



## PORTFOLIO MANAGEMENT AT THE ECB

*The ECB owns and manages three kinds of portfolios: the foreign reserve portfolios; the own funds portfolio; and the portfolios corresponding to the pension fund. This article outlines the approach followed in managing these portfolios and provides information about this activity. It also briefly outlines the main operational, IT and legal aspects of this activity.*

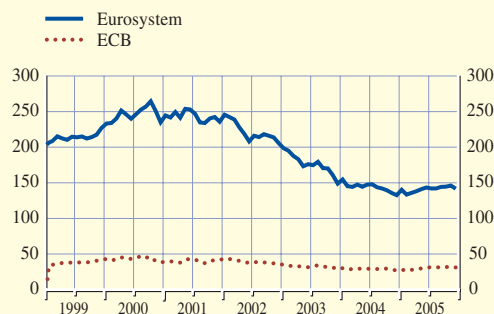
### I GENERAL DESCRIPTION OF THE PORTFOLIO MANAGEMENT FRAMEWORK

The ECB currently owns three kinds of portfolios. The first and largest comprises the foreign reserves of the ECB, which at the end of 2005 had a market value equivalent to around €41 billion, of which around €31 billion was in foreign currencies – the US dollar and the Japanese yen – and around €10 billion was in gold and special drawing rights (SDRs). The ECB's foreign reserves are one component of the foreign reserves of the Eurosystem, the other component being the foreign reserves of the euro area NCBs. At the end of 2005, total Eurosystem foreign reserves amounted to around €320 billion, of which €142 billion was in foreign exchange assets and €178 billion in gold, SDRs and IMF reserve positions. Reflecting mostly portfolio choices of NCBs, the foreign reserves of the Eurosystem declined steadily, net of exchange rate changes, between 1999 and 2005. By contrast, – leaving aside the one-off impacts of the foreign exchange market interventions of September and November 2000 – in broad terms, the ECB's foreign reserves remained stable over this period, with changes mainly reflecting exchange rate fluctuations and accumulated portfolio returns (see Chart 1).

The purpose of the ECB's foreign reserve portfolio is to ensure that, whenever needed, the Eurosystem has a sufficient amount of liquid resources for its foreign exchange policy operations involving non-EU currencies, such as the interventions that took place in September and November 2000.<sup>1</sup> It should be noted, however, that the ECB's capacity to intervene in the foreign exchange market is not restricted by its foreign reserve holdings. This is because:

**Chart 1 Eurosystem and ECB foreign exchange reserves**

(EUR billion equivalent)



Source: ECB.

Note: Official foreign reserve assets excluding gold, SDRs and IMF reserve positions; market values.

- NCBs are committed to providing an additional amount of foreign reserves to the ECB, should the need arise;
- the ECB could fund interventions without having recourse to foreign reserve holdings, for example by using foreign exchange swaps with the market or with the relevant central banks;
- foreign exchange operations involving EU currencies, including interventions related to the Exchange Rate Mechanism II, can be funded within the ESCB<sup>2</sup>.

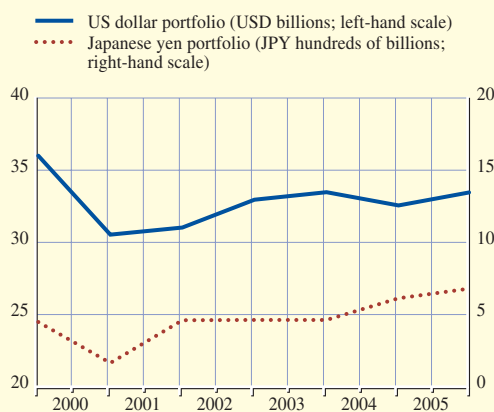
The distribution between US dollar and Japanese yen assets reflects both estimated needs in case of market intervention and risk optimisation. At the start of 1999 the ratio of US dollar to Japanese yen assets was 90/10. At the end of 2005, following foreign exchange market

1 Further information about the Eurosystem's foreign exchange operations is available at the following internet address: <http://www.ecb.int/ecb/orga/tasks/html/foreign-exchange.en.html>.

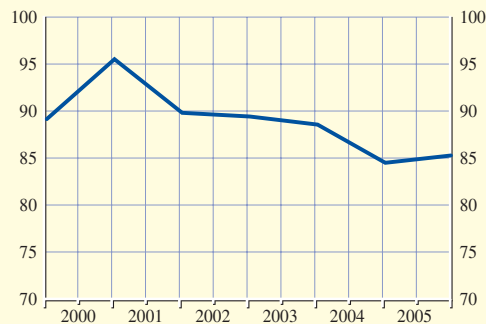
2 The ESCB is composed of the ECB and the NCBs of all 25 EU Member States.

**Chart 2 Currency distribution of the ECB's foreign exchange reserves**

**a) Sizes of US dollar and Japanese yen portfolios**  
(market values)



**b) Percentage of the ECB's foreign exchange reserves invested in US dollars**  
(market values; in EUR equivalent)



Source: ECB.  
Note: Portfolio sizes are calculated as official reserve assets, plus deposits in foreign currency with residents, minus future predetermined net drains on foreign currency holdings due to repos and forward transactions.

fluctuations and some rebalancing operations, the ratio was around 85/15 (see Chart 2).

The second portfolio is the own funds portfolio. The invested paid-up capital and the general reserve fund of the ECB form the basis of this portfolio, which amounted to around €6.4 billion at the end of 2005. The purpose of the own funds portfolio is to provide the ECB with a reserve to meet possible losses. The portfolio is invested in euro-denominated assets.

The third, and by far the smallest, portfolio is the ECB's pension fund portfolio, where the money of the ECB's retirement plan is invested. The ECB's pension fund amounted to €161 million at the end of 2005, with total contributions by the ECB and its staff of around €20 million in 2005. The assets of the ECB's pension fund are owned directly by the ECB but are earmarked for the retirement plan; the financial results of the portfolio investment are retained within the fund.

The three portfolios are very different not only in terms of size, but also as regards composition, purpose, objective and management. However, the ECB applies some overarching portfolio management principles and rules to all three portfolios.

- First, the ECB applies a “market neutrality principle”: it endeavours, in its portfolio management activities, not to cause any undue distortion in market prices. In practice, this means that the ECB's portfolio management activities are only conducted in markets that are deep and liquid enough to ensure that portfolio management transactions are easily absorbed at market-determined prices.
- Second, the ECB applies professional ethics rules, as set out in the “Code of Conduct of the ECB” and the “Rules on professional conduct and professional secrecy”. These documents give guidance on matters of professional ethics to all ECB employees. In this context, insider trading rules, aimed at avoiding the use of inside information for private investment activities by the people involved in portfolio management, are obviously of particular relevance.<sup>3</sup>

- Third, the ECB applies a strict separation between portfolio management and other activities: a Chinese Wall, which is reflected in the ECB's organisational structure,

<sup>3</sup> Further information about the ECB's corporate governance is available at the following internet address: <http://www.ecb.int/ecb/orga/governance/html/index.en.html>.

ensures that the people involved in portfolio management activities do not receive any privileged information from other parts of the ECB. The idea behind this is to prevent any conflict of interest between the policy and the investment activities of the ECB.

## 2 ORGANISATIONAL ASPECTS

The ECB has organised portfolio management activities in distinct ways for its foreign reserves, own funds and pension fund portfolios, thereby taking account of the different objectives assigned to each portfolio.

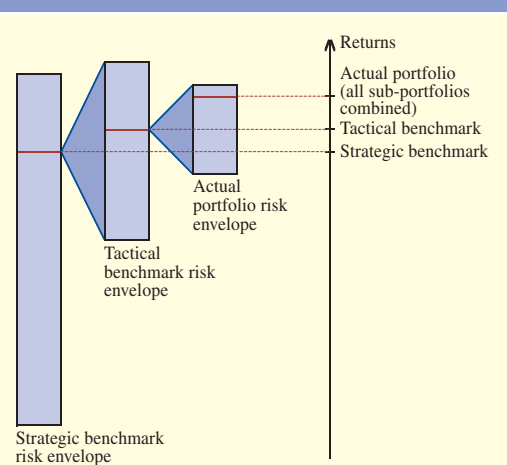
For the ECB's foreign reserves, the portfolio management objective is to maximise returns through prudent portfolio management, subject to the stringent security and liquidity requirements that derive from the portfolio's purpose. Investment guidelines and benchmarks are defined within the ECB using internally developed methods (see Sections 3 and 4 respectively).

While some functions, such as risk management and accounting, are carried out in a centralised manner at the ECB, most of the front and back office functions are decentralised across the Eurosystem.

Two portfolio management mandates have been defined to reflect this decentralised approach.<sup>4</sup>

- The first mandate for the ECB's foreign reserves envisages the outperformance of the foreign reserve portfolio strategic benchmarks (one in US dollars and one in Japanese yen) in compliance with specific investment guidelines and avoiding frequent changes in positions (normally positions are reviewed and possibly changed only once a month). This mandate has been given to the ECB's Investment Committee, which reports to the Executive Board. The results of the positions put forward by the Investment Committee and approved by the Executive Board constitute the tactical benchmarks for

**Chart 3 Management structure of the ECB's foreign reserve portfolio**



Source: ECB.

Note: The boxes display risk envelopes for the strategic benchmark, tactical benchmark and actual portfolios; the horizontal red lines represent the selected risk levels, which respectively reflect the outcome of the strategic benchmark design process, the tactical benchmark positioning and the actual portfolio positioning; the vertical axis displays returns resulting from the portfolio decisions.

the ECB's foreign reserves (one in US dollars and one in Japanese yen).

- The second mandate envisages the outperformance of the tactical benchmarks; it also includes the settlement of the market transactions necessary to invest the ECB's foreign reserves, in compliance with specific investment guidelines. The resulting portfolio management structure and task allocation are shown in Chart 3 and Table 1.

Until the end of 2005, the latter mandate was given in identical terms to each NCB. Since 1 January 2006, euro area NCBs have had the freedom to abstain from taking up the ECB's foreign reserve management mandates. Those NCBs that abstain from taking up a mandate would not be involved in operational activities related to the ECB's foreign reserve management but would

<sup>4</sup> In this context, the term "mandate" refers to the allocation of the responsibility to manage a portfolio to a business unit or an external party. A mandate specifies the benchmark portfolio against which portfolio management performance will be assessed, the portfolio management objective and the relevant investment guidelines, such as a list of eligible instruments and a set of risk limits.

**Table 1 Allocation of foreign reserve portfolio management tasks**

(• = full responsibility for a task; ◦ = local responsibility to contribute to a task)

Activity	ECB	NCBs
Investment decisions	•	•
Execution		•
Settlement		•
Confirmation generation and matching		•
Custodians and correspondents instructions		•
Reconciliation	•	•
Portfolio management system/sub-account statements	•	
Sub-account statements/accounting	•	
Accounting	•	
Deal capturing and risk management system	•	◦
Risk management (e.g. performance attribution, limits, eligible countries/counterparties/issuers)	•	
Foreign reserve management framework	•	(ESCB committee)

Source: ECB.

remain involved in strategic activities, such as the work on benchmarks and investment guidelines. Those NCBs that take up an ECB foreign reserve management mandate are eligible for a mandate corresponding to either a US dollar sub-portfolio or a Japanese yen sub-portfolio. The Deutsche Bundesbank and the Banque de France are eligible for two mandates. The allocation of mandates will be reviewed as a rule every three years or if a specific need arises. Compared with the framework which was in place until the end of 2005, the new framework is expected to bring efficiency gains. The initial allocation of portfolio management mandates is shown below (see Table 2). It follows approximately the capital key of the ECB, i.e. the shares of the different NCBs in the paid-up capital of the ECB<sup>5</sup>.

As regards the ECB's own funds, the portfolio management objective is to generate returns

**Table 2 Allocation of the ECB's foreign reserve sub-portfolios**

(on 31 January 2006)

US dollar portfolio (in USD millions)		Japanese yen portfolio (in JPY hundreds of millions)	
BE	1,398	DE	628
DE	11,039	FR	442
GR	1,040	NL	2,510
ES	4,262	AT	1,307
FR	7,765	PT	1,109
IE	505	FI	810
IT	7,153		
LU	121		

Source: ECB.

over the long term in excess of the average main refinancing rate of the ECB. Investment guidelines and the benchmark are specified so as to fulfil this objective. The ECB's Investment Division has been given a mandate to outperform the own funds portfolio benchmark, in compliance with specific investment guidelines.

For the ECB's pension fund, the portfolio management objective involves maximising the fund's asset value and minimising the risk that the retirement plan's liabilities exceed its assets. An external service provider selected by the ECB currently manages the whole pension fund portfolio.

### 3 INVESTMENT GUIDELINES

Investment guidelines translate the general portfolio management objectives into specific principles and rules, including issuer and counterparty eligibility criteria as well as a framework for market and credit risk management. There are significant differences between the pension fund and the other two kinds of portfolios as regards investment guidelines. Box 1 includes information about the pension fund; the comments which follow refer to the other two portfolios only.

<sup>5</sup> Further information on the paid-up capital of the ECB is available at the following internet address: <http://www.ecb.int/organic/capital/html/index.en.html>.

## Box I

**LEGAL ASPECTS OF THE ECB'S PORTFOLIO MANAGEMENT**

This box outlines the main legal aspects related to the ECB's portfolio management in relation to the ECB's foreign reserves, own funds and the pension fund, as well as the recently established Eurosystem reserves management services framework.

**Foreign reserves management**

To document operations involving its foreign reserve assets, the ECB uses:

- the FBE Master Agreement for Financial Transactions, 2004 edition, (the European Master Agreement or “EMA”) with counterparties incorporated under the laws of 15 EU jurisdictions and Swiss law for (i) repurchase agreements and buy/sell-back agreements, and (ii) over-the-counter derivatives and foreign exchange operations;
- the Bond Market Association (“TBMA”) Master Repurchase Agreement, 1996 version, for repurchase agreements and buy/sell-back agreements with counterparties incorporated under US federal or state laws;
- the TBMA ISMA Global Master Repurchase Agreement, 2000 version, for repurchase agreements and buy/sell-back agreements with counterparties incorporated under the laws of jurisdictions outside the EU, Switzerland and the United States;
- the International Swaps and Derivatives Association (“ISDA”) Master Agreement (multi-currency, cross-border), 1992 version, for over-the-counter derivatives and foreign exchange operations with all counterparties, except those incorporated under the laws of 15 EU jurisdictions or Swiss law; and
- the ECB Master Netting Agreement to document operations with all counterparties except the counterparties with which the ECB has signed an EMA and which are incorporated under the laws of 14 EU jurisdictions or Swiss law.

**Own funds management**

To document its own funds operations, the ECB uses the EMA and the ECB Master Netting Agreement. The contractual framework of the ECB regarding its securities lending with respect to the own funds portfolio aims to ensure the following objectives:

- to minimise risks regarding the lending of the portfolio;
- to facilitate lending activities; and
- to ensure the confidentiality of the composition of the ECB's portfolio.

To this effect, the securities lending and agency agreement ensures, among other things, that the ECB is indemnified for any loss possibly occurring during repo and reverse repo operations under the securities lending programme. It was also an important consideration to enter into a contract with an entity based in the euro area, carrying out securities lending activities itself, while benefiting from the guarantee of the mother company. To ensure that the composition of the ECB's portfolio is kept confidential, the ECB requires that appropriate – and identical – confidentiality undertakings are entered into between the securities lending agent and the

different eligible counterparts. A similar arrangement is under consideration regarding the US dollar assets of the foreign reserves portfolio.

### **Pension fund management**

The pension fund is invested in bonds, equities and money market instruments. The ECB is the contracting party with the service providers of the pension fund, on behalf of the pension fund. Until recently there was one contract with a service provider that performed the function of both investment manager and custodian. Since then, the two functions have been separated and there is a separate investment management agreement with a service provider acting as the investment manager of the pension fund and a custody agreement with the custodian institution.

The industry standard agreements were used as a basis, tailored to the specific requirements of the ECB's pension fund. Liability issues are of course always key issues with respect to agreements of the kind. In addition, the ECB's control over the custody network used and the financial instruments applied had to be ensured. Because of the dual framework (separate custodian and investment manager) the exact split of responsibilities between the two service providers had also to be set out. As regards the investment manager, the agreement had to cater for market risk limits, defined using the tracking error concept, which will ensure that the performance of the managed portfolios does not deviate substantially from that of the corresponding benchmarks. For certain asset categories, it was foreseen to use already existing funds operated by the investment manager, alongside other investors. In order to meet the ECB's requirements, some modifications to the existing policies of these funds were necessary. The special tax status of the ECB also had to be reflected in the structure, with appropriate tax and corporate action service level ensured by the custodian. Because of the relatively complex structure, it was also necessary for all charges to be identified and made transparent and billed directly to the ECB.

### **ISSUER AND COUNTERPARTY ELIGIBILITY CRITERIA**

The ECB's foreign reserves and own funds portfolios are invested in fixed income instruments, i.e. money market instruments, bills and bonds and corresponding derivative instruments.

In selecting eligible issuers for the ECB's foreign reserves, the main focus is on ensuring that the foreign reserves are invested in line with their primary operational objectives, namely security and liquidity. In particular, the following issuers are currently eligible: the governments of the United States, Japan and Canada; some highly rated agencies and international or supranational organisations in which EU members are not majority shareholders; and the BIS.

Eligible issuers for the ECB's own funds are grouped into three categories: government issuers, non-government issuers and covered bond issuers. Government issuers include in particular EU Member States and regional governments, provided that they fulfil a minimum rating. Non-government issuers include some highly rated agencies and corporations, and the BIS. In addition, both government and non-government securities are only used in managing the ECB's own funds if they are traded in a deep and liquid market, i.e. a market in which the ECB's transactions can be easily absorbed with no undue price impact. Non-government issuers also need to fulfil a minimum rating threshold and other criteria, including a minimum size of equity capital.



Counterparties for the ECB's foreign reserves and own funds management operations are chosen on the basis of prudence and operational efficiency. They need to (i) be supervised by a recognised supervisor; (ii) be incorporated in an eligible country; (iii) fulfil minimum creditworthiness criteria as defined by the ECB; and (iv) be approved individually by the ECB. The minimum creditworthiness criteria are differentiated with respect to the credit risk resulting from different instruments. The minimum creditworthiness is higher for transactions creating direct credit risk exposure, such as uncollateralised deposits, than for delivery-versus-payment (DvP) transactions. In the case of own funds, uncollateralised deposits are allowed only with the BIS. For an unrated counterparty, a formal written guarantee from the parent company of the counterparty, which must have an adequate rating, will be required as a prerequisite for the counterparty's eligibility. Presently, the minimum credit rating for counterparties eligible for non-collateralised transactions is A (the second best rating in ratings by several international rating agencies).

Table 3 summarises the number of eligible counterparties, issuers and countries for ECB foreign reserves and own funds.

It is also worth noting that transactions made in the context of the ECB's portfolio management face another constraint, namely respecting the

**Table 3 Number of eligible counterparties, issuers and countries**

(on 31 January 2006)

	Foreign reserves	Own funds
Total counterparties	119 <sup>1)</sup>	26 <sup>2)</sup>
of which: eligible for DvP transactions	81	26
of which: eligible for deposits	45	1 (BIS)
Eligible private sector issuers	1	52
Eligible public sector issuers	8	35
Eligible countries	21	26

Source: ECB.

1) For foreign reserves, 39 counterparties are eligible for deposits and DvP transactions.

2) For own funds, the BIS is eligible for deposits and DvP transactions.

prohibition of monetary financing embodied in the Treaty and the associated Council Regulation<sup>6</sup>. In particular, purchases of debt instruments issued by Member States or Community institutions or bodies in the primary market are strictly prohibited, whereas such purchases in the secondary market, although not prohibited, must not be used to circumvent the prohibition. In this context, secondary market purchases or debt instruments issued by Member States are subject to monitoring thresholds. However, in the specific context of the foreign reserve portfolio, there is an exemption, which permits the ECB to purchase debt instruments issued by the non-participating Member States in the primary market, if these purchases are conducted for the sole purpose of the foreign exchange reserves management<sup>7</sup>.

#### MANAGEMENT OF CREDIT RISK

While the first credit risk-related restrictions for investments in the context of the ECB's foreign reserves and own funds are the counterparty and issuer eligibility criteria described in the previous section, more precise tools are needed for the management of credit risk. These are limits which assure that excessive risk-taking and concentration is avoided. The different categories of limits implemented and monitored in the ECB's credit risk management system are the following:

- Country risk limits. Country exposure results from issuer and counterparty exposure, whereby the jurisdiction of organisation/incorporation of the issuer or counterparty is taken into account. Country limits depend on the relevance of the countries for the ECB's investment activities, their credit rating and their size in terms of GDP.

6 This prohibition is referred to in Article 101 of the Treaty, to which Council Regulation (EC) No 3603/93 of 13 December 1993 is linked.

7 This specific exemption is mentioned in Article 2 of Council Regulation (EC) No 3603/93. As mentioned earlier, this exemption is not relevant for the ECB, which has decided that EU Member States and international or supranational organisations in which EU Member States are majority shareholders are not eligible issuers for the ECB's foreign reserve management.

- Issuer risk limits. These apply to exposure arising from the holding of securities of issuers or groups of issuers. Issuer limits depend on the relevance of the issuers, their ratings and the size of outstanding issues.
- Counterparty risk limits. Specific sub-limits for counterparty risk arising from uncollateralised deposits are applicable in foreign reserves management. Counterparty limits depend on the counterparties' rating (or its guarantor's rating) and equity. Furthermore, a ceiling applies to all counterparties.
- Counterparty settlement limits. This limit applies to exposure arising from non-DvP transactions. In the case of the ECB's own funds, there is no settlement risk limit since all transactions are DvP transactions.

For the ECB's foreign reserves, total limits are allocated to the NCBs which manage sub-portfolios in a decentralised way, according to a distribution key reflecting portfolio sizes.

#### MANAGEMENT OF MARKET RISK

The market risk for the ECB's foreign reserve and own funds portfolios is managed through a multi-layered benchmark framework and deviation bands around these benchmarks for the activities of portfolio management.

Essentially, the overall market risk is managed by ensuring that the individual investment portfolios are expected to avoid losses at given prudent confidence levels.

Market risk exposure, implied by all investment portfolios, and the compliance of portfolio management with the market risk framework are monitored daily by means of the IT systems described in Box 2. Market risk exposure is measured by a variety of indicators, including Value at Risk (VaR) figures for the holdings expressed in local currencies and euro, modified durations, tracking errors and exposures to specific instrument classes.<sup>8</sup> VaR figures are calculated both on an absolute basis and relative to the respective benchmarks.

Within this framework, deviation bands around the benchmarks, expressed in terms of modified duration and relative VaR, provide leeway for portfolio management. While VaR figures have been monitored for several years, relative VaR limits will only become binding this year and modified duration limits will correspondingly

<sup>8</sup> Modified duration is a measure of the interest rate exposure of a portfolio. It reflects the weighted average time to maturity of the instruments held in the portfolio. VaR is an estimate of the maximum possible loss at a given confidence level (e.g. 95%) over a given investment horizon (e.g. one year). Tracking error is the standard deviation of differences between portfolio returns and benchmark returns observed at a given frequency (e.g. daily) over a given period of time (e.g. three months).

#### Box 2

##### IT SYSTEMS FOR THE ECB'S PORTFOLIO MANAGEMENT

All of the ECB's portfolio management activities, except pension fund management, are supported by a single, integrated portfolio management system. This system ensures that all instruments eligible with the ECB's foreign reserve and own fund management frameworks are processed and monitored in compliance with the ECB's requirements in the front, middle and back office areas. A customised accounting module has been developed and integrated into the system to cope with the special ESCB accounting requirements.

The system was procured in 1997 with a public tender and followed a thorough selection process, in which seven systems were short listed and evaluated on the basis of a pre-agreed set of conditions to select the one that best matched the ECB's functional and technical requirements. The system was implemented in 1998 to be operational by 1 January 1999.



Since then, several new versions have been introduced to ensure that the system continues to fit the ECB's evolving needs, for example, to support the new features and instruments introduced as a result of changes in the ECB's investment framework.

Since 1997 several NCBs within the ESCB have selected the same system as the ECB for the management of their own portfolios. The increasing number of central banks using the same IT platform for their own purposes has provided unique opportunities to undertake joint projects, exploit synergies and better manage the relationship with the vendor.

The technical architecture ensures that every NCB that is involved in the management of ECB foreign reserves, in accordance with the decentralised set-up, is connected to the same central servers while having access only to the transactions related to its investment and intervention portfolios. No interfaces or batch transaction transfers are therefore needed.

Although the system also covers back office functionalities, only the front and middle office functionalities are utilised in the ECB's installation, whereas each NCB is responsible for settling the transactions undertaken as the ECB's agent via its own system.

The ECB also uses several other systems in its portfolio management activities. These include a pension fund administration system, a system for cash and security reconciliation, an electronic trading platform for securities transactions, and a system for risk analytics. A database for the analysis of historical risk and performance-related figures is currently being developed.

be discontinued. The market risk limits are specified to ensure that position-taking is possible while potential market risk is still contained at prudent levels. In the past, the positions which were taken have on average remained significantly below the allowed deviation bands, reflecting a prudent attitude towards risk taking on the part of portfolio managers at the ECB and the NCBs. Benchmarks and deviation bands are reviewed regularly to ensure their compliance with the overall risk-return preferences of the ECB.

The liquidity risk profile of the ECB's foreign reserves is also monitored daily to ensure that adequate amounts of assets are held in cash or highly liquid securities.

#### 4 BENCHMARK DESIGN

For the ECB's foreign reserves, establishing the strategic asset allocation is a two-step process. The first step is to determine the foreign reserves' currency mix, thus to derive the

optimal shares of the US dollar and Japanese yen holdings, taking into account first policy needs and then risk considerations. The second step is to propose an optimal asset allocation within each of the currencies. Currently, risk-return preferences are formulated separately for the management of the currency allocation and the management of the US dollar and Japanese yen sub-portfolios.

For the ECB's own funds, the strategic asset allocation process is similar to the second step described above, with somewhat different parameters reflecting the longer-term orientation and lower liquidity requirements of the ECB's own funds.

Given the importance of selecting adequate investment benchmarks, as shown by many theoretical and empirical studies, considerable resources are devoted to the development of the methodologies used in the benchmark design process. The investment function of the ECB has developed a purpose-built econometric model, which relies on publicly available

macroeconomic forecasts, to derive forward-looking return expectations for the individual asset classes included in the investment universe for the foreign reserves and own funds. The use of forward-looking returns is a considerable improvement on using past returns as inputs for the benchmark design process. The standard mean variance optimisation technique is supplemented by alternative optimisation techniques designed to enhance the robustness of the analysis. The benchmark design process is continuously reviewed and improvements and refinements are sought.

## 5 PORTFOLIO MANAGEMENT RESULTS

The ECB publishes financial results in its Annual Reports. In 2005 net profits amounted to exactly zero, following losses of €1.6 billion in 2004 (see Table 4). The development of the ECB's financial results is heavily affected by adverse exchange rate movements: for example, the strengthening of the euro against the US dollar brought about the losses in 2003 and 2004, since a large portion of the ECB's assets are unhedged foreign reserves. In line with the ECB's prudent accounting policies, which take into account this significant exposure, valuation gains are not recognised as income, but are taken to revaluation accounts; whereas valuation losses are treated as an expense. The effect of this asymmetric treatment of unrealised gains and losses is to defer profits until the corresponding assets are sold or until they mature. The annual financial result will therefore be different from that indicated by a fully fledged mark-to-market return.

Exchange rate shocks explain only part of the developments in the ECB's annual profits: for example, the profits in 2001 and 2002 were mainly driven by bond market developments: bond yields decreased significantly to very low levels and brought about significant capital gains. Low interest rates, however, left little room for interest income to offset the losses realised on the exchange rate in 2003 and 2004. Since 2004 the level of interest rate risk to

**Table 4 Annual profit and loss of the ECB since 1999**

(in EUR millions)

Year	P & L
1999	-247
2000	1,990
2001	1,822
2002	1,220
2003	-477
2004	-1,636
2005	0

Source: ECB.

which the three portfolios are exposed has been reduced significantly, given the low level reached by interest rates and the prevailing level of interest rate volatility.

The portfolio management mandates, which the ECB has defined for its foreign reserves and own funds, assign an important role to the maximisation of portfolio performance over the benchmark return. This reflects the idea that, within the strict constraints imposed by the roles and objectives of the portfolios, as reflected in the risk management framework, portfolio managers can add value to the portfolios over time. Although portfolio management performance was negative at times, particularly in 2002, it was positive and non-negligible in most years between 1999 and 2005 and thus on a cumulated basis. This mainly reflected the daily activities of the various portfolio managers.

Portfolio managers also add value to the ECB's portfolios by putting forward business cases for new instruments to be included in the investment universe. Over time, the ECB's investment universe has been enlarged, by adding new categories of instruments such as covered bonds, new eligible issuers within eligible categories of instruments, and derivative instruments, such as money market and bond futures. Portfolio managers have also proposed new portfolio management mandates, such as those mentioned above for security lending for the own funds portfolio and the foreign reserves' US dollar portfolio.

Portfolio managers also play an important role in the financial market monitoring activities of the ECB and the Eurosystem. Portfolio managers must closely monitor and analyse financial market developments – both current and structural – in various degrees of detail, from broad asset classes down to individual financial instruments. They rely on many sources of information including, in particular, research and views submitted by market counterparties.

The resulting body of continuously updated knowledge about financial market developments is considered to have considerable value for the ECB and the Eurosystem. To spread this knowledge, portfolio managers are responsible for preparing regular briefings about financial market developments seen from an investor's perspective. In addition, they answer occasional queries about financial markets. Thus, analyses of financial market developments and innovations and structural changes in financial markets benefit significantly from the insights gained in the portfolio management process.

## 6 SETTLEMENT FRAMEWORK

Different settlement frameworks are in place for the various types of portfolios owned by the ECB. Whereas the euro area NCBs that opt to participate in the ECB's foreign reserve management (currently all 12 euro area NCBs) perform the settlement of regular ECB foreign reserve management transactions, the ECB settles all transactions for its own funds portfolio. The processing of transactions for the ECB's pension fund is currently carried out by an external party.

The ECB strives to apply the highest standards in the processing of transactions for its foreign reserve and own funds portfolios. In cooperation with counterparties, efforts are also made to further improve the secure and efficient processing of transactions in the industry as a whole, particularly as regards the application of best practices in the exchange of trade confirmations.

NCBs carry out operations involving the ECB's foreign reserve assets as declared agents for the ECB. Thus, when dealing with portfolio management counterparties, NCBs identify the operations they carry out for their own account and those that they carry out in the name of and for the account of the ECB, i.e. this agency status is disclosed. To facilitate this arrangement, accounts with financial intermediaries – including correspondents, securities and gold custodians/depositories and central clearers for exchange-traded derivatives – have been opened in the ECB's name with individual NCBs having operating authority over these accounts. Moreover, common requirements and procedures for ECB and NCB operations have been defined to ensure that adequate separation between the ECB's and the NCBs' assets is maintained. Such common guidelines also ensure that the ECB's foreign reserve management transactions are processed in a harmonised way throughout the entire Eurosystem, in line with best practices and high safety standards. Comprehensive controls are in place at both the ECB and NCB levels, including the regular, detailed reconciliation of external statements for the ECB's cash, securities, gold and futures accounts against the various systems used. Detailed data on settlement failures are collected and analysed by the ECB, with regular reporting to the ECB's decision-making bodies.

The ECB and the NCBs actively manage the collateral received as part of the ECB's own funds and foreign reserve management transactions. Following pooling/netting of relevant collateralised operations, exposures vis-à-vis counterparties are calculated and the need for any margin calls<sup>9</sup> is assessed.

## 7 CONCLUSION

The ECB owns and manages three kinds of portfolios: foreign reserves, own funds and the

<sup>9</sup> Margin calls are requests for counterparties to post additional collateral.

pension fund. Each portfolio has a particular purpose, which is reflected in the way it is managed. The ECB's portfolio management activities are subject to strict rules which ensure market neutrality, ethical behaviour and a strict separation between portfolio management and policy-making. Detailed investment guidelines are in place to ensure that market and credit risks are strictly controlled and provide clear and fair criteria for the selection of eligible issuers and counterparties.

Significant resources are allocated to the design of portfolio benchmarks, which are the main drivers of portfolio returns and risks. Portfolio management mandates are defined and allocated with a view to maximising, within the given constraints, portfolio performance over benchmark while keeping administrative and other costs as low as possible. As regards the ECB's foreign reserves, a change in the process of allocation of sub-portfolios was implemented in January 2006, which is expected to lead to efficiency gains.

Updated information will be published as needs arise, in particular in the ECB's Annual Reports.