

Financial markets

Financial market trends

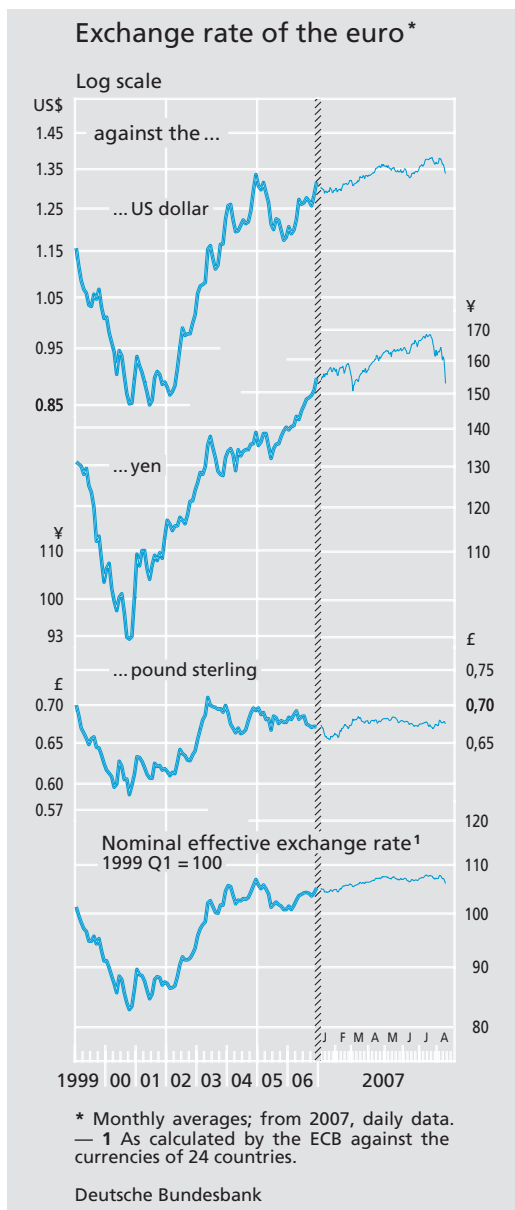
Developments in the international financial markets fluctuated considerably in the second and at the beginning of the third quarter. The robust state of the global economy and a high level of confidence on the part of market players initially resulted worldwide in rising bond yields and higher stock prices. In many regions, stock prices rose to multi-year highs, with some of the corresponding indices reaching record levels. From mid-July, however, increasingly apparent problems in the US mortgage market triggered a fundamental shift in investors' risk perceptions. As a result, stock prices dropped significantly and the spreads on higher-risk financial instruments widened noticeably. Conversely, the "flight to quality" lowered the bond yields of top-rated borrowers. In the foreign exchange markets, the euro held very firm against various currencies for much of the time since business cycle expectations for the euro area were on the upside and most market players were expecting monetary policy to be tightened further. It was only recently that the euro started to weaken a little amid increasing uncertainty in the financial markets.

*Financial
market setting*

Exchange rates

After temporarily reaching a new high of over US\$1.36 at the end of April 2007, the euro-US dollar exchange rate depreciated to US\$1.33 by mid-June. The US dollar benefited from the fact that speculation about possible interest rate cuts in the USA was damp-

*The euro's
exchange rate
against the
US dollar, ...*



ened by warnings from the Federal Reserve concerning existing inflation risks as well as by favourable US labour market data. Less heed was apparently taken during this time of the possible repercussions for the US economy of the crisis in the US real estate market, which had contributed significantly to the upward surge in the euro-US dollar exchange rate in the first few months of the year.

The euro-US dollar parity showed renewed appreciation in July, when the markets increasingly expected a further rise in euro-area interest rates in the fourth quarter following the publication of positive sentiment indicators and in view of continuing risks to price stability in the euro area. Moreover, following the announcement that two hedge funds active in the US mortgage market had run into difficulties, the crisis in the US real estate market was seen with growing concern by investors, so that the dollar came under additional pressure vis-à-vis the other major currencies. On 24 July, the euro achieved a new historical high of just over US\$1.38. However, the euro subsequently lost a little ground again. Profit-taking, the publication of the surprisingly high growth rate of US GDP for the second quarter and an increased demand for dollar liquidity probably played a role in this. As this report went to press, the euro was trading at US\$1.34, 2% up since the beginning of the year.

Owing to the large yield spread between Japanese and European investments, the euro initially appreciated against the yen in the reporting period and repeatedly reached new highs in the second quarter. Although the publication of the Tankan survey and statements from the Bank of Japan triggered speculation of an interest rate rise in Japan at the beginning of July, the upward movement of the euro-yen exchange rate still continued for the time being. In mid-July, the euro reached its highest level to date since the launch of EMU, trading at ¥169. The euro was thus about 7½% above its level since the start of the year and over one-quarter higher

... the yen ...

than since its introduction. The surge in the euro-yen exchange rate came to an end in the last week of July, when the worldwide fall in stock market prices exerted downward pressure on the euro vis-à-vis the yen. The yen continued to strengthen in mid-August. Many market players attribute this to the heightened uncertainty in the financial markets, which has dampened risk propensity and led to a liquidation of carry trades. The euro-yen exchange rate stood at ¥153 as this report went to press. The euro was thus 2½% below its level at the beginning of the year.

*... and the
pound sterling*

Vis-à-vis the pound sterling, the euro moved within a narrow range between £0.67 and £0.68 in the reporting period. The raising of key interest rates by the Bank of England in July had been generally expected by the markets and therefore had no discernible impact on the further development of the euro-pound parity. Given the robust growth of the British economy and the existing inflation risks, however, many market players expected the Bank of England, too, to continue tightening its stance. As this report went to press, the euro was trading at £0.68, which is ½% above its value recorded at the beginning of the year.

*Effective euro
exchange rate*

The euro's average value vis-à-vis the 24 major currencies in the exchange rate index has hardly changed on balance since the end of March. Most recently, the euro's effective exchange rate was ½% higher than at the beginning of the year, and 3% up on its level at the start of monetary union. In real terms, ie taking into account the simultaneous de-

velopment of the inflation differentials between the euro area and its major trading partners, the euro's effective exchange rate was almost 3½% above its level at the start of monetary union.

Securities markets and portfolio transactions

The yields of long-term debt securities issued by first-class borrowers markedly increased on a worldwide scale in the second quarter against the backdrop of a benign macroeconomic environment and in the expectation of rising central bank interest rates in various economies. The European bond markets recorded a rise of just over ½ percentage point up to mid-July, both in nominal and real terms;¹ the corresponding rise in the USA was somewhat smaller. Since then, however, the yields of European government bonds have dropped by just over ¼ percentage point; most recently, ten-year bonds in the euro area were remunerated at almost 4½%. US yields, by contrast, declined more strongly to 4¾% of late. An increased demand for safe investment opportunities in the wake of the crisis in the US mortgage markets is likely to have affected interest rate movements across the maturity spectrum. Moreover, some unfavourable economic indicators weighed on the capital market at times. This resulted in a renewed flattening of the German yield curve.

*Rising capital
market rates up
to mid-July*

¹ Market players' inflation expectations – as measured by the break-even inflation rate derived from inflation-indexed bonds – remained virtually unchanged in the euro area throughout the reporting period. See also the box on p 36-37.

Euro real term structures and break-even inflation rates

The market for inflation-indexed euro-area government bonds is constantly growing. Thus bonds from France, Italy and Greece linked to the European Harmonised Index of Consumer Prices (excluding tobacco) have been circulating since 2001 and 2003, respectively, and the first German inflation-indexed Federal bond was issued last year. With a total of 16 inflation-protected debt securities having meanwhile been issued by euro-area member states with a total volume of bonds outstanding of just under €150 billion, it is now possible to estimate a real zero-coupon term structure for the euro area, modelled on the European and national nominal yield curves.

Such a real term structure makes it possible to derive real yields with a constant maturity. Thus comparisons made over time, for example of the ten-year real interest rate, are not distorted by the decreasing residual maturity of an individual bond. Furthermore, the break-even inflation rate curve (BEIR curve) derived from the difference between the real zero-coupon term structure and a corresponding nominal term structure is based on yields for each point in time that have not only identical maturities but also iden-

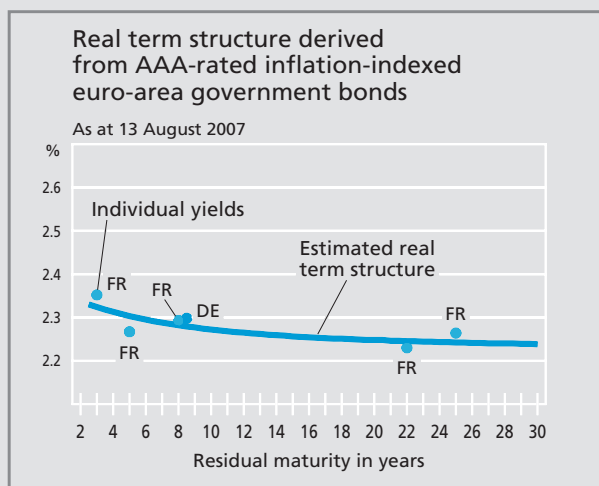
tical durations. Furthermore, implied forward rates can be derived from the term structure. In other words, the future interest rates expected by market participants at a given moment in time (on average) can be calculated. An implied forward BEIR curve can also be computed. While the break-even inflation rate shows market participants' expectations regarding the average inflation level up to a future date, implied forward BEIRs reflect the market's inflation expectations for a period of time in the future. However, both contain additional inflation risk premiums.¹

Term structures reflect market participants' expectations concerning the development of future real interest rates or future inflation particularly well if they are not "distorted" by a time-varying risk premium, liquidity premium or other types of term premiums and if they show a good fit to the market prices of traded bonds. Both of these requirements are best satisfied by using a data set that is as homogeneous and broadly based as possible. However, the number of inflation-indexed bonds issued by euro-area member states that are currently in circulation limits the data set. On the one hand, the residual maturity of the still relatively new issues lies in the medium to long-term range and thus no real yields and BEIRs can be calculated for shorter periods of time.² On the other hand, the creditworthiness of the issues varies considerably, ranging from AAA to A. Furthermore, some countries offer a range of bonds with different maturities, while other countries only offer individual issues.³

Estimates of zero-coupon term structures using the parametric procedure of Nelson and Siegel (1987)⁴ have shown that they fit the original data better if only bonds with the best creditworthiness (with an AAA rating from Standard & Poor's) are used than if bonds with a lower creditworthiness (A rating) are added.⁵

If the development of the long-run real interest rate, calculated using the estimated zero-coupon yield for a period of

is the case with multi-year nominal bonds. A further distortion may emanate from liquidity premiums. However, in general, these are relatively constant over time, as there are no influences from the futures market, unlike in the case of nominal government bonds (cheapest-to-deliver). — 2 The estimation of the parameters for the curves is only designed to fit the yields of available bonds. Therefore, values calculated using the estimated parameters which are outside the maturity range show no extrapolated market expectations. Rather, particularly in the short maturity segment, economically implausible curves, and sometimes even curves with negative values, may be produced. — 3 Since inflation-protected bonds are bought, for example, to finance



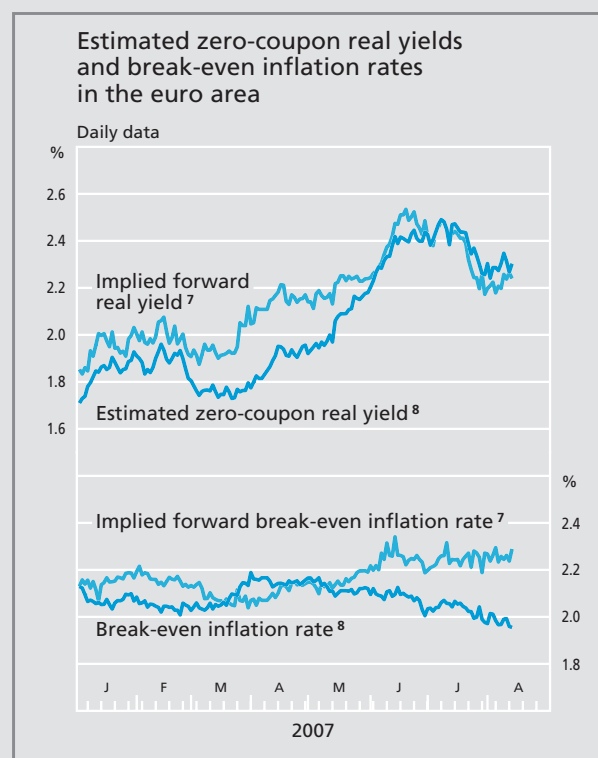
¹ The difference between the yields of nominal bonds and inflation-indexed bonds includes, in addition to the expectations of the level of inflation in the period under review, a premium to compensate for possible changes in inflation during this period. Thus, in general, the BEIR is above the "pure" inflation expectation. This uncertainty does not apply in the case of inflation-protected investments and therefore does not need to be compensated for. While in the case of inflation-indexed bonds, too, there is also a short period of time in which there is no protection against inflation changes owing to the belated payment to offset inflation, which is calculated with a time lag, it can be disregarded here as it is considerably shorter (three months) than

ten years, is examined, it can be seen that, following a slight rise at the beginning of this year, it fell again for a time in the wake of the turmoil in the financial markets triggered by the Chinese stock market and the US subprime mortgage market. The corresponding long-run inflation expectations, measured by the ten-year BEIRs, remained constant at just over 2%. A remarkable development occurred in the second quarter, when the long-run real interest rate surged by just over 60 basis points, whereas the BEIR increased only slightly. On the one hand, this reflects the buoyant upturn in the euro area. On the other hand, the interest rate movement is also likely to have been influenced by international co-movements between interest rates. In the United States, whose economy developed more robustly than was expected at the beginning of the year, the real interest rate and the BEIR followed a similar pattern to the euro area.⁶ Latterly, however, real yields then fell again. While, compared with the start of the year, the real interest rate was thus just over ½ percentage point higher, the ten-year inflation expectations were slightly below the level at which they had been at the beginning of the year and at the start of the second quarter.

Today's expectations regarding future real interest rate developments can be described using the forward rates derived from the term structure, for example, by means of a five-year interest rate in five years' time. So far this year, the five-year spot real interest rate and the forward real interest rate between years five and ten have shown a high level of co-movement. Moreover, over virtually the entire period, the implied forward interest rate is above the current spot interest rate, which corresponds to a "normal", ie upward, slope of the real yield curve. This relationship between the two interest rates only reversed in July. This reflects an inverse slope of the real yield curve and points to expectations of falling real interest rates.

long-dated real liabilities, investors prefer to have access to a range of bonds with differing maturities. This is reflected in the differing yields of bonds with the same creditworthiness and similar liquidity. — 4 See C Nelson und A Siegel (1987), Parsimonious modelling of yield curves for U.S. Treasury yields, *Journal of Business*, Vol 60, pp 473-489. Here the parameters of a functional form are defined so as to minimise the deviations of the theoretical (estimated) zero-coupon yields from the observed yields of inflation-indexed bonds. A term structure that is estimated in this way cannot take on all forms, which is why the estimation of the term structure for nominal bonds is mostly calculated using the Svensson extension (L Svensson (1994), Estimating and

In the case of the BEIR, by contrast, the five-year forward rate in five years' time has fluctuated more strongly around the five-year spot rate during the course of the year. Latterly the forward rate was somewhat above the spot rate. On the one hand, this may reflect marginally higher long-run inflation expectations. On the other hand, it may reflect a "normalisation" of the BEIR term structure, which, driven by the inflation risk premium, may show an upward slope even in the case of stable inflation expectations. However, considered as a whole, the changes in the BEIR so far this year have remained within close bounds, indicating largely stable long-run inflation expectations.



interpreting forward interest rates: Sweden 1992-1994, IMF Working Paper No 114, Washington D C) or via the even more flexible non-parametric estimation using cubic splines defined piecewise. However, all three approaches provide a comparatively good fit to the data, so that given a small number of available bonds, estimating a small number of parameters is preferable. — 5 Using all bonds, the mean-squared yield error was about three times as high as when only German and French AAA-rated bonds were used. — 6 Measured by individual inflation-indexed and matching nominal bonds. — 7 Five-year rate in five years' time. — 8 Horizon of five years.



Heightened uncertainty

The heightened nervousness of the market participants in the wake of the US mortgage crisis can also be seen in the implied volatility of options on bond futures. It mirrors the market's uncertainty concerning the future development of capital market yields. The level of uncertainty thus measured has increased perceptibly in all major financial centres. For the Bund future, it was most recently almost twice as high as at the end of March and also well above the average value since 1999.

Widening of corporate bond spreads

The financial market movements in the past few weeks ultimately reflect a general re-appraisal of risk. For example, the yield spread of BBB-rated corporate bonds over euro-area government bonds increased by one-quarter to 138 basis points, after they

had fallen in June to their lowest level for two years. This development is consistent with in part substantial rises in premiums in the credit risk transfer market (see chart on p 39). Frictions in connection with syndicating large loans were also evident. Particular attention was aroused by two corporate take-overs in connection with which the underwriters were unable to pass the loans on to financial investors as planned. The problems in the securitisation market have also placed strains on merger and acquisition (M&A) transactions, which are frequently highly leveraged. A proper assessment of risks, which in the past the markets did not appear to have undertaken always and everywhere, is necessary from a monetary policy perspective and also with regard to sustainable financial stability. To this extent, the corrections of the spreads should be seen as a normalisation. However, the fact that the adjustments occurred abruptly and – in an environment of increased uncertainty – were accompanied by a drying-up of liquidity in various market segments caused problems for the market players.

Issuing activity in the German bond market in the second quarter of 2007 was not affected by the aforementioned turbulences, which did not start until July. Total gross sales of domestic debt securities amounted to €290½ billion. This was significantly less than in the previous three months (€324 billion); however, after deducting redemptions and changes in issuers' holdings of their own securities, German issuers raised only a slightly smaller inflow of funds (€45½ billion net) than in the previous quarter (€50½ billion).

Weaker issuing activity in the bond market

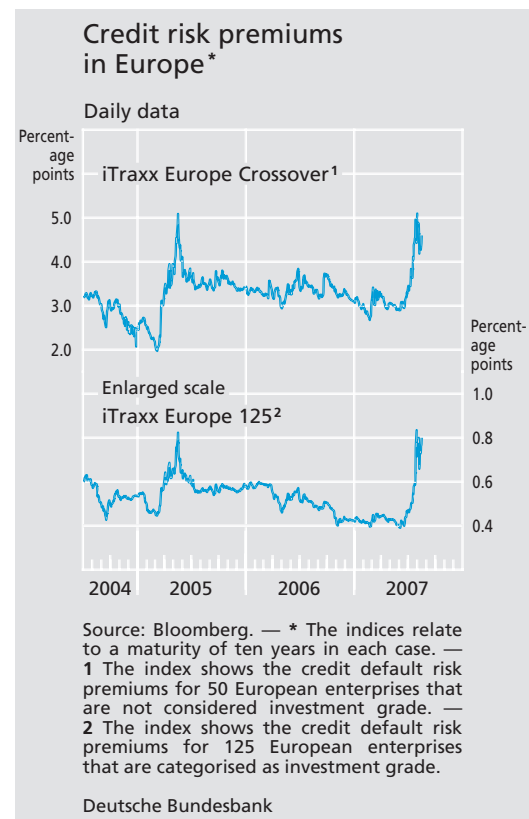
At €43 billion net, a similar amount of foreign debt securities were sold in the German market, about four-fifths of which were denominated in euro. The total amount of resources raised from sales of domestic and foreign debt securities in the second quarter was thus just over €88 billion, compared with €122½ billion in the preceding three months.

Higher borrowing by the public sector

In contrast to the weaker issuing activity overall, the public sector had greater recourse to the capital market in the reporting period (€25 billion) than in the preceding quarter (€5½ billion). At €24 billion (net), central government accounted as usual for by far the largest share of new borrowing. In the longer-term maturity range it issued, in particular, €11 billion worth of five-year Federal notes (Bobl) and €11 billion worth of ten-year Federal bonds (Bunds). In addition, it issued two-year Federal Treasury notes (Schätze) in the amount of €2 billion. State government increased its capital market debt by just under €1 billion in the second quarter, which was less than in the preceding three months (€3 billion).

Less borrowing by credit institutions ...

German credit institutions drew €15½ billion in the bond market in the second quarter, following €39 billion in the first quarter. As in the first three months of this year, their issuing activity focused on other bank debt securities, which can be structured flexibly (€21½ billion). Debt securities of specialised credit institutions were issued to the net amount of €10½ billion, compared with net sales of €25 billion in the preceding quarter. As in the previous three months, domestic banks, by contrast, reduced their debt from public and



mortgage Pfandbriefe (€15½ billion and €1 billion, respectively).

German enterprises tapped the domestic bond market for €4½ billion in the second quarter, compared with €6 billion in the first quarter. On balance, they issued short-dated instruments in the amount of €5½ billion, simultaneously reducing their debt in longer-dated bonds by €1 billion.

... and by enterprises

As in the first quarter, foreign investors were the principal purchasers of debt securities in the period from April to June. In net terms, they acquired securities of German private and public issuers for €39½ billion and €23½ billion, respectively. German credit institutions also greatly enlarged their bond market portfolios (€25 billion). In doing so, they almost

Purchases of debt securities

Share price movements and earnings estimates for European and German public limited companies

Monthly data



1 January 2002 = 100. — 2 Source: Deutsche Börse AG. — 3 Based on year-on-year I/B/E/S analyst estimates (earnings before goodwill). Source: Thomson Financial Data-stream.

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exclusively bought foreign bonds on balance. German non-banks reweighted their bond portfolios from domestic to foreign securities; they sold debt securities for €½ billion (net) from their stocks in the reporting period.

An optimistic mood continued to prevail in the international stock markets right into the third quarter. Strong global economic growth, predominantly positive corporate

data and buoyant M&A activity drove the world's major stock price indices to multi-year highs. However, the increasingly apparent crisis in the US mortgage markets, which had led to an interim trough already in March, triggered a heavy slide in stock prices from mid-July in the wake of generally heightened risk sensitivity. In particular, equity prices of the financial sector, which was directly affected by the problems, underperformed the stock market. Some economic indicators with worse-than-expected numbers as well as the tensions in the money market also weighed on the markets. In this context, uncertainty regarding future share price developments rose to a heightened level.² Despite this, corporate earnings as a whole are still growing robustly and are likely to have a stabilising effect on the stock markets.

This is especially true of German equities, which have performed comparatively well, not least owing to the ongoing favourable cyclical conjuncture in Germany. For example, the broad CDAX index has increased by just under 1% since the start of the second quarter – in spite of the recent slide in stock prices – while the US S&P 500 index has been falling slightly short of its end-March level, and the European Dow Jones EuroStoxx has dropped by 5% on balance. Domestic shares have consequently recorded an average price rise of 7% since the beginning of the year.

In spite of rising share prices overall, issuing activity in the German share market weakened somewhat in the second quarter. Do-

Slightly reduced issuing activity in the stock market

² Measured by implied volatility indices, such as the VIX or the VDAX.

Share prices down following bull run

domestic enterprises issued new shares worth €2½ billion, as against almost €3½ billion in the first quarter. Half of this involved shares of listed companies. In addition, foreign shares were sold in the German market for €8½ billion net.

Share purchases

In the second quarter of 2007, domestic non-banks were the main group of buyers in the equity market. They added domestic and foreign equities worth €13½ billion to their portfolios. Foreign investors acquired domestic shares in the amount of €12½ billion, on balance, mainly in the form of portfolio investment (€8½ billion).³ By contrast, domestic credit institutions sold equities for €12½ billion.

Sales of mutual fund shares

Domestic investment companies recorded inflows of €½ billion in the second quarter, which was well down on the previous three months (€12½ billion). This drop was attributable almost entirely to the specialised funds reserved for institutional investors, which raised only €1 billion of fresh funds compared with €12½ billion in the preceding three months. The outstanding volume of mutual fund shares of German funds open to the general public, which had been static in the first quarter, declined by €½ billion. Of the investment funds open to the general public, bond-based funds (€4 billion less) and share-based funds (€3 billion less) again sustained the greatest outflows. Units of hedge funds and funds of funds were also redeemed on balance on a small scale. By contrast, open-end real estate funds and mixed security-based funds sold shares for €2½ billion each. Money market funds offloaded shares worth

Investment activity in the German securities markets

€ billion			
Item	2006	2007	
	Q2	Q1	Q2
Debt securities			
Residents	57.7	83.6	24.8
Credit institutions	23.6	46.0	25.2
of which			
Foreign debt securities	25.5	49.4	32.4
Non-banks	34.1	37.6	- 0.4
of which			
Domestic debt securities	18.3	15.5	- 11.0
Non-residents	10.9	38.8	63.4
Shares			
Residents	- 9.7	- 10.9	1.0
Credit institutions	- 8.2	5.0	- 12.3
of which			
Domestic shares	- 5.1	1.3	- 17.8
Non-banks	- 1.5	- 15.9	13.3
of which			
Domestic shares	3.1	4.0	10.0
Non-residents	4.0	- 2.0	12.3
Mutual fund shares			
Investment in specialised funds	9.7	12.3	1.0
Investment in funds open to the general public	- 2.1	0.0	- 0.7
of which: Share-based funds	- 3.0	- 2.6	- 2.8

€1½ billion net. Once again, sales of shares by foreign funds in Germany showed a marked rise of €17 billion.

As in the previous quarter, mutual fund shares were purchased mainly by domestic non-banks (€11 billion), which on balance solely added mutual fund shares issued by foreign investment companies to their portfolios (€12½ billion). The investment of domestic credit institutions (€5 billion) was likewise concentrated almost exclusively on shares of foreign mutual funds. Non-resident investors bought mutual fund shares to the amount of €1½ billion in the German market.

Purchases of mutual fund shares

³ See page 42 for the evolution of direct investment in the second quarter.

Major items of the balance of payments

€ billion

Item	2006		2007	
	Q2	Q1	Q2	Q1
I Current account 1,2	+ 25.7	+ 37.2	+ 35.8	+ 48.8
Foreign trade 1,3	+ 36.9	+ 48.8	+ 48.8	+ 48.8
Services 1	- 3.6	- 4.7	- 3.4	- 4.7
Income 1	+ 1.6	+ 7.4	- 2.0	+ 7.4
Current transfers 1	- 5.0	- 10.8	- 4.7	- 10.8
II Capital transfers 1,4	+ 0.0	+ 0.2	+ 0.8	+ 0.2
III Financial account 1 (Net capital exports: -)	- 56.1	- 75.4	- 88.9	- 63.0
1 Direct investment	- 5.4	- 6.3	- 22.0	- 6.3
German investment abroad	- 11.1	- 13.8	- 23.9	- 13.8
Foreign investment in Germany	+ 5.7	+ 7.6	+ 1.9	+ 7.6
2 Portfolio investment	- 9.9	- 35.8	+ 13.0	- 35.8
German investment abroad	- 25.5	- 72.1	- 60.7	- 72.1
Shares	+ 12.7	+ 12.1	- 2.8	+ 12.1
Mutual fund shares	+ 3.0	- 12.7	- 16.9	- 12.7
Debt securities	- 41.2	- 71.6	- 41.0	- 71.6
Bonds and notes 5	- 33.5	- 65.8	- 38.0	- 65.8
of which Euro-denominated bonds and notes	- 28.7	- 53.7	- 32.4	- 53.7
Money market instruments	- 7.7	- 5.7	- 3.0	- 5.7
Foreign investment in Germany	+ 15.6	+ 36.3	+ 73.7	+ 36.3
Shares	+ 3.3	- 3.2	+ 8.6	- 3.2
Mutual fund shares	+ 1.4	+ 0.7	+ 1.7	+ 0.7
Debt securities	+ 10.9	+ 38.8	+ 63.4	+ 38.8
Bonds and notes 5	+ 8.6	+ 29.0	+ 57.7	+ 29.0
of which Public bonds and notes	+ 1.4	- 7.3	+ 25.7	- 7.3
Money market instruments	+ 2.3	+ 9.8	+ 5.7	+ 9.8
3 Financial derivatives 6	+ 2.4	- 10.0	- 12.0	- 10.0
4 Other investment 7	- 43.6	- 23.5	- 66.5	- 23.5
Monetary financial institutions 8	- 55.8	- 10.6	- 60.9	- 10.6
of which: short-term	- 38.9	+ 8.9	- 40.4	+ 8.9
Enterprises and households	+ 13.4	- 11.3	+ 13.5	- 11.3
of which: short-term	+ 7.2	- 4.0	+ 23.3	- 4.0
General government	- 15.2	+ 13.6	- 23.4	+ 13.6
of which: short-term	- 15.1	+ 14.6	- 23.1	+ 14.6
Bundesbank	+ 14.0	- 15.3	+ 4.3	- 15.3
5 Change in reserve assets at transaction values (increase: -) 9	+ 0.4	+ 0.1	- 1.4	+ 0.1
IV Errors and omissions	+ 30.4	+ 38.0	+ 52.2	+ 38.0

1 Balance. — 2 Including supplementary trade items. — 3 Special trade according to the official foreign trade statistics (source: Federal Statistical Office). From January 2007 excluding supplies of goods for/after repair/maintenance, which, up to December 2006, were deducted via the supplementary foreign trade items. — 4 Including the acquisition/disposal of non-produced non-financial assets. — 5 Original maturity of more than one year. — 6 Securitised and non-securitised options as well as financial futures contracts. — 7 Includes financial and trade credits, bank deposits and other assets. — 8 Excluding the Bundesbank. — 9 Excluding allocation of SDRs and excluding changes due to value adjustments. — o Exports positively influenced by late reports. — Discrepancies due to rounding.

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Direct investment

Unlike the situation of portfolio investment, which recorded net capital imports of €13 billion, the balance of direct investment showed capital outflows of €22 billion in the second quarter, compared with net capital exports of €6½ billion between January and March.

High net capital exports in direct investment

The main reason for this was the increased cross-border investment of German firms, which made €24 billion worth of capital available to their subsidiaries and branches abroad. €11 billion of this total was allocated to raising existing equity stakes while €8½ billion was earmarked for intra-group loans. Key target countries for the equity investments were Italy and the United Kingdom.

Foreign firms, by contrast, invested only a very small amount in Germany during the period under review (€2 billion). The main component of the capital imports was the transfer of equity capital (€4 billion). This originated chiefly from France, Spain and Italy.