Financial markets

Financial market trends

Financial market setting

In the second quarter of 2008, the international financial markets were dominated by ongoing concern regarding the extent of the write-downs required in the financial sector and increasing scepticism about the economic climate. At the same time, the global price climate deteriorated significantly. Owing to sharp price increases for food and energy and, initially, relatively robust economic activity in the euro area, inflation expectations soared on both sides of the Atlantic. Given the mounting signs of stability policy risks, the Governing Council of the ECB decided to raise the interest rate by 25 basis points in July. As a result, yields on European government bonds rose sharply. The stock markets, which were still underpinned by companies' relatively positive results at the beginning of the quarter, faced pressure from an unremitting low risk appetite in the second quarter owing to increased anxiety about an economic downturn and renewed concerns about the extent of the US mortgage crisis. They consequently recorded losses. On the foreign exchange markets, the euro held very firm against the dollar and the yen for a while, but incurred severe losses towards the end of the reporting period.

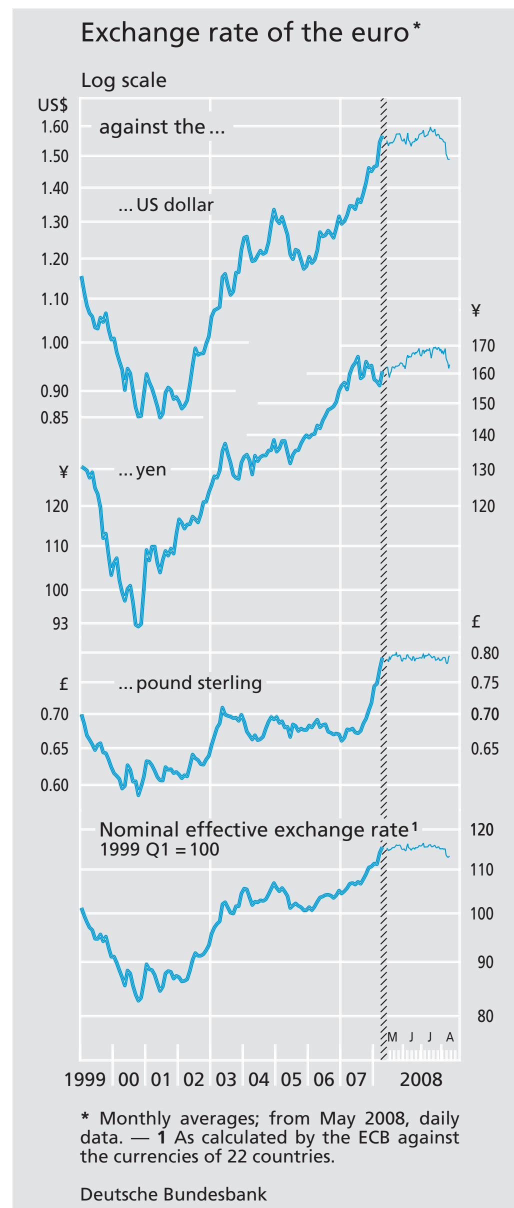
Exchange rates

Euro exchange rate development against the US dollar...

As a result of changes in the assessment of future international interest rate differentials, the euro-US dollar exchange rate trend was initially difficult to predict in the reporting period. Following the publication of unex-

pectedly high growth and inflation rates for the euro area in May, interest rate expectations shifted in favour of the euro, causing it to appreciate. However, it surrendered its gains at the start of June amid warnings from the Fed of inflation risks resulting from a weak US dollar. The expected change in the Fed's monetary policy seemed to be supported by relatively favourable data for US retail sales, which additionally strengthened the position of the US dollar against key currencies.

The US dollar faced renewed downward pressure in mid-June when various Governing Council representatives indicated that an interest rate increase was likely at the next meeting owing to mounting inflation risks in the euro area. The Eurosystem's interest rate move at the beginning of July had therefore been largely expected by the markets and did not have any additional direct impact on the euro-US dollar exchange rate. Discussions about the feared insolvency of several major US mortgage financiers subsequently subjected the US real estate market crisis to increased scrutiny from investors, thereby putting pressure on the US dollar. The euro-US dollar exchange rate briefly reached a new all-time high of US$1.60 in mid-July. Recent speculation that the Federal Reserve would soon hike its interest rates, based on the publication of the minutes of the preceding FOMC meeting at which several members spoke out in favour of raising interest rates, subsequently strengthened the US dollar. Furthermore, market participants perceived the economic risks for the euro area to be higher, which put even more pressure on the euro-



* Monthly averages; from May 2008, daily data. — 1 As calculated by the ECB against the currencies of 22 countries.

dollar exchange rate. As this report went to press, the euro was trading at US$1.49, just under 1½% up on the beginning of the year.

... against the yen ...

Contrary to the changing interest rate expectations in the euro area and the US, the market expected, throughout the reporting period, that the Bank of Japan would maintain its neutral monetary policy in Japan for some time to come, thus compounding the

interest rate disadvantage of the yen. The euro therefore initially also further appreciated against the yen. This trend was given further momentum at the start of July following the publication of the Bank of Japan's Tankan survey, which indicated that the business climate of key enterprises in Japan's manufacturing sector had deteriorated sharply in the second quarter. On 23 July, the euro reached its highest level to date since the launch of EMU, trading at ¥170. As this report went to press, however, it had fallen to ¥163, 1% lower than at the beginning of the year.

... and against the pound sterling

The euro mostly fluctuated within a narrow range of between £0.78 and £0.80 against the pound sterling in the reporting period. Owing to high inflationary pressure in the UK and increasing inflation expectations, the markets did not expect the Bank of England to continue easing its monetary policy, despite the weak economy. In fact, the interest rate has remained unchanged since it was last reduced in April. As this report went to press, the euro was trading at just under £0.80, around 8½% higher than at the beginning of the year.

Effective euro exchange rate

Against other key currencies, however, the euro has lost ground perceptibly since mid-March. It incurred significant losses against the Hungarian forint (-8½%), the Chinese renmimbi (-8%) and the Polish zloty (-6%). The value of the euro against the Slovak koruna (the central rate of which was raised by over 17½% within the context of ERM II with effect from 29 May) also fell in the reporting period (-7%). The euro's average rate against the 22 major currencies in the exchange rate index has therefore fallen by 2½% since the end of March. In real terms, too, ie taking account of the simultaneous inflation differentials between the euro area and its major trading partners, the effective exchange rate of the euro fell slightly in the reporting period. The euro was still 10½% higher than at the launch of currency union, however.

Securities markets and portfolio transactions

Rise in capital market rates

In the spring and early summer, the European bond market was caught between increased inflationary pressure, on the one hand, and growing concerns about the economy as well as resurgent fears regarding the effects of the financial market turbulence, on the other. The global inflation outlook deteriorated, mainly owing to reports of rising food and energy prices. At the same time, a number of robust economic indicators initially pointed to a stable economic situation in Germany and the euro area. As a result, yields on ten-year euro-area government bonds rose by around three-quarters of a percentage point to almost 5% at the beginning of July. As well as higher long-term inflation expectations, this development also led to a rise in the long-term real interest rate which, expressed as the yield on index-linked bonds, temporarily rose to just over 2¼%. However, unfavourable economic data for the euro area and Germany put renewed pressure on European capital market interest rates, primarily shorter and medium-term maturities in nominal and real terms, in July. As this report went to

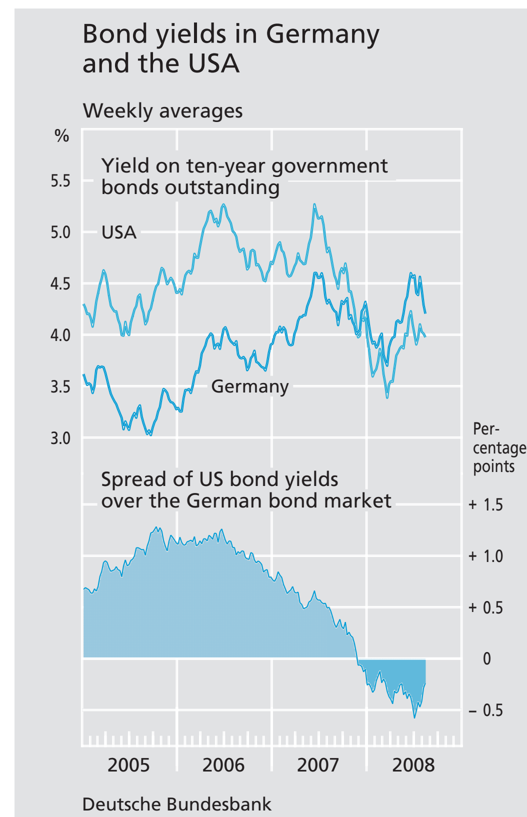
press, yields on ten-year euro-area government bonds amounted to just under 4½%.

Worse financing conditions for enterprises

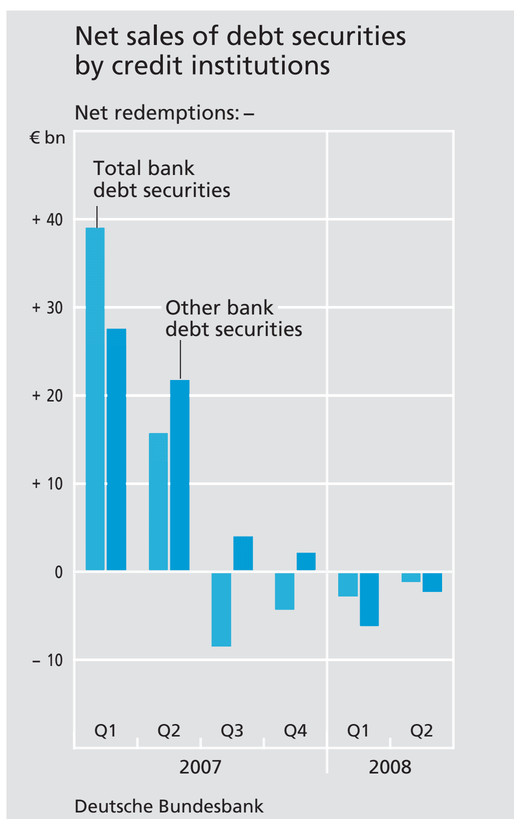
As capital market interest rates increased, the financing conditions for European enterprises on the bond market also tended to deteriorate in the second quarter. Their earnings outlook, in particular, was assessed less favourably by the market. However, the spreads for corporate bonds rated BBB (the lowest investment-grade category) against euro-area government bonds, after reaching record highs towards the end of the first quarter, narrowed somewhat, by 13 basis points to 295 basis points at the end of the reporting period. The fact that interest rate premiums remain high reflects the continued low risk appetite of market participants and substantial liquidity premiums. It also indicates that, compared with interest rate premiums, premiums on the relatively liquid market for credit risk transfer have fallen a bit more sharply.

Issuing activity in the bond market remains lively

Uncertainty in the financial markets and investors' pronounced risk aversion had a considerable effect on issuing activity in some segments of the German bond market in the second quarter of 2008. A record volume of German debt securities (€401 billion) were sold after having already peaked once in the previous quarter (€391 billion). However, issuers only raised just under €1 billion net on the capital market after likewise high redemptions and changes to holdings of their own bonds. In the previous quarter, as much as €12 billion worth of German debt securities had been placed in the German market. Sales of foreign debt securities and money



market paper also fell in Germany (€24 billion from €32½ billion), although individual instruments did buck the general trend, with a greater volume of euro-denominated bonds issued by non-resident public and private issuers being sold on the German market (€31½ billion) for the first time since the onset of the financial market turbulence. By contrast, interest-bearing securities denominated in foreign currency fell (€7½ billion) following €41½ billion worth of purchases by German counterparties between July 2007 and March 2008 of those issues which are often traded as asset-backed securities (ABS). Overall, German bond market issuance thus totalled around €25 billion in the second quarter of 2008 compared with €44½ billion in the first quarter.



Low level of funds raised by the public sector

The public sector was the only group of German issuers to record inflows of funds after redemptions and changes to holdings of its own bonds. From April to June, however – also partly due to the positive cash balance – it raised only €3½ billion in the capital market, an amount comparable to that of the first three months of this year. The state governments increased their bond market debt slightly on the previous quarter (€3 billion), while the Federal Government raised very little on the capital market (just under €½ billion net). In the longer-term maturity range, however, it issued ten-year Federal bonds (Bunds) totalling €6½ billion, including inflation-indexed debt securities, which are considered especially worthwhile from an issuer's perspective if the price climate exceeds the expectations held on the issue date by the bond underwriters. Furthermore, the Federal Government issued a combined €7 billion worth of two-year Federal Treasury notes (€1 billion) and redeemed thirty-year Bunds, five-year Federal notes and savings notes, Federal Treasury discount paper (Bubills) and Federal Treasury financing paper.

Net redemptions by credit institutions ...

Credit institutions, by contrast, removed €1 billion net of their own bonds and money market instruments from circulation. Since the beginning of the crisis in the second quarter of 2007, they have therefore reduced their capital market debt by €16½ billion. The development in the previous quarter was caused by redemptions of public Pfandbriefe (€11 billion) and mortgage Pfandbriefe (€2 billion), circulation of which has been falling for some time. The turnaround in flexible other bank debt securities was also notable. From the creation of the euro area until mid-2007, the average net quarterly issue volume was €11½ billion; by contrast, the reporting quarter was the second consecutive quarter of net redemptions (€2½ billion after €6 billion in the first three months of this year). Sales of debt securities by specialised credit institutions remained more or less on a par with the previous quarter (€14 billion compared with €13½ billion). Their issue volume rose significantly at the beginning of the year when a financial institution relocated the departments responsible for issuing business to Germany.

... and enterprises

Non-financial enterprises also reduced their capital market liabilities on a net basis (€1 billion). Although they issued €4½ billion worth of longer-term debt instruments, they also vigorously redeemed money market paper

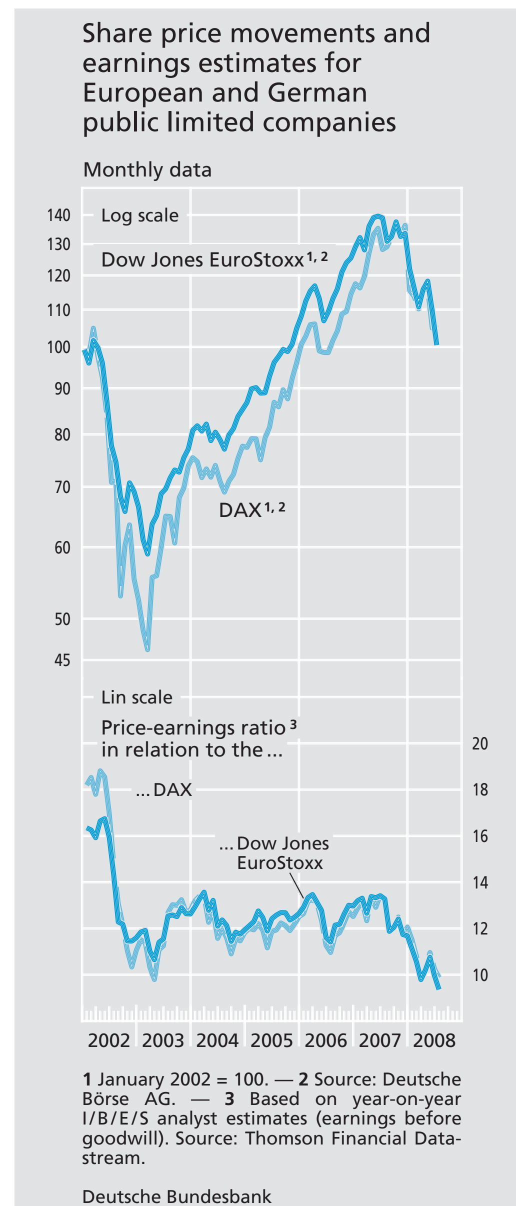
between April and June; such instruments had momentarily attracted little interest from investors in the financial markets since the outbreak of the tensions.

Purchases of debt securities

Non-resident investors, again, actively acquired debt securities in the second quarter of 2008. They bought public debt instruments totalling €27 billion exclusively in May and June, when investors looking for secure and liquid instruments obviously favoured German government bonds. Statistics also show that non-residents invested large amounts in private issuers' bonds (€30½ billion). However, many of these cross-border transactions involved certificates and warrants created in Germany which were sold en bloc to affiliated companies abroad and held there, in most cases, until maturity. Ultimately, only a fraction of documented purchases by private investors were transacted outside the banking sector, the actual target group of these products.[1] German investors, in contrast, disposed of interest-bearing securities on balance. The sales were solely attributable to German non-banks which unloaded debt securities totalling €70 billion net.[2] Domestic credit institutions, on the other hand, increased their bond market exposures by €33½ billion; just under two-thirds of this amount was spent on foreign debt securities.

Temporary stock market recovery until mid-May...

The stock market recovery which began towards the end of the first quarter of 2008 continued until mid-May. Signs of a potential easing of tensions on the credit markets, relatively robust quarterly results and the success of a number of large financial institutions in raising loans initially boosted prices. However,



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 Datastream.

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rising crude oil prices and renewed concern about write-downs in the financial sector, in particular, then led to losses, the brunt of which was borne by financial institutions. Moreover, the closure of a US mortgage

... but further losses in summer

1 For more details, see Deutsche Bundesbank, The German balance of payments in 2007, Monthly Report, March 2008, pp 26-27.
2 The purchase of securities by German non-banks is a statistical residual and therefore subject to a high degree of uncertainty.

Constructing an aggregate risk appetite indicator with a principal component analysis

In an analysis of capital markets, various market-based indicators can be used to measure and assess the risk appetite of the market players. Examples of indicators that are based on credit risk securities such as bonds or credit derivatives are interest rate premiums on uncertain corporate debt securities and credit default swap (CDS) premiums, the size of which – alongside other factors – (inversely) depends on the risk appetite. Another indicator that is frequently used is the implied volatility on the stock market, which is calculated using option prices and expresses uncertainty regarding future price developments. Other indicators focus on the subjectively perceived safety of certain assets. The underlying hypothesis is that, in times of uncertainty, investors shift their assets to "safe havens". An example of such an indicator is the time-variably measured correlation of returns on stocks and government bonds, which reflects the extent of such a flight to safety.

It is often difficult to interpret individual indicators because they are also affected by a number of other factors that are unrelated to risk appetite. This has been highlighted by the recent financial market turbulence, in particular, with differences in trading activity and the liquidity of individual financial instruments making it more difficult to infer information regarding the risk propensity of the market players. While the VDAX volatility index, for example, was below its long-term average at the turn of 2007-08 (with quotations now recovering), BBB-rated interest rate premiums on corporate bonds – which, following the turbulence, still contained sizeable liquidity premiums – rose significantly above the historical average and indicated a low risk appetite. The sometimes low liquidity of individual markets and financial instruments therefore makes it advisable not to rely on a single indicator when assessing risk appetite.

The principal component analysis enables several single indicators to be aggregated to form a composite indicator. This is a statistical method that extracts common time-varying determinants from several correlated variables. Each determinant is a linear combination of the variables included. In most cases only one or two common factors are considered, as these generally explain the majority of the total variance of all the variables included. Ideally, the influence of risk appetite, which appears in all the variables under consideration, can thus be separated from the other specific determinants that are only relevant for individual variables. The individual indicators included in the following principal component analysis are based on stock markets, bond markets and CDS markets. The inclusion of CDS premiums broadens the base of the aggregated indicator and, in comparison with previous studies, represents an important step forward.[1] Specifically, during the 1 July 2004 to 31 July 2008 reporting period, the following variables were included (the expected influence on risk appetite is given in brackets).

- VDAX (–)
- Time-varying correlation between the returns on long-term European government bonds and stocks[2] (+)
- Interest rate premiums on AAA-rated corporate bonds (–)
- Interest rate premiums on BBB-rated corporate bonds (–)
- Credit default risk premiums of investment-grade European companies as measured by iTraxx Europe (–)

1 For older studies, see Deutsche Bundesbank, Monthly Report, October 2004, pp 69-73 and T Sløk and M Kennedy (2004), Factors driving risk premia, OECD Economics Department, Working Paper No 385. — 2 A negative correlation indicates high safe-haven flows and thus a low risk appetite; for the calculation of the correlation, see Deutsche Bundesbank, Monthly Report, November 2007, pp 42-43. — 3 This is

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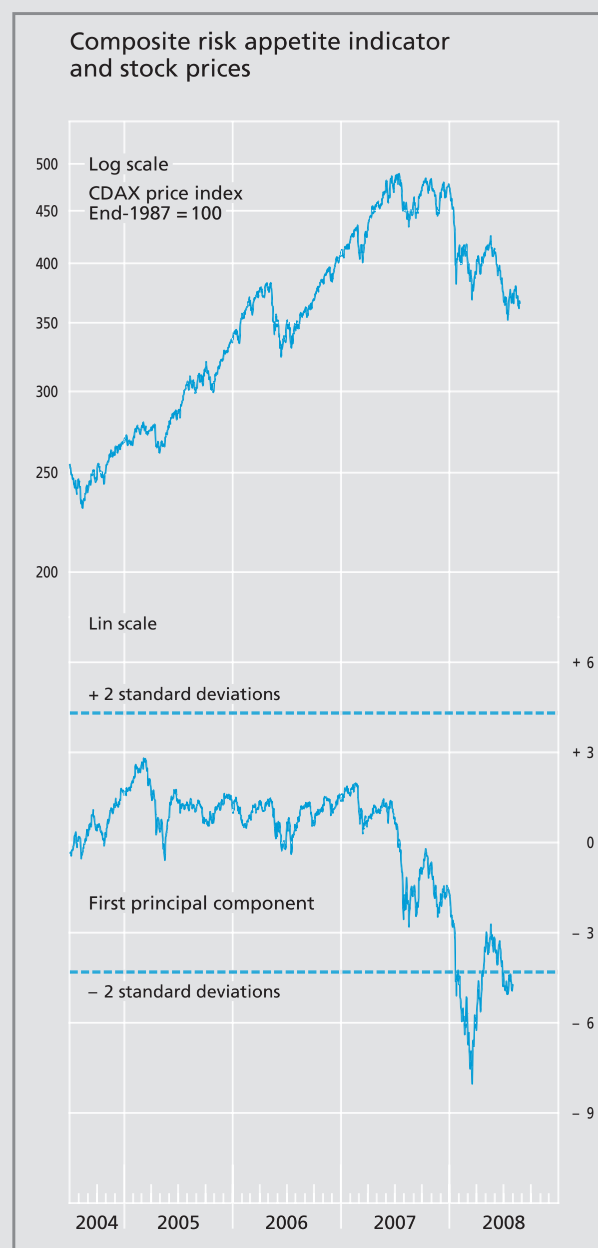
– Credit default risk premiums of European high-yield companies as measured by iTraxx Europe Crossover (–)

At just over 77%, the first principal component explains a relatively high percentage of the total variance. All the variables included are incorporated in the first principal component with the expected sign (+/-) and with similar weightings. This means that all the individual indicators are adequately represented in the first principal component. By contrast, the second principal component provides little additional explanation and is therefore not considered further.[3] Overall, this suggests that the first principal component reflects the risk appetite well.[4] Risk appetite, in turn, represents an important explanatory factor for stock prices in Germany.

According to the indicator, in spring 2005, in connection with Ford and General Motors being downgraded by the Standard & Poor's rating agency, and in summer 2006, when the stock markets of emerging market economies, in particular, sustained heavy losses, market players' risk appetite temporarily fell below the zero line – which corresponds to the reporting period average – but was otherwise positive, without any substantial fluctuations, until mid-2007 (see chart). In this environment characterised by an above-average risk appetite, the stock prices – as measured here on the broad CDAX index – rose sharply. Furthermore, the indicator also traces the development of perceived risk since the onset of the financial market turbulence in summer 2007 and suggests that the severe slump in stock prices was due not only to poor fundamentals, but also to the sharp fall in risk appetite. Following a temporary calm period in autumn 2007, in mid-March of this year risk appetite bottomed out, falling well out of the ± 2 standard deviations range (dotted lines). At the current end, the indicator is once again below this range, thus continuing to indicate that market players' risk appetite is very low.



consistent with the low eigenvalue of the second principal component (0.66). According to Kaiser's criterium, only principal components with an eigenvalue greater than 1 should be considered. — **4** See V Coudert and M Gex (2006): Can risk aversion indicators anticipate financial crises?, Banque de France Financial Stability Review No 9, December 2006.

Investment activity in the German securities markets

€ billion

Item	2007 Q2	2008 Q1	2008 Q2
Debt securities			
Residents	13.6	9.7	– 33.0
Credit institutions	25.3	19.8	33.3
of which			
Foreign debt securities	32.4	14.5	20.5
Non-banks	– 11.6	– 10.1	– 66.3
of which			
Domestic debt securities	– 18.7	– 28.2	– 69.7
Non-residents	71.1	35.0	57.9
Shares			
Residents	– 1.4	19.6	39.3
Credit institutions	– 13.0	0.9	– 14.3
of which			
Domestic shares	– 18.5	9.0	– 3.3
Non-banks	11.6	18.6	53.6
of which			
Domestic shares	7.5	17.7	51.1
Non-residents	13.5	– 25.5	– 46.5
Mutual fund shares			
Investment in specialised funds	1.0	– 4.0	2.8
Investment in funds open to the general public	– 0.7	– 1.4	1.2
of which: Share-based funds	– 2.8	– 3.4	1.1

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bank, growing anxiety about the soundness of government-sponsored US real estate financiers and worse-than-expected economic indicators created gloom among market participants. Against this backdrop, in which the risk appetite of market participants was low, the US government's announcement of its intention to provide assistance to US real estate financiers, the unexpectedly positive quarterly results of some US banks and the drop in the oil price had a stabilising effect on prices. Ultimately, US and German equities have, since April, fallen by 3% and 5%, respectively, as measured by the S&P 500 and CDAX broad market indices, while the European Dow Jones EuroStoxx has slipped by 9%.

Weak stock market funding

Against the backdrop of share price losses, issuing activity in the domestic stock market remained weak in the second quarter. Domestic enterprises placed €1½ billion worth of new shares, compared with €1 billion in the third quarter. Half of these were issued by listed companies. Moreover, residents sold foreign shares for €8½ billion net.

Share purchases

From April to June, German non-banks represented the only group of buyers on the stock market with €53½ billion; they mainly traded in domestic securities. Banks, in contrast, divested themselves of €3½ billion worth of shares. Non-resident investors also sold German equities amounting to €46½ billion. These sales were probably in connection with the run-up to the respective dividend payment dates.

Sales of mutual fund shares

Domestic investment companies recorded inflows of funds totalling €4 billion in the second quarter, compared with fund outflows of €5½ billion in the preceding three months. The money was invested in both special funds reserved for institutional investors (€3 billion) and mutual funds open to the general public (€1 billion). Of the mutual funds open to the general public, balanced funds and mixed securities funds sold the most certificates (€2 billion each), followed by equity-based funds and open-end real estate funds (€1 billion each). However, money market funds also saw capital outflows (€3½ billion), as did – to a lesser extent – bond-based funds and mixed securities funds (€1 billion and €½ billion respectively). In addition, net sales of foreign mutual fund shares on the German market totalled €4 billion.

Purchases of mutual fund shares

In the second quarter, mutual fund shares were purchased exclusively by domestic non-banks (€10 billion), which chiefly added mutual fund shares issued by foreign investment companies to their portfolios (€7½ billion). Non-residents invested €1 billion in German mutual fund shares. By contrast, resident and non-resident credit institutions sold mutual fund shares (€3½ billion).

Foreign direct investment

Foreign direct investment saw net capital exports of €29½ billion in the second quarter. Capital outflows were therefore lower than those of the first quarter. The lower level of overall activity in foreign direct investment is in line with the decrease in cross-border mergers and acquisitions (M&A) with German involvement in the reporting period.

Germany's outward foreign direct investment

German companies which provided their foreign branches with additional funds of €35½ billion made a large contribution to capital outflows within the context of foreign direct investment. They primarily increased capital stakes in foreign companies (€22 billion), the principal destinations being Spain and the US. Here, a major transaction in the energy sector played a significant role. In addition, however, reinvested earnings (€7 billion) and foreign direct investment loans to affiliates (€7 billion) played their part.

Inward foreign direct investment in Germany

In the second quarter, foreign proprietors furnished their German subsidiaries with an additional €6 billion, of which equity capital accounted for around half.

Major items of the balance of payments

€ billion

Item	2007	2008	
	Q2	Q1	Q2
I Current account [1,2]	+ 41.8	+ 48.3	+ 41.6
Foreign trade [1,3]	+ 49.4	+ 50.6	+ 52.8
Services [1]	– 2.0	– 1.5	– 3.7
Income [1]	+ 1.5	+ 13.1	– 0.5
Current transfers [1]	– 4.9	– 11.5	– 4.4
II Capital transfers [1,4]	+ 0.4	+ 0.5	+ 0.3
III Financial account [1] (Net capital exports: –)	– 85.1	– 70.5	– 78.6
1 Direct investment	– 21.7	– 43.0	– 29.5
German investment abroad	– 26.9	– 45.6	– 35.6
Foreign investment in Germany	+ 5.2	+ 2.7	+ 6.1
2 Portfolio investment	+ 21.6	– 23.9	– 2.4
German investment abroad	– 59.3	– 31.6	– 15.2
Shares	– 2.9	+ 11.5	+ 12.7
Mutual fund shares	– 16.9	– 10.6	– 3.9
Debt securities	– 39.5	– 32.5	– 23.9
Bonds and notes [5]	– 37.6	– 22.9	– 21.5
of which Euro-denominated bonds and notes	– 31.3	– 5.3	– 23.0
Money market instruments	– 1.9	– 9.6	– 2.4
Foreign investment in Germany	+ 80.9	+ 7.7	+ 12.8
Shares	+ 8.2	– 25.8	– 46.3
Mutual fund shares	+ 1.6	– 1.5	+ 1.2
Debt securities	+ 71.1	+ 35.0	+ 57.9
Bonds and notes [5]	+ 66.8	+ 18.2	+ 46.6
of which Public bonds and notes	+ 29.0	– 1.8	+ 25.4
Money market instruments	+ 4.3	+ 16.8	+ 11.3
3 Financial derivatives [6]	– 8.9	– 18.7	– 14.9
4 Other investment [7]	– 74.7	+ 16.2	– 30.9
Monetary financial institutions [8]	– 60.8	+ 18.2	– 27.9
of which: short-term	– 40.4	+ 46.4	+ 20.0
Enterprises and households	+ 5.5	– 1.4	+ 8.7
of which: short-term	+ 15.2	– 5.8	+ 12.9
General government	– 23.8	+ 6.2	– 1.8
of which: short-term	– 23.1	+ 7.4	– 1.1
Bundesbank	+ 4.3	– 6.8	– 9.9
5 Change in reserve assets at transaction values (increase: –) [9]	– 1.4	– 1.2	– 0.9
IV Errors and omissions	+ 42.9	+ 21.6	+ 36.7

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.

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