

## Reserve assets: their development and importance in monetary union

Global reserve assets have continued to grow strongly right up to the present. Despite the currency crises in Latin America and in Asia, they have more than doubled over the past ten years. In the brief period since the start of 1999, when European monetary union was established, there has been a worldwide increase of around 35%. However, the Eurosystem, one of the principal holders of reserve assets, has not contributed to this increase. In fact, it has slightly reduced its reserve assets overall (expressed in US dollars). There has actually been a distinct decrease in Germany's reserve assets in the past four years. Nonetheless, the importance and appropriate level of reserve assets under the special conditions of monetary union continues to be a subject of debate in Germany, too. This article takes up that issue and comes to the conclusion that, although Germany's reserve assets are quite substantial in absolute terms, they are on the low side by international comparison when measured in terms of Germany's economic size and high degree of openness. The article also examines the terms and conditions under which Germany's reserve policy operates within European monetary union.

## Development and structure of the global reserve assets

*Sharp increase  
in global  
reserves*

After the Second World War the international holdings of reserve assets expanded fairly slowly at first. A rapid increase only began in the early 1970s and has continued ever since. The global reserves increased almost fivefold between 1970 and 1980 and doubled in each of the following two decades. At the end of September 2002<sup>1</sup> they amounted to US\$2,454 billion.<sup>2,3</sup> The start of the expansion process coincided with the collapse of the Bretton Woods system of fixed exchange rates, which, in its final stages, entailed extensive interventions in the foreign exchange markets. An important factor was also the first "oil price explosion" and the concomitant marked expansion of reserve assets in the OPEC countries. Subsequently, large US current account deficits and shifts in exchange rate patterns contributed to a further swelling of the international reserves. Moreover, many countries continued to observe exchange rate agreements even after the end of the Bretton Woods system. It is that background which ultimately makes it possible to find an explanation for the surprising occurrence of a sharp increase in the global reserves after the system of fixed exchange rates had been officially abandoned.<sup>4</sup>

*Share of  
emerging  
economies and  
developing  
countries  
increases*

In recent years the increase in the reserve assets has been attributable primarily to the emerging economies and developing countries, which more than trebled their reserve holdings between the end of 1992 and the end of September 2002. Even if, in currency crises, some of these countries have tempor-

arily used large amounts of foreign exchange to protect their national currency, this has hardly had any effect on the longer-term trend. Since 1996 the emerging economies and developing countries, taken together, have held more reserve assets than the group of industrial countries. They currently hold some 60% of the global reserve assets although most of their holdings are concentrated on a few more developed countries, such as China, Taiwan or South Korea. Nevertheless, seven of the ten principal holders of reserve assets are emerging economies or developing countries (see table on page 18).

Of the industrial countries, Japan, in particular, has increased its reserve assets significantly since the end of the 1980s by means of interventions; in the short period of time

*Japan and  
Eurosystem  
hold largest  
reserves*

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<sup>1</sup> The data used in this article in order to make international comparisons are mainly those as at the end of September 2002 or, in the case of annual data, the end of 2001. In the case of Germany, data on the reserve assets are available up to the end of 2002 and are indicated separately in the appropriate places.

<sup>2</sup> In the underlying data of the International Monetary Fund (IMF), gold reserves are consistently valued at the fixed gold price of SDR 35 per ounce of fine gold. At the end of September 2002 the gold reserves were therefore worth around SDR 33 billion or (converted) US\$43 billion. At that cut-off date the market price for gold in London was US\$323.70 per ounce of fine gold. Valued at market prices, the gold reserves therefore amounted to around US\$301 billion (SDR 228 billion) and the total reserve assets to US\$2,712 billion. In earlier publications US\$38 per ounce was taken as the gold price in 1971 and 1972 and US\$42.22 per ounce from 1973 onwards in order to eliminate the impact of exchange rate fluctuations on the value of the gold reserves.

<sup>3</sup> Owing to the high percentage of US dollar holdings in the global foreign exchange reserves – at the end of 2001 68% of the foreign exchange reserves were in US dollars – it seems appropriate to show the reserve assets in US dollars. Otherwise, exchange rate fluctuations would distort the development patterns in which we are interested. As clarified below, this also applies to the euro area, in particular.

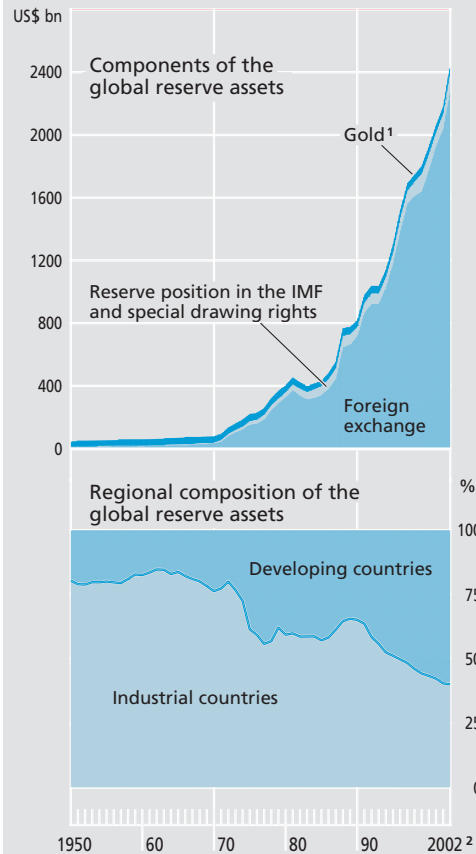
<sup>4</sup> For the reasons for the increase in global reserves in the 1970s and 1980s, see also Deutsche Bundesbank, Longer-term trends in global reserve assets, *Monthly Report*, January 1990, pp 33-55.

since the start of 1999 its holdings have approximately doubled as a result. At the end of September 2002 it had more reserve assets – US\$454 billion – than any other country. The second place among the holders of reserves is occupied by the Eurosystem, whose balance sheet shows the combined reserve assets of the 12 participating national central banks and the European Central Bank (ECB). At the end of September 2002 the Eurosystem had reserve assets amounting to €381 billion.<sup>5</sup> In contrast to what has happened in Japan, however, the Eurosystem's reserve assets have actually decreased since the start of 1999 when monetary union came into being. This can be seen from the balance of payments statistics, which include only transaction-related changes (ie not valuation changes). The decrease up to the end of September 2002 is shown to have been around €45 billion (or 12%). By contrast, in the Eurosystem's financial statement, which is presented in euro and based on market prices, the large valuation gains have such an impact on the foreign exchange position and the gold reserves, in particular, that an increase from €338 billion to €381 billion was recorded.<sup>6</sup>

<sup>5</sup> The Eurosystem's reserve assets are valued at market prices in this article, as in ECB publications. However, if a uniform gold price of SDR 35 per ounce is taken as a basis and converted into US dollars (as in the table on page 18), they amount to US\$264 billion. For the Eurosystem, which holds around 40% of the official gold reserves, the valuation of the gold stock is of greater importance than for most other countries.

<sup>6</sup> In each case, including Greece. From the start of 1999 to the end of September 2002 the price of gold went up from €246.37 per ounce to €326.98 per ounce and the dollar rate rose from €0.86 to €1.01 per US dollar. The dollar rate has since fallen considerably.

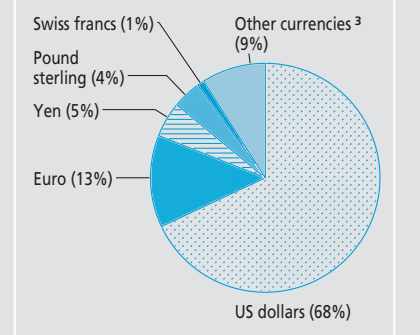
### Global reserve assets: volume and composition \*



### Regional composition of the global reserve assets



### Currency composition of the foreign exchange reserves at end-2001



Sources: IMF, Bundesbank calculations. —  
\* Excluding gold holdings of the BIS and IMF and excluding special drawing rights of the IMF and "other holders". — <sup>1</sup> Gold valued at SDR 35 per ounce. — <sup>2</sup> September 2002. — <sup>3</sup> Difference between total foreign exchange reserves and foreign exchange reserves in the currencies indicated.

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### The ten principal holders of reserve assets \*

End of September 2002

Country	US\$ billion
Japan	453.9
China	263.7
Taiwan	157.7
South Korea	116.6
Hong Kong	111.2
Singapore	80.5
USA	76.9
India	60.9
Germany	57.1
Mexico	46.6
<i>Memo item</i>	
Euro area	263.9

Sources: IMF, Bundesbank calculations. — \* Gold holdings valued at SDR 35 per ounce.

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Components  
of reserve  
assets ...

Although gold continues to play an important role within the reserve assets as a relatively crisis-proof, non-government asset, at least since the Second Amendment of the IMF Articles of Agreement it no longer has a key function in the international monetary system.<sup>7</sup> Its quantitative importance as part of the reserve assets has also declined significantly. Even when valued at market prices, the gold reserves at the end of September 2002 accounted for only 11% of the total reserve assets. At the same time, the reserve position in the IMF and special drawing rights accounted for 4%. In terms of volume, however, the foreign exchange reserves are predominant, with a share of 85%.<sup>8</sup>

The available data on the currency composition of the foreign exchange reserves indi-

cate that assets denominated in US dollars play the most important role. More than two-thirds of the total holdings of foreign exchange reserves are in US dollars. After an interim low in the early 1990s, the US dollar has increased its share by more than 10 percentage points. At the end of 2001 the euro accounted for 13% of the monetary authorities' foreign exchange holdings worldwide, thus somewhat strengthening its position as the second most important reserve currency. Around 5% of the foreign exchange reserves were denominated in Japanese yen and 4% in pounds sterling. At the end of 2001 the share of Swiss francs was less than 1%.<sup>9</sup>

... and currency  
composition of  
foreign  
exchange  
reserves

### Development and structure of Germany's reserve assets

The volume and composition of Germany's reserve assets are not so much the result of an optimisation strategy as, primarily, a response to the Bundesbank's intervention obligations during the time of the Bretton Woods system and foreign exchange purchases at times when the dollar was weak. By contrast, the Bundesbank's participation in the European Monetary System (EMS) was not a significant factor in the longer-term in-

Reserve assets  
expanded after  
Second World  
War

<sup>7</sup> Under the Second Amendment of the IMF Articles of Agreement, the gold definition of the special drawing rights and the function of gold as a reference variable for monetary parities and as a unit of account in the IMF, *inter alia*, ceased to be used. Moreover, no official gold payments have since been made between the IMF and its members. See also Deutsche Bundesbank, *Weltweite Organisationen und Gremien im Bereich von Wahrung und Wirtschaft*, Special Publication, April 1997, pp 52-53.

<sup>8</sup> Valued at a gold price of SDR 35 per ounce, the percentages shift distinctly in favour of foreign exchange reserves (94%) and away from gold (2%).

<sup>9</sup> See *IMF Annual Report 2002*, p 97, Table 1.2.

crease in the reserve assets. Although, in the context of the EMS, there were repeatedly very large foreign exchange inflows in the short term, with the result that the reserve assets peaked during the EMS crises at DM179 billion in 1992 and DM163 billion in 1993, the volume of foreign exchange purchased was generally quickly reduced again and therefore had no lasting impact on the level of the reserves. At the end of 1998, the Bundesbank had reserve assets which amounted to DM134 billion (€68½ billion) – calculated at the then balance sheet rates, which were largely geared to the historical acquisition rates.

*Sharp rise in euro equivalent of reserve assets on accession to monetary union...*

At the start of monetary union, the reserve assets of all participants in the Eurosystem – ie including Germany's reserve assets – were redefined in accordance with standard criteria.<sup>10</sup> Furthermore, they have since been regularly revalued at market prices.<sup>11</sup> Accordingly, at the start of January 1999 the Bundesbank had reserve assets which, when expressed in euro, amounted to €94 billion. They have decreased slightly since then, albeit with fluctuations; at the end of September 2002 their market value was still €89 billion.<sup>12</sup> Much the same as in the case of the

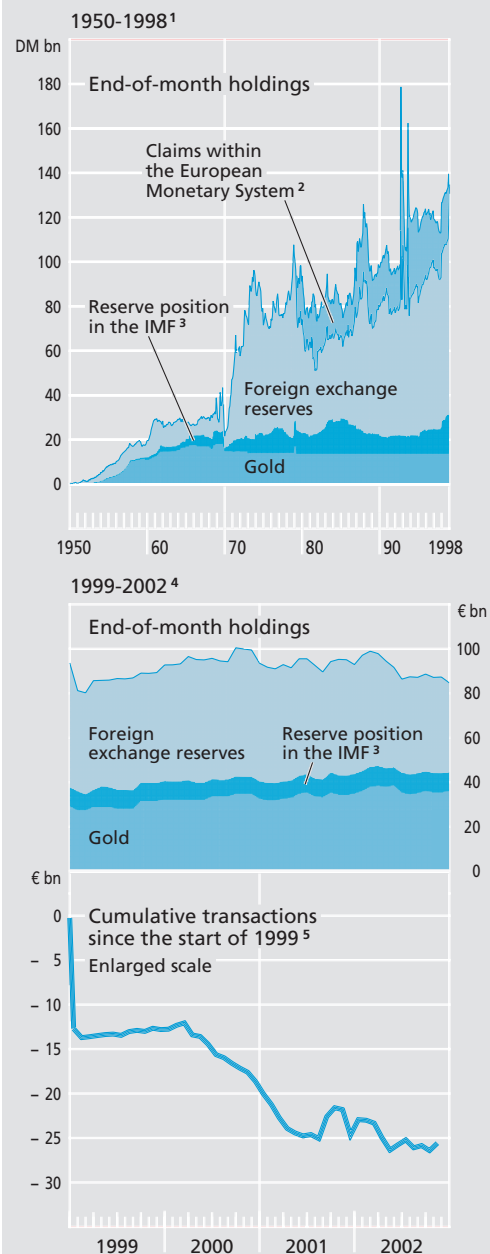
*... followed by deliberate reduction of reserves*

<sup>10</sup> Since then, in addition to gold, the reserve position in the IMF and the special drawing rights, only liquid foreign-currency-denominated claims of the Eurosystem on non-residents are taken to be reserve assets. This therefore excludes, for example, claims on euro-area residents that are denominated in euro (or the legacy currencies) and in foreign currency.

<sup>11</sup> Initially, revaluation at current market prices was carried out at the end of each quarter. Since January 2001 the Bundesbank has recorded all end-of-month positions at market prices.

<sup>12</sup> Data on Germany's reserve assets are available up to the end of December 2002. At that cut-off date the reserves amounted, at market prices, to a total of €85 billion.

## Germany's reserve assets 1950-2002



<sup>1</sup> Valued at balance sheet rates. — <sup>2</sup> Up to 1993 the claims were made on the European Monetary Cooperation Fund, from 1994 until May 1998 on the European Monetary Institute and from June to December 1998 on the European Central Bank. — <sup>3</sup> Including special drawing rights. — <sup>4</sup> Up to December 2000, at the end of each quarter; since January 2001, generally valued at market prices. — <sup>5</sup> Transactions with reserve assets as per the balance of payments statistics.

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Eurosystem's reserve assets as a whole, this decrease reflects two opposing movements: the deliberate reduction of the reserves, on the one hand, and holding gains, particularly in the case of foreign exchange and gold positions, on the other. Data from the balance of payments, in which only transactions involving reserve assets are reflected, show that, from the start of EMU up to the end of September 2002, Germany's reserves decreased by €25½ billion (or 27%) as a result of transactions. Roughly half of the decrease can be traced back to the transfer of gold and foreign exchange holdings to the ECB at the beginning of January 1999; in return, the Bundesbank received a claim for the equivalent amount in euro. The Bundesbank also reduced its holdings by injecting foreign exchange into the market in addition to the amounts that had arisen from the interest income accruing to it from its investment of the reserve assets. In this way it responded to the change in the need for reserves in monetary union.

*Structural  
changes in  
reserve assets*

The reduction of the foreign exchange holdings and the movements in market prices and foreign exchange rates have also led to major structural shifts within the reserve assets. Although, at the start of monetary union, foreign exchange reserves still accounted for 60% of Germany's reserve assets, their share has since fallen to 49½% (end of September 2002). Owing to the increase in the price of gold, by contrast, the share of the gold reserves expanded, in terms of value, by 10 percentage points to 41% in this same period even though the volume of gold holdings decreased. A slight increase (from 9% to 10%)

was also recorded in the reserve position in the IMF and the special drawing rights.

### International comparison of Germany's reserve assets

Despite the decrease, the Bundesbank still has the most reserve assets, in terms of value, within the Eurosystem. If the different sizes of the individual economies are taken into account, however, Germany's reserve assets are not unusually large when compared with those of other participating countries. With reserve assets of €89 billion, the Bundesbank held about 26½% of the total reserve assets of the national central banks in the Eurosystem at the end of September 2002. This is, for instance, far less than the German capital share in the ECB, which – when calculated for the current 12 euro-area member states – is slightly more than 30%. Of the individual components of the reserve assets, Germany's gold reserves were slightly above average (29½%) but, relatively speaking, they were still less than its capital share; at 24½%, Germany's share of the foreign exchange reserves of the national central banks in the Eurosystem was even smaller.

This discrepancy between the absolute and relative volume of Germany's reserve assets is also apparent if an international comparison is made. Although Germany is one of the principal holders of reserve assets, those assets account for only 3% of the international reserves if calculated at market prices. This is far less than, for example, Ger-

*Germany's  
reserve assets  
within the  
Eurosystem...*

*... and by  
international  
comparison*

many's share of global GDP (6%) or its share of world trade (8½%).

*Reserve assets  
in relation to  
GDP*

In international comparisons of reserve assets, rather than reference being made to the share of global GDP or of world trade, the national reserves are often calculated, for example, in relation to GDP in the country in question or to (monthly) imports, and these figures are then compared. If the reserve assets of an economy or a currency area are compared with its economic strength, the 2001 figure for Germany is approximately 4½%. Germany therefore ranks low on the list of leading industrial countries (along with France and Italy). Countries with even fewer reserve assets in relation to GDP are, for example, the United States with a ratio of just under 1½% and the United Kingdom (2½%) while, relatively speaking, the euro area as a whole has slightly more reserves (6%). The figures for Switzerland (21%), Japan (9½%) and some emerging economies and countries in transition are far higher (see the table on page 22).

*Import cover of  
reserve assets...*

Relating a country's reserve assets to its (average monthly) imports gives the import cover of the reserve assets (in months); for Germany it was 1.6 (months). Hypothetically, Germany's reserve assets would therefore be enough to finance the (total) imports of goods and services for about 1½ months. That figure is fairly low by international comparison. A similarly low import cover by reserve assets is recorded, for instance, by the United States and the United Kingdom, with slightly more than one month, or France and Italy, with around two months. In terms of

### Germany's reserve assets within the Eurosystem

End of September 2002

Item	Total	Gold	Reserve position in the IMF and special drawing rights	Foreign exchange reserves
€ billion				
Eurosystem	380.9	131.3	31.2	218.3
of which				
ECB	46.5	8.1	0.2	38.2
Germany	88.9	36.2	8.8	44.0
in %				
Germany's share of the Euro-system's reserve assets <sup>1</sup>	26.6	29.4	28.2	24.4

Sources: ECB, Bundesbank. — <sup>1</sup> Excluding the ECB's reserve assets.

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this indicator, the reserve assets of the Eurosystem as a whole (3½ months) and Switzerland (6½ months) are far higher. Of the major industrial countries, Japan has the largest import cover, almost one year. Some emerging economies and countries in transition – such as South Korea with 7½ months and Russia with six months – also have quite a large import cover.

The calculation of the months of import cover provided by reserve assets is ultimately based on the view that, except for performance-related reasons, reserve assets are held mainly for intervention and transaction purposes. It is assumed that an economy's external vulnerability increases with its degree of openness. In order to cushion external shocks, the monetary authorities will hold a growing amount

*... an  
appropriate  
indicator only  
in certain  
circumstances*

### International comparison of reserve assets \*

2001

Country	Reserve assets in relation to GDP	Imports covered by reserve assets (in months)	Reserve assets in relation to ex- ternal liabilities <sup>2</sup>	Reserve assets in relation to money stock <sup>3</sup>
<b>Selected industrial countries</b>				
Canada	4.7%	1.5	4.8%	7.4%
France	4.5%	2.0	2.6%	–
Germany	4.5%	1.6	3.2%	6.4%
Italy	4.2%	1.9	4.4%	–
Japan	9.7%	11.8	26.3%	8.2%
Switzerland	20.9%	6.6	5.3%	15.7%
United Kingdom	2.6%	1.1	0.8%	2.7%
United States	1.3%	1.1	1.4%	1.6%
<b>Selected emerging economies and countries in transition</b>				
Czech Republic	25.5%	4.1	29.4%	32.6%
Hungary	20.7%	4.0	19.8%	43.0%
Mexico	7.2%	2.9	–	31.7%
Poland	15.0%	5.4	25.0%	31.2%
Russia	11.8%	5.9	22.2%	52.0%
South Korea	24.3%	7.2	–	28.9%
<i>Memo item</i>				
Euro area	5.8%	3.7	5.2%	7.2%

Sources: IMF, ECB, Bundesbank, Bundesbank calculations. — \* Reserve assets as per the international investment position (where data available); as at end-2001. — 1 Imports of goods and services as per the national accounts; for the euro area, imports of goods and services as per the balance of payments; in both cases for the whole of 2001. — 2 External liabilities as per the inter-

national investment position; as at end-2001. — 3 The money stock is made up of the IFS aggregates "money" and "quasi-money"; it comprises cash, sight deposits, time deposits, savings deposits and foreign exchange deposits; for the United Kingdom, M4; for the United States and the euro area, M3; for Germany, the German contribution to M3; as at end-2001.

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of reserves the more the economy is exposed internationally. In this connection, however, the underlying institutional conditions of each monetary system are a decisive factor. Under the conditions of the Bretton Woods system, with fixed exchange rates, comparatively less developed capital markets and widespread restrictions on the movement of capital, external disruptions were transferred mainly via trade in goods and services. During the period in which the Bretton Woods system was in operation, there was therefore clearly a certain justification for using reference variables based on imports when evaluating the relative amounts of reserve assets.<sup>13</sup>

national capital markets generally no longer need – for reasons related to the balance of payments – to hold extensive reserve assets. Market participants are normally able to raise the funds required for cross-border payments on the free foreign exchange market. Nonetheless, reserve assets are still likely to be a major factor underpinning international investors' confidence in a country's ability to meet its financial commitments, thus contributing to stabilising capital flows and, at times,

<sup>13</sup> One criticism of this standard method for assessing the level of the reserve assets is that reserves do not generally serve to finance imports but (balance of payments) deficits; another criticism is that the approach is said to imply that the reserves have an import elasticity of 1 although there is no empirical evidence to support this. See J Frenkel, B Jovanovic, *Optimal International Reserves: A Stochastic Framework*, *Economic Journal* (91) 1981, pp 507-514 and H Badinger, *The Demand for International Reserves in the Eurosystem*, Research Institute for European Affairs, IEF Working Paper No 37, 2000, p 25.

Other indicators

Since the changeover to flexible exchange rates and the liberalisation of capital movements, countries with access to the inter-



the national currency. It is therefore appropriate to use financial variables in the analysis and to set a country's reserve assets against its external liabilities or money stock. While the former indicator shows the confidence factor more clearly in terms of the external balance of payments, the latter takes account of the sustainability of financial developments in the domestic market.<sup>14</sup>

External  
liabilities

When comparing the relation between reserve assets and external liabilities for the major industrial countries and some countries in transition – for many emerging economies the corresponding data from the international investment position are not available – there is also evidence of a broad spread of values, even if the countries are not always ranked in the same order as in the other previously analysed indicators. In 2001 the lowest ratios of reserve assets to external liabilities were those of the United Kingdom at just under 1% – which owes much to London's status as an international financial centre – and the United States at 1½%. Germany was also in the bottom bracket at 3% (the euro area as a whole: 5%). This contrasts with other countries such as Japan (26½%), Poland (25%) and the Czech Republic (29½%) which, measured in terms of external assets, had comparatively large holdings of reserve assets. The problem with these figures is, however, the focus on the external liabilities – regardless of whether these were offset by external assets (and if so, to what extent). For instance, the USA's external position (net external liabilities of US\$2,309 billion or 23% of GDP at the end of 2001) differs fundamentally from the German external

position (net external assets of €116 billion or 5½% of GDP).

If the reserve assets are measured against the money stock – normally using a broad aggregate such as M3 – the same familiar pattern generally tends to emerge: here, too, the United States (1½%) and the United Kingdom (2½%) show the smallest figures among the industrial countries. At 6½% Germany's reserve assets are somewhat larger than its contribution to M3 (euro area 7%), whereas the figures for virtually all the countries in transition and emerging economies included in the analysis were several times higher. The reason for this probably has to do, *inter alia*, with the comparatively underdeveloped financial sector in these countries. However, this may also be attributable in part to distortions due to discrepancies in the statistical definitions or in the customary payment media; these distortions frequently play a major role in the monetary aggregates.

Money stock

Econometric analyses of the central bank demand for reserve assets frequently draw on "buffer stock models". The approaches are based on the view that the greater the likelihood is of the reserves being fully depleted within a given period, the more monetary authorities seek to increase their reserve holdings. It is frequently assumed that this probability depends on the past volatility of the reserve assets. In addition, higher adjustment

Monetary  
reserve volatility

<sup>14</sup> The ratio of the reserve assets to the money stock has frequently proved to be an important determinant when modelling currency crises. See, for example, B Schnatz, *Macroeconomic determinants of currency turbulences in emerging markets*, Economic Research Centre of the Deutsche Bundesbank, Discussion paper 3/98.

costs in the real economy, which are incurred if the reserves are fully depleted, have a positive influence on the (optimal) stock of reserves, while higher opportunity costs have a negative influence. These correlations were again corroborated in recent panel studies, although the explanatory content of the models is still rather moderate.<sup>15</sup> However, these studies are only of minor importance for the current analysis of Germany's reserve assets as, within the context of monetary union, Germany is not faced with undesirable outflows of reserves.

*Interim  
statement*

The results of the simple comparison of ratios and the econometric studies show that the reserve holdings of monetary authorities vary considerably from one country to another. If the actual reserve assets were interpreted as being the result of an optimisation strategy (which they generally are not), the demand for reserves would clearly be so different from one country to the next that they could not be captured using a single model. Some authors therefore take a different approach with regard to the euro-area countries. They assume that before accession to monetary union the size of reserve holdings was "optimal" in terms of the ability to absorb external economic shocks. The changeover to the euro is said, however, to have reduced the degree of openness of the participating countries, now defined as openness vis-à-vis countries outside the euro area. Correspondingly, the volume of reserve assets would also tend to decrease – if the national central banks maintained their assumed behaviour in the period before monetary union. If this line of argument is followed, Germany – possibly

*A different  
approach*

following a transition period – would maintain the level of its reserve assets in relation to its imports from (or vis-à-vis its external liabilities to) non-euro-area countries at the same level as the ratio that prevailed before monetary union in relation to total imports (or total external liabilities).<sup>16</sup>

When Germany acceded to monetary union, its reserve assets amounted to 17½% (or 2.1 months' worth of imports) in relation to (total) imports in 1998 and 5% in relation to (total) external liabilities. For 2001, the last year for which complete data are available, values of 23% (2.7 months' worth of imports) and somewhat over 5% can be calculated – measured against the imports from or liabilities to non-euro-area countries. As the reserve assets declined by around 9% in the course of 2002, the ratios (adjusted for the effect of the reduced degree of openness) are likely to have since moved closer to the levels recorded at the start of monetary union (imports) or to have fallen below them (external liabilities).

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<sup>15</sup> See, for example, R Flood, N Marion, *Holding international reserves in an era of high capital mobility*, IMF Working Paper 02/62, April 2002 and H Badinger, *Adäquanz und Optimalität internationaler Reserven – theoretische Aspekte und Schätzung der Reservenachfrage Österreichs (1970-1998)*, Vienna University of Economics and Business Administration, 2000, which summarises more than 40 empirical studies of the demand for reserves.

<sup>16</sup> The argument implicitly assumes that only the confidence of investors from third countries has to be protected. This is not necessarily the case, however; rather, with regard to Germany's ability to meet its international financial commitments, it would be possible to continue to measure its reserve assets against its total external liabilities. Another possibility would be to emphasise the currency aspect and to use external debt denominated in foreign currency as the measure.

## Germany's reserve assets in the changed monetary policy setting

*Profound changes due to monetary union*

The belief described above that the new monetary policy environment in which the Bundesbank finds itself could be accounted for simply by disregarding cross-border transactions or financial relations within the euro area fails, however, to embrace in full the actual implications of monetary union. The Bundesbank is now integrated into the Eurosystem, which has assumed responsibility for both internal and external monetary policy for the euro area. This also calls for a fundamental rethink on the question of the importance of national reserve assets. The reasons normally given for holding reserve assets have at most an indirect relevance in the case of the national reserve assets.<sup>17</sup>

*Some "traditional" reasons for holding reserve assets...*

Confidence in the euro is primarily based on the Eurosystem's independent monetary policy with its goal of maintaining price stability. The availability of reserve assets, especially the reserve assets of the national central banks in the Eurosystem, which are not readily available for intervention purposes, can at most act as an indirect support. Other reasons which were important in the past or which apply to less developed economies have lost importance owing to the development of the financial markets, the liberalisation of cross-border capital flows and the strong role of the euro as an international currency. In addition to the confidence function, three reasons essentially remain for holding national reserve assets.

*... are no longer as important*

- In accordance with secondary Community legislation, the ECB can ask the national central banks to transfer more reserves if necessary.<sup>18</sup>
- Foreign exchange reserves enable the Federal Government to process payments (for example, in the context of international agreements) in foreign currency without a major impact on the market; as such, they are a means of fulfilling the fiscal agent function which the Bundesbank assumes for the Federal Government.
- Foreign exchange reserves yield appreciable interest income; this is an important part of the Bundesbank's profit, which accrues to the Federal Government in accordance with the statutory regulations since the Bundesbank is owned by the Federal Republic of Germany.

*Other reasons are still valid ...*

However, these factors provide no clear indication of what the appropriate level of the Bundesbank's reserve assets should be. It also

*... but allow no concrete quantification*

<sup>17</sup> The literature gives, *inter alia*, the following reasons for holding reserve assets: reserve assets serve to maintain confidence in the currency in question; reserve assets are a monetary policy instrument; interventions on the foreign exchange market are used, where appropriate, to support the exchange rate, in order to avoid real adjustment burdens or at least to spread them out over time; reserve assets may be used to service a country's external liabilities denominated in a foreign currency; insofar as this is within the powers of the government, reserve assets may help to deal with cross-border public expenditure; reserve assets may be drawn on during natural disasters or other emergency situations; reserve assets serve to earn income. See, for example, J Nugée, *Foreign exchange reserve management*, Handbooks in Central Banking No 19, Centre for Central Banking Studies, Bank of England, 2000.

<sup>18</sup> Pursuant to Council Regulation (EC) No 1010/2000 of 8 May 2000, the ECB may effect further calls for reserve assets from the national central banks up to an amount equivalent to €50 billion if such reserve assets are needed.

needs to be borne in mind that the present volume and composition of the reserve assets constitute the starting point for any changes. Moreover, decisions on any adjustments can be made only in the overall monetary policy context. Besides the current market situation, further constraints apply within the framework of the Eurosystem or in the light of other contractual obligations of the Bundesbank. For example, a portion (albeit relatively small) of the reserve assets – the reserve positions in the IMF and the special drawing rights – are governed by international agreements and cannot therefore be mobilised. In addition, the Bundesbank may not sell gold at present because major European central banks – including the Bundesbank – have agreed, until September 2004, to refrain from making any sales of gold other than those already scheduled by individual central banks;<sup>19</sup> the Bundesbank has announced no such sales for the duration of this period.

*Restrictions on  
the use of  
reserve assets*

In addition, the Bundesbank, like the other national central banks in the Eurosystem, is bound by certain restrictions on the use of its reserve assets.<sup>20</sup> Article 31 of the Statute of the ESCB stipulates that, apart from transactions which allow the national central banks to fulfil their obligations towards international organisations, all of their reserve assets transactions above a certain limit established by the Governing Council of the ECB are subject to the approval of the ECB.<sup>21</sup> This rule does not apply to investment transactions in foreign currency. These restrictions are necessary to ensure the consistency of the Eurosystem's monetary and exchange rate policy and to avoid disruptions to the market. However,

they do not preclude specific changes in the volume of reserve assets made over longer periods of time, as is shown by the reduction in the foreign exchange reserves made by the Bundesbank and other national central banks.

Possible "alternative uses" for Germany's reserve assets are a frequent topic of public debate – for example, in connection with last summer's flooding disaster or to finance the planned bank for SMEs. The proposals are not always in keeping with the provisions of the EC Treaty. Pursuant to Article 105 (2) of the EC Treaty, the Bundesbank holds and manages the official German foreign reserves. Any attempt by government to influence the Bundesbank in the performance of these functions would constitute a breach of the Treaty and undermine the Bundesbank's independence. Apart from these serious legal objections, however, the reserve assets cannot, for accounting reasons, simply be transferred from the Bundesbank's accounts to other agencies. The equivalent value of the reserve assets has been largely injected into the economy in the form of central bank money (see box on page 27). A sale of foreign exchange reserves would withdraw liquidity from the banking system, which would then have to be made good by means of more refinancing loans, for example. The

*Possible  
"alternative"  
uses*

<sup>19</sup> The Central Bank Gold Agreement of 1999 was signed by the ECB, the then 11 national central banks in the Eurosystem, Sveriges Riksbank, the Swiss National Bank and the Bank of England.

<sup>20</sup> See European Central Bank, Foreign exchange reserves and operations of the Eurosystem, *Monthly Bulletin*, January 2000, pp 51-57.

<sup>21</sup> This rule also applies to member states' transactions with their foreign exchange working balances.

## Germany's reserve assets as part of the balance sheet

Viewed in isolation, the building-up of reserve assets by a central bank amounts to an extension of the balance sheet. An increase in its assets is matched by a corresponding increase in its liabilities. This interaction can be seen most clearly if one considers what happens when foreign currency is purchased from a domestic credit institution. In such a situation, there is an initial increase both in the central bank's foreign currency reserves and in the credit institution's central bank deposits (as a result of the equivalent value of the foreign currency purchased being credited to the credit institution's account). Even if the banking system then responds (by increasing its lending, for example) or the central bank does so (by granting fewer refinancing loans, for example), the fundamental balance sheet connection between the building-up of reserve assets, on the one hand, and the creation of central bank money, on the other, remains intact: the equivalent value of accumulated reserve assets has been made available to the financial system as central bank money.

This interaction is disrupted – but not entirely eliminated – by valuation changes in existing reserve stocks. If market prices are rising, unrealised holding gains ensue, which, in line with the Eurosystem's accounting principles, are not distributed but transferred to a revaluation account. With the changeover to marking to market at the start of monetary union, large unrealised holding gains accrued to the Bundesbank from the previous lower valuation of stocks of gold, SDRs, US dollars and securities. These amounted to €25½ billion. Particularly as a result of the increase in the price of gold and the higher US dollar exchange rate, further (unrealised) holding gains followed, with the result that there

was around €37½ billion on the revaluation accounts at the end of September 2002. First and foremost, these liability items form a kind of buffer which shields the Bundesbank's profit and loss account against losses incurred by its holding reserve assets in times of falling market prices and exchange rates. The fluctuations in the revaluation account can be seen from the Bundesbank's financial statement. Its highest value to date – €45 billion – was recorded at the end of June 2001.

The revaluation account "bridges" the discrepancy between the market value of the reserve assets and the supply of central bank money derived from the earlier acquisition of the reserves. Apart from the other restrictions which the Bundesbank is obliged to observe in the management of its reserve assets, the discussion of alternative uses of reserve assets (in the sense of making resources available to the public sector) can only be about this partial amount. As Article 101 of the EC Treaty prohibits the central banks in the Eurosystem from providing public sector financing, reserve assets cannot be transferred to a public sector body and a corresponding asset shown on the Bundesbank's balance sheet. When reserve assets are sold at market prices which are higher than the prices originally paid for them, the ensuing holding gains can, where appropriate, be realised, corresponding revaluation reserves being liquidated with an effect on the profit and loss account and paid over to the Federal Government. However, it needs to be borne in mind that the balance on the revaluation account is primarily attributable to the currently higher price of gold and that, as far as the use of its gold reserves is concerned, the Bundesbank is currently bound by the Central Bank Gold Agreement.

### Financial statement of the Deutsche Bundesbank (simplified)

End of September 2002, in € billion

Assets		Liabilities	
Reserve assets	89	Revaluation accounts	37
Lending related to monetary policy operations	104	Banknotes in circulation	92
Other assets	29	Liabilities related to monetary policy operations	41
		Other liabilities	52
<b>Total assets</b>	<b>222</b>	<b>Total liabilities</b>	<b>222</b>

Deutsche Bundesbank

gross proceeds from any sale cannot therefore be disbursed in full but are tied up in the balance sheet. Only the unrealised holding gains recorded in an additional revaluation account on the liabilities side of the Bundesbank's balance sheet are released in part whenever assets are sold and would thus be available for alternative use. The Bundesbank has sold a limited amount of foreign exchange reserves in recent years and distributed the realised holding gains with the Bundesbank profit. Another point to remember is that the (national) reserve assets continue to serve a certain function even in the context of monetary union. A sizeable volume of reserves will therefore continue to be needed. Furthermore, the Bundesbank's revaluation reserves relate mainly to its gold holdings which – even after the expiry of the Gold

Agreement – can only be reduced very gradually to ensure that the price of gold does not collapse. The unrealised gains relating to the foreign exchange reserves totalled less than €10 billion at the end of September 2002 and have since fallen further owing to the euro's appreciation on the foreign exchange markets, with the result that the resources which arise from the sale of foreign exchange reserves and which can be drawn on for special purposes would be less than is frequently assumed. Moreover, any reduction in the foreign exchange reserves, by releasing revaluation reserves, would lead to a contraction of the balance sheet total and would thus also entail a loss of income for the Bundesbank.

## Conclusion

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The Bundesbank is one of the world's principal holders of reserve assets; but compared with the size of the German economy and its high degree of international economic integration, Germany's reserve asset holdings do not appear excessive by international standards. However, the question arises as to whether the ratios normally used to value such reserves are also an appropriate measure for countries in a monetary union. Yet even if this is not the case, the reserve assets still held at the Bundesbank are also of special sig-

nificance within European monetary union: they are a kind of "standby fund" should the ECB need additional reserve assets and they also enable the Bundesbank to carry out its fiscal agent function. In addition, the interest income on foreign exchange reserves contributes substantially to the Bundesbank's profit. Moreover, any adjustments to the reserve holdings can only be made by the Bundesbank itself within the framework of the legally stipulated or agreed limits. To sum up, the bulk of Germany's reserve assets are not available for "alternative" uses.