

MAIN FEATURES OF THE MONETARY POLICY FRAMEWORKS OF THE BANK OF JAPAN, THE FEDERAL RESERVE SYSTEM AND THE EUROSISTEM¹

1. Introduction

This paper presents a concise summary of the main aspects of the monetary policy instruments and procedures of the Bank of Japan, the Federal Reserve System and the Eurosystem. It is based on information provided by the three central banks and is meant to complement the more analytical presentations and discussions in Session 3 of the Conference on the Operational Framework of the Eurosystem which concentrate on a comparison of the three frameworks. In particular, it describes shortly the monetary policy objectives of the three central banks, the minimum reserve systems they apply, the demand for central bank balances and the main autonomous factors affecting their supply, the type of open market operations, the range of counterparties able to participate in monetary policy operations, the standing facilities available, the eligible assets used as collateral and, finally, the overnight interbank markets, the rates of which are largely determined by central bank policies.

The attached tables present the structure of the balance sheets of the three central banks and the main features of their reserve requirement systems and open market operations. In addition, some charts describing the development of the main official interest rates in the course of 1999 as well as the behaviour of the overnight rate with regard to both the amount of central bank balances and the monetary policy operations of the three central banks have been annexed.

2. Objectives of monetary policy operations

The monetary policy operations of the three central banks considered here, particularly their open market operations, have a direct influence on the overnight interest rate applied to the trading of funds between financial institutions for the adjustment of their balances with the central bank. In Japan this interest rate is referred to as the call rate, in the euro area it is called the EONIA rate (Euro OverNight Index Average), and in the United States it is the federal funds rate. These interest rates are sometimes

¹ Prepared by Denis Blenck, Head of Operations Analysis Division, European Central Bank. The author would like to acknowledge the very substantial contributions of Spence Hilton, Federal Reserve Bank of New York, Harri Hasko, European Central Bank and Kazuhiro Masaki, Bank of Japan. Comments from Francesco Papadia, European Central Bank, Sandy Krieger, Federal Reserve Bank of New York and Atsushi Miyanoya, Bank of Japan helped to improve the paper. The views and the information provided in the paper are not, however, to be imputed to the European Central Bank, the Federal Reserve Bank of New York or the Bank of Japan.

informally called interbank rates, although participation in these markets may not be limited to depository institutions.^{2,3} Short-term interbank rates are one of the channels through which monetary policy decisions are transmitted to the economy, and two of the central banks currently set an explicit objective for the overnight interbank rate, commonly called the target rate.

The sole operating objective of open market operations conducted by the Bank of Japan (BoJ) is to keep the overnight call rate in line with the target set at each *Monetary Policy Meeting* of the Policy Board. The target is announced to the public immediately after each meeting. In the Federal Reserve System (FRS) the Federal Open Market Committee directs open market operations to meet a specified target for the overnight federal funds rate. It immediately announces any new target after each policy change or indicates if no change in policy has taken place after a meeting. The European Central Bank (ECB) does not have an official operating target for interbank rates. Generally speaking, the regular operations are used to satisfy demands for central bank balances in a smooth fashion over the course of each maintenance period. As long as a fixed-rate procedure is used,⁴ the Governing Council of the ECB fixes the rate on tenders at regularly scheduled weekly operations, and this is used to signal the stance of policy.⁵ Normally, however, a smooth provision of central bank balances in the Eurosystem, combined with the rates set on the standing facilities, leave the interbank rate near midpoint of the band formed by the rates on these facilities.⁶

In all three central banks, open market operations, and certain other market-related activities, are carried out by a trading arm, hereinafter referred to as the Trading Desk.⁷ The Trading Desk at each central bank is directly accountable to the policy-making body.

3. Demand for central bank balances

The central bank balances under consideration in this section pertain to the deposits of private financial institutions active in money markets that are held in accounts at the central bank, sometimes called current account balances. These balances are closely related to a concept of “reserves” which is used by all three central banks, but they are not identical, as will be outlined below. In the Eurosystem and FRS, central bank deposits are largely held by depository institutions subject to reserve requirements, although there are exceptions. At the BoJ, a broader set of financial institutions active in the money markets

² The terms “banks”, “depository institutions” and “credit institutions” are used interchangeably in this review.

³ The overnight rate is understood to be of the greatest relevance for this discussion, although longer maturities are available in these markets, which are described in more detail in Section 9.

⁴ The Governing Council of the ECB may decide to conduct either fixed-rate or variable-rate tenders.

⁵ The mechanics of open market operations are described in more detail in Section 5.

⁶ The administration of the borrowing and lending facilities of the ECB and of the other central banks are reviewed in Section 6.

⁷ As the Eurosystem has recourse to the national central banks of the euro area in carrying out open market operations, a Trading Desk, in the true sense, does not exist at the ECB.

maintain accounts at the central bank, including securities companies, securities finance companies and money market dealers.⁸

Demand for central bank balances in each currency area may be divided into two broad categories: demand stemming from explicit reserve requirements, and all other sources of demand, sometimes called demand for excess balances. As used in this paper, the concept of excess reserves includes balances held by financial institutions active in the money markets that are not subject to reserve requirements.

A. Demand for central bank balances deriving from reserve requirements

All three central banks impose reserve requirements on depository institutions, which can be satisfied by holding balances at the central bank. The key features of the structure of reserve requirements are summarised in the first table of Annex 1. For the BoJ and the ECB, reserve requirements determine the level of total required balances (TRB), defined as the total level of balances that an institution is required to hold at the central bank in each maintenance period. For the FRS, allowance must be made in calculating the level of TRB for the portion of the reserve requirements that can be met with vault cash.⁹ Banks within the FRS may also establish a required clearing balance, which affects the demand for balances within a maintenance period in a way that is virtually identical to reserve requirements.¹⁰

Whatever their original or other purposes, reserve requirements plus, if any, required clearing balances are an important component in the institutional framework of all three central banks for influencing interbank rates. In all cases, total required balances represent the largest source of demand for central bank balances, and they are known with complete certainty, at least before a maintenance period ends. The ability of banks in all three currency areas to “average” their balance holdings within a maintenance period, so as to meet requirements, helps moderate the impact that daily variations in the actual supply of balances outside the control of the central bank have on the behaviour of interbank rates.

⁸ Balances held by some institutions that are active in the money markets are sometimes considered a factor that negatively affects the supply of reserves, but in this paper these holdings are treated as a positive component with respect to the level of central bank balances.

⁹ The FRS allows each bank to satisfy its reserve requirements with currency held on the bank’s premises, which is referred to as vault cash. Each depository institution’s level of “applied vault cash” in a maintenance period is calculated as the average value of the vault cash it held during the computation period, up to the level of its reserve requirements. Thus, the level of applied vault cash is lagged and known prior to the start of each maintenance period. Applied vault cash is included in official measures of reserves.

¹⁰ Banks may agree, at their discretion, to hold additional balances at the FRS within each two-week reserve maintenance period to meet a clearing balance requirement. Unlike the balances held to meet reserve requirements, banks are, de facto, remunerated at a market rate for the balances they hold to meet their required clearing balance. Explicit interest is not paid, but compensation is paid in the form of income credits that can be applied against charges for various priced services offered by the FRS. Banks are sometimes motivated to establish a clearing balance requirement in order to improve the flexibility they have in managing their account at the central bank without incurring the opportunity cost of holding (non-remunerated) excess reserves. All balances are held in a unified account. At the end of each two-week period, the FRS determines whether a bank has satisfied its clearing balance requirement, based on a bank’s average holdings of balances that were not used to meet reserve requirements. The level of a bank’s required clearing balance must be established before a maintenance period begins, and the incentives a bank has to meet its clearing balance requirements are similar (though not identical) to those for its reserve requirements.

Average levels of total required balances from 1999 are presented in Annex 1. By themselves, these aggregate values do not reveal the flexibility that banks subject to balance requirements have in averaging their holdings of central bank balances over a maintenance period. This flexibility is dependent on the level of requirements, in the aggregate and at the level of the individual institution, and must be measured against the volatility and unpredictability both of financial payment flows and of the aggregate supply of balances, as well as on the length of each maintenance period. In all three areas, the ability to average balances to meet requirements is limited by the restrictions placed on ending any day in a debit position.¹¹

B. Other demand for central bank balances

Normally, the penalties for failing to meet the requirements and the lack of remuneration on balances held above requirements, regardless of whether interest is paid on required balances or not, keeps desired holdings very close, on average, to the level of total required balances. But some other uses of central bank balances, beyond the need to meet requirements, generate demand for balances in excess of requirements which Trading Desks must be able to anticipate if they wish to influence interbank rates.

Settlement and payment-related uses of central bank balances

In all three currency zones, financial payments are settled when balances are transferred between the central bank accounts of financial institutions that are parties to a transaction. The settlement procedures and closely-related overdraft policies at each central bank are described in this section, along with their impact on demand patterns for central bank balances.

The transfer of central bank balances via electronic payments systems is the primary mechanism by which financial transactions are settled in all three currency areas. Fedwire in the FRS and TARGET (Trans-European Automated Real-Time Gross Settlement Express Transfer system) in the Eurosystem are real-time gross settlement (RTGS) systems. Net settlement systems exist in both areas, but these other systems settle their end-of-day balances in central bank money through the above networks. In Japan an RTGS system is scheduled to be adopted in the near future. Currently, the BoJ provides the “BoJ Net”, which is mainly used for designated-time net settlement system¹². This system is linked to separate networks for cheque clearing, yen-based foreign exchange transactions, and interbank domestic fund transfers that settle at designated times once a day. In the FRS and the Eurosystem banks dominate the settlement process, acting as intermediaries for other financial institutions that do not have central bank accounts. At the BoJ, other financial institutions, not covered by reserve requirements, but holding central bank accounts, have direct access to the BoJ Net, through which they can effect the settlement of funds and government securities, although membership of the networks for cheque clearing, yen-based foreign exchange transactions, and interbank domestic funds transfers are limited to depository institutions.

¹¹ The carryover provisions, that are unique to the FRS, provide some flexibility for averaging balances across maintenance periods.

¹² The present system can also work for RTGS if participants concerned opt for it.

All the central banks considered in this paper have adopted policies that reduce their exposure to daylight overdrafts, but each has a unique set of arrangements. In the euro area the separate national central banks administer their own policies, which take one of two general forms. In some cases, daylight overdrafts are permitted, as long as adequate collateral is on hand at that national central bank. In other countries the national central bank may provide intra-day credit through repurchase agreements (through an automatic mechanism) with no interest charged. In all cases, at the end of a day, debit positions are automatically treated as a request for use of the Eurosystem's marginal lending facility.

In the FRS, daylight overdrafts are permitted, subject to caps. Securities-related overdrafts can be excluded from the caps by pledging collateral. A fee of 27 basis points (quoted on an 18-hour day) is charged against an institution's average daylight overdraft position. A penalty of 4 percentage points in excess of that day's effective federal funds rate is applied against any end-of-day overdraft. Larger banks typically opt to cover these overdrafts by borrowing at the discount window. However, some smaller banks either may not actively manage their accounts late in the day or may not have collateral pledged to the window and may, occasionally, end the day with an overdraft and pay the penalty rate.

In the BoJ, where designated-time net settlement is commonly used, all financial institutions that have current account balances with the BoJ keep positive balances at each designated time during the day. Between designated times, net balances that are to be settled at the next designated time are calculated (no actual settlement are made between designated times unless parties concerned opt for RTGS mode). Call money transactions may be arranged to make financial institutions' balances positive at each designated time. Under this system, there is no need for overdrafts, which are necessary under the RTGS system.

Financial institutions that fail to have positive balances at any designated time can apply for BoJ loans against eligible collateral. The loans are extended at the BoJ's discretion, rather than made available as a facility that can be used by financial institutions on request. Access to the loan is regarded as a penalty, since the official discount rate, which is usually set higher than the target overnight rate, is applied to the loan.

The concentration of settlement pressures at particular times of the day can give rise to strong demand for intra-day balances, depending on how binding daylight overdraft policies are. In all three currency areas, an aggregate quantity of balances in line with the level of total required balances usually appears to be sufficient to satisfy even the highest intra-day demand for balances on most days, although this is difficult to measure objectively. But on days when settlements of payments are particularly heavy, demand for higher levels of excess balances does seem to be systematically greater in all three areas, although to a lesser extent in the euro area. However, the higher daily demand for balances on these days can usually be offset with lower balances on other days within the maintenance period, consistent with holding, on average, minimal levels of excess balances.

Other sources of demand for excess balances

Institutions that do not have access to immediately available funds in the interbank market may hold levels of balances in excess of requirements as a precautionary source of liquidity to meet contingencies. This may apply, in particular, to smaller banks. In the FRS, excess holdings held by smaller institutions have for many years averaged, in each maintenance period, about \$1 billion (currently almost 10% of total balances). The experience gained in the Eurosystem is relatively limited, but excess holdings, as a portion of total balances, are much lower (in the order of 0.5 to 1.0%). This is likely to be due to the possibility of making overnight deposits at the end of the day with the Eurosystem. Normally, in all three areas, the opportunity costs associated with holding balances in excess of requirements will keep their demand to a minimum, as long as the requirement is well above the balances that are needed for a smooth settlement of funds. But when the opportunity cost effectively becomes zero, demand for excess balances may become extremely elastic. Accordingly, the very high levels of excess balances provided by the BoJ in 1999 were associated with the so-called “zero interest rate policy” in place over most of that year (Annex 6).

4. Main autonomous factors affecting the supply of central bank balances

Autonomous factors outside the direct control of the Trading Desk affect the available supply of balances at all three central banks. In large measure, open market operations are designed to neutralise their effects. Each bank devotes resources to forecasting their movements so as to help formulate its operations and, in the case of the BoJ, forecasts of key factors for the following day are released to the public every evening.

In the FRS and the BoJ, where daily swings in autonomous factors are large relative to the size of the balances, the central banks conduct market operations almost every day in order to smooth the liquidity conditions. In the ECB, where central bank balances are large enough to absorb daily fluctuations of autonomous factors, the central bank usually only intervenes in the market once a week. Because of such differences in frequency of operations, the daily behaviour of autonomous factors is the most relevant for the BoJ and the FRS, while weekly behavioural and forecasting horizons are the most relevant for the ECB.

The balance sheets of all three central banks, presented in Annex 2, itemise the major autonomous factors for each bank. The composition of each balance sheet reflects a host of historical circumstances unique to each central bank. But, in all three cases, the largest single liability is banknotes in circulation (currency). Banknotes in circulation are also fairly volatile in all three areas (Annex 3). Movements in currency follow strong seasonal patterns in all three areas (although experience at the ECB is still fairly limited), which improves their predictability. But, in the euro-area and in the United States, this factor is relatively difficult to predict on a daily basis.

Perhaps the most volatile factor at all three central banks is the Treasury balance, or government deposits. In absolute size, government deposits are normally very small in the FRS, and of moderate size at the BoJ and the ECB. But their magnitude can swing dramatically around peak government payment or receipt dates. The ECB and the FRS report that this factor is perhaps the most difficult one to forecast on a short-term basis, even though dates when government inflows and outflows are highest are known well in advance. In the case of the BoJ, the Treasury funds are projected fairly precisely in most cases, since all fund transactions related to the Treasury are conducted through the BoJ. Even so, however, swings in the Treasury funds are often significant relative to the level of the required balances, giving some difficulties in conducting market operations.

The ECB and the FRS report that the “float,” or items in the process of collection, can also be volatile and difficult to predict. The BoJ and the FRS also maintain deposit or investment facilities for foreign central banks, which are autonomous factors affecting the supply of reserves that can be difficult to predict.

5. Open market operations and operational practices

Open market operations are the main instruments used in steering interest rates and managing liquidity in all three currency areas, as recalled above. The BoJ is the most active, conducting operations more than once a day. The FRS typically acts in the market daily, while the Eurosystem usually conducts open market operations only on a weekly basis (see Annex 4 for a comparison of the open market instruments).

The Bank of Japan

The open market operations of the BoJ can be classified in two broad categories: operations where funds are provided and operations where funds are absorbed. Several market instruments can be used for providing temporary liquidity: purchases of short-term government bills or commercial paper under repurchase agreements, outright purchases of short-term government bills and outright purchases of bills collateralised by eligible assets. Borrowing of securities against cash collateral (so-called “JGB repos”) is also used for temporary liquidity provision. Among these instruments, purchases of short-term government bills under repurchase agreements are the most frequently used. The maturity of these operations range from one week to three months in most cases, although the maturity of those operations which use government securities as collateral can be extended to six months (operations with a maturity of less than one week are also available). As for more permanent funds provision, the BoJ conducts outright purchases of government bonds regularly (currently, twice a month), so that the amount is consistent with the net increase in banknotes in the long run. For short-term funds provision, there has been a shift of emphasis from open market operations using commercial bills to those using government securities. The instruments used for absorbing funds are mainly sales of short-term government bills under repurchase agreements and outright sales of bills issued by the BoJ.

All operations are conducted through multiple-price (American) auctions and settlement can be on same day or on some future date. The instruments used for same-day settlement are purchases or sales of government bills under repurchase agreements, outright purchases of bills, or BoJ bill sales. As the purpose of the open market operations is to guide the level of the overnight rate, there is no attempt to affect any particular market in which the operations are conducted; instead, practical considerations influence the choice of instruments to be used.

The interbank market opens at 9 a.m. in the morning. At around this time the Director of the Financial Market Department and other staff concerned of the Trading Desk meet to decide on the details of the operations to be conducted on that day. At 9.20 a.m. operations to be settled on the same day are announced. Operations to be settled on future dates are announced after that, at 9.30 a.m., 10.10 a.m. or 12.10 p.m., depending on the types of instruments. In most cases, propositions for operations are collected within an hour after the announcement, and auction results are released as soon as possible thereafter. The interbank market closes at 5 p.m.

The Federal Reserve System

The FRS conducts its open market operations in Treasury securities and debt obligations of government agencies and government-sponsored enterprises. Repurchase agreements accepting these securities as collateral are used to add reserve balances on a temporary basis. The maturities of the repurchase agreements range from overnight to three months. In practice, most repurchase agreements are under one week and overnight is the most common maturity. Outright purchases of Treasury securities in the market are made to increase reserves on a permanent basis.

The specific issues purchased are chosen on the basis of broad portfolio considerations. For operational convenience, each outright purchase of securities is limited to either bills or to a specified maturity range of coupon-bearing issues. When draining reserves on a temporary basis, the FRS, for operational convenience, uses mainly matched sale-purchase agreements of Treasury bills, overnight being the most common maturity. These are, however, arranged far less frequently than repurchase agreements, reflecting the Trading Desk's practice of allowing reserve shortages to up build over time, creating a need to add reserves on a temporary basis. A multiple-price auction format is used for all transactions. Repurchase agreements are predominantly for same-day settlement, but forward operations are sometimes arranged.

The interbank market opens informally at 8 a.m. At 9.10 a.m. there is an informal telephone discussion between staff at the Fed New York, and on the Board of Governors, reviewing forecasts and presenting the Trading Desk's proposed market actions, shortly after a complete set of reserve estimates is first available. At 9.20 a.m. a conference call begins, with the participation of staff at the Fed New York, of the Board of Governors and a regional Reserve Bank President who is a voting member of the Federal Open Market Committee (FOMC). Money market conditions and reserve projections are reviewed, and the Manager's proposed open market actions are presented to the FOMC representative for approval.

Temporary operations, which are designed predominantly to affect the supply of reserves that day, are usually arranged in the morning between 9.25 and 9.50 a.m. to take advantage of the greater market liquidity at that time. The timing of permanent operations is more flexible. Most outright purchases are arranged for next-day settlement and are executed before 3 p.m., after which time the futures market for Treasuries closes and the cash market for Treasuries becomes less liquid. However, operations arranged for same-day delivery-versus-payment settlement must be completed prior to the closing of the securities wire transfer system at 3 p.m. The interbank market for fed funds closes at 6.30 p.m. The direction and duration of projected reserve imbalances drive the choice of operations. The Trading Desk exercises considerable judgement in selecting the specific maturities of the repurchase agreements it uses to address day-to-day reserve needs, recognising that the same daily pattern of reserve supply can be achieved through many combinations of repurchase agreements of different size and maturity.

The Eurosystem

Although the Eurosystem also has a wide variety of market instruments available to affect the level of reserve balances, it has so far almost exclusively resorted to its regular operations. Of these, the main refinancing operations are the most important, since only they are used to signal the stance of monetary policy. They are executed every week and have a maturity of two weeks. The other regular operations are longer-term refinancing operations with a maturity of three-months, aimed at providing longer-term financing for the counterparties. These operations provide approximately 30% of the reserve supply by the ECB. While all the main refinancing operations have, to date, been executed through fixed-rate tenders, longer-term operations have been executed in the form of variable-rate tenders (using, in most cases, the American auction method). In these latter operations the ECB does not send signals to the market and therefore normally acts as a rate taker. Longer-term operations are executed regularly each month.

In addition to regular operations, the Eurosystem can also conduct fine-tuning operations and structural operations. The fine-tuning operations can be executed in the form of reverse operations, foreign exchange swaps, outright purchases or sales and the collection of fixed-term deposits. Fine-tuning reverse transactions, foreign exchange swaps and the collection of fixed-term deposits are normally to be executed through quick tenders, although the possibility of using bilateral procedures is not excluded. Outright purchases or sales are conducted through bilateral procedures. The Eurosystem may also execute structural operations in the form of reverse transactions or the issuance of debt certificates aimed at adjusting the structural liquidity position of the Eurosystem vis-à-vis the financial sector.

A wide range of collateral is accepted for the operations. The regular operations are usually settled on T+1, while the fine-tuning operations can be settled on the same day.

The euro area interbank money market opens at 9 a.m. C.E.T. A Liquidity Committee, consisting mainly of liquidity managers and senior management of the Directorate General Operations and the Directorate General Economics, meets every day at 10.15 a.m. to discuss money market developments and the

liquidity situation. On every Tuesday two Executive Board members participate the meeting of the Committee which makes a proposal to the Executive Board on the allotment in the main refinancing operation. Counterparties have to submit their bids to the national central banks by 9.30 a.m. on Tuesday morning, which then send the bids to the ECB. The bids are compiled by the ECB Front Office at 10.35 a.m. The Executive Board's allotment decision is published via wire services at 11.20 a.m. The interbank market closes at 6 p.m. C.E.T.

6. Standing Facilities

The Eurosystem provides its counterparties with two standing facilities: one for providing and one for draining reserves, which also set a corridor for the fluctuations of the overnight interest rate. The BoJ and the FRS do not offer facilities for draining reserves and also use more discretion than the Eurosystem in providing funds for temporary liquidity pressures of their counterparties.

The Bank of Japan

The Bank of Japan extends loans to counterparties that hold current accounts with the BoJ on its own discretion rather than “automatically” on banks' request. Financial institutions which have difficulties in reaching a positive balance at each designated time can apply for BoJ loans against eligible collateral. Institutions must seek other reasonably available sources of funds before applying for BoJ loans. The rate applied is the official discount rate, which is usually set higher than the target overnight rate.

The Federal Reserve System

Borrowing at the Federal Reserve's discount window may be used to meet temporary liquidity needs arising from short-term fluctuations in assets and liabilities. All institutions subject to reserve requirements have access to the discount window, including domestic commercial banks, US branches and agencies of foreign banks and savings institutions. Like the BoJ, the FRS likewise provides discount loans at its own discretion. Borrowing must be for an approved reason – typically to avoid unexpected overnight overdrafts or unexpected shortfalls that would leave the institution deficient in meeting reserve requirements. Institutions must seek other reasonably available sources of funds before turning to the discount window.

Each of the twelve regional Reserve Banks operates a discount window facility for eligible institutions in its district, but subject to the same policies in all districts. The maturity of the credit is mostly overnight. The rate is the basic discount rate approved by the Board of Governors.

In addition to discount window loans, the FRS also provides seasonal borrowing programmes for small institutions and an extended credit facility for banks experiencing longer-term liquidity needs arising from exceptional circumstances.

The Eurosystem

The Eurosystem provides two standing facilities on demand, a marginal lending facility and a deposit facility. There are two ways to access the former facility: first, at the end of the day, intra-day debit positions of counterparties on their settlement account with the national central bank are automatically considered a request for use of the marginal lending facility. Furthermore, counterparties may also access the marginal lending facility on their own initiative, by making a request to the national central bank during the day. All credit institutions subject to reserve requirements can, in principle, access the marginal lending facility. The interest rate applied is currently 1 percentage point higher than the fixed rate of the main refinancing operation. There is no limit to the amount of credit that can be extended against eligible assets. Since the maturity of the credit is overnight, in normal circumstances, the marginal lending rate provides a ceiling for the overnight rate. Each of the 11 national central banks within the Eurosystem operates the marginal lending facility for eligible institutions in its country. The Governing Council of the ECB exercises authority over the administrative procedures to ensure uniform practices across the euro area.

As regards the deposit facility, counterparties can use it to make overnight deposits with national central banks. The interest rate of the deposit facility provides, in normal circumstances, a floor for the overnight market interest rate. Currently the rate of the deposit facility is 1 percentage point lower than the rate of the main refinancing operation. To access the deposit facility, the counterparty must send a request to the national central bank during the day or, at the latest, 30 minutes after the actual closing time of TARGET. Counterparties fulfilling the general eligibility criteria may access the deposit facility.

7. Counterparties

The FRS and the BoJ both have relatively few counterparties, less than one hundred, even if the range of eligible institutions in both countries is wider than in the euro area. As regards the Eurosystem, all of the approximately 7,900 credit institutions subject to reserve requirements are eligible, in principle, to participate in the regular operations and standing facilities of the Eurosystem, but less than half of them fulfil the operational criteria required by the national central banks for accessing monetary policy operations and only about 1,000 institutions actually participate in them.

The Bank of Japan

The counterparties of the BoJ differ somewhat, depending on the type of operation in question, but all of them fall into one of the following categories: banks, securities companies, securities finance companies and money market brokers (Tanshi companies). Furthermore, all must have a current account at the BoJ. Additional qualifications that counterparties need to meet are that they have access to the BoJ Net, that their creditworthiness satisfies certain standards and that they are recognised as major players in the money market.

Depending on the type of operation, the number of counterparties vary from about 20 to 50 institutions. They are selected and reviewed about once a year, through a public application process based on the selection guidelines that are publicly disclosed. Counterparties are expected to bid actively on the BoJ's offer, to expeditiously and accurately process transactions and to provide market information or analysis useful to the BoJ in implementing monetary policy.

The Federal Reserve System

For open market operations, the FRS relies on a well-defined set of counterparties, called primary dealers, currently about thirty in number. Primary dealers must be either a commercial banking organisation or a registered securities dealer in good standing with their regulator, and they must comply with minimum capital standards. Financial institutions that comply with the primary dealer requirements are eligible to apply to become a counterparty.

Primary dealers are expected to provide satisfactory performance in three areas: to make reasonably good markets for the FRS Trading Desk's open market operations, to provide meaningful support for the issuance of US Treasury securities (including participation in primary auctions) and to communicate market information to the Trading Desk on conditions in financial markets valuable in the formulation and implementation of monetary policy.

The Eurosystem

All credit institutions subject to minimum reserve requirements are, in principle, eligible counterparties of the Eurosystem, assuming that some basic requirements are met. The most important of these are that the credit institutions must be financially sound, are subject to harmonised supervision by national authorities and fulfil the operational criteria specified by the national central banks (e.g. hold a securities settlement account for liquidity-providing operations). Counterparties participating in fine-tuning operations must meet some additional requirements, of which the activity in the money market as well as the efficiency of the trading desk and the bidding potential are the most important.

Currently about 7,900 credit institutions are subject to reserve requirements; more than 3,000 of these have access to standing facilities and about 2,500 are eligible for participation in regular open market operations. About 200 of them have been selected by the national central banks to participate in fine-tuning operations.

8. Eligible collateral

All credit operations with the three central banks have to be covered by collateral. Although the spectrum of eligible collateral is broadest in the euro area, government securities represent the bulk of the eligible assets in all three currency areas.

The Bank of Japan

Different types of assets are eligible for the monetary policy operations of the Bank of Japan.

- For outright purchases of bills, including bills collateralised by corporate bonds and loans on deeds, eligible collateral must be attached to the “ master bills” (issued by private banks) purchased by the BoJ. Eligible collateral includes commercial bills issued by non-financial institutions, certificates of JGBs, book-entry government bonds, corporate bonds, loans on deeds, asset-backed securities, etc.
- For repurchase agreements, the BoJ accepts commercial paper issued by non-financial companies and short-term government bills.
- For borrowing of securities against cash collateral (JGB repos), long-term government bills (10-year, 20-year) as well as medium-term government bills (2, 4, and 6 year) are accepted as eligible assets.

While the BoJ does not have standing facilities, it is entitled to provide collateralised loans to financial institutions on a discretionary basis. The collateral eligible to these loans includes any of the following assets, as deemed appropriate by the BoJ: government bonds, short-term government bills, government-guaranteed bonds, local government bonds, corporate bonds, commercial bills, etc.

The Federal Reserve System

The range of assets accepted by the FRS as collateral in its open market operations is comparatively narrow but outstanding supply is much greater. It encompasses direct obligations of the US Treasury and securities that are direct obligations of, or fully guaranteed as to principal and interest by, government agencies, including government-sponsored enterprises. Under the conditions and terms announced on 8 September 1999, the FRS announced a temporary expansion of its list of eligible assets to include mortgage-backed securities issued by federal agencies and government-sponsored enterprises, which was subsequently extended until the end of January 2001. The Fed’s counterparties, the primary dealers, collectively hold roughly 1.5 trillion USD of Fed-eligible securities (including those securities acceptable under the temporarily expanded authority) that are financed through repurchase transactions. The outstanding supply of these securities is much larger, perhaps as much as four times this amount.

By contrast, the FRS accepts a wide range of assets at the discount window. In addition to the assets already mentioned, this includes obligations of government-sponsored agencies, certain collateralised mortgage obligations, obligations of state and other political subdivisions, corporate bonds, one-to-four family residential mortgage notes and commercial, industrial or agricultural notes. A common list of assets eligible to the discount window is used by the twelve Federal Reserve Banks. Given the diverse nature of discount collateral, it is very difficult to estimate the supply of eligible collateral but it is quite

clear that it is much greater than the amount of collateral eligible and available for open market transactions.

The Eurosystem

The Eurosystem accepts the same type of collateral for both its open market operations and the marginal lending facility, as well as for intra-day credit for payment system purposes. In order to take account of the still existing differences in the financial structure across Member States, assets eligible for the credit operations of the Eurosystem encompass a very wide range of different instruments. Notably, in addition to marketable debt instruments, non-marketable debt instruments and even some equities are eligible. No difference is made between these assets in terms of quality, and all fulfil the minimum eligibility criteria of the Eurosystem. All types of eligible assets can be used indiscriminately for monetary policy operations by all counterparties across the euro area. Altogether, there exists a total of EUR 6,049 billion of eligible assets.

Essentially for purposes internal to the Eurosystem, however, a distinction is made between two categories of eligible assets, referred to as “tier one” and “tier two”:

- Tier one consists of assets fulfilling uniform euro area-wide eligibility criteria established by the ECB.
- Tier two consists of additional assets, for which eligibility criteria are established by the national central banks, subject to the minimum eligibility criteria established by the ECB.

9. Key financial markets in the implementation of monetary policy

Since the policy rate in Japan and the United States is the announced level of the overnight interest rate, the most important market in defining the stance of the monetary policy in these countries is the uncollateralised overnight money market. The Eurosystem, too, pays close attention to the behaviour of the overnight rate, although it is not an operational target of the Eurosystem.

The Bank of Japan

The major participants in the uncollateralised overnight call money market are the city banks who have the largest share as borrowers, while regional banks act as major lenders. Other important players include investment trusts, trust banks and specialised money market brokers. Most trades are settled on the same day, although settlement on T+1 and T+2 is also possible. The most closely related markets to the uncollateralised overnight market are the collateralised call market and euro-yen market.

Because of the wide fluctuations in the autonomous factors and the lack of a single market liquid enough the BoJ conducts monetary policy operations in several markets. The most important of these are the

markets for short-term government bills, the repo market and the market for commercial paper. A relatively large weight has been attached to operations in the market for short-term government bills, because of the rapid growth of this market recently.

The Federal Reserve System

In the United States the uncollateralised overnight market is called the federal funds market. It is the interbank market for direct transfers and trades of balances in Federal Reserve accounts. Most large trades are arranged through brokers and trading is dominated by large banks. Many of these maintain correspondent relations with other institutions, with whom they may arrange federal fund trades directly. Smaller banks typically arrange trades directly with counterparties, rather than through the brokers. The vast majority of wholesale transactions are for same-day settlement and carry a maturity of one business day maturity. But forward trades and term transactions, though, generally short-term, are common. In recent years, the daily volume of overnight transactions arranged through major brokers has averaged between \$50 to \$70 billion.

The most closely related market that participants can use for borrowing and lending is the market for overnight eurodollar transactions, which are unsecured dollar-denominated transactions that settle on the accounts of offshore institutions. The rates in the two markets are usually identical. The domestic repo market may also serve as an alternative financing market. The availability of collateral creates some differences in interest rates and participants between the markets.

Most open market operations are conducted in the repo market for government securities. The largest cash lenders in this market include, among others, mutual funds, corporations, insurance companies and municipal authorities. The largest routine borrowers of cash are government securities dealers. Banks are able to participate in the repo market, but the collateral requirement can be a limiting factor. Settlement is mostly on the same day, but forward transactions are common. Maturities range from overnight to one year, although shorter-term transactions are the most common, especially overnight. The trading volume averages around \$600 billion per day.

The Eurosystem

The key instrument in signalling the stance of the monetary policy of the Eurosystem is the main-refinancing operation, the maturity of which is two weeks. However, even if the Eurosystem's monetary policy operations have a longer maturity, the Eurosystem, too, pays the very close attention to the overnight market, as evidenced by the fact that the two standing facilities of the Eurosystem set a corridor for the fluctuation of the overnight rate. The overnight market is the by far most active and the reference overnight rate (EONIA), which is calculated by the ECB, is widely used in interbank transactions (i.e. through the overnight interest rate swap market).

The uncollateralised overnight money market is largely characterised by a two-tier structure, i.e. larger banks, also acting across the border, act as intermediaries for the smaller banks. The interbank money market is essentially an over-the-counter market, and it involves few intermediaries such as brokers. Settlement normally takes place on T+2 for deposit, repo and swap transactions, with the exception of overnight and tom-next transactions, which are settled on T and T+1 respectively. The bulk of the transactions takes place at the very short end of the money market curve. According to the data available, it is estimated that the overall average volume of daily transactions of the largest banks amounts to approximately EUR 60 billion.

The two most closely related markets used by participants for borrowing and lending are the repo market and the foreign currency swap market. Each of them is estimated to represent slightly less than half the size of the unsecured money market. As regards the repo markets, mutual funds, corporations, insurance companies and other institutional investors act as cash lenders/borrowers, together with credit institutions.

A n n e x e s

- Annex 1: Key elements of Reserve Requirements
- Annex 2: Balance sheet of the three central banks
- Annex 3: Comparison of key autonomous factors in 1999
- Annex 4: Comparison of market operations instruments
- Annex 5: Key interest rates
- Annex 6: Banking system's liquidity
- Annex 7: Intertemporal arbitrage

Key Elements of Reserve Requirements

	Bank of Japan	European Central Bank	Federal Reserve
Covered Institutions	Depository institutions (city banks, regional banks, etc.)	All credit institutions.	Depository institutions (banks, thrifts, etc.).
Covered Liabilities having a non-zero requirement ratio and some other liabilities	Time deposits, other deposits, bank debentures, money in trusts, and foreign currency deposits	Overnight deposits, deposits with a maturity of up to 2 years, debt securities with a maturity of up to 2 years, and money market paper.	Transactions deposits.
Key Requirement Ratios	Ratios range from 0.05 percent to 1.20 percent.	2 percent on all the above liabilities.	10 percent top marginal requirement ratio applies to most deposits.
Maintenance Period Structure	One month, starting on the 16 th day of each month and ending on the 15 th day of the following month.	One month, starting on the 24 th calendar day of each month and ending on the 23 rd day of the following month.	Two-week periods, beginning on every other Thursday.
Required reserve computation Period	Partly lagged. Based on average deposits over the entire calendar month in which the maintenance period begins.	Fully lagged. Based on balance sheet data from the end of nearest the calendar month preceding the start of the maintenance period.	Fully lagged. Based on average deposits in the two-week period beginning 30 days before the start of the corresponding maintenance period.
Eligible Assets for Satisfying Requirements	Central bank balances held during the maintenance period only.	Central bank balances held during the maintenance period only.	Central bank deposits held during the maintenance period, plus vault cash (up to the level of requirements) held during the required reserve computation period.
Remuneration on Assets Held to Satisfy Requirements	None.	Interest is paid at the average rate of the ECB's main financing operations over the maintenance period.	None.

Annex 1

	Bank of Japan	European Central Bank	Federal Reserve
Carryover Provisions	None.	None.	Up to 4 percent of requirements of one maintenance period may be met with balances held in the following period; balances in excess of up to 4 percent of requirements in one period may be applied to meeting requirements in the following period.
Penalty structure for failing to meet reserve requirements	3.75 percentage points plus the official discount rate	2.5 percentage points plus the marginal lending rate. Banks typically opt to borrow at the marginal lending facility instead.	2 percentage plus the discount rate is levied against reserve deficiencies beyond the carry-forward amount. Banks typically opt to borrow at the discount window instead.
Penalty structure for ending a day in overdraft		Debit positions at the end of a day are automatically considered as a request to the marginal lending facility	A penalty of 4 percent plus the average federal funds rate for the day is applied to any account deficit at the end of each day. Larger banks typically opt to borrow at the discount window instead.

Average Reserve Levels for the Maintenance Periods of 1999

	Bank of Japan trillions of yen	European Central Bank billions of euros	Federal Reserve billions of dollars
Reserve Requirements	4	100	40
Applied Vault Cash	not applicable	not applicable	36
Required Clearing Balances	not applicable	not applicable	6
Total Required Balances	4	100	10
Total Balances above Requirements (excess)	0.8*	0.8	1

* includes about 0.3 trillion yen of excess reserves at institutions subject to reserve requirements and about 0.5 trillion yen of balances held by financial institutions not subject to requirements.

Bank of Japan's Balance Sheet

(US\$ billion)

Exchange rate: US\$ = Y100

<Assets >

Items	Application to BOJ	June 30	Sep. 30	Dec.30
1. Cash/Coins	Cash	3	3	2
2. Gold	Gold	4	4	4
3. Foreign exchange reserve	Foreign exchange	39	38	37
4. Liquidity provisions as Monetary Policy Operations		366	399	807
(1) Temporary liquidity provisions		60	103	465
a. Regular operations/lending conducted at the central bank's discretion	Outright purchase of commercial bills ¹ Purchases of commercial paper under repurchase agreements Purchases of Treasury bills (TB)/Financing bills (FB) under repurchase agreements JGB repo Loans Outright purchase of TB/FB	8 23 16 13 - - (73)	18 39 30 17 - - (53)	36 95 215 100 - 19 (-)
(Securities sold under repurchase agreements)	(Sales of TB/FB under repurchase agreements)	<off balance sheet>		
b. Lending/discount facilities used upon request of financial institutions	Commercial bills discounted, etc.	0	0	0
(2) Permanent liquidity provisions (securities held outright)	Outright purchase of JGBs ² (Sales to government agencies or other institutions under repurchase agreements) ³	311 (131) <off balance sheet>	295 (156)	342 (123)
5. Other liquidity provisions	Other loans ⁴ Loans to Deposit Insurance Corp.	11 40	14 24	18 22
6. Securities acquired through operations other than OMO's	FB (underwritten)	233	175	117
7. Other financial assets	Deposit with agencies JGBs in custody ⁵ Other financial assets	9 12 9	12 16 7	0 97 8
8. Other assets (non-financial)	Premises and equipment	2	2	2
Total assets		734	692	1,113

<footnotes>

1. BOJ purchases “master bills” (with maturity of less than three months) issued by financial institutions for short-term liquidity provisions. Master bills must be collateralized by eligible assets such as eligible commercial bills issued by non-financial institutions, certificates of JGBs, and book-entry government bonds, etc.
2. Figures include TBs underwritten in exchange for JGBs (long-term government bonds) at their maturity (converted into shorter issues).
3. The BOJ sells JGBs that have been acquired through outright purchase operations to government agencies (Trust Fund Bureau of the Ministry of Finance, etc) and foreign central banks under repurchase agreements for investment facilities.
4. Loans to financial institutions other than those used for monetary operation purposes. Most of them are loans to financial institutions that are facing temporary liquidity problems.
5. In Japanese accounting standard, JGB repo transactions are double counted on both sides of the balance sheet. When supplying liquidity by JGB repo operations, JGB transaction is appropriated as “JGBs in custody” on the asset side and “JGB borrowed” on the liability side, while cash transaction is appropriated as “cash collateral” on the asset side, and “current deposits” on the liability side.

<Liabilities and Capital side>

Items	Application to BOJ	June 30	Sep. 30	Dec.30
1.Banknotes in circulation	Banknotes	523	514	654
2.Current account deposits of financial institutions		46	61	234
(1)Reserve Deposit (Required and excess reserves)	Reserve balances Excess reserve	43	56	190
(2)Required clearing balances	None	-	-	-
(3)Other balances	Deposits held by institutions NOT subject to the Reserve Requirement System, etc. ¹	3	5	44
3.Liquidity absorption as Monetary Policy Operations		58	-	-
(1)Deposit facility	None	-	-	-
(2)Bills and Certificates issued	BOJ-Bills sold ²	58	-	-
(3)Reverse transactions	None	-	-	-
4.Government deposits	Deposits of the Japanese government	25	35	60
5.Other deposits	Foreign central bank account	4	4	4
6.Other liabilities and capital	JGB securities borrowed Accrued liabilities, Capital, Reserves, etc.	12 66	16 62	97 64
Total liabilities and capital		734	692	1,113

<footnotes>

1. Securities companies, securities finance companies, and money market brokers (“Tanshi” companies), etc.
2. Bills issued by BOJ with maturity less than 3 months are sold through money market brokers for liquidity absorption.

Federal Reserve System's Balance Sheet

(US\$ billion)

<Assets >

Items	Application to FRS	Jun. 30	Sep. 30	Dec. 31
1. Cash/Coins		0.3	0.3	0.2
2. Gold		11.0	11.0	11.0
3. Foreign exchange reserve		14.3	14.4	14.4
4. Liquidity provisions as Monetary Policy Operations		499.6	511.8	619.0
(1) Temporary liquidity provisions		14.5	22.5	140.9
a. Regular operations/lending conducted at the central bank's discretion	RPs outstanding	14.3	22.1	140.6
b. Lending/discount facilities used upon request of financial institutions	Loans to depository institutions (discount window, Special Liquidity Facilities, etc.)	0.2	0.5	0.2
(2) Permanent liquidity provisions (securities held outright)	Securities bought outright ¹	485.1	489.3	478.1
5. Other liquidity provisions		0	0	0
6. Securities acquired through operations other than OMO's		0	0	0
7. Other financial assets		33.4	31.5	30.9
8. Other assets (non-financial)		1.3	1.3	1.3
Total assets		560.0	570.3	676.8

<footnotes>

1. Permanent liquidity provisions correspond to total securities, including securities on loan. Excludes securities sold and scheduled to be bought back under matched sale-purchase agreements with foreign accounts. These amounts were \$17.8 billion on June 30, \$18.5 billion on September 30, and \$39.2 billion on December 31.

<Liabilities and Capital >

Items	Application to FRS	Jun. 30	Sep. 30	Dec. 31
1.Banknotes in circulation	Federal Reserve Notes ¹	505.4	517.0	600.7
2.Current account deposits of financial institutions		22.2	21.7	24.0
(1)Reserve Deposits (Required and excess reserves)	Balances with the Federal Reserves	22.2	21.7	24.0
(2)Required clearing balances				
(3)Other balances				
3.Liquidity absorption as Monetary Policy Operations		0	0	0
(1)Deposit facility	None	-	-	-
(2)Bills and Certificates issued	None	-	-	-
(3)Reverse transactions		0	0	0
4.Government deposits		6.7	6.6	28.4
5.Other deposits		8.0	6.0	6.4
6.Other liabilities and capital		17.7	19.0	17.3
Total liabilities and capital		560.0	570.3	676.8

<footnotes>

1. Banknotes in circulation excludes about \$27.0 billion of Treasury currency outstanding.

Consolidated Eurosystem's Balance Sheet

(US\$ billion)

Exchange rate: EUR 1.0062

<Assets >

Items	Application to Eurosystem	End June ²	End Sep ³	End Dec ⁴
1. Cash/Coins	Coins of Euro area	1.0	1.0	1.0
2. Gold	Gold and gold receivables	106.0	102.4	117.2
3. Foreign exchange reserve	Net Foreign reserve assets (Claims denominated in foreign currency – liabilities denominated in foreign currency – Counterpart of special drawing rights allocated by the IMF)	235.7	243.1	251.5
4. Liquidity provisions as Monetary Policy Operations		171.7	199.5	251.2
(1) Temporary liquidity provisions		171.7	199.5	251.2
a. Regular operations/lending conducted at the central bank's discretion	Open market operations (Main refinancing operations +Longer-term refinancing operations +Fine-tuning/Structural reverse operations + Other lending)	171.5	199.5	239.7
b. Lending/discount facilities used upon request of financial institutions	Marginal lending facility	0.2	0.0	11.5
(2) Permanent liquidity provisions (securities held outright)	Structural/ Fine –tuning outright transactions	-	-	-
5. Other liquidity provisions	None	-	-	-
6. Securities acquired through operations other than OMO's	(1) General Government debt denominated in Euro	60.5	60.5	59.5
	(2) Securities of the Euro area denominated in Euro	26.3	25.6	23.7
7. Other financial assets ⁵		35.6	36.9	35.8
8. Other assets (non-financial)		47.1	46.4	48.8
Total assets		683.8	715.5	788.7

<footnotes>

1. Exchange rate at 31 December 1999
2. Figures from Weekly financial Statement published at the end of June (data from 24 June 99)
3. Figures from Weekly financial Statement published at the end of September (data from 24 September 99)
4. Figures from Weekly financial Statement published at the end of December (data from 31 December 99)
5. Confidential data; not published in the weekly financial statement

<Liabilities and Capital>

Items	Application to Eurosystem	End June¹	End Sep²	End Dec³
1. Banknotes in circulation	Banknotes	340.0	342.4	377.3
2. Current account deposits of financial institutions		98.0	104.5	115.2
(1) Reserve Deposits (Required and excess reserves)	Reserve balances + Excess reserves	97.8	104.3	115.0
(2) Required clearing balances	None	-	-	-
(3) Other balances	Deposits held by institutions not directly contributing to the Reserve Requirement System ⁶	0.2	0.2	0.2
3. Liquidity absorption as Monetary Policy Operations		10.3	10.3	10.6
(1) Deposit facility	Deposit facility	0.1	0.1	2.5
(2) Bills and Certificates issued	Debt certificates issued ⁷	10.2	10.2	7.9
(3) Reverse transactions	None	-	-	-
4. Government deposits	Liabilities to the General Government denominated in Euro	37.8	55.3	56.8
5. Other deposits	None	-	-	-
6. Other liabilities and capital	Liabilities to non euro-area residents denominated in euro, other liabilities to euro area residents denominated in Euro, revaluation accounts, Capital and Reserves and other liabilities	197.7	202.9	228.8
Total liabilities and capital		683.8	715.5	788.7

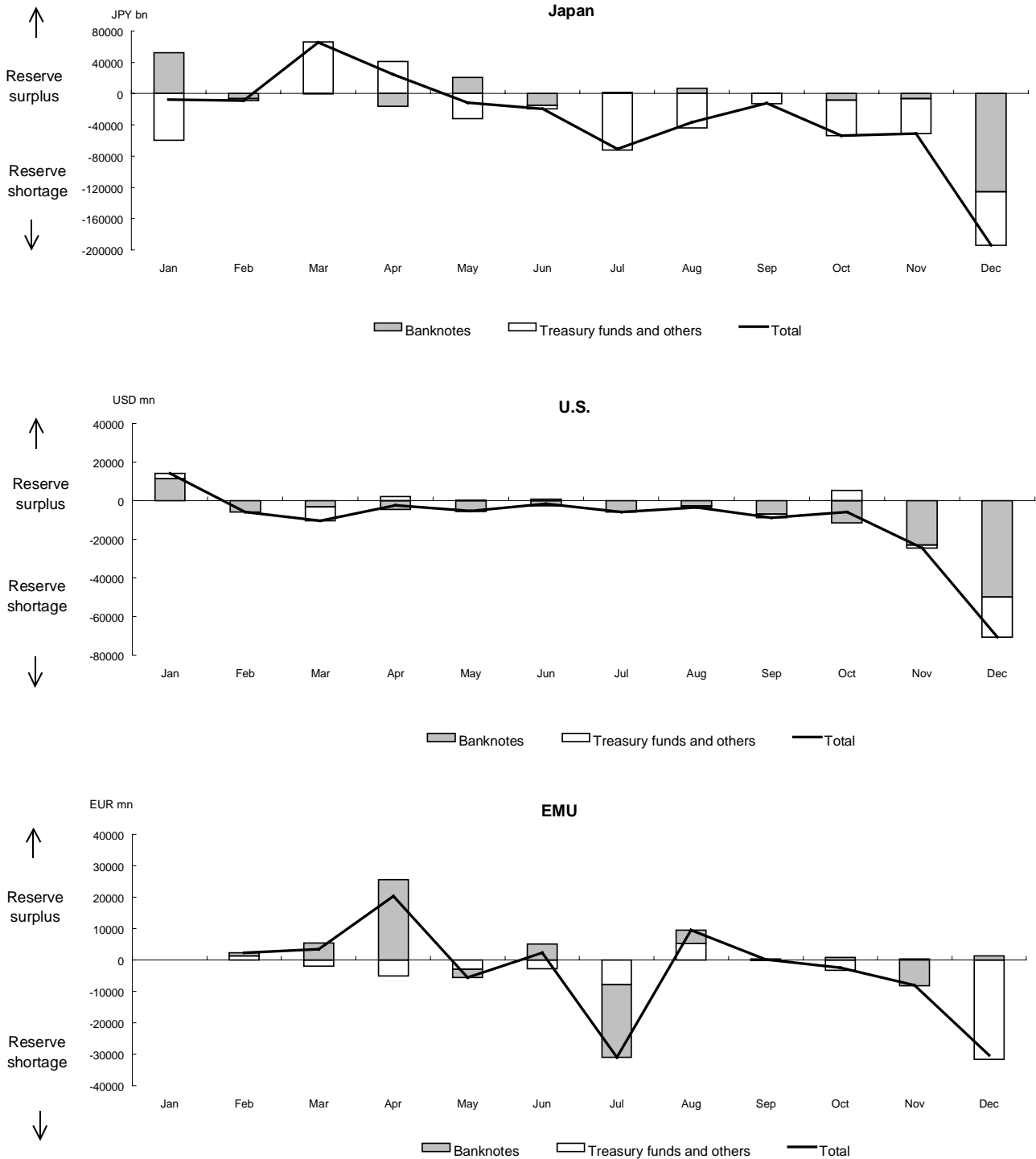
<footnotes>

6. Current account holdings from institutions that are not subject to minimum reserve requirements or that although being subject, do not have to fulfil them because they are below the lump-sum allowance or because they use an intermediary for that purpose
7. Debt certificates issued by several national central banks before the start of the European Monetary Union. They are therefore inherited from Stage 2.

Daily Changes in Key Autonomous Factors Affecting the Supply of Balances in 1999

average / maximum absolute change in daily level in the indicated period	Bank of Japan March – November 1999 100 million yen	European Central Bank Second Half of 1999 Million euros	Federal Reserve All of 1999 million dollars
Banknotes	2960 / 9540	599 / 3,693	896 / 5,379
Treasury Balance (government deposits)	9410 / 89,320	2,586 / 24,811	887 / 7,446
Float (items in the course of settlement)	not available	532 / 3,713	693 / 6,217

Comparison of Autonomous Reserve Factors (1999)



Figures of January 1999 for EMU is omitted.

Note: (a) Using publicly available information. ECB: "Consolidated financial statement of the Eurosystem", FRS: "Factors affecting reserve balances", BOJ: "Supply and demand of funds in money markets (monthly)".

(b) For the FRS and the ECB, "Treasury funds and others" are calculated as residual based on the following equation:
 Change in the amount outstanding of market operations (including loans and other facilities) + autonomous factors = change in reserve balances, where autonomous factors exclusively consisting of "banknotes" and "Treasury funds and others".

Bank of Japan **Monetary Policy Operations**

	Instruments	Legal structures	Purposes	Roll-over or not	Maturity	Eligible assets to be purchased/sold	Settlement conventions	Counterparties	Notes
Fund Provision Operations	Outright purchases of JGBs	Outright	Permanent	Can be exchanged for new issues at maturity (replacement)	JGBs (10Y, 20Y)		Forward only	Banks Securities companies	Exchanged for JGBs (10Y) or TB (1Y) <converted into shorter issues>
	Outright purchases of TB/FBs			In principle redeemed at maturity (no replacement)	TB, FBs		Forward only	Banks Securities companies Tanshi	Used as a means of short-term funds injections
	Purchases of bills (regular)		Temporary	Depending on reserve condition	Within 3 months	Master bills (collateralized by eligible assets ¹)	Same day and forward	Tanshi (Banks participating through Tanshi)	Master bills are designed and issued by financial institutions for the OMOs
	Purchases of bills (collateralized by corporate bonds)	Forward only					Banks Securities companies		
	Purchases of CPs under repurchase agreements	Repurchase				Eligible CPs	Forward only	Banks Securities companies Tanshi	
	Purchases of TB/FBs under repurchase agreements				Within 6 months	TB, FBs	Same day and forward	Banks Securities companies Tanshi	
	JGB repos	Securities borrowing	JGBs (2Y,4Y,6Y,10Y,20Y)	Forward only		Banks Securities companies Tanshi			
Fund Absorption Operations	Outright sales of TB/FBs	Outright	Temporary	Depending on reserve condition	TB/FBs held outright by the BOJ		Forward only	Banks Securities companies Tanshi	
	Sales of BOJ-bills				Within 3 months	Bills issued by the BOJ	Same day and forward	Tanshi (Banks participating through Tanshi)	BOJ-bills are allowed to be traded only among interbank participants
	Sales of TB/FBs under repurchase agreements	Repurchase				TB/FBs held outright by the BOJ	Same day and forward	Banks Securities companies Tanshi	

1. Eligible commercial bills issued by non-financial institutions, certificates of JGBs, and book-entry government bonds, etc.
2. Corporate bonds, loans on deeds, and asset-backed securities, all of which have to be examined for their eligibility.

Federal Reserve System Monetary Policy Operations

	Instrument	Legal Structure	Purposes	Maturity	Roll-over or not	Eligible assets	Settlement conventions	Counter-parties	Notes
Fund Provision Operations	Outright Purchases	Outright	Permanent addition to Fed balances	Duration of underlying security	Can be rolled over for new issues at maturity	Treasury securities and direct or guaranteed obligations of government agencies and government sponsored enterprises ¹	Usually next day. Same day and skip day have been used	Primary Dealers ²	Purchases of Treasury bills and coupon issues are usually arranged in separate operations. Purchases of agency debt have not been made since 1981.
	System Repurchase Agreements	repurchase agreement	Temporary addition to Fed balances	Up to 90 calendar days	No	Treasury securities and direct or guaranteed obligations of government agencies and government sponsored enterprises	Usually same day; forward operations are sometimes made	Primary Dealers	FOMC sets guidelines for specific collateral that can be accepted. Under temporary authorization that is set to expire in January 2001, mortgage-backed securities of agencies may be accepted.
	Customer Repurchase Agreements	repurchase agreement	Temporary additions to Fed balances	One business day	No	Treasury securities and direct or guaranteed obligations of government agencies and government sponsored enterprises	Same day	Primary Dealers	These operations are structured to offset internal overnight matched sale purchase agreements between the Fed and internal accounts. Not used since 1996.
Fund Absorption Operations	Outright Sales	outright	Permanent drain to Fed balances	-	-	Treasury securities and direct or guaranteed obligations of government agencies and government sponsored enterprises	Same day is possible		Only Treasury bills have been sold in any quantity in the market. Last arranged in 1989.
	Matched Sale-Purchase Transactions	sale and repurchase	temporary drain to Fed balances	Unlimited	No	Treasury securities and direct or guaranteed obligations of government agencies and government sponsored enterprises	Same day	Primary Dealers	In practice, only Treasury bills are used.

1. See the complete definition p.14 of the main text

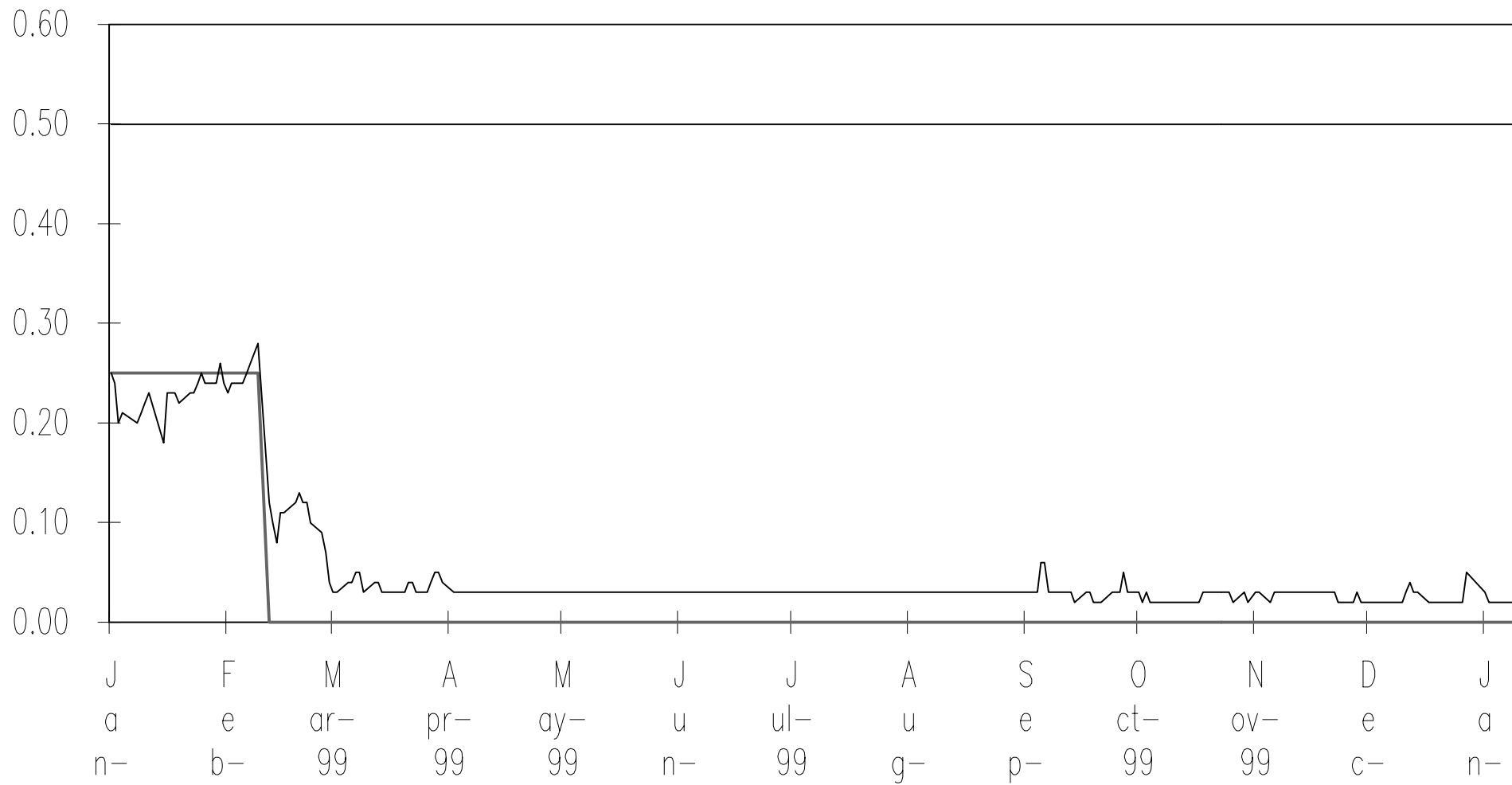
2. See the complete definition p. 13 of the main text

The table above summarizes the basic structure of the different types of open market operations the Desk has arranged in recent years under Federal Open Market Committee's Authorization for Domestic Open Market Operations

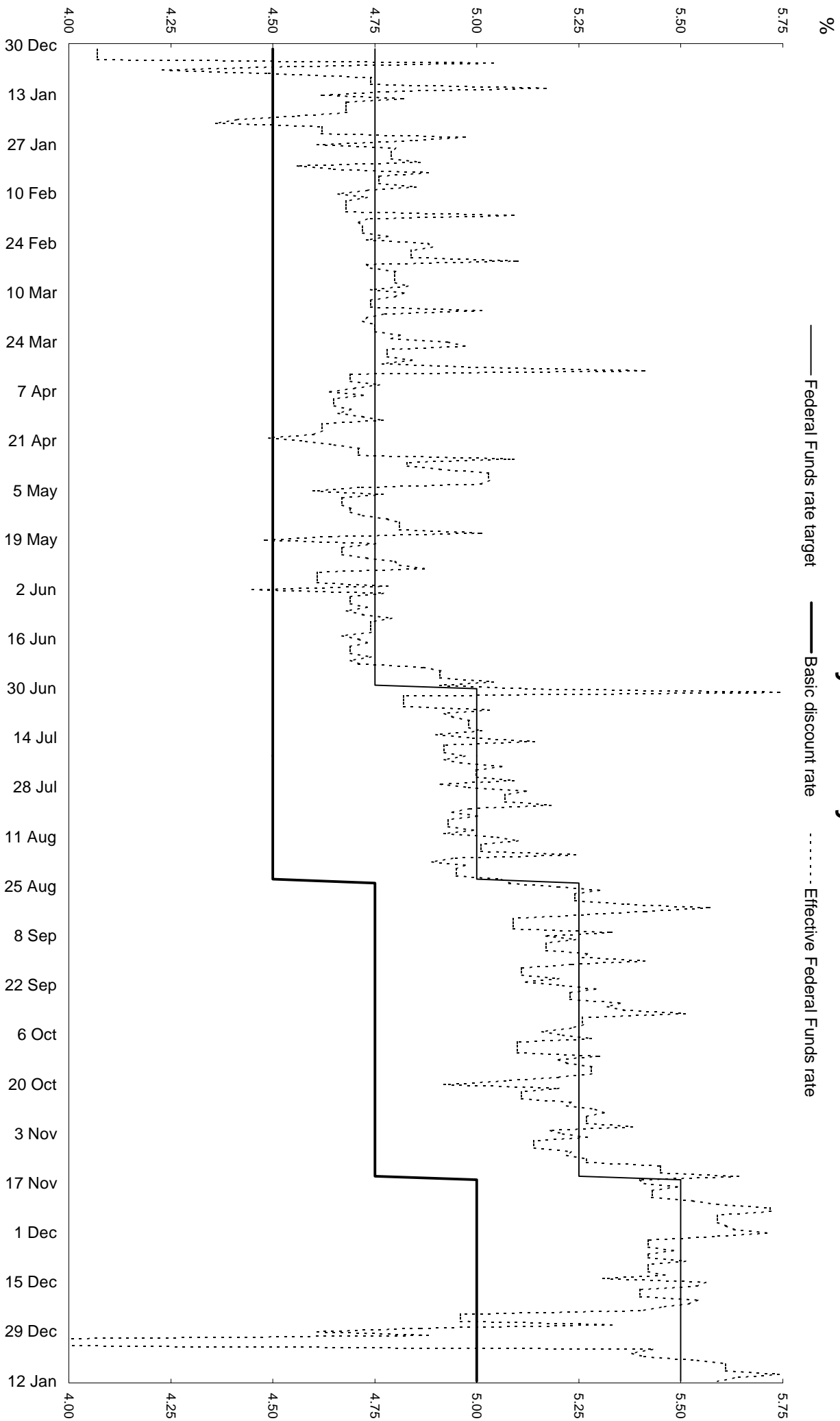
Eurosystem Monetary Policy Operations

	Instruments	Legal structures	Frequency	Procedure	Roll-over or not	Maturity	Eligible assets to be purchased/sold	Settlement conventions	Counterparties	Notes
Fund Provision Operations	Main refinancing operation (MRO)	Reverse transactions	Weekly	Standard tenders	Yes, but usually not for the same amount	Two weeks	Both tier 1 and tier 2 assets	T+1	Eligible credit institutions (2500 institutions)	Fixed-rate tenders only since 1.1.99
	Longer-term refinancing operation (LTRO)		Monthly			Yes, but not necessarily for the same amount				Three months
	Fine-tuning / Structural reverse transaction		Non-regular	FT: Quick tenders Bilateral procedures ST: Standard tenders	No	Non-standardized		T		Eligible Credit institutions (200 institutions)
	Fine-tuning / Structural outright purchase	Outright	Bilateral procedures			Only Tier 1 assets	Market conventions	No restrictions a priori		
	Fine-tuning foreign exchange swap	Swap	Quick tenders Bilateral procedures			-	T, T+1 or T+2	Eligible Credit institutions (100 institutions)		
	Marginal lending facility	Reverse transaction	Access at the discretion of counterparties			Overnight	Both tier 1 and tier 2 assets	T	Eligible Credit institutions (3200 institutions)	
Fund Absorption Operations	Fine-tuning foreign exchange swap	Swap	Non-regular	Quick tenders Bilateral procedures	No	Non-standardized	-	T, T+1 or T+2	Eligible Credit institutions (100 institutions)	
	Fine-tuning Collection of fixed term deposits	Deposit					-	T	Eligible Credit institutions (200 institutions)	Single FT instrument used once since 1/1/99
	Fine-tuning reverse transaction	Reverse transaction		Bilateral procedures			Both tier 1 and tier 2 assets		Eligible Credit institutions (200 institutions)	
	Fine-tuning / Structural outright sale	Outright					Only Tier 1 assets	Market conventions	No restrictions a priori	
	Structural Issuance of debt certificates			Standard tenders			< 12 months	-	T+1	Eligible Credit institutions (2500 institutions)
	Deposit facility	Deposit	Access at the discretion of counterparties			Overnight	-	T	Eligible Credit institutions (3700 institutions)	

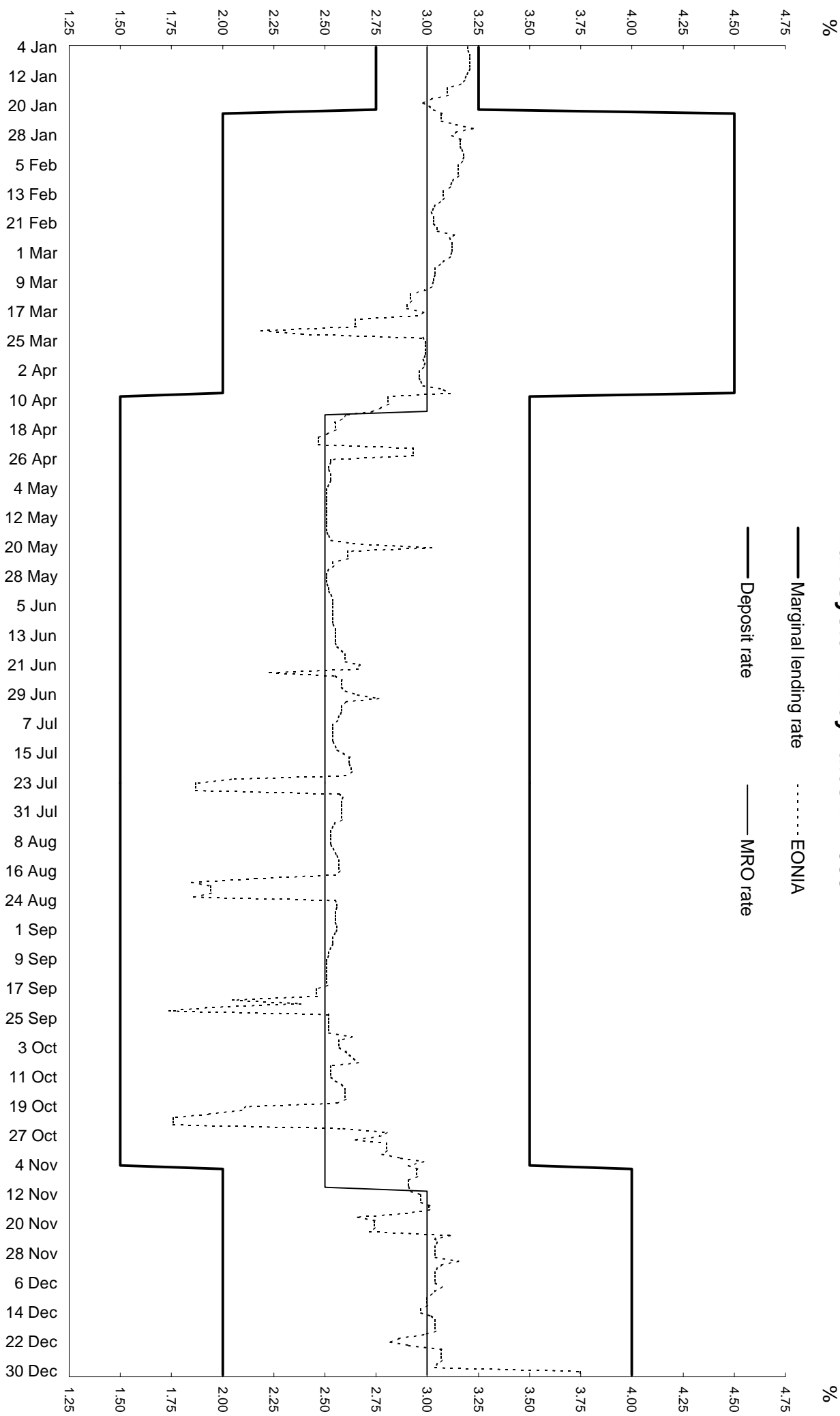
— official discount rate — target rate — 0/N call rate



Federal Reserve System - Key rates in 1999



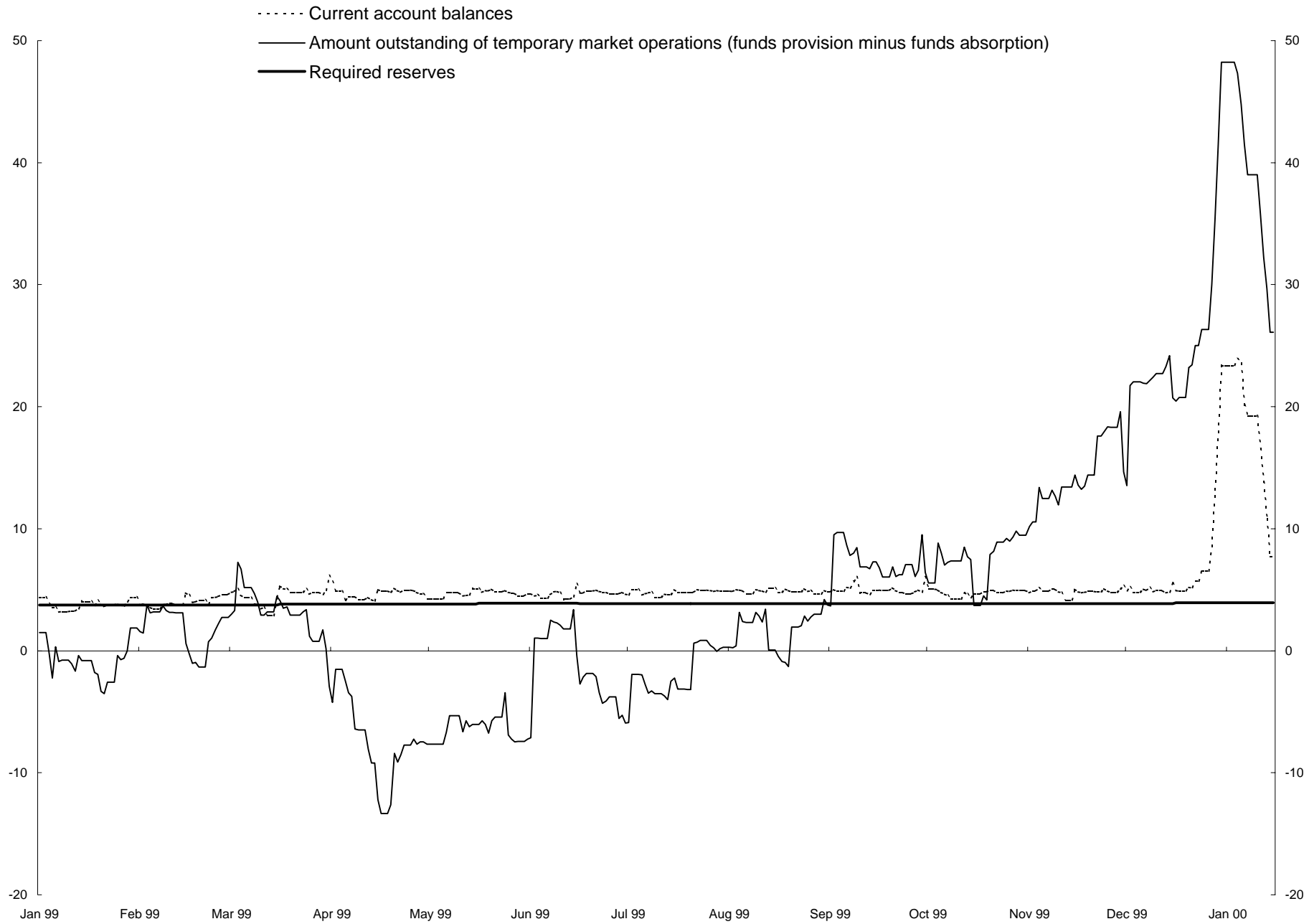
Eurosystem: Key rates in 1999



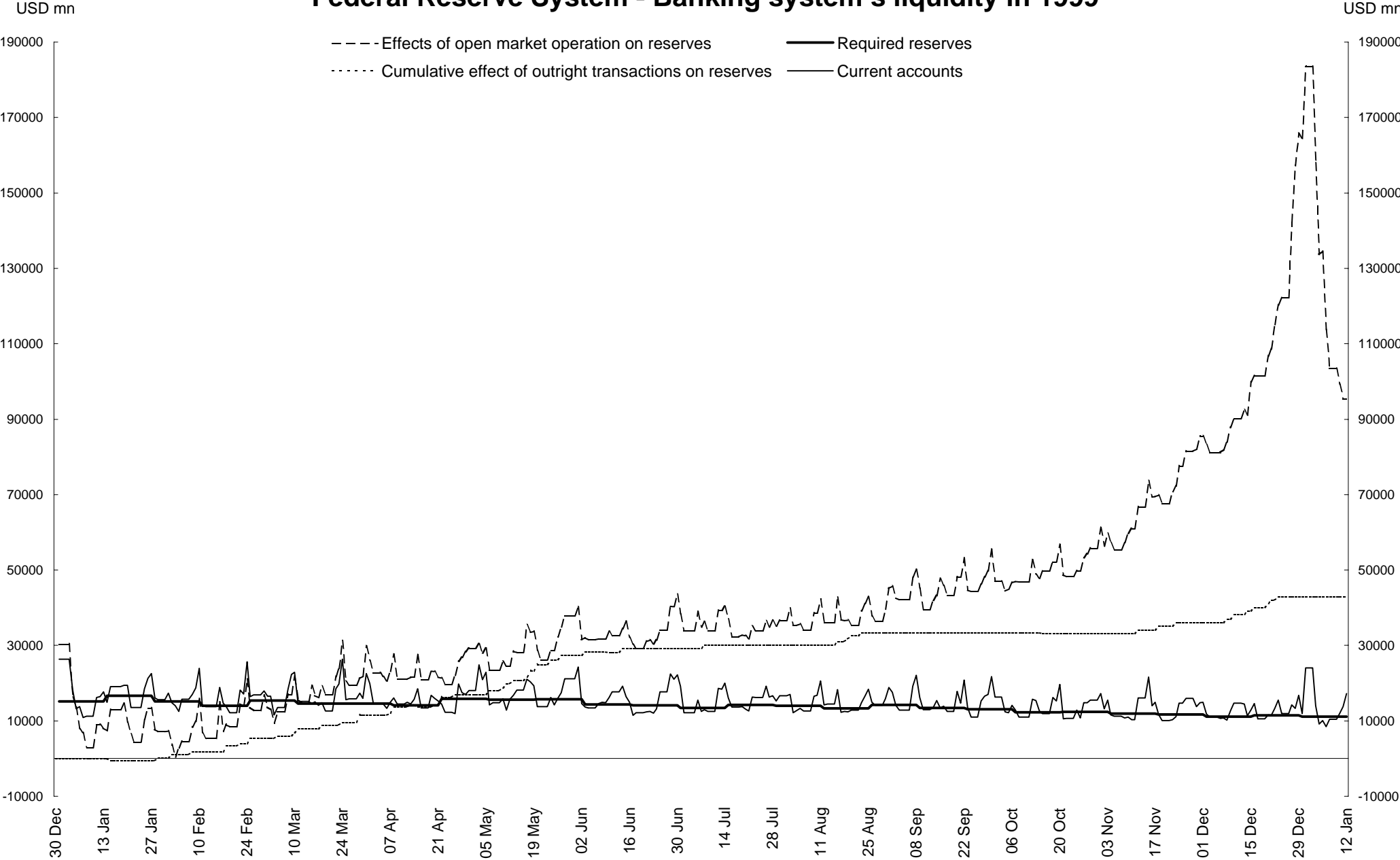
Bank of Japan - Banking system's liquidity

Annex 6

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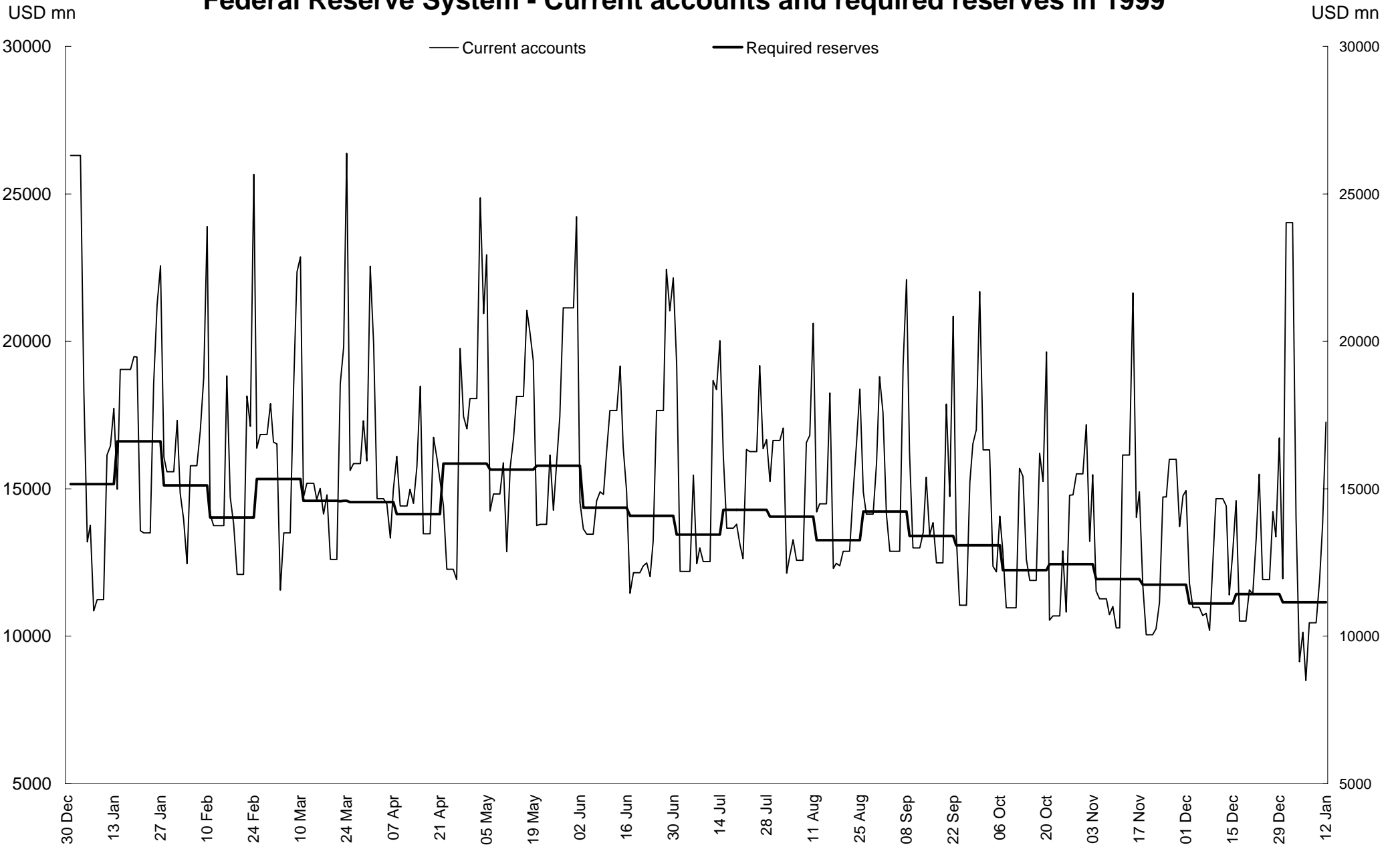


Federal Reserve System - Banking system's liquidity in 1999



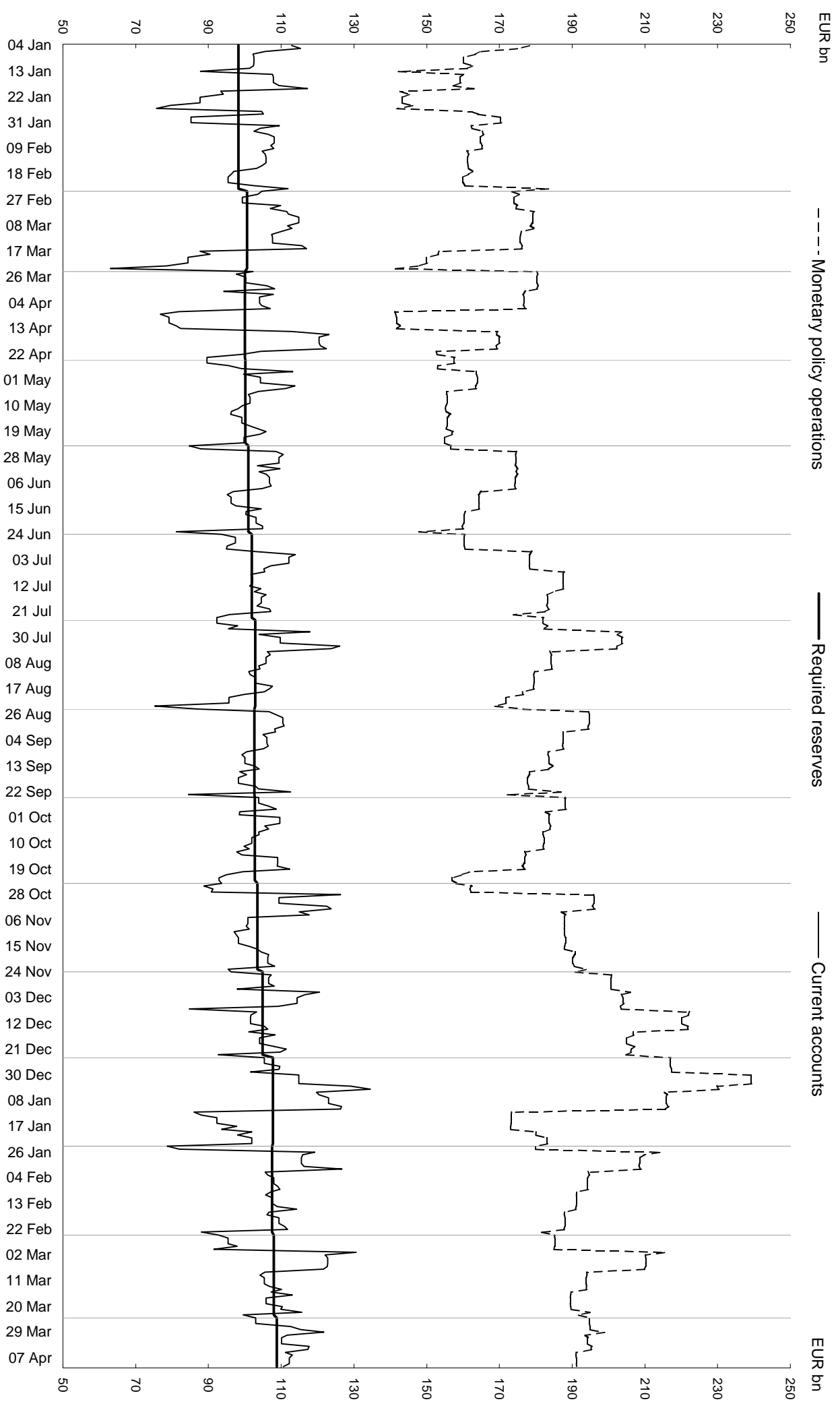
Federal Reserve System - Current accounts and required reserves in 1999

Annex 6



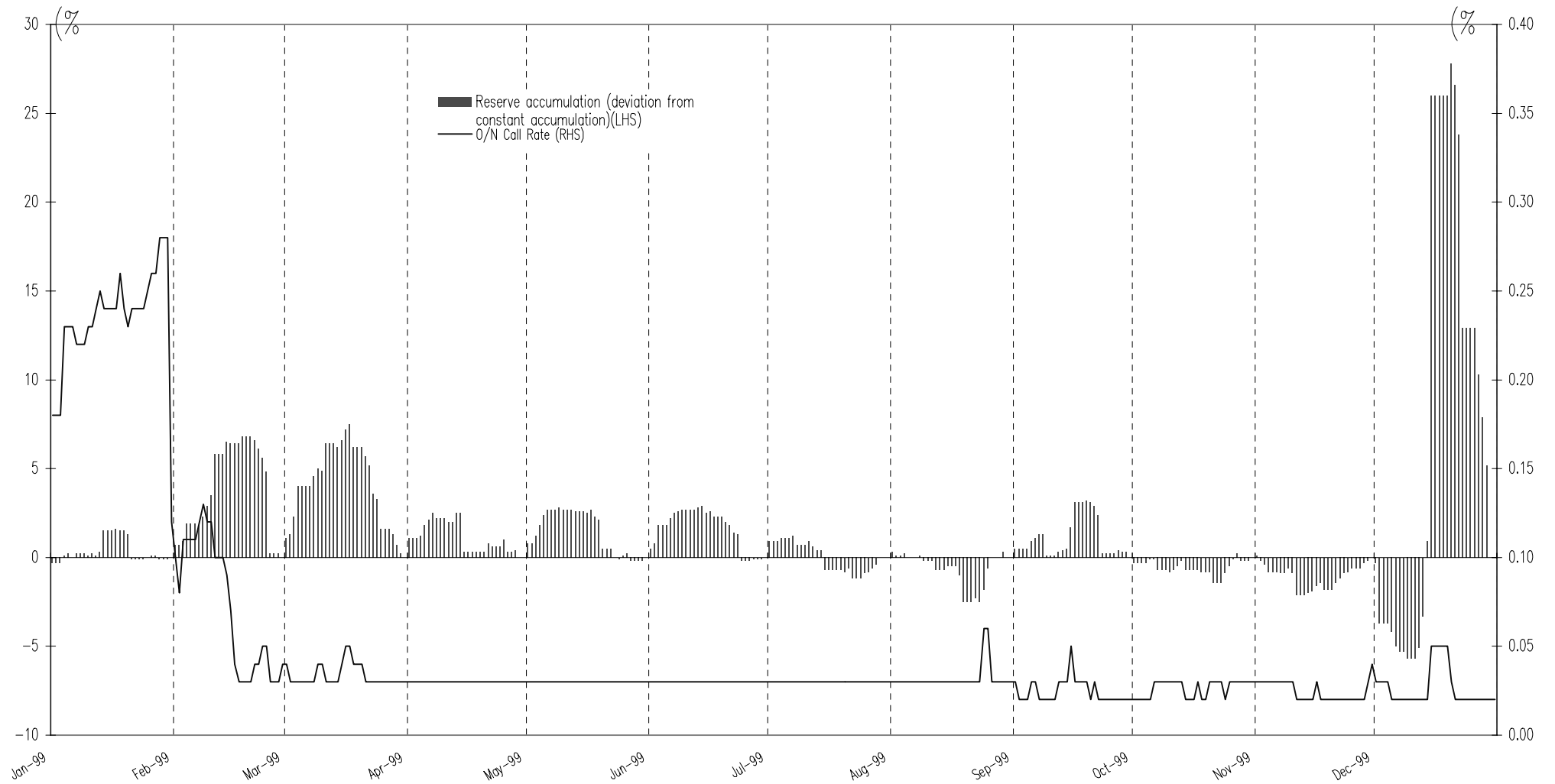
Eurosystem: Banking system's liquidity in 1999

Annex 6

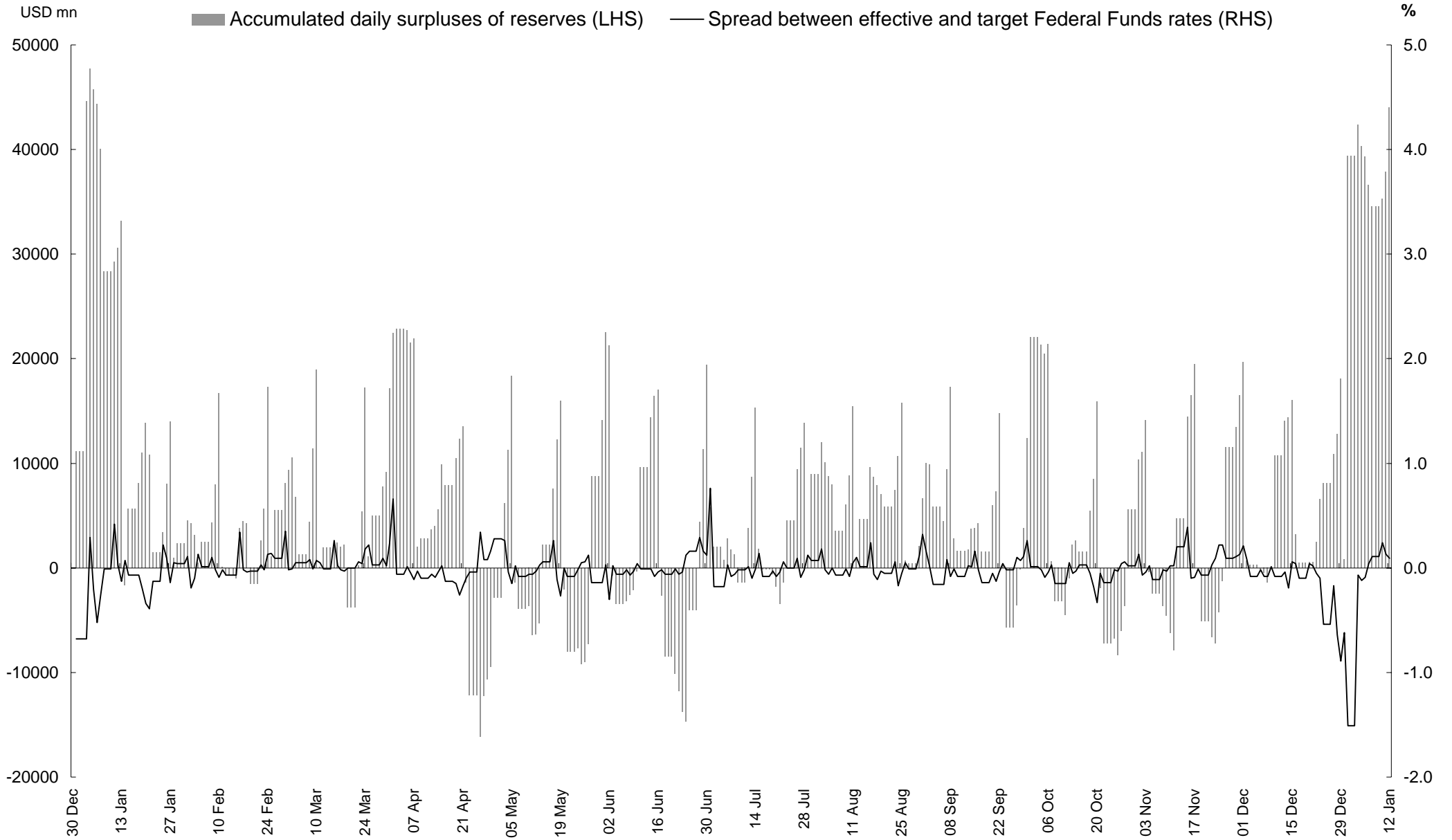


Intertemporal Arbitrage

Reserve accumulation and O/N call rate)



Federal Reserve System - Intertemporal Arbitrage in 1999



Eurosystem: Intertemporal Arbitrage in 1999

