Financial integration and risk sharing in the euro area – longer-term trends and impact of the financial crisis

European monetary union has been a major driver of financial integration in Europe. This process has taken place against the backdrop of a general trend towards financial globalisation. Integrated financial markets offer the economies involved potential efficiency and welfare gains, and are also of substantial importance to the smooth implementation of monetary policy in the euro area. However, these benefits may also entail drawbacks and macroeconomic costs in that, if economic and financial crises occur in closely integrated financial markets, a faster regional spillover has to be expected. This report will analyse both the process of the financial integration of Germany and the euro area's integration into the global economy. Viewed from a longer-term perspective, financial market integration has contributed to consumption smoothing between the euro-area countries through international risk diversification. Moreover, during the last two years the financial crisis has generated a considerable impact on cross-border asset positions, the real economic implications of which cannot yet be fully measured. All in all, it is clear that the growing together of the capital markets during the last 20 years has reinforced interdependencies.

Integration of the financial markets worldwide and within Europe

Integration of the financial markets and rise in global risk sharing

The last few decades have seen a marked worldwide rise in investors' willingness to invest across borders. This process offers investors and consumers a number of potential economic advantages. For instance, a wider range of financial instruments has created additional investment opportunities allowing investors to spread their income risk. The benefits of improved risk diversification also apply at the macroeconomic level. Besides making a more efficient allocation of capital possible, international risk diversification can dampen temporary fluctuations in individual countries' GDP owing to their integration into the global economy and limit their impact on national consumption potential.[1] On the other hand, however, the closer interdependency is also likely to result in shocks being transmitted more quickly, with the possibility of negative wealth effects and adjustment burdens for the real economy.

The growing together of the world economy is clearly reflected in the pronounced increase in cross-border assets. At the end of 2007 (data on the external asset position for 2008 are not yet available for all countries), total cross-border assets and liabilities documented worldwide amounted to some US$192 trillion (or €131 trillion). Of that figure, almost US$77 trillion (€52 trillion) was accounted for by the euro-area countries (including assets and liabilities among the euro-area countries themselves). Compared with 1999, global holdings of cross-border assets and liabilities are today almost four times higher as a result. The financial integration of the euro-area countries into the global financial markets has largely kept pace with this rate of expansion in recent years. For instance, the euro-area countries' share of external asset positions worldwide between 2002 and 2007 remained very steady at around 40%. The financial links of the single currency area as a whole with the rest of the world – ie at the external borders of the euro area, excluding intra-EMU asset positions – have likewise grown appreciably since the euro was introduced. In 2008, as measured by holdings, they amounted to almost €30 trillion. This is roughly two and a half times the figure for 1999.

Single currency area affects investment focus ...

Even stronger than the increase in financial links with non-euro-area countries since 1999 has been – in terms of external assets data – the growth of financial links between euro-area countries themselves.[2] This is supported by a comparison of direct and portfolio investment holdings, broken down by region, for a number of EMU countries[3] – Finland, France, Germany, Italy, the Netherlands, Por-

1 This type of hedging against risk is often referred to in the literature as risk sharing. It differs from risk sharing in a community of insurees which, in the event of loss, provides for real income transfers without a direct consideration. Hedging against risk by diversifying assets internationally, on the other hand, is based on lower fluctuations in investment income. A further means of international consumption smoothing lies in the variation of external saving with corresponding adjustments to the current account balance.
2 Data on the international investment position provide information on a very highly aggregated level. The significance of the intra-EMU focus may vary not only between the individual countries but also depending on segment and industry, and can be modelled using additional indicators. See European Central Bank, Financial Integration in Europe, April 2009.
3 Data broken down by extra and intra-EMU holdings are not available for all countries for the time period mentioned.

tugal and Spain. In almost all cases, intra-EMU assets in the categories mentioned have increased more strongly than the corresponding external positions overall. The same applies to liabilities in direct investment (see adjacent chart).

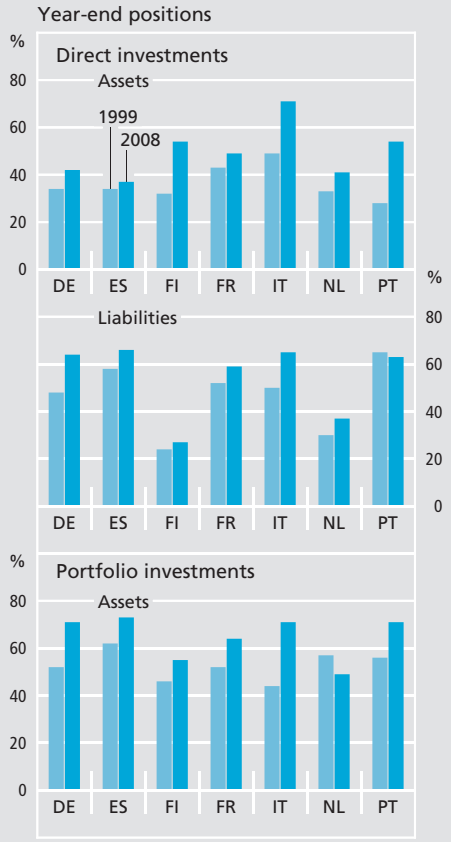
... in favour of the euro area

The driving forces behind global financial integration have been and remain technological progress – particularly in information and communication technology – and the opening up of national financial markets to foreign investors. Besides giving banks a global orientation, these factors led to the growing importance of multinational enterprises and the heightened presence of institutional investors. The latter traditionally engage more strongly in cross-border investment activities than do private investors and they have continued to increase their foreign investment in recent years. The single currency and the harmonisation of the institutional framework in the euro area have given additional impetus to financial market integration among the participating countries. Monetary union made it possible to diversify investment and borrowing without the need to incur additional currency risks. What is more, the single currency had the effect of increasing the liquidity of key financial market segments.

Safeguarding against and vulnerability to shocks

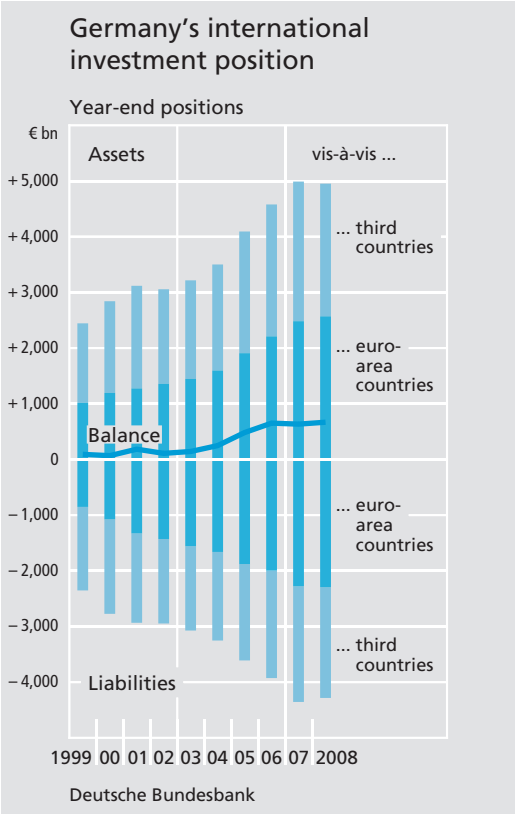
In view of these benefits which the single currency area offers, investors' focus may reasonably be expected to be more intra-European than on countries outside the euro area. From the risk diversification point of view, however, it should be borne in mind that the euro area could perhaps also be more exposed to unidirectional shocks. Moreover, the exchange rate can also be a way for investors to diversify risk. Thus, the elimination of the intra-European exchange rate risk has also contributed to investment in other currencies and investments outside the euro area.

Capital investments of selected euro-area countries in the euro area*



Sources: National data and Bundesbank calculations. — * Percentage of assets/liabilities vis-à-vis other euro-area countries in relation to worldwide cross-border assets/liabilities for each country, broken down by instrument (international investment position data). In some cases, varying definition of the group of euro-area countries.

Deutsche Bundesbank



Capital links within the euro area from the German perspective

Integration process took place over several decades

The increase in intra-European capital investment has, however, been a long-term process witnessed not only since the introduction of the euro. Germany may serve as an example in studying these developments. In the 1970s and 1980s, the share of German capital exports to the other countries of the present-day euro area relative to total foreign investment averaged 26% and 29% respectively. In the 1990s up to the beginning of monetary union, the share averaged 45%, and 51% in the period from 1999 to 2008. In Germany's international investment position this was reflected in a rise in the percentage of assets invested in other euro-area countries from 39% in mid-1999 to 52% at the end of 2008 (see adjacent chart).

German portfolio investments with heavy euro-area focus

It may be seen in this context that portfolio investments are more strongly geared to the euro area than are other segments of capital transactions. There was already a shift towards the other partner countries in the early years following the start of Stage Three of monetary union, and it has persisted since then. Since the euro was introduced, internationally operating German portfolio investors have invested roughly two out of three euros in the euro area. This is reflected in asset holdings. In the case of mutual fund shares, German investors are almost entirely focused on the single currency area (2008: 98%). However, this figure is also affected by the fact that, from a German perspective, major mutual funds – these are mostly subsidiaries of German banks – are domiciled in other euro-area countries (Luxembourg and Ireland). The euro-area countries also account for a considerable share of foreign bonds held by German investors (some 68%). Thus, the EMU share of German foreign investment in this, the most important securities segment in terms of market volume, has continued to rise considerably (by almost 20 percentage points) since the euro was introduced. And even in the months before the launch of the euro, German investors – expecting to make capital gains from the interest rate convergence of the then "high-interest countries" (convergence trading) – invested heavily in issues of other (at that time, potential) euro-area countries.[4] In the case of equities, by

4 See Deutsche Bundesbank, Capital flows and the exchange rate, Monthly Report, January 2002, pp 15-26.

contrast, German investors have not displayed any such markedly stronger focus on other euro-area issuers in recent years. At the end of 2008, the corresponding percentage was some 43%, ie only a little higher than in mid-1999 (40%). Especially when investing in public limited companies, which often operate worldwide, investors attach great importance to aspects such as regional origin (currency denomination) and the sector to which a company belongs. They influence the risk/return profile of an equity investment and, therefore, on possible diversification effects. Moreover, it may be noted that stock market capitalisation is especially prevalent in major economies outside the euro area (United States, United Kingdom), whereas the differential in the case of bonds outstanding is less pronounced.

German borrowers, too, attach greater importance to the euro area for raising funds abroad than they did in the early days of monetary union. This is most striking in the case of bonds. At the end of 2008, 66% of foreign-owned paper was held by investors from other euro-area partner countries – 35 percentage points more than in mid-1999. Holders of German equities who are based in other euro-area countries have increased their positions less noticeably, however, their share having risen from 26% in mid-1999 to 37% in 2008.[5]

Rise in equity stakes held in euro-area enterprises

Many direct investments had already been made in other EU countries (and, to an extent, in potential euro-area countries) during the two decades preceding monetary union. Nevertheless, the cross-border ties between enterprises within Europe were strengthened further after 1999 as well. Thus, the share of equity capital invested in the euro area by German investors had risen to 46% by the end of 2008; this was roughly 10 percentage points above the mid-1999 figure. Conversely, there were similar developments in the increase in equity capital deployed in Germany by enterprises from the rest of the euro area (2008: 60% of total holdings compared with 51% at mid-1999).[6]

Home bias as an indicator of financial market integration

Home bias down

One indicator commonly used to gauge the extent of international financial market inte-

5 The first purchaser and the holder of securities are not identical if the original purchaser – often a bank – sells the security on. If the purchaser and the holder are domiciled in different countries, the regional breakdown of the securities liabilities can no longer be reliably ascertained on the basis of the balance of payment transaction data, which supply important information when compiling the international investment position. For the years from 2001 onwards, it is possible in most cases to determine the domicile of the actual holder on the basis of the regional breakdown of German securities liabilities contained in the IMF's Coordinated Portfolio Investment Survey (CPIS), in which the Bundesbank also participates. See Deutsche Bundesbank, Regional breakdown of German securities liabilities according to the Coordinated Portfolio Investment Survey (CPIS), Monthly Report, October 2008, pp 26-27.

6 The regional classification of investments may be distorted where foreign direct investments in Germany are made through group companies domiciled in a third country acting as intermediaries. For example, if a subsidiary of a US parent company is domiciled in the euro area and holds a stake in an enterprise in Germany, the stake is shown in the international investment position as a direct investment from the euro area. The Bundesbank's direct investment statistics reveal that, at the end of 2007, roughly 40% of foreign direct investment stocks in Germany attributed to investors from other euro-area countries were held by investors whose parent company was domiciled outside the euro area. Roughly half of such direct investment and 22% of primary direct investment in Germany from the euro area was attributed to the Netherlands, with holding companies playing an important part in this context.

gration is the investor's tendency to give preference to domestic securities, ie home bias. Provided all investors have perfect information and given the absence of transaction costs, the international dispersion of securities ought to be identical in the portfolios of all countries and so correspond to the regional structure of securities outstanding worldwide.[7] The home bias indicates the extent to which foreign securities held by domestic investors are underrepresented in terms of their weight in the global portfolio. The home bias indicator normally assumes values of between 0% (the composition of the domestic portfolio matches that of the global portfolio) and 100% (only domestic securities are held).[8]

Home bias for equities and mutual fund shares as well as debt securities

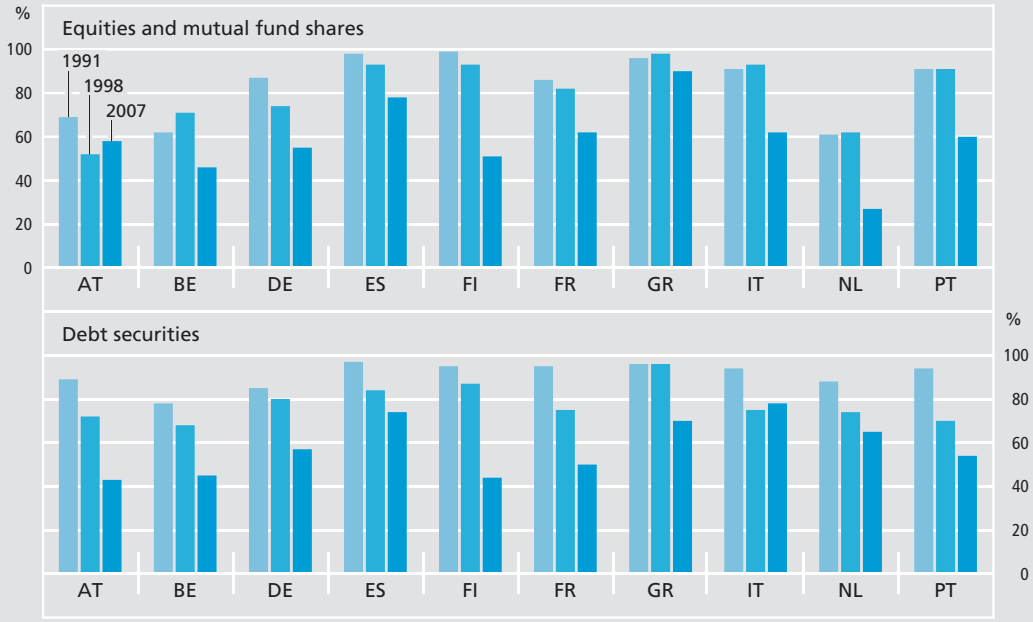
Besides securities, the home bias concept can, in principle, also be applied to other international investment positions such as direct investments or loans. At the end of 2008, portfolio investment accounted for no more than about 30% of German external assets. Direct investment accounted for 18%, and half of external assets took the form of loans and other assets. Statistical problems arise when calculating the home bias towards these assets, however, because the respective reference variables – the (book) value of all enterprises worldwide and the volume of credit outstanding worldwide – are not available. For this reason, the home bias towards securities, which is relatively easy to determine, is often used as an indicator of a given country's general financial integration into the world economy. It is a straightforward and useful procedure to differentiate according to equities and mutual fund shares on the one hand and debt securities on the other.

Home bias declines in the euro area ...

On an unweighted average of 10 euro-area countries,[9] the home bias towards equities (including mutual fund shares) slipped from 84% to 81% between 1991 and 1998, falling heavily after the euro was introduced to stand at 59% at the end of 2007. The bias towards domestic debt securities also decreased. Whereas the home bias came to 91% at end-1991, it was only 78% on the eve of the introduction of the euro and 58% at end-2007. Developments for Germany are largely in keeping with those for the other countries observed. From figures well in excess of 80% in the early 1990s, by the end of 2007 the home bias was down to 55% for equities and mutual fund shares and 57% for debt securities. With that, German home bias figures occupied a mid-table position in the group of countries as at the two reference dates.[10]

7 See B Solnik (1974), An Equilibrium Model of the International Capital Markets, Journal of Economic Theory, Vol 8, pp 500-524. The Capital Asset Pricing Model (CAPM) is based on the assumption that all investors have perfect information and that there are no transaction costs. Generally speaking, the assessments can also be applied to other assets classes, although in this case deviations from the key assumptions are even greater in reality than they are in the securities markets.
8 In special cases in which foreign securities are "overrepresented", the home bias may also take on negative values. For details on the exact calculation, see the box on p 40, footnote 5.
9 Austria, Belgium, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal and Spain. Ireland and Luxembourg are disregarded given their special role as the domicile of foreign investment companies. No meaningful data exist for the past for countries which joined the euro area after the introduction of the euro.
10 In Germany, the decrease in the home bias towards equities and mutual fund shares since the turn of the millennium has largely been due to the growing importance of investment funds domiciled abroad (see pp 36f). The decline would have been considerably less pronounced had solely direct shares been considered.

Home bias*



Sources: IWF, BIS and Bundesbank calculations. — * Underrepresentation of foreign securities in the national portfolio in relation to their share of the global portfolio.

Deutsche Bundesbank

... also vis-à-vis third countries

However, the convergence of the regional structure with the reference standard since the beginning of Stage Three of monetary union is by no means due exclusively to stronger diversification within the euro area. Taking the euro area as a whole, the propensity to hold foreign securities likewise rose noticeably between 1999 and 2007. This is true of equities and investment funds, for which the home bias slid from 76% to 49%, and of debt securities, which saw the home bias drop from 81% to 74%. This development is further evidence that, on the whole, European integration has fostered international ties among the participating countries and was not the result of, say, a withdrawal from the global capital markets.

Risk sharing in the European monetary union

Smoothing consumer paths ...

With regard to European monetary union, the question arises as to whether the above-mentioned strengthening of financial ties has also been reflected in real economic convergence and whether, besides promoting the convergence of economic development, it has contributed to the smoothing of national consumption paths.

... via private-sector channels ...

In most countries, one economic policy objective lies in balancing countervailing economic developments within the national territory. Key instruments in achieving this objective are transfer payments between government authorities and automatic stabilisation through centralised taxes and social benefits.

International consumption smoothing in the euro area

The term "international risk sharing" denotes the possibility of absorbing temporary fluctuations in individual countries' GDP through financial integration into the global economy and of limiting their impact on national consumption paths. A distinction should be drawn between this evening-out of short to medium-term fluctuations and the longer-term differences among national growth rates for value added and consumption, which can lead to structural current account deficits in countries in the midst of an economic catch-up process. In the following empirical analysis, such trends were eliminated using the Hodrick-Prescott method.[1]

The extent of international consumption smoothing within the euro area can be measured using the elasticity of the residual cyclical development of national consumption compared with the euro-area average $(C_{i,t} - \overline{C}_t)$) to the cyclical development of GDP relative to the euro-area average $(GDP_{i,t} - \overline{GDP}_t)$.[2]

The estimates are based on the period from 1991 to 2007 and encompass ten euro-area countries.[3] Statistically significant consumption smoothing exists if, in the regression equation

$$C_{i,t} - \overline{C}_t = \alpha_0 + (1 - \alpha_1)\,(GDP_{i,t} - \overline{GDP}_t) + \epsilon_{i,t}, \quad (1),$$

the coefficient α_1 is significantly positive.[4]

Parameter α_1 is indeed highly significant and shows that, on an average of the observation period, only around 60% of national fluctuations in value added were reflected in consumption changes relative to the development of consumption in the group of countries as a whole. Admittedly, this does not constitute evidence of an evening-out of income risks across countries. National mechanisms stemming from countercyclical economic policy, such as the effect of automatic stabilisers in the area of fiscal policy, and individual behavioural changes also stabilise consumption through adjustment of the aggregate saving ratio.

The second step is therefore to establish whether financial integration in Europe had a positive impact on consumption smoothing among euro-area countries. First, the introduction of the single currency in 1999 is taken as an indicator; the dummy variable *EMU* is 0 for the years from 1991 to 1998 and 1 for the subsequent years. In the modified regression equation

$$C_{i,t} - \overline{C}_t = \alpha_0 + (1 - \alpha_1 - \alpha_2 \cdot EMU_t)\,(GDP_{i,t} - \overline{GDP}_t) + \varepsilon_{i,t}, \quad (2)$$

a significantly positive value for α_2 signals that consumption smoothing within the euro area has increased since 1998. The results in the second column of the table support this hypothesis. However, the simplicity of the dummy variables means that no conclusions can be drawn regarding the underlying mechanism of risk sharing. In addition, some important elements of financial integration in Europe were not first implemented when Stage 3 of European monetary union was formally initiated but were introduced as part of an ongoing process in the preceding and subsequent years.

For this reason, the *EMU* dummy was replaced with two key indicators of international financial integration. They denote the convergence of the national securities portfolio with the composition of the global portfolio. They deviate from the ideal value, 100% (complete correspondence), by the amount of the home bias for equities and mutual fund shares (*HBE*) and for debt securities (*HBD*).[5] As non-European assets are also import-

1 Following the authors' recommendations for annual data, the smoothing parameter was set to 100. See R J Hodrick and E C Prescott, (1997), Postwar U.S. Business Cycles: An Empirical Investigation, Journal of Money, Credit and Banking, 29, pp 1-16. — **2** C and GDP denote the logarithm of the cyclical components of aggregate consumption and of GDP, respectively. Consumer spending and GDP were converted into euros at base-year (2000) value, the former using the national consumer price index and the latter using the national GDP deflator. Source: ECB. The subindex i denotes the individual country; t is a time index. — **3** Austria, Belgium, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal and Spain. — **4** The parameters were estimated using EVIEWS 6. The EGLS method with cross-section SUR weights and fixed country effects was applied. Serial correlation was removed by including an AR(1) term. The results are summarised in column 1 of the table on p 41. — **5** The home bias indicates the extent to which foreign securities are underrepresented

Deutsche Bundesbank

ant for risk diversification, equal account is taken of European and non-European foreign securities.[6] This is borne out by the fact that financial integration with non-euro-area countries has likewise risen in the course of European integration and should therefore be included in the analysis.[7] In the regression equation

$$C_{i,t} - \overline{C}_t = \alpha_0 + [1 - \alpha_1 - \alpha_3 (1 - HBE_{i,t-1}) - \alpha_4(1 - HBD_{i,t-1})] (GDP_{i,t} - \overline{GDP_t}) + \varepsilon_{i,t}, \quad (3)$$

a significant positive value for α_3 or α_4 suggests that the international diversification of the securities portfolio helps to smooth the consumption path in the individual countries.

It is shown that the home bias in the countries analysed does indeed have a significant impact on risk sharing within the euro area and that taking account of the home bias increases the explanatory power of the regression compared with the estimation using a dummy variable (column 3 of the table). However, a higher share of foreign securities in the national portfolios does not produce a stabilising effect in all categories of investment. As expected, a broader regional distribution of equity ownership seems to go hand in hand with a smoothing of investment income and the consumption path. By contrast, no statistically significant correlation can be found between the regional diversification of debt securities and the effects of fluctuations in national value added on consumption.

This result can be taken to imply that an evening-out of national income cycles across countries tends to occur to a greater extent among investment vehicles such as equities, for which returns are more cyclically sensitive. By contrast, for debt securities, which often have a fixed interest rate and, in Europe, are still dominated by government bonds (which are considered largely safe), the regional diversification of income volatility does not play a key role.

The results are consistent with other empirical analyses. For example, in Demyanyk *et al* and Sørensen *et al*, the results for the impact of equity capital diversification and credit diversification on international risk sharing also differed.[8] Although both studies found a positive correlation between the regional distribution of equity capital and consumption smoothing, the results for debt securities or loans were negative or insignificant. The cause is thought to be an insufficient number of observations (in the case of insignificant results) or an improvement in access to credit with increasing income growth and consumption growth (Demyanyk *et al*, 2008).

International consumption smoothing in the euro area

Item	(1)	(2)	(3)
α_1	0.38 (11.3)***	0.28 (5.68)***	0.35 (2.30)**
α_2	–	0.25 (3.58)***	–
α_3	–	–	0.30 (2.19)**
α_4	–	–	0.02 (0.06)
AR(1)	0.36 (5.32)***	0.34 (5.12)***	0.35 (4.82)***
Adjusted R^2	0.76	0.71	0.77
DW	1.80	1.84	1.82

t-values in brackets. ** [***] denote a significance level of 5% [1%].

in the portfolios of domestic investors in relation to their share in the global portfolio. The formula for calculating the home bias is as follows: home bias = 100% – (percentage share of foreign securities in the portfolio of domestic investors / percentage share of foreign securities in the global portfolio). A home bias of 100% means that the investors own only domestic securities; a value of 0% means that there is the same share of foreign securities in the national portfolio as in the global portfolio. — **6** The greater the convergence between business cycles within the euro area, the less suitable European foreign securities become for diversifying income risk. — **7** See p 39. — **8** See Y Demyanyk et al (2008), Risk Sharing and Portfolio Allocation in EMU, European Commission, Directorate Economic and Financial Affairs, Economic Papers 334, Brussels, and B E Sørensen et al (2007), Home Bias and International Risk Sharing: Twin Puzzles Separated at Birth, Journal of International Money and Finance, 26, pp 587-605.

There are no corresponding instruments at the European level. The redistribution instruments that do exist, such as the Structural Funds or the Cohesion Fund, aim to achieve long-term objectives of real economic convergence, but are not suitable as a means of offsetting temporary country-specific income fluctuations. This is why private-sector channels of income stabilisation play a special role. Diverging income and consumption paths may create conflicts of interest between member countries which are in different phases of the business cycle. The impact of stabilisation mechanisms on country-specific income fluctuations is therefore of great significance not least in terms of the single monetary policy within the euro area, which can only take its bearings from aggregated variables of the euro area as a whole.

... within the euro area

In the ideal case of a perfect international sharing of risk, the cyclical differentials in the growth of consumer demand between the individual countries would be wholly independent of temporary growth differentials in value added.[11] Although this is not the case in the euro area, an econometric study can show that a high degree of consumption smoothing takes place in the euro-area countries (see the box on pages 40-41). Only some 60% of short-term changes in national value added appear to be reflected in consumption level adjustments in relation to the corresponding European average.

In principle, also in the national context there is a tendency among consumers to smooth their consumption profiles over time. This may be achieved without government influence through a variation in private saving. Government institutions, too – such as the social security systems – absorb part of the income fluctuations that arise. However, there are clear indications that consumption paths have converged more quickly than economic cycles, in particular since the introduction of the euro. This would indicate that, besides national factors, financial market integration is also likely to have made a major contribution. This is not only a matter of the direct capital flows between the euro-area members. Although the pronounced financial integration among euro-area countries indicates that bilateral payment flows play an important role, the integration of the single currency area as a whole into the global economy has had a similar effect.

Risk diversification also by making national adjustments and portfolio investments in third countries ...

... notably in equities and mutual fund shares

The hypothesis that greater financial integration among the euro-area countries and with third countries plays a significant role can be verified empirically. Of particular importance in this context is the concept of home bias explained above. It is assumed that as the home bias declines, income from securities develops more uniformly, at least within one currency area, and is less dependent on special national factors. The steadying of this income component, in turn, ought to be reflected in a stabilisation of consumer demand. Indeed, evidence exists of the above-mentioned diversification effect in the case of holdings of foreign equities. By contrast, there is no statistically significant correlation between the re-

11 This definition of international risk sharing follows the seminal article by P Asdrubali et al (1996), Channels of Interstate Risk Sharing, United States 1963-1990, The Quarterly Journal of Economics, Vol 111, pp 1081-1110.

gional dispersion of debt capital and consumption smoothing within the euro area.

Diversification of risk less effective with government bonds

This finding may be taken to indicate that fluctuations in yields achievable on equity holdings can be reduced by including more international assets in the portfolio. With regard to debt securities, on the other hand, fixed-rate government bonds – which, moreover, display a low risk of default even in times of crisis – predominate. It therefore follows that international portfolio diversification aimed at smoothing investment income is largely ineffective for this asset class; nor is it necessary. What is more, in the run-up to monetary union, yield differentials between euro-area government bonds largely reflected differences in inflation and exchange rate expectations, and have converged substantially since the introduction of the euro.[12]

Financial market crisis highlights rising interdependence

Broad-based protection against vulnerability to risk

Theory and empirical evidence show that financial integration brings considerable benefits. Besides possibilities of consumption smoothing, easy access to international capital markets improves, in principle, the allocation of resources as it allows investors to invest their capital where potential returns are highest – depending, of course, on their risk appetite. Moreover, the bigger global capital market offers (potential) borrowers additional sources of funding. Yet it can also be assumed that the transmission channels of shocks will change as international financial links become closer. Whereas the significance of domestic developments will tend to decrease, macroeconomic or financial changes abroad will gain in importance. In this respect, the composition of external assets may point to a possible vulnerability. The geographical breakdown and the currency structure are relevant in that they give an idea of the regions and currencies in relation to which a national economy might be particularly vulnerable to shocks.

Structural features of German external assets

In the case of Germany, for example, cross-border capital links are concentrated on the industrial countries. In 2008, this group of countries accounted for roughly 90% of all external assets and liabilities. Given that these countries were hard hit by the current financial crisis, repercussions for German external assets were inevitable. Moreover, the banking sector (excluding the Bundesbank), as creditor and debtor for the international capital links, is a major player in this field. Monetary financial institutions (MFIs) were involved in about 49% of assets and 46% of liabilities in 2008. At the same time, however, direct exposure to exchange rate changes is limited, given the fact that only a comparatively small percentage of external assets and liabilities is denominated in a foreign currency (almost 70% of assets and just over 80% of liabilities at the end of 2008 were denominated in euro). It should also be borne in mind that Germany is a net creditor vis-à-vis the rest of the world, and that at end-2008 German net foreign assets came to €668 billion (some 27% of GDP).

12 It was only in the wake of the financial market crisis that spreads in euro-area government bond yields widened again.

Adjustments to cross-border asset positions ...

In addition to the influence of such structural patterns, it is to be expected that market players will react to this severe shock to confidence and that their reactions will entail adjustments to their external positions. It can generally be assumed that the crisis will make investors more cautious in their cross-border activities and that they will avoid especially risky financial instruments. They may also have changed their regional investment focus.

... in Germany

Indeed, recent developments in German external assets are evidence both of changes in market prices as a direct consequence of the crisis and of portfolio adjustments by internationally operating investors. At end-2008, the German international investment position showed foreign assets to be down on the year by nearly 1% (almost €38 billion) for the first time since 2002. On the liabilities side, meanwhile, there was a year-over-year decrease of 1½% (€72 billion) for the first time in over 20 years. Apart from the sale of equities, severe stock price losses, in particular, put downward pressure on asset-side and liability-side positions, whereas changes in exchange rates played only a secondary role. The MSCI index, which reflects price developments on international equity markets, plunged by 40% in the course of 2008, and the German CDAX by 44%, whilst changes in foreign exchange rates remained limited, with the euro appreciating by 2½% on average against the currencies of 21 trading partners. On balance, the equity position across all sectors fell by €167 billion (53%) on the asset side and €276 billion (49%) on the liability side compared with the end of 2007. By contrast, the global flight by investors to safe and liquid financial instruments following the collapse of Lehman Brothers drove up the volume of German government bonds held by non-residents by some €100 billion between end-2007 and end-2008. This slowed down the decline in German external liabilities considerably.

Provisional data available thus far show that in the first half of 2009, the observed trends – notably, brisk foreign demand for German government paper – continued to some extent, with short-term instruments now in particular demand (see chart on the opposite page). German enterprises and households likewise continued to give preference to foreign bonds over equities, although stock prices staged a significant recovery in the course of 2009. What is more, domestic MFIs scaled back their cross-border positions substantially as part of their general balance sheet adjustments. Overall, German external assets have rebounded slightly since the beginning of this year (+1%), whilst external liabilities have fallen again (-2%).

Crisis-induced adjustments are also reflected in the regional structure of foreign assets (for which data are only available up to end-2008, however). Whereas foreign assets and liabilities via-à-vis other euro-area countries were up in 2008 (by 3½% and slightly more than ½% respectively), there was a pronounced downward correction vis-à-vis third countries (assets by 5% and liabilities by slightly more than 4%). At first glance, the differences in asset adjustments vis-à-vis third countries and euro-area countries could be

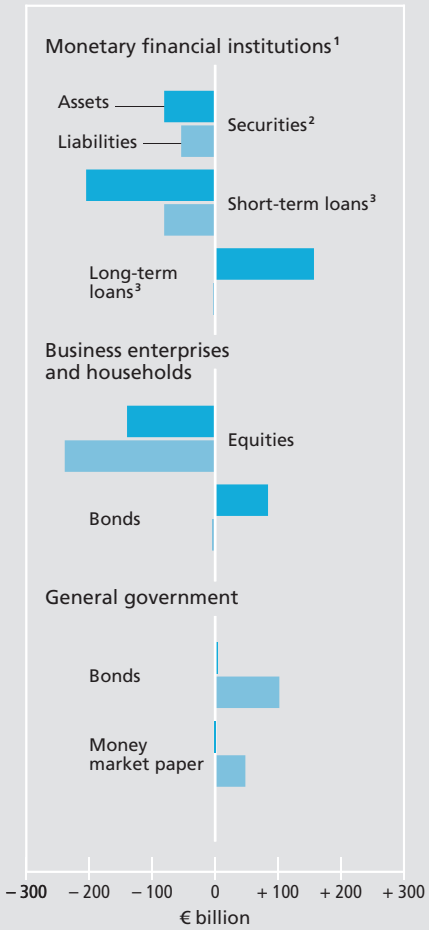
an indication that financial relations within the single currency area are more stable. Yet this is contradicted by the fact that, at the end of 2008, portfolio positions severely affected by the crisis were also reduced sharply vis-à-vis other euro-area countries. Moreover, a considerable part of the roughly 14% increase in unsecuritised lending by MFIs to euro-area borrowers was due to support measures for foreign branches.

... and in the euro area

Much as for Germany, the financial crisis has also left its mark on the euro area's external position vis-à-vis the rest of the world. Here, too, the sharp decline in asset prices associated with the financial crisis led to corrections on both the asset and liability sides in 2008.[13] The fall in the prices of equities issued in the euro area and held by non-residents was heavier than that of foreign equities and debt instruments held by euro-area investors. At the same time, non-residents upped their holdings of euro-area government bonds on balance compared with end-2007. In contrast to Germany, moreover, exchange rate changes (euro-area assets are largely denominated in a foreign currency and liabilities in euros) had a dampening effect on assets. In some cases, the valuation-related adjustments also continued in the first two quarters of 2009. At mid-2009, euro-area foreign assets were roughly 3½% (or some €482 billion) below their end-2007 figure, whilst liabilities declined by 1% (€159 billion) in the same period. Changes in cross-border assets and liabilities were partly responsible for the fact that the euro area's degree of financial openness[14] came to 315% of GDP at the end of June 2009. This was some 15 percentage points lower than at the end of 2007, when the ratio temporarily peaked at slightly more than 330%.

Change in selected positions of Germany's external assets

End-June 2009 compared with end-2007



1 Excluding Bundesbank. — **2** Equities, mutual fund shares and debt securities. — **3** Financial credits, including loans, loans against borrowers' notes, bank deposits, assets acquired through assignment, etc.

Deutsche Bundesbank

13 See European Central Bank, press release, 2 November 2009 – Euro area international investment position and its geographical breakdown (as at end-2008).
14 Expressed as a percentage, the ratio of the euro area's total external assets and liabilities to euro-area GDP.

Conclusion

The increased integration of the capital markets during the last 20 years has reinforced the interdependencies of the countries concerned. In the long term, the spreading of income risks has stabilised the development of consumption paths in the euro-area countries. Conversely, however, more intense financial integration also allows unsound economic developments that originate abroad to spread more easily to other countries via the "financial channel". Recent months have shown how, in an environment of heightened uncertainty, changes in risk appetite and perception can affect cross-border investment behaviour and lending relationships.

The necessary implications must and will be drawn from the financial crisis in terms of financial market regulation and the market players' operations. But these should not take the form of protectionist measures which may, in turn, involve high and incalculable economic costs. It is still true that cross-border investment broadens the spectrum of possible risk-return combinations for investors. This, in itself, can have a positive effect on the real economy, such as smoothing consumption and stabilising flows of income. One further lesson to be learnt from the recent financial market crisis, finally, is that the international financial markets need an improved regulatory framework in order to achieve sound and sustainable business practices in the financial sector itself.