Integrating Government Debt and Cash Management

Based on Client Presentation

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Outline

- Cash Management
  - Objectives; and Policy Issues
  - Integration with Debt Management
- The International Perspective
- Emerging Market and Transition Countries
- Problems and Challenges

What is Cash Management?

- Cash management is:
  - 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
- Cash management is distinct from budget management or budget execution
  - Budget execution is about ensuring that the budget is managed consistently within agreed financial limits
  - Cash management is about ensuring that the government has the liquidity to execute its payments - requires planning ahead
- Cutting planned expenditure because of a lack of cash is cash rationing, not cash management.
  - Effective cash management removes the need for cash rationing

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Objectives of Cash Management

Ensuring cash is available to meet commitments

Overriding objective – other objectives must be subject to it

- Economising on cash within government
  - Saving costs
  - Reducing risk
- Managing efficiently the government's aggregate short-term cash flow
  - Both cash deficits and cash surpluses
- In such as way as also to benefit
  - Debt management
  - Monetary policy
  - Financial markets (market liquidity and infrastructure)

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Benefits

- Ensures obligations can be met as they fall due
- Minimises idle balances and associated costs
- Contributes to development of short-term money markets
- Reduces liquidity impact from Budget deficits/surpluses
- Separation of cash management from monetary policy
- Supports debt management
- Enhanced transparency of government flows

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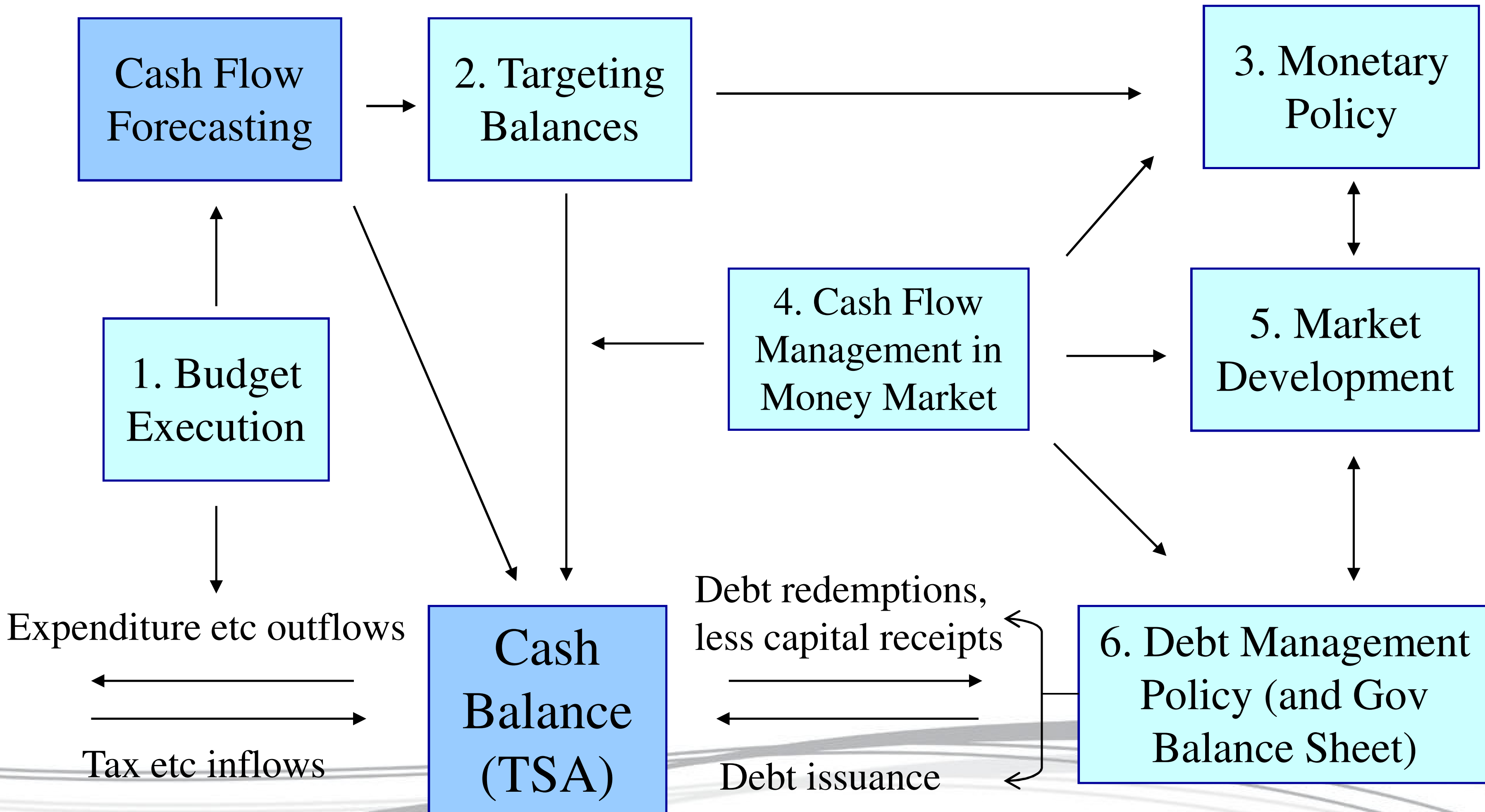
Policy Issues Arising



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The International Perspective

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Budget Execution and Payments

- Budget Execution - in many OECD countries budget execution function has withered away
  - Line ministry's agreed budget is released at the start of the year
  - Ministries make own decisions as to the profile of spending
    - Providing it keeps within agreed spending provision
    - Centre's role primarily monitoring – requires flow of information from ministries to centre
- Payments System
  - Modern processes rely on electronic transactions
    - Centralising flows through a limited number of agents
    - Processing government transactions with minimum intermediate steps
  - Marked differences between countries in degree to which the payments process is centralised within the Treasury / central bank or reliant on the commercial banking system

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Payments Systems - Responsibilities

	Central Bank responsible for banking operations	Commercial banks responsible for banking operations
Treasury responsible for payment processing	France, USA (expenditure) China (centralised system)	USA (tax)
SUs responsible for payment processing	Turkey (major payments)	UK, Australia, New Zealand China (authorised system)

- Dispersal of payment responsibility tends to be associated with dispersal to the banking system
  - possible to centralise payment while decentralising budget execution responsibilities
- Growing complexity and volume of financial transactions suggest that the dispersed model is likely to more robust in the longer term

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The Treasury Single Account

- Aggregate all Government cash balances in TSA at central bank
  - Facilitates monitoring and control, also fiscal and financial planning.
  - Allows Treasury to minimise the volume of idle balances in the banking system with consequent cost savings
- TSA can work with variety of payments systems
  - Payments approvals centralised in MoF/Treasury or dispersed to spending agencies
  - Processing of payments centralised within MoF/Treasury/Central Bank or dispersed to the banking sector
  - hybrid
- Any balances left with the banking system should be swept overnight back into the TSA. Also need:
  - Internal accounting arrangements (and incentives) to minimise level of idle balances and reduce timing uncertainties
  - Account structures to net transactions and aggregate balances into TSA

Cash Flow Forecasting

- Efficient cash management requires ability to forecast daily cash flows across the TSA
  - To facilitate orderly achievement of budget targets; and to ensure that budgeted expenditure is smoothly financed avoiding delays
  - To devise the strategies for smoothing the cash flow profile, minimising idle cash balances and reducing borrowing costs
  - To contribute to monetary policy implementation
- Forecast information is needed for some period ahead
  - Timing of future peaks and troughs must be identified to make decisions about the maturity of required borrowing or lending
- Monitor actual changes in close to real time
- Forecasting relies heavily on those in SUs and tax departments closest to cash flows (see later)
- Characteristic of all modern government cash management systems

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Management of Idle Balances

- Governments need access to liquidity – implies some cash balances
- Who has responsibility for their investment?
  - If left with central bank who takes the risk?
- In some countries, MoF takes responsibility for investing balances – targeting a low balance at central bank
  - Associated with monetary policy independence of central bank (and helps to ensure it)
  - Considerable advantages – clarity in financial markets, eases monetary policy operations – but technically demanding
- Intermediate models
  - Rough tuning not fine tuning – see later
  - Longer-term surpluses invested in private sector
  - Relative interest rates must give correct signals – central bank should remunerate MoF account at market rate

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Central Bank's Balance Sheet

Table 4.3 Central bank balance sheet structure

A standardised central bank balance sheet:	
Assets	**Liabilities**
Refinancing to credit institutions	Credit institutions' holdings on current accounts (reserves)
Marginal lending facility	Deposit facility
Net foreign assets	Banknotes in circulation
	Government deposits
	Other factors (net)
Can be rearranged as follows:	
Liquidity supply through monetary policy operations "refinancing to credit institutions" plus "marginal lending facility" minus "deposit facility"	
equals	
Autonomous factors "banknotes in circulation" plus "government deposits" minus "net foreign assets" plus "other factors (net)"	
plus	
Reserves "credit institutions' holdings on current accounts"	

Source: ECB

Monetary Policy Objectives

- Whatever the model of government cash management, needs to be agreement with MoF and central bank covering
  - Flow of information from MoF on government's expected cash flows and balance at central bank
  - Flow of information to MoF on government's actual balance at central bank (in close to real time)
  - Remuneration of accounts – preferably at market rate
- Variety of mechanisms to establish co-ordination

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Debt Management Policy

- Integration of (or close coordination between) cash and debt management functions ensures:
  – Debt issuance decisions are taken in the context of the seasonal nature of government's cash flows
  – MoF has overview of whole market – important when taking decisions about the future balance of short- and long-term debt, including Treasury bills
  – Active management of the short-term cash position allows pattern of bond sales to be announced in advance [as capacity develops]
  – Potentially operational and risk management advantages
- Integration tending to become the norm in OECD and many other countries
  – Often with the formation of a debt office or similar

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Cash and Debt: Making the Choice

- Financing government's gross borrowing requirement ⇨ choices between instruments: internal or external, short or long-term, bonds or bills, fixed or floating rate, retail or wholesale, etc
  - Choices made in context of MTDS
  - Depend on market appetite, market volatility, interest rate prospects
- **Demand:** intermediaries' and investors' requirements varying with market and their cash flow
- **Supply:** government's financing choices made in the context of the profile of financing flows
- **Price:** represented by the yield curve
- Debt managers best placed make these decisions
  - Juggle the full range of instruments in deciding issuance
  - Trading-off the demands of the strategy, the demands of the market, and the government's need for cash, taking account of price

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Operational Coordination

- Other day-to-day coordination requirements include:
  - Linkage of issuance dates with redemption dates, to maximise the opportunities for investors to roll over into a new issue
  - Maturity dates chosen to avoid weeks, and especially days, of heavy cash outflow (e.g. salary payments): instead target days of cash inflow (the due date for tax payments)
  - Debt managers can mitigate the cash management problems that potentially arise when large bonds come to maturity
  - Also debt managers can correct repo market distortions or disruptions
- As interaction with the market develops, integration of debt and cash management functions becomes especially important.
  - In time, through active management of the short-term cash position, the combined function will be better placed to weaken the link between the timing of cash flows and bond issuance
    - Allows pattern of bond sales to be announced in advance
  - Ensures that the government presents a consistent face to the market

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Cash Flow Tuning

- Many Treasuries seek to target the cash balance at central bank, by short-term borrowing or investment of temporary surpluses; but varies greatly
- Distinguish between:
  - "Rough tuning" – issuing Treasury bills (or other short-term instruments) to a pattern designed to offset the impact on banking sector of net cash flows in and out of government, ie to smooth somewhat the changes in the TSA
  - "Fine tuning" – more active policies, wide on a wider range of instruments, to smooth the treasury's balance more fully.
- Many countries rough tune their flows; but relatively few countries manage to fine tune well – France, smaller northern eurozone countries, UK, Sweden
- Efficient payment infrastructure is important

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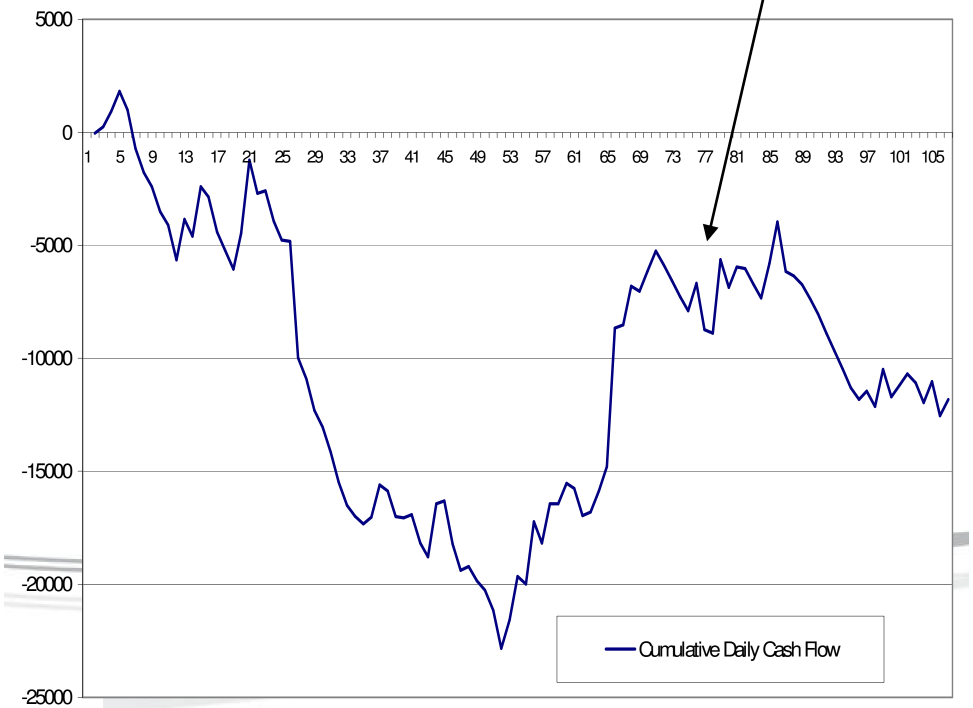
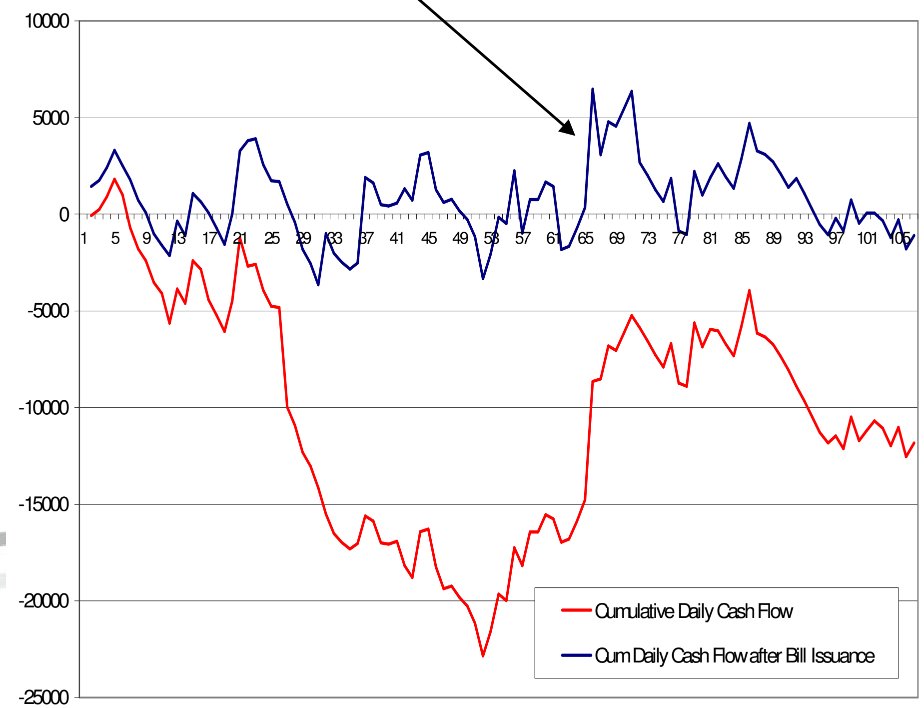
Rough Tuning: Example

Rough Tuning with weekly issue of Treasury Bills only

Converts **this** profile to **this** profile

[Fine tuning makes it flat]





Cash Management Instruments

- Treasury bill usually main instrument in moving towards more active cash management
  - TBill has different roles as instrument of
    - debt management
    - cash management
    - monetary policy
  - Clarify purposes and operational procedures with market and central bank
  - Emphasis on shorter-term (e.g. 1 month) bills for cash management
- Repo usually used for fine tuning – but requires liquid market

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Financial Market Development

- Active cash management links to development of domestic financial market
- Repo (or similar secured instruments) contributes to money market activity
  - Makes treasury securities more attractive to banks for liquidity management
  - Spurs development of infrastructure required for interbank repo market
  - Also stimulates government bond market
    - Domestic government bonds normally the preferred collateral
- Benefits government debt and cash management
  - Reduces risks and consequences of debt auction failure
  - Providing opportunities to invest excess cash balances
- Developed money market important both as an objective in itself and through its links to other financial markets
- Emphasises importance of:
  - Debt and cash managers working closely together.
  - Interaction between cash management policies and monetary policy

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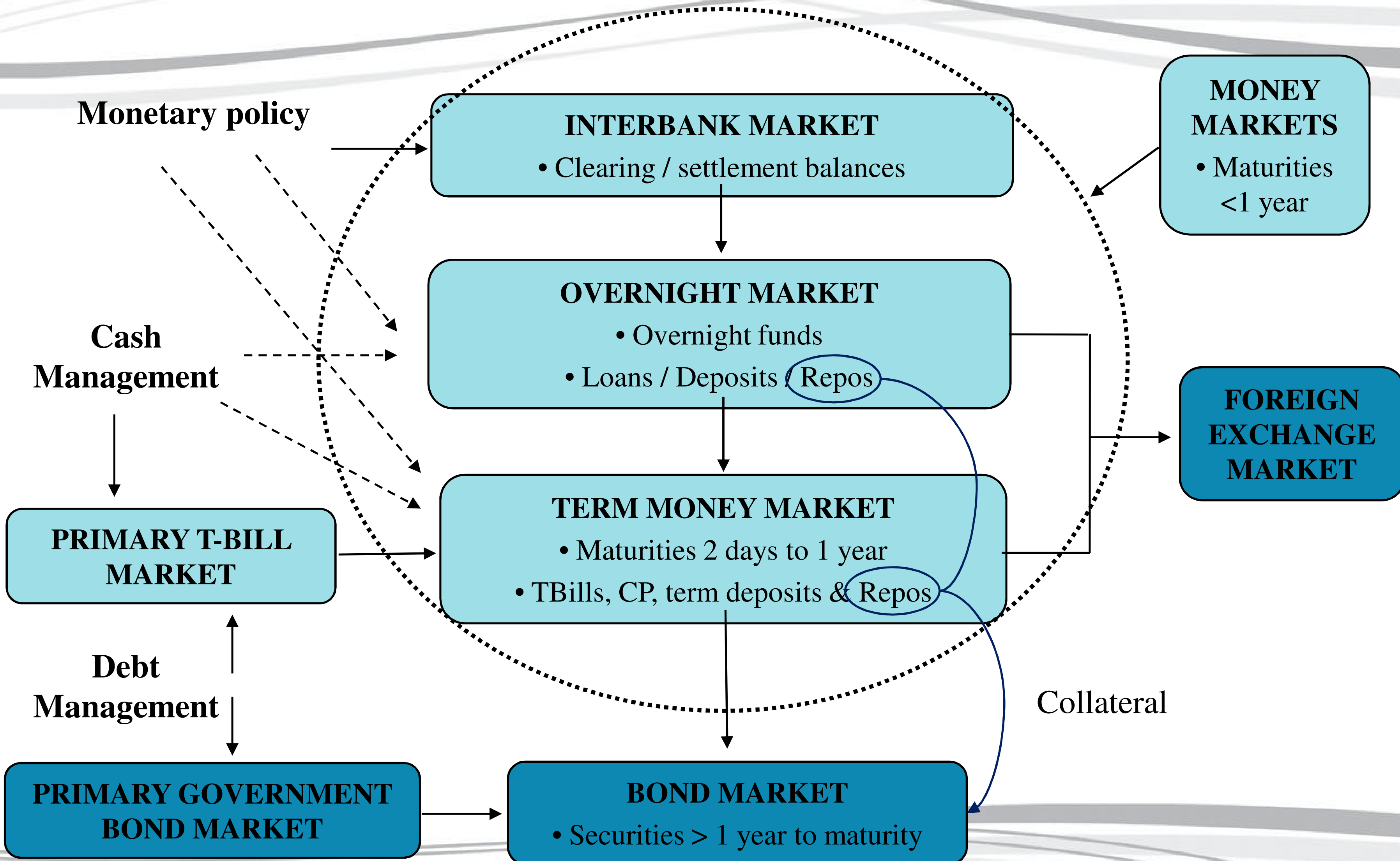
Debt and Money Market Interaction



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Good International Practice - Summary

1. Processing of government transactions with few handling steps – reliance on electronic transactions, centralised systems
2. Treasury Single Account (TSA)
3. Internal systems to forecast daily government flows of receipts and payments
4. Agreements between MoF and central bank on information flows and respective responsibilities (but no borrowing from central bank)
5. Close interaction between government debt and cash management
6. Use of Treasury Bills (and repo and reverse repo) to help manage balances and timing mismatches
7. Efficient payment infrastructure

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Main Models

Target Balance

- Eurozone, UK and Sweden: ministry of finance or debt office targets low and stable balance at central bank
- Differences of approach
  - Definition of target balance varies
  - Different modes of interaction with market (secured or unsecured, auctions or bilateral, issuing Treasury Bills or commercial paper, interbank or repo market)
- Difficult - some more successful than others!

Other

- MoF or debt office maintains minimum balance at central bank – and/or rough tunes with Treasury Bills
  - Australia
- Balances left with banking sector until convenient to transfer
  - US (deposits collateralised, maintain balances at Fed of $5-7 billion – but can be exceeded)
- Central bank takes responsibility for handling cash variations
  - Places deposits directly with banks (Canada)
  - Takes into account in own money market operations (UK pre-2000)

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Emerging Market and Transition Countries

Emerging Market & Transition Countries

Objectives are no different – but unhelpful legacy

- Many bank accounts – extra-budgetary funds a complication
- Cash management entwined with budget execution – or confused with cash rationing
- Cash flow forecasting undeveloped
- Coordination with central bank often patchy

Progress being made

- Benefits of TSA recognised, but long process to establish fully
- Many seeking to integrate debt and cash management
- Several rough tune cash flow by varying TBill issuance
- Budgeting and cash systems improving

Identify priorities & sequencing

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Typical Phases of Development

- **Phase 1: Treasury Single Account**
  - integration of government accounts
  - sweeping of overnight balances into single MoF account at central bank

- **Phase 2: Forecasting capability**
  - the development of a capability within MoF to monitor and forecast flows in and out of government – i.e. changes in MoF balances at central bank

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Typical Phases of Development

- **Phase 3: Rough tuning**
  - the issue of Treasury bills (or other bills)
  - issuance pattern designed to offset liquidity impact of net daily cash flows, i.e. to smooth the change in MoF's balance at the central bank
  - some management of structural surpluses
- **Phase 4: Fine tuning**
  - more active policies, drawing on a wider range of instruments or institutional options, to smooth more fully MoF's balance at central bank

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Emerging Market and Transition Countries – the Way Forward

- Emphasis should be on first 3 phases
- Consider fine tuning in due course
  - Operationally more demanding
  - Goes hand in hand with financial market reform
- Develop capabilities incrementally – but as steps on a route to an understood objective
- Work on different phases can proceed in parallel
- But benefits from more active cash management
  - Average cash balance at central bank will be less – with cost savings
  - Contributes to development of short-term money markets
  - Reduces impact on liquidity of fluctuations in government cash flows, with benefits to monetary policy

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Cash Management is a Project

- Most of the actions are for the Treasury function to take forward, with support as necessary from others in the MoF
- But effective cash management also needs:
  - A supportive central bank.
  - Competent finance functions in SUs and the tax departments to supply good cash flow forecasts - and see it as part of their responsibility to do so.
  - A flexible banking system and a developed money market.
- Development of cash management therefore best thought of as a project
  - Dependencies, bottlenecks and a need to prioritise
  - Needs also to link with money market development
- 4 streams of work (next slide)

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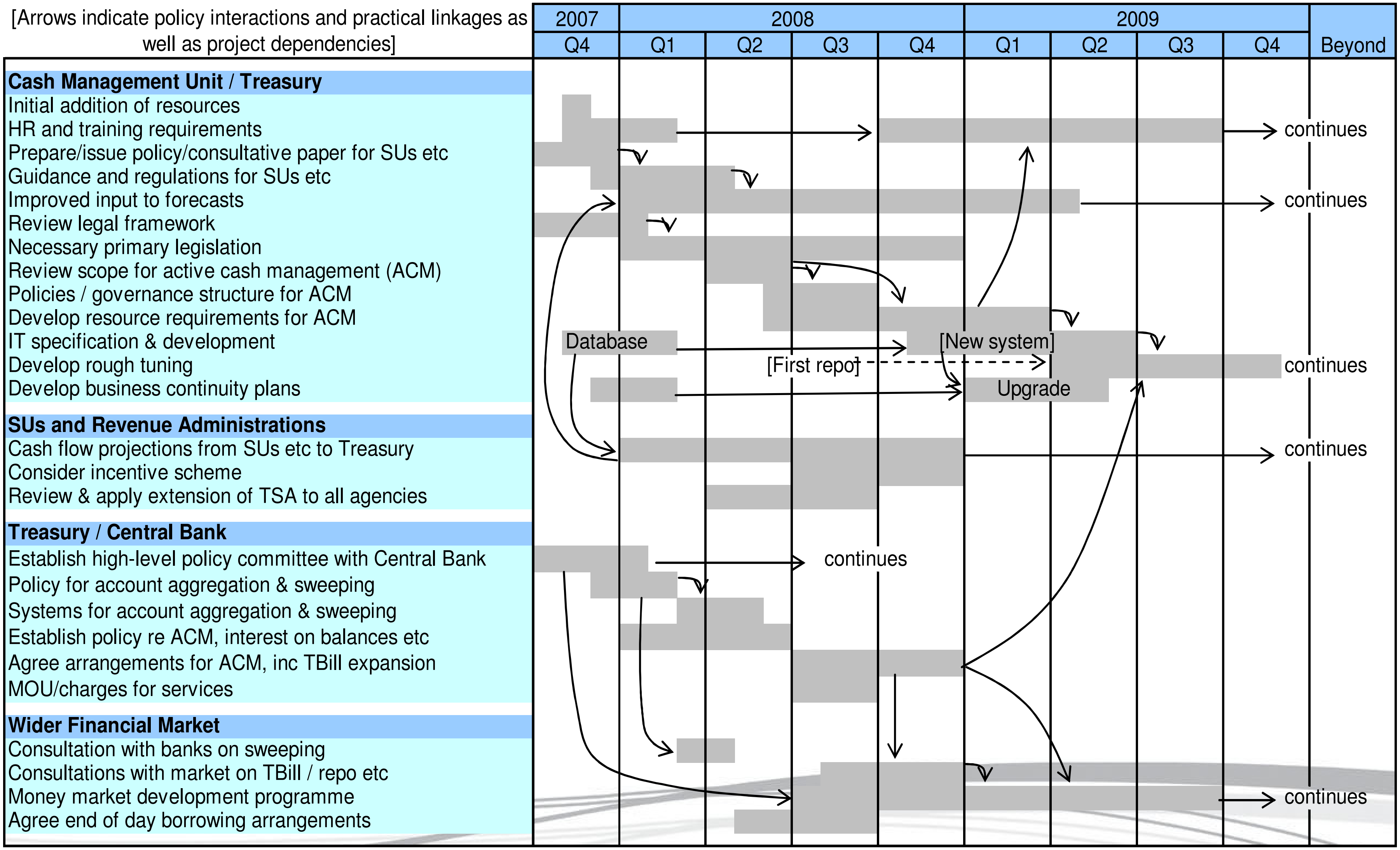
Illustrative Implementation Map



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Problems and Challenges

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Some Common Problems

- Budget execution focused on legal regularity and compliance
- Government loses control to central bank
  - Liquidity managed for monetary policy purposes
    - Bank may even control TBill issue
  - Bank meets government's short-term cash flow needs
  - Government balances not properly remunerated
- Fiscal cash rationing is the main imperative
  - Budget execution objective dominates the debt and cash management objectives
  - Surpluses and deficits managed off market – eg using SOEs
  - Institutional distribution of responsibilities relevant
- Spending units not concerned with borrowing costs
- Fragmented treasury system with many separate bank accounts

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TSA: Problems and Choices

- Extent to which budget units should have bank accounts.
  - Should be limited to necessary transaction accounts
  - Where transaction accounts are necessary balances are swept up into TSA periodically (preferably daily) [ZBAs]
- Balances of extra-budgetary funds should preferably be included in TSA
  - May be policy resistance – who controls the cash?
  - If not in TSA, Treasury should still be able to borrow from EBFs
  - [Some of the same problems re donors' accounts]
- Balances of sub-nationals
  - Pros and cons of including in TSA

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Cash Flow Forecasting: the Aim

- Objective is to anticipate cash needs of government
- Forecasts needed of total net cash flow (hence also cash balance)
  - Receipts and payments (above the line); and
  - Financing transactions (below the line) - debt redemptions, new borrowing, also eg assets sales
  - May need to identify foreign currency and donor project flows separately (depends on structure of TSA)
- Ideally
  - Daily (if necessary weekly) some 3 months ahead
  - Rolled forward regularly (weekly)

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Key Features of Forecasting Framework

- Develop a comprehensive framework
- What matters is cash flow - separation of permission to spend from actual spending
- Incentives to SUs to provide realistic plans
- Concentrate on major inflows and outflows
  - Emphasis on history and experience – not econometrics
- Develop contacts with SUs and revenue departments at operational level – use their knowledge

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Tool and Techniques - 1

- At start of year, forecasts consistent with annual budget
  - But need unbiased estimates; do not constrain to budget as year progresses
  - May help to separate forecasting from budget execution processes
- Revenue forecasts from the tax departments
  - Monthly totals of tax receipts, by tax for xx months ahead
  - Daily [weekly] tax receipts for next month, 1-3 months if possible
  - Tax usually more variable and more unpredictable
- Expenditure forecasts from departments/agencies / SUs
  - Expected expenditure (cash not commitments) by day/week for xx months ahead
  - Focus on largest SUs [80/20 rule]

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Tool and Techniques - 2

- Indentify major individual flows – some are very precise
  - Tax payments by the largest companies
  - Debt issuance and redemption; interest on government debt
  - Salary payments; regular social welfare or pension payments
  - Payments on major public projects
  - Transfers to lower levels of government
  - Receipts from major asset sales
- Particular problems with donor grants and disbursements
  - Highly uncertain, difficult to forecast, depends on project progress
  - May be possible to assume that project spending and project-related funding net to zero – but does not cope with lumpy flows
  - Inflows may also go to separate accounts not TSA

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Making Forecasting Work in Practice

- Important that SUs and tax depts cooperate
  - May need legislation
  - Scope for sticks and carrots - greater delegated authority, easier virement, financial penalties
  - Some countries also require pre-notification to MoF of all major payments
  - Also consult MoF on eg payment due dates of new taxes, dates of asset sales
- Explore past patterns
  - Business and sales taxes often have a marked pattern across the year
  - Some expenditures – eg agricultural support – may be seasonal
  - Many countries have an end-year surge in expenditure – avoid rules preventing end-year carryover of unused budget appropriations
  - Within-the-month pattern often associated with the payment of civil service salaries as well as the due days for tax payments
- Personal contacts
  - Avoid requests / information going up hierarchy, across and down
  - Cash forecasters in Treasury must have direct contact with opposite numbers in major SUs and tax depts

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Daily Monitoring

- Daily monitoring
  - 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?
- As forecasting develops
  - Move to daily forecasts
  - Update forecast during day to forecast the end of day position

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Who does What?

- SUs and tax departments – provide above the line data
  - [Planning/Economics ministry may provide projections of donor flows]
- In Treasury/MoF/Debt Dept distinguish between:
  - Who aggregates 'above the line' forecasts; and takes responsibility for the projection of the total
  - Who adds 'below the line' transactions – will often be debt managers
    - Have data on issuance, redemptions,
    - Also loan disbursements (which may link with expenditure forecasts)
    - Debt managers may also forecast interest payments (above the line)
  - Who is responsible for taking decisions about investment of surpluses or issuance of TBills to manage cash flow
- Central bank – provides banking services and information flows
  - May provide details of actual disbursements
- Good practice guidance
  - Identify who is responsible for what – others should not second guess
  - Regular [weekly] meetings of those responsible in MoF to review forecast updates and decide on investment / issuance policies
  - Establish risk management parameters

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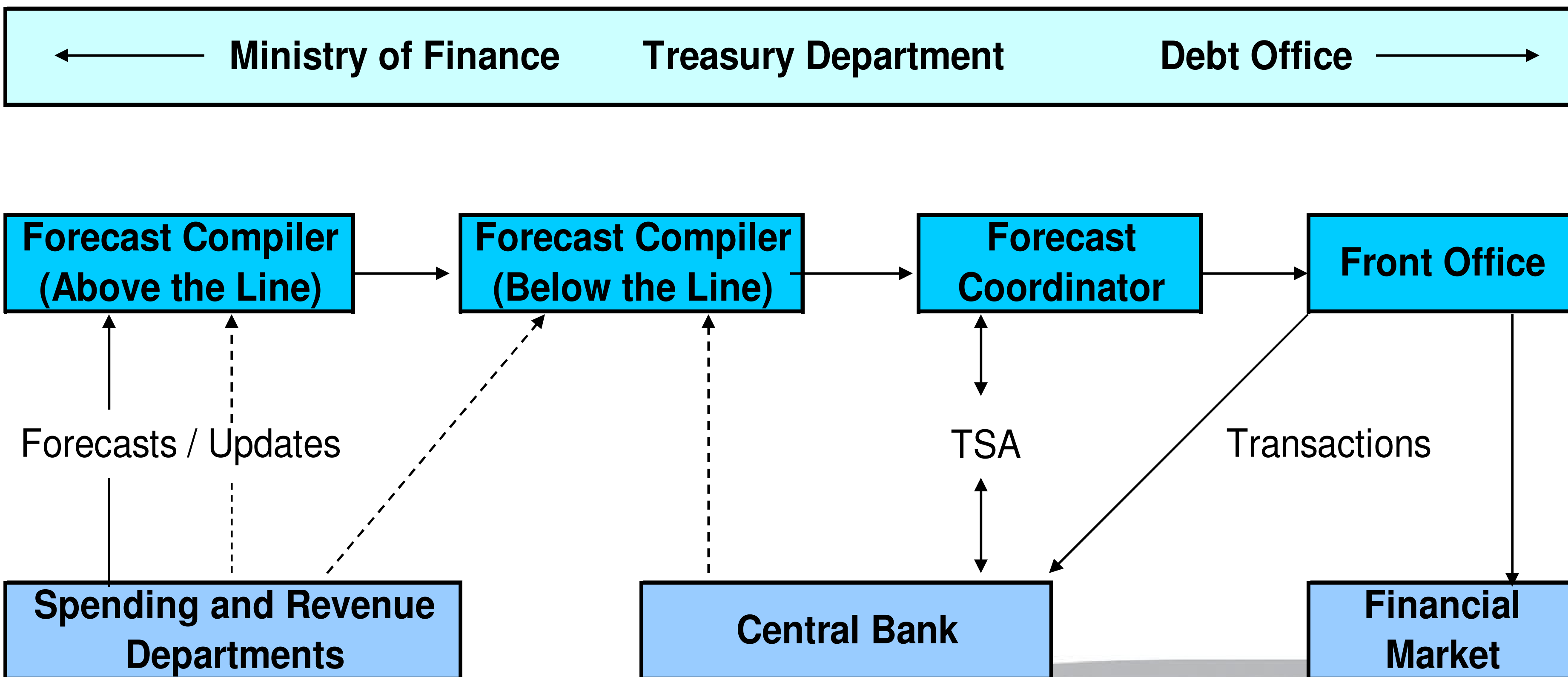
Responsibilities



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Resource Requirements

- Cash forecasting unit needs 2-3 people
  - Aggregate and coordinate the latest forecasts
  - Monitor flows across the TSA
  - Analyse patterns and past outturns against previous forecasts
- Some countries develop cash forecasting module integrated with main Integrated Financial Management Information System (IFMIS)
- Many more develop separate database (initially just a spreadsheet)
  - Cash flow data support immediate operational decisions. Do not have to be of "accounting" quality or precision
  - Databases have to be flexible and under the control of forecasters / cash managers
  - Active cash management means much more work on scenarios and what-if calculations – maybe easier in dedicated database
  - Note operational risk related to data integrity
- As capability and sophistication develop, people, skills, IT, other systems, risk management, etc requirements all increase

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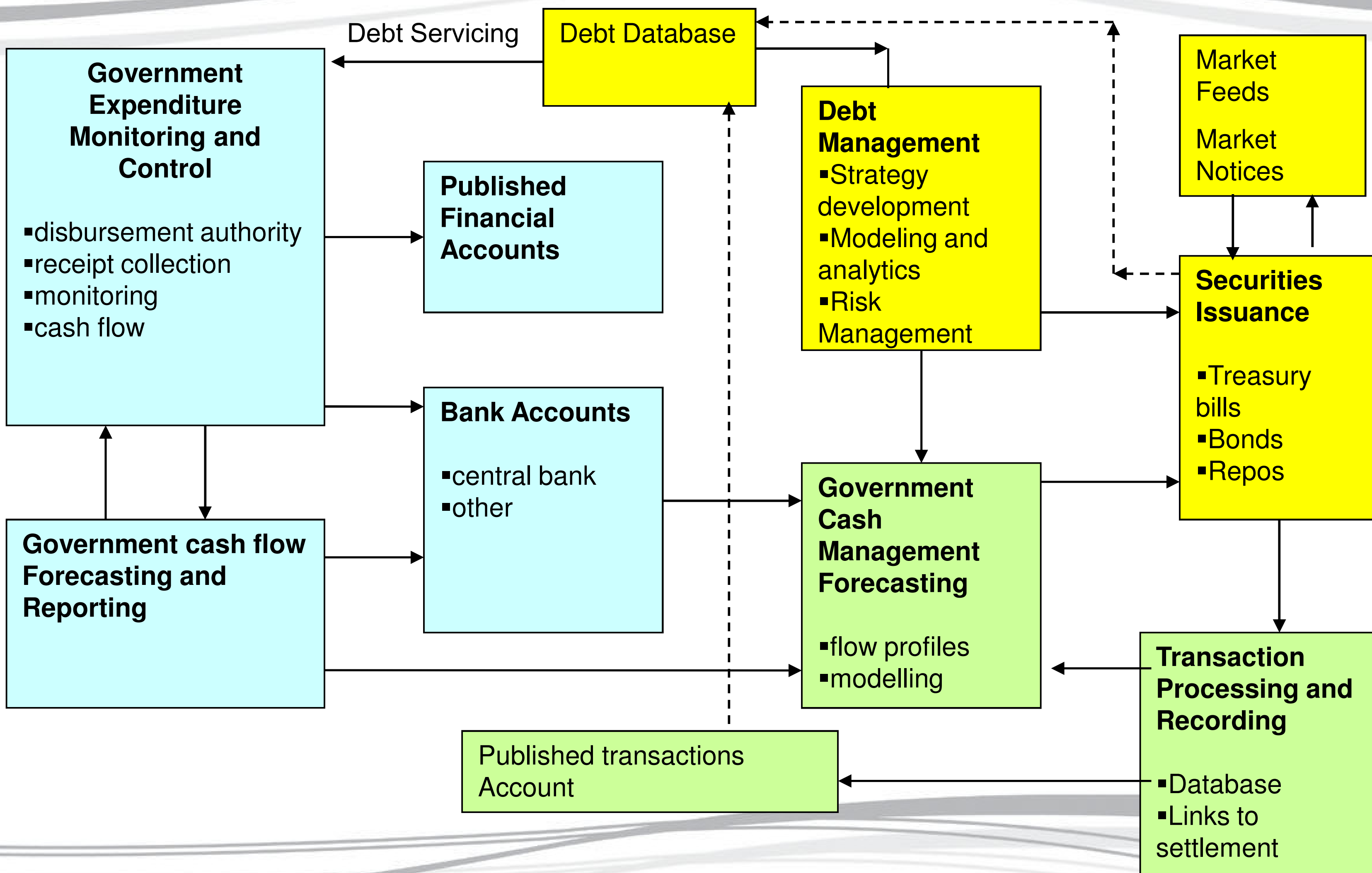
Debt (& Cash) Office: Systems



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Conclusion

- Substantial economic benefits from efficient cash management
- International consensus on main characteristics of efficient cash management
- But some important differences
  - How far MoF or debt office tries to meet a target of a low stable cash balance at central bank
  - Or left to central bank to balance the residual cash flow
- In emerging and transition countries, emphasise development of TSA, improved forecasting and rough tuning (e.g. using Treasury Bills)
  - Plan as a Project
  - No shortage of problems; but improvements can be made incrementally

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Tuning - Illustration

- Next 11 slides
  - Slides illustrative not actual data (except published data for UK Treasury Bill issuance in 2002-03)
  - But not untypical for the time

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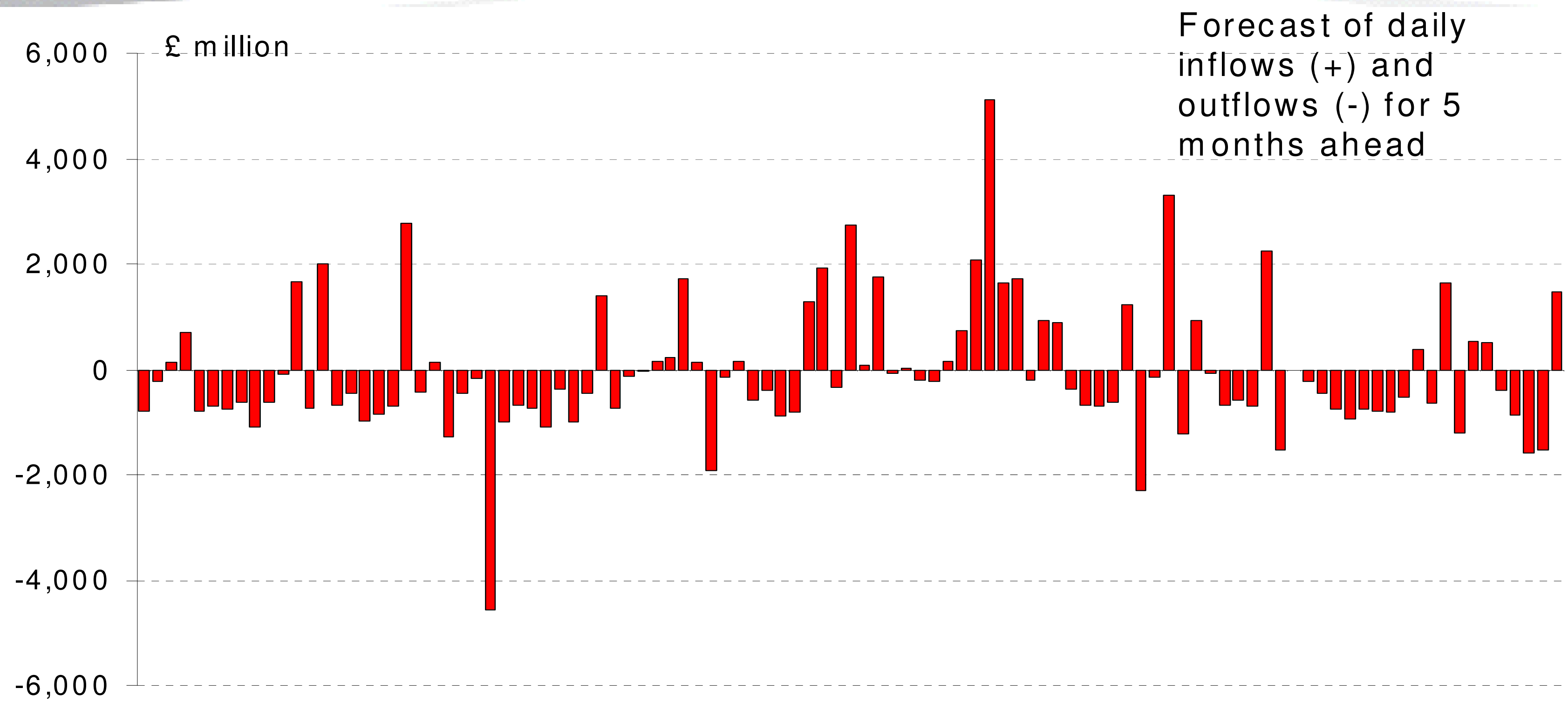
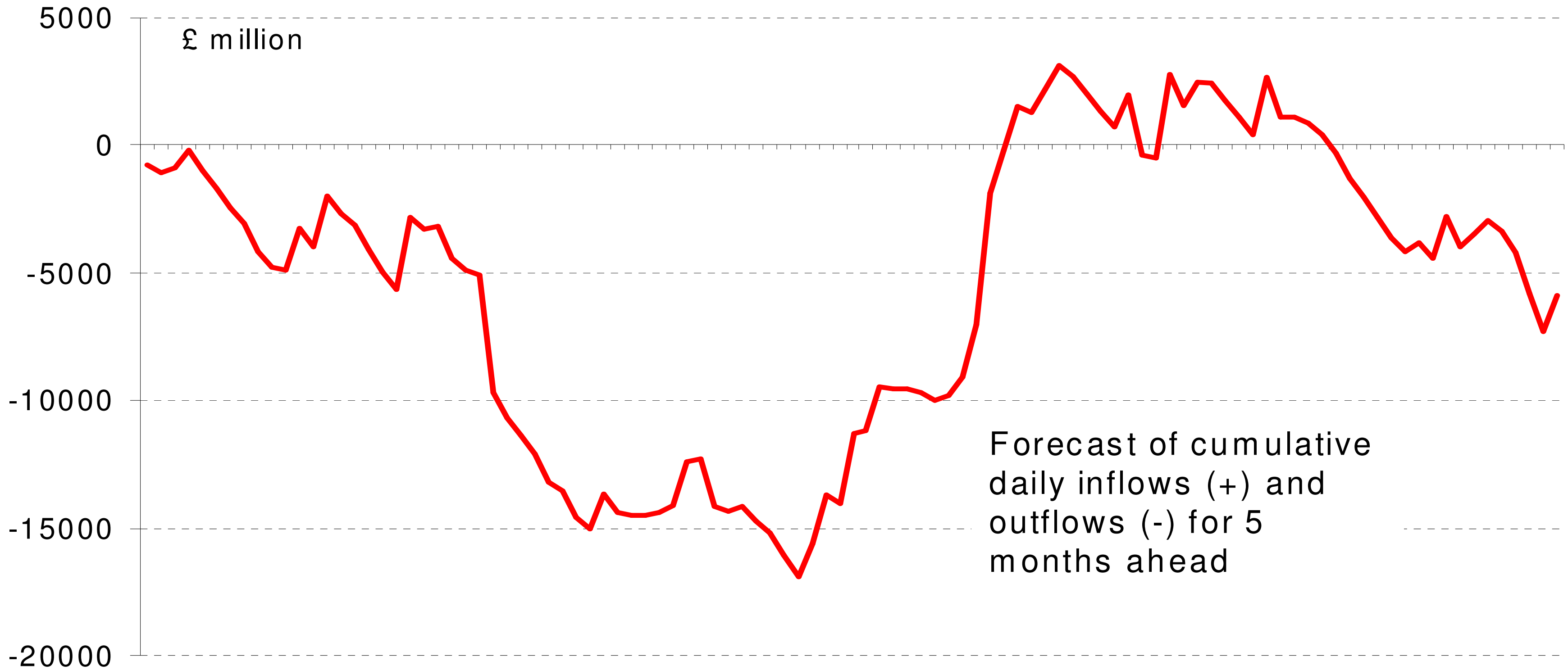
Daily Forecast of Net Cash Flows



Cumulative Daily Forecast



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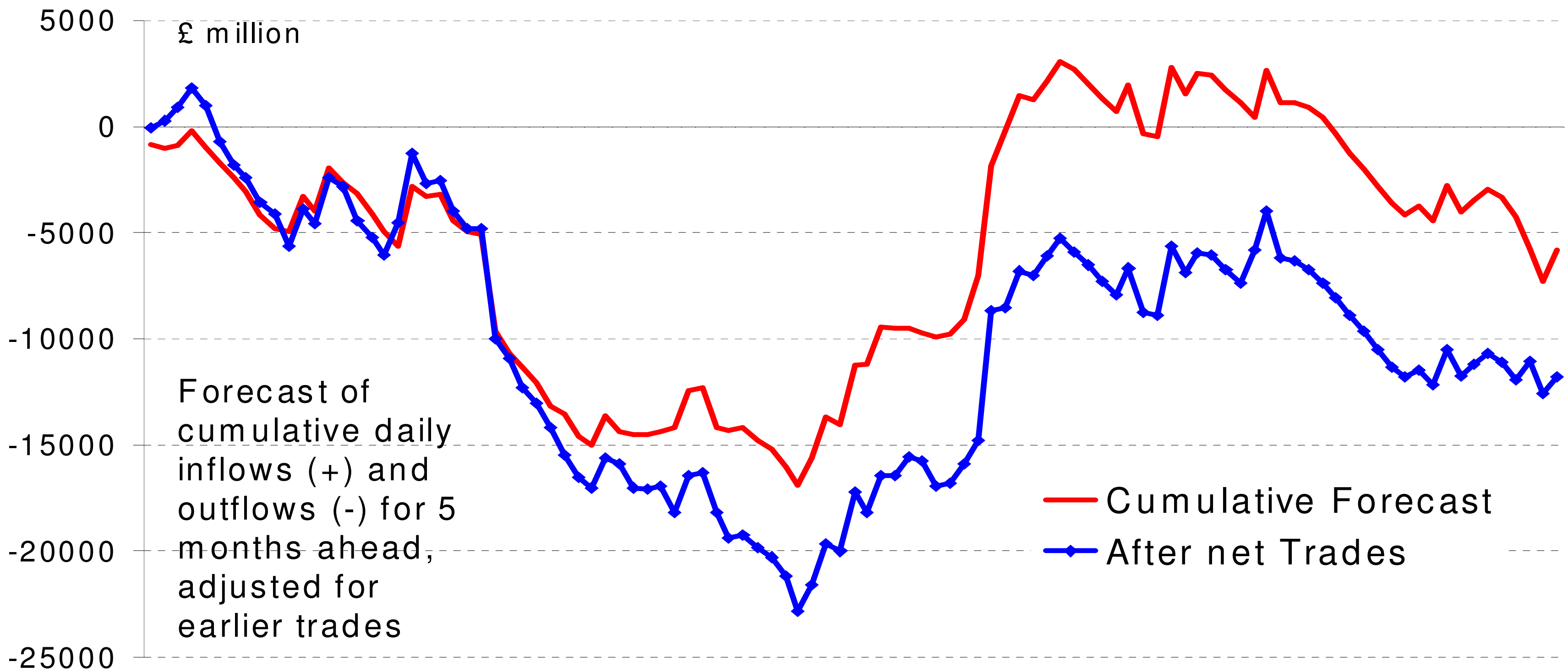
Cumulative Daily Forecast, adjusted for earlier trades



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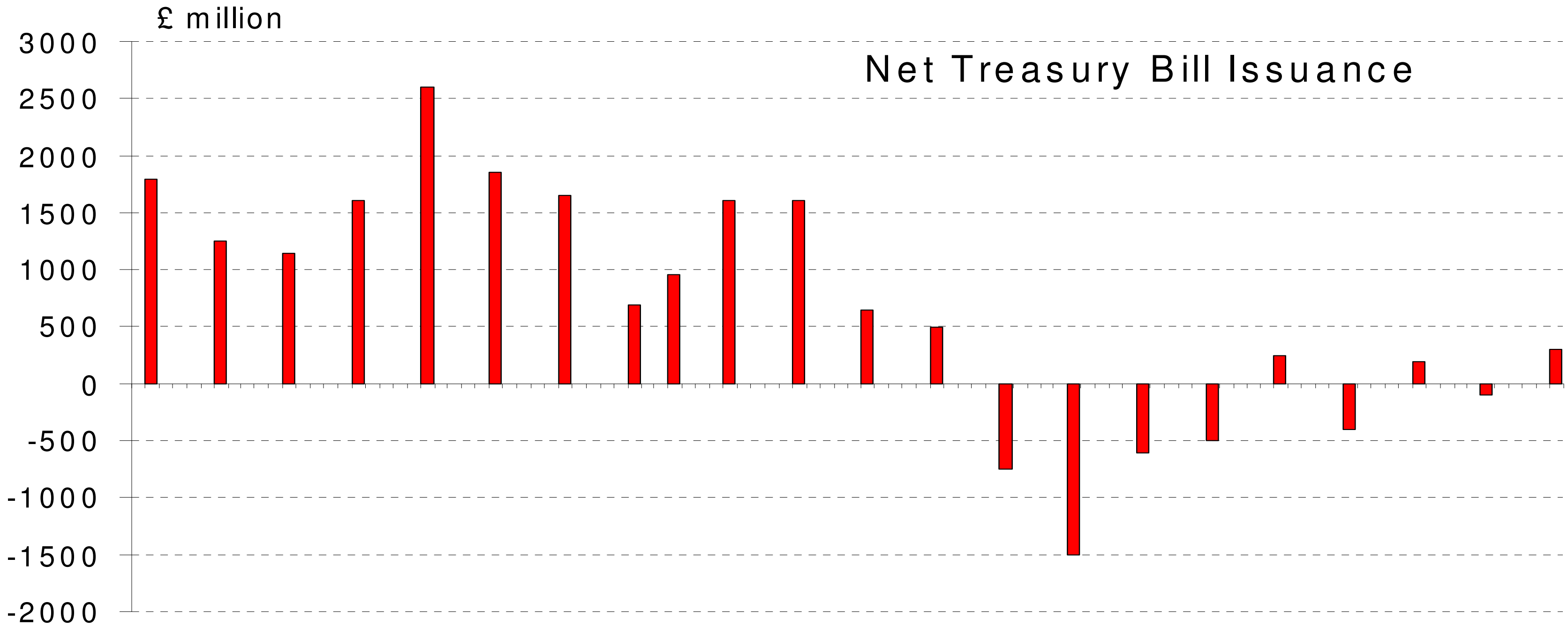
Planned Treasury Bill Issuance for Illustrative Forecast



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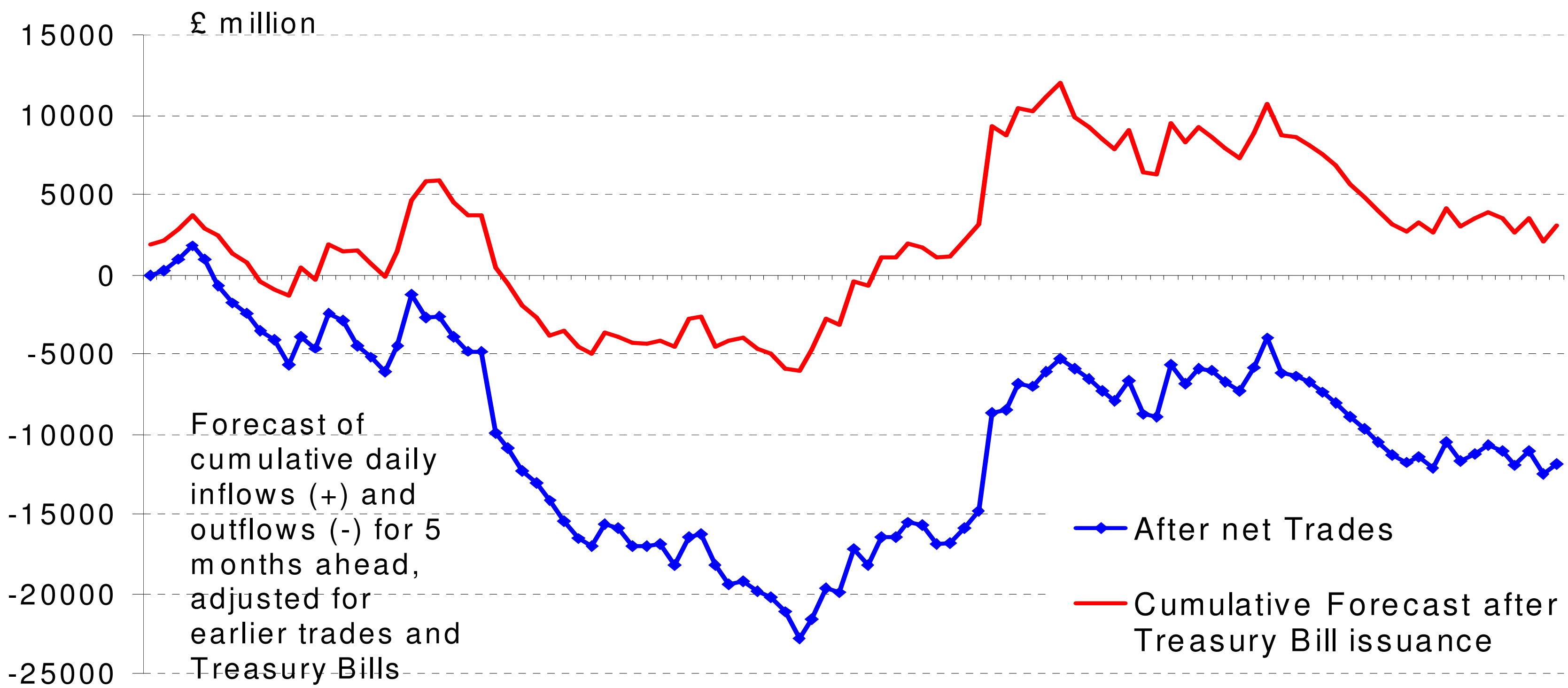
Smoothing with Treasury Bills



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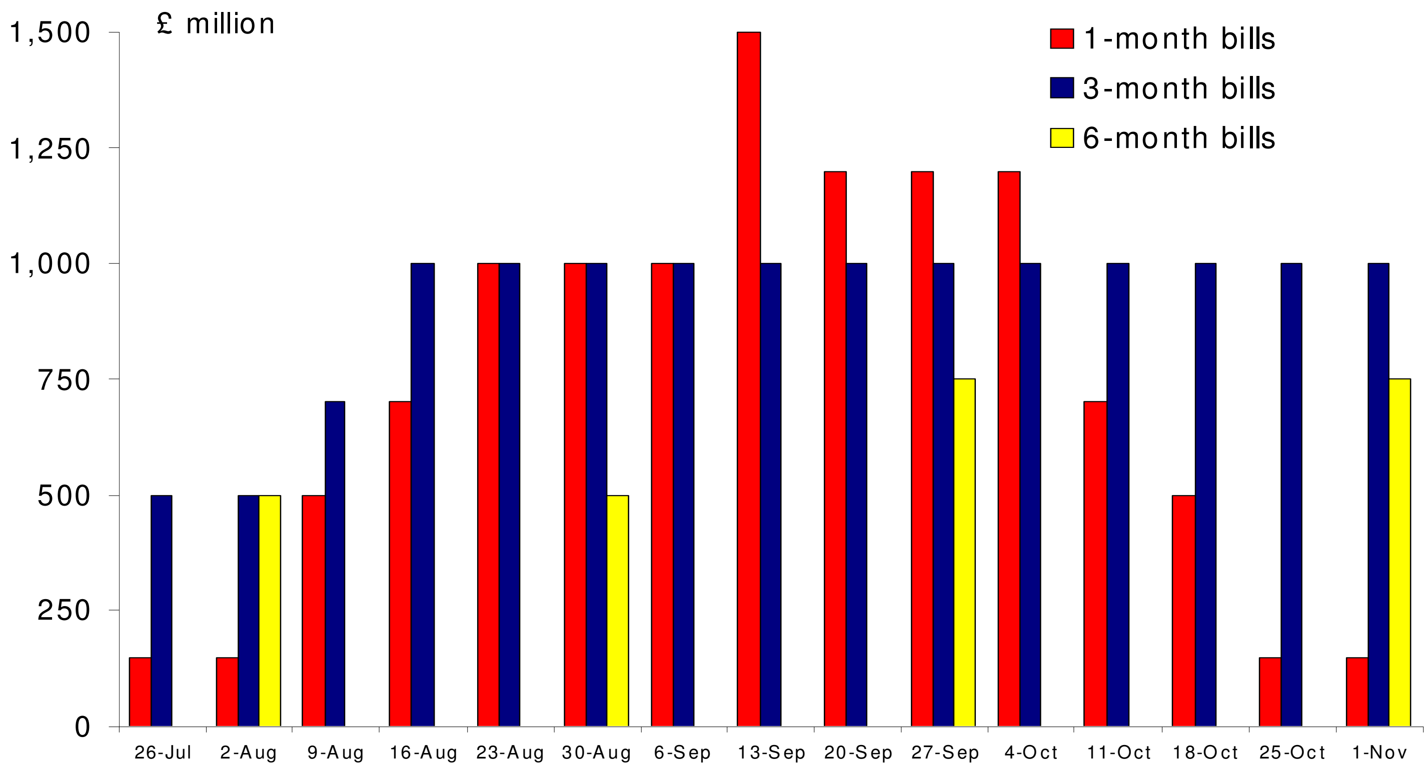
Treasury Bills – Typical Issuance Pattern



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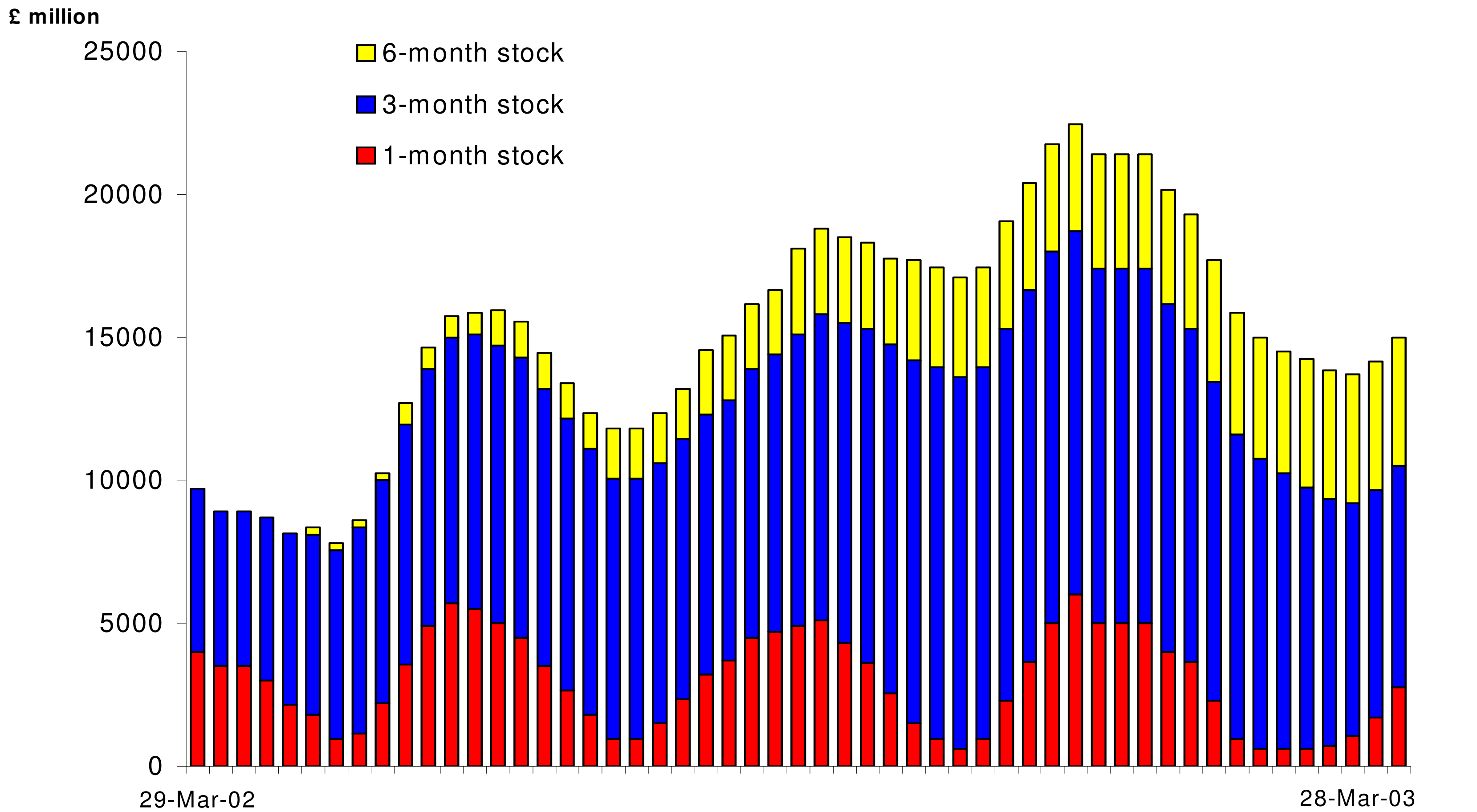
Variation of Treasury Bill Stock



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Smoothing

- Invest today's surplus cash to mature on a forecast deficit day
- To fund today's deficit, borrow against a day when there's a forecast surplus
- If large future deficit (or surplus) is projected
  - buy and sell different maturities to smooth in advance; or
  - borrow (or lend) ahead through forward starting repo

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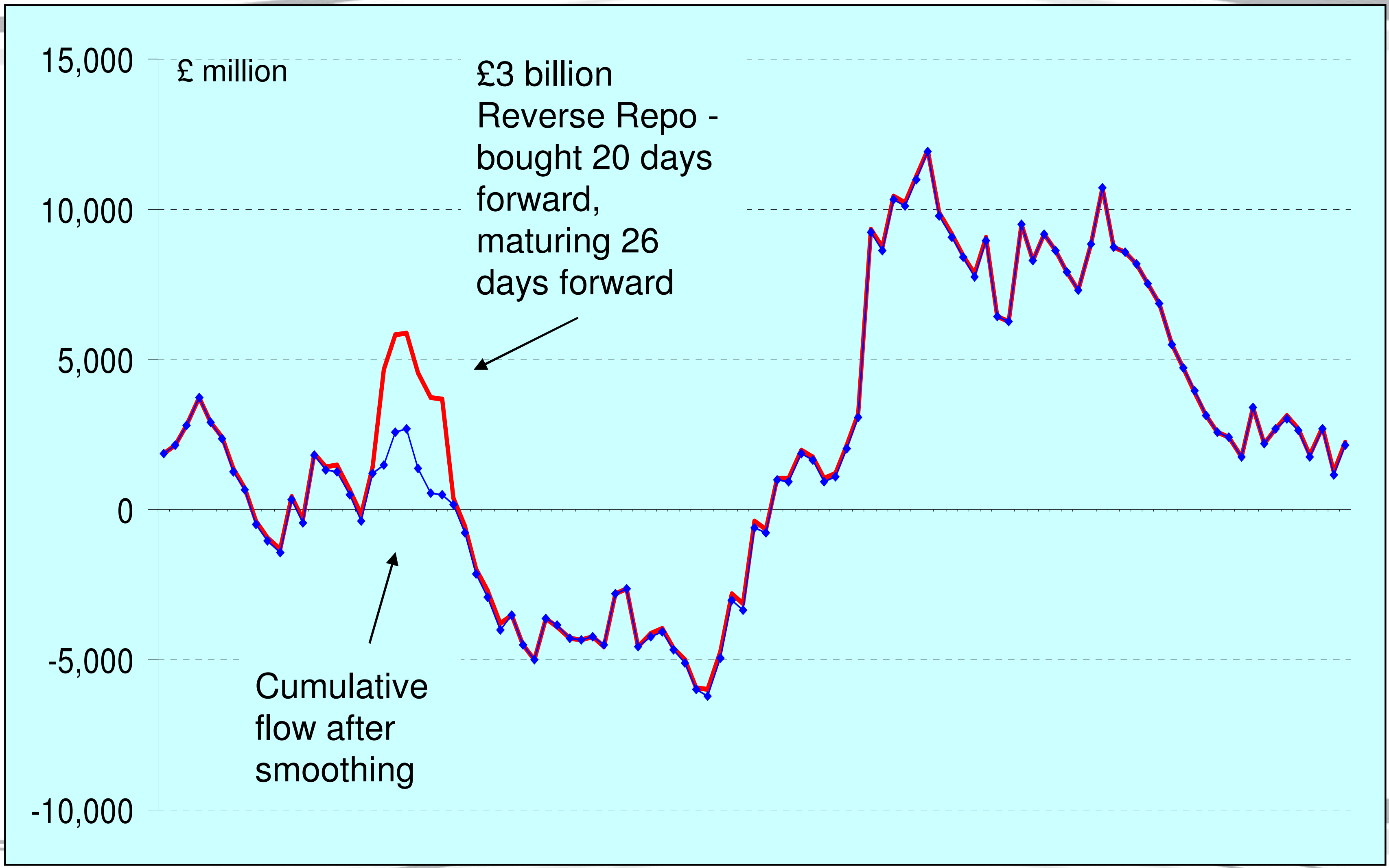
Smoothing Strategies - 1



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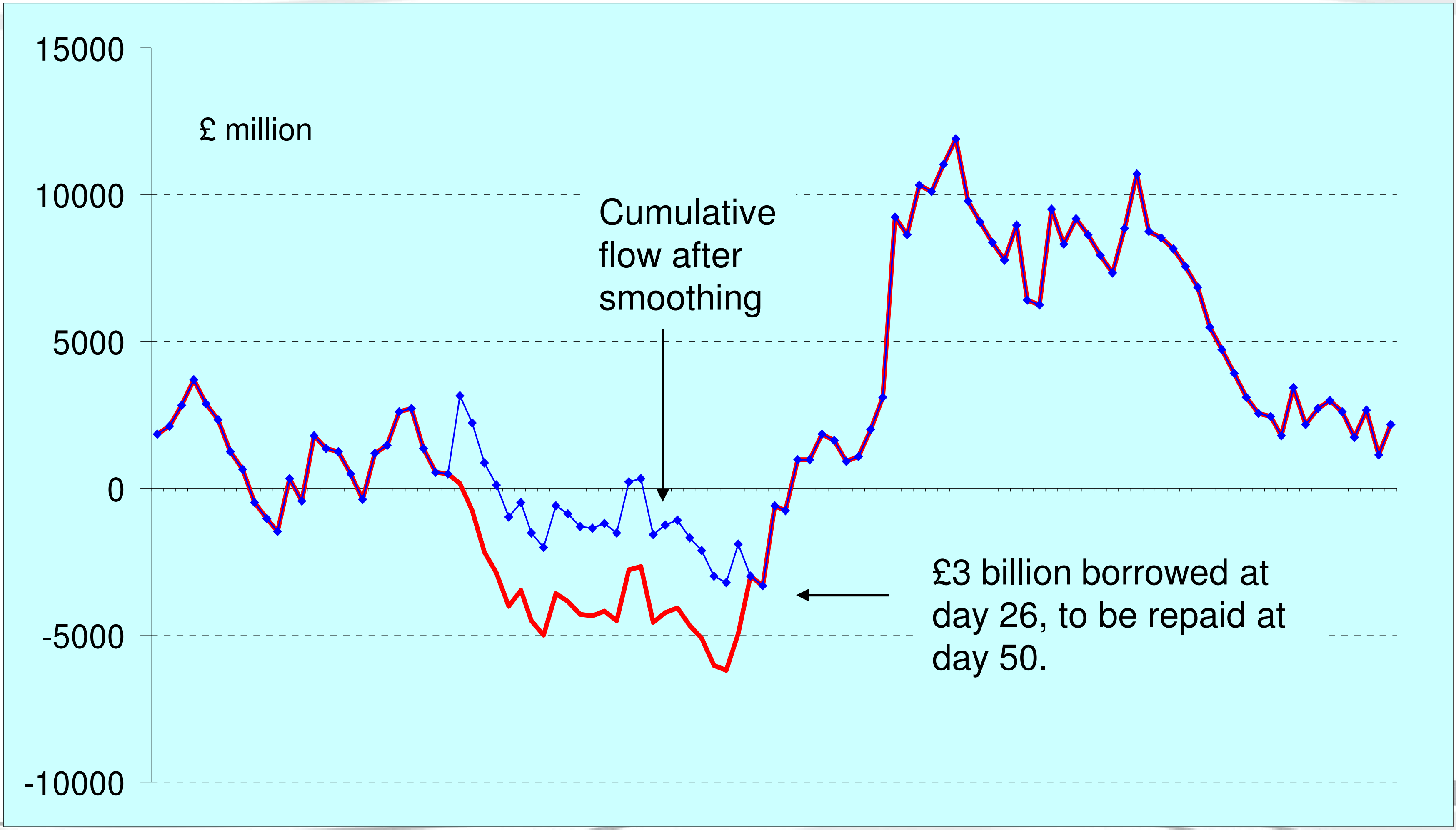
Smoothing Strategies - 2



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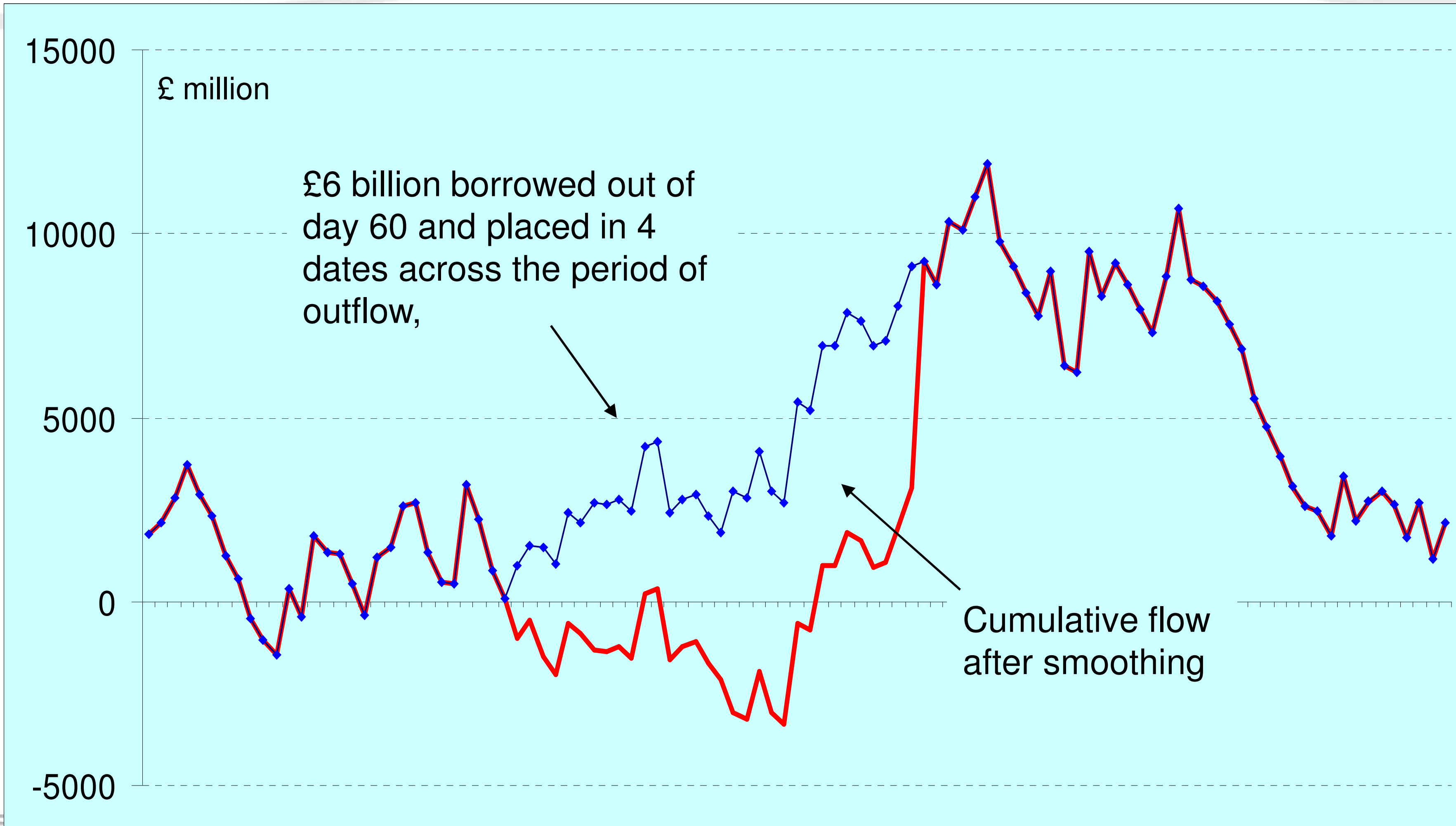
Smoothing Strategies - 3



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