Forecasting module; updating cash flows in real time
  - Transaction processing requirements, incl. accounting
  - Electronic links to relevant MoF departments (and possibly some BUs or tax departments)
  - Electronic links to high value payment system and settlement system (or via central bank)
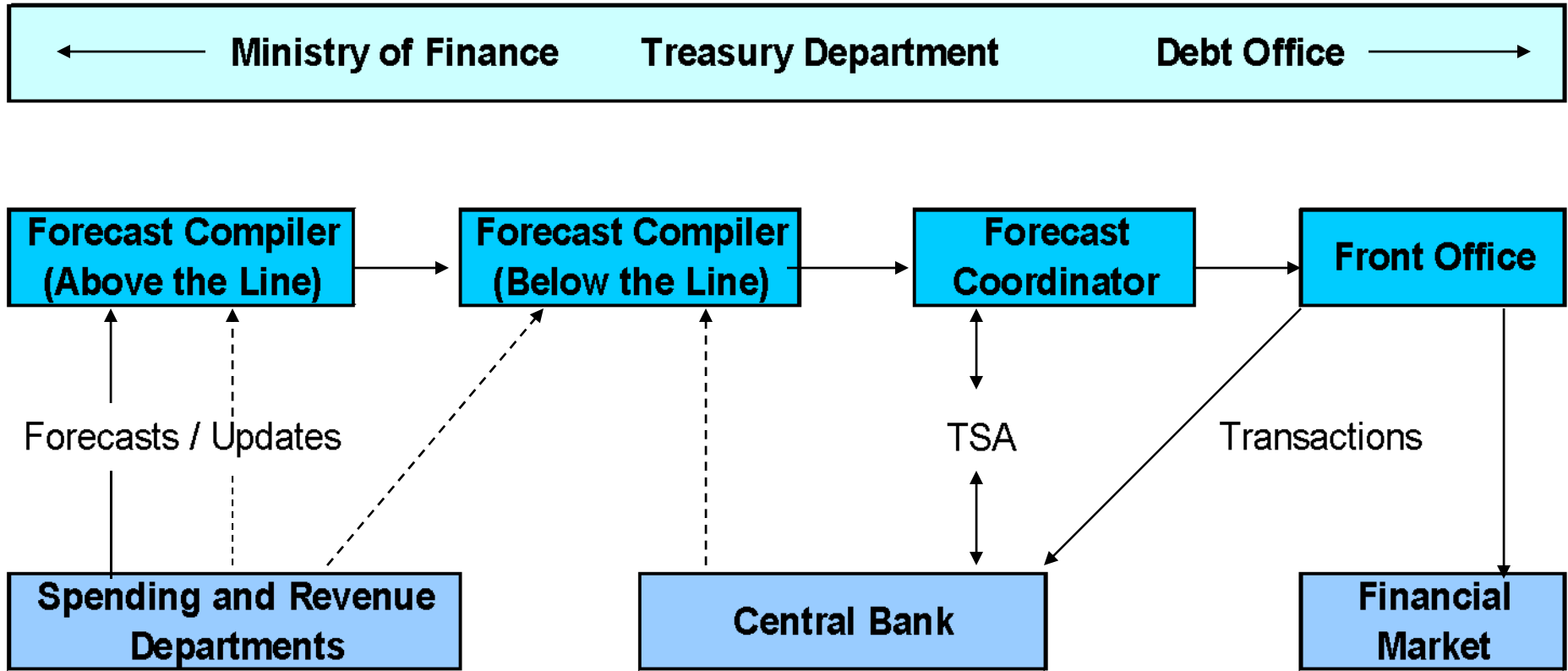- **People**
  - Expanded front office
  - Forecaster / data controller
- **Operational Risk Management**
  - Data integrity
  - Volume of transactions

Responsibilities

Ministry of Finance	Treasury Department	Debt Office

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Forecast Compiler        Forecast Compiler        Forecast            Front Office
(Above the Line)   →    (Below the Line)   →    Coordinator    →
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Forecasts / Updates

TSA   Transactions

| Spending and Revenue Departments | Central Bank | Financial Market |

Lessons

- Better results from history and experience of patterns – not econometrics
  - Database and trend analysis more important than models
- Fundamental requirements
  - Forecasts from tax and spending departments
  - Good intelligence on what has/is likely to happen
  - Build on informal working level links
  - Need good information systems to record and maintain data
- May need to offer carrots and sticks

Management of cash Balances of TSA

- Define separate pools of funds within TSA system, for instance:
  - Liquidity
  - Deposit
  - Investment
- Differentiation based on liquidity needs, level of uncertainty, costs of alternative sources, etc
- Select instruments that match expected cash needs
- Integrated management of assets and liabilities
- Transparent and efficient pricing of assets, liabilities and services!

Managing cash balances

- Need to develop instruments to manage cash surpluses and deficits.
- Main financial instruments
  - T-Bills
  - Repo's/reverse repo's
  - Short-term facilities with commercial banks
  - Deposits-term and overnight
    - With CB and with commercial banks
- Access to Liquidity at short notice for unanticipated cash calls
- Impact on domestic financial markets will be relevant (large stocks or flows)
  - Coordination with monetary authorities essential

Obstacles to managing cash balances

- Underdeveloped domestic financial markets-particularly money markets
- Lack of confidence in domestic banking system (particularly now)

- Absence of sound, efficient clearing and settlement systems
  - ○ Hugely improved in most transition countries over last 5-10 years

- Underdeveloped legal, judicial and regulatory infrastructures

- Untested standardized master repurchase agreements and other collateralization contracts
  - ○ Although in place in many countries may not have been fully tested under national legal framework

Money markets: key points

- Essential preconditions - stable macroeconomic conditions and sound policies

- Underpin bond and other financial markets

- Support effective monetary policy and financial stability

- Central bank & government must play an active role-both as an active player in the market and from a policy perspective to promote activity in the financial markets

Managing risk

Principally
- liquidity risk (ensure liquid funds available, avoid overdraft)
- funding risk (ensure ability to raise funds at market yields when required)

Also
- Risk attached to estimates of the borrowing requirement - insufficient information
- Volatility or lumpiness of underlying cash flows
- Counterparty credit risk and operational risk

Cash management and monetary policy

- Treasury cash management task is separate and distinct from CB liquidity management
  - CM can neutralize changes in aggregate cash position
- Need clear accountability for policy functions and allocation of responsibilities
  - Avoid possible conflict of interests, inside information
  - Transparency
  - Separation of cash management and monetary operations
- Common incentives to foster liquid financial markets

Institutional arrangements for cash management

- What is the appropriate framework?
- DMA's are increasingly adding cash and asset management functions –not the only model
- Who is responsible for the different elements of cash management-should one institution be responsible or should it be shared across different institutions or units
- Integration of cash and debt management
- Good liaison and sharing data/information across organization boundaries
  - Cash forecasting: MoF, BIs, revenue agency, treasury etc
  - Monetary agency, treasury (inc. debt managers)