

Private consumption in Germany since reunification

In the current economic cycle, which has now lasted for four years, private consumption has not yet really taken off. This empirical finding is exceptional, not only historically but also relatively compared with other large economies. An analysis of private consumption since German reunification shows that the unusual consumption profile in the last few years is attributable to the accumulation of a number of factors. These notably include the lingering effects of Germany's structurally sluggish economic growth and entrenched problems on the labour market. Another contributory factor was a marked deterioration of the terms of trade owing to rising imported energy prices, which placed a further strain on households' real income. Moreover, the distribution of income has shifted in favour of sections of the population that tend to save more. Furthermore, there are indications of structural changes in consumption and saving behaviour that are likely to be attributable to precautionary motives and private pension provision. Wealth effects play only a minor role in Germany. Current conditions are conducive to strengthening private consumption, especially in view of the labour market adjustments that have been made and the momentum provided by the economic upturn.

Underlying trends since 1991

*Large weight
of private
consumption*

Defined according to the final expenditure concept used in the national accounts, private consumption is the largest component of aggregate demand in Germany, accounting for more than 40%. In relation to the value of domestic economic output, that is gross domestic product (GDP), it amounts to almost 60%. Added to this is the fact that a significant share of consumer goods which households obtain for final consumption is financed by the state. This household-related consumption spending by government, which in 2006 made up almost 19% of private consumption expenditure and just under 8% of aggregate demand in Germany, includes public spending on education and health, social security as well as recreational, cultural and sporting activities. Such a wider definition of consumption in accordance with the final consumption concept used in the national accounts is particularly appropriate for analysing the supply rates of goods or making international comparisons, as the financing of health services, for example, differs from country to country.

However, the following analysis focuses on private consumption expenditure as usually defined, since this is directly based on households' own purchasing behaviour¹ and is therefore closely linked to their income and savings.²

*Marked rise
in standard
of living*

In 2006 households spent a total of €1,357 billion for consumption purposes. This is an average of €16,480 *per capita*. Between 1991 and 2006 consumption expenditure by

households rose by over 50% in total or by just under 3% per year. While the price of goods and services went up by more than one-quarter, or by an average of over 1½% per year, in this period according to the national accounts, this still leaves a marked net increase of just over 20%, or 1¼% per year, since German reunification after adjustment for price changes. The pattern of households' average consumption capital likewise shows a very favourable picture. Measured by the aggregated value of the stock of consumer durables and residential real estate per household, the possession of durable goods has improved by more than 50% since 1991. This likewise indicates that, despite a subdued consumption pattern overall, the general standard of living in Germany has improved considerably over the course of the past few years.

The rising standard of living has been accompanied by a perceptible shift in the composition of the consumption budget over time. This reflects the changes in the number and make-up of households as well as changes in relative prices and consumer preferences. It is possible that demographic trends also affect the composition of the consumer goods basket, with certain categories of goods such as health services becoming more important for older sections of the population, for example.

*Shifts in the
consumption
budget*

¹ Including non-profit institutions serving households.
² However, it should be noted that the propensity to spend is not identical with the propensity to consume. Consumer durables, such as motor vehicles, are used by consumers not only during the acquisition period but also during their entire useful life and from an economic perspective are therefore "consumed" over a longer period. As such an analysis would require deeply disaggregated data on the useful life of consumer durables, it is not possible to address this issue further here.

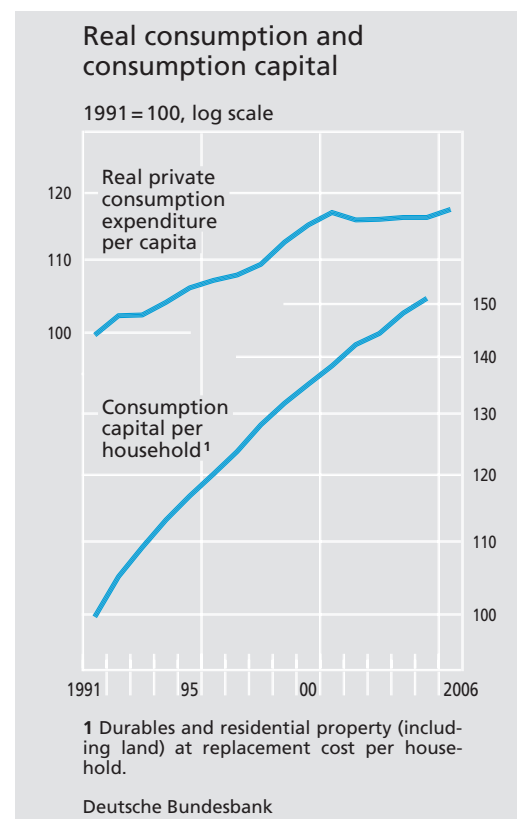
However, several studies have concluded that the structural shifts in consumption expenditure are attributable to purely demographic reasons to a very limited extent only and that these are greatly outweighed by changing preferences and general income growth.³ At the same time, the share of consumption expenditure, which in the short term is not very elastic and therefore cannot be adjusted easily to changes in income, has tended to grow since German reunification.

*Growing share
for housing
and ...*

Households' expenditure on housing (including ancillary housing costs) has increased disproportionately. Both the share of rent payments (including imputed expenditure for owner-occupied housing) and the share of ancillary housing costs, which comprise water supply, electricity and heating charges, have increased in relation to total consumption expenditure. In 2006 almost one-quarter of household expenditure went on housing, compared with just under one-fifth in 1991. This development is attributable, firstly, to an above-average increase in housing-related costs, driven especially by the sharp rise in ancillary housing costs. But it is doubtless partly due in addition to the fact that the number of households in Germany – and subsequently also the average *per capita* living space – has increased significantly.

*... certain
services ...*

The share of consumption expenditure spent on other purposes, such as healthcare, personal care, education as well as insurance and financial services, has also expanded noticeably. Last year it amounted to 17½% of consumption expenditure, which was almost 3 percentage points more than 15 years pre-

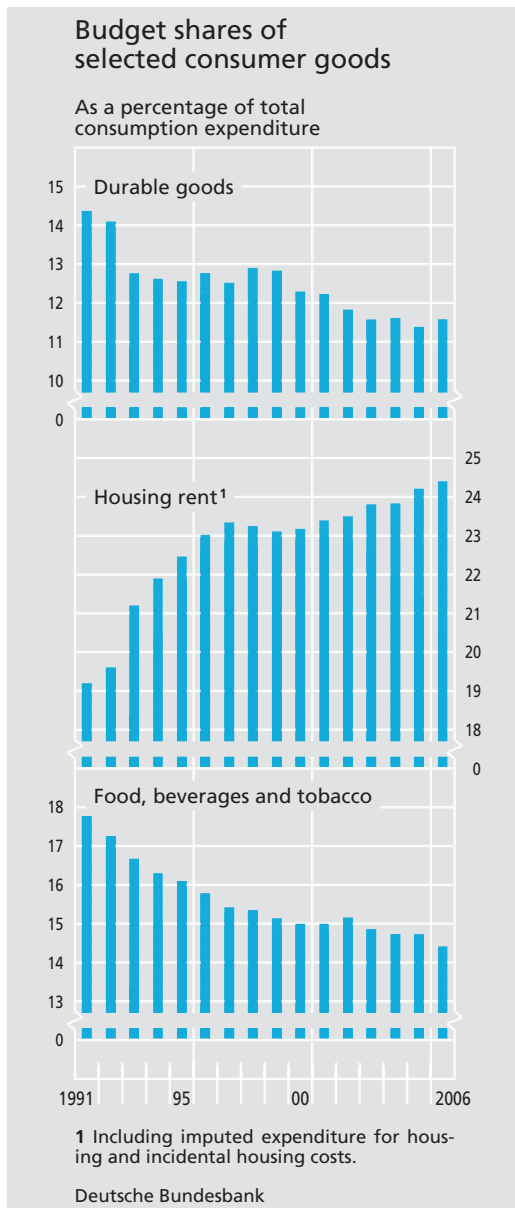


viously. This was driven not so much by the relative price factor as by the growing need or increased awareness of the need for private provision and investment in these areas.

The tendency observed over a prolonged period in western Germany towards an ever smaller share of domestic consumption expenditure by households on food, drink and tobacco has continued since German reunification. In 2006 this figure amounted to 14½%, compared with 17¾% in 1991 and 24½% in 1970. The expenditure share for clothing and shoes also decreased – from 8%

*... but
decreasing
weight of food,
clothing and
furniture*

³ See H Lehmann, *Demographie und Konsumstruktur in Deutschland – eine Entwicklungsanalyse bis 2050* –, *Wirtschaft im Wandel*, 16/2004, pp 471-477 (only available in German) as well as H Buslei and E Schultz (2007), *Wachsende Bedeutung der Haushalte Älterer für die Konsumnachfrage bis 2050*, *DIW-Wochenbericht*, 74, No 23, pp 361-366 (only available in German).



in 1991 to 5¼% in 2006. This is probably partly due to the fact that the prices of these products have increased fairly moderately overall since reunification and that since 2002 the prices of clothing and shoes have actually tended to fall. Furthermore, the expenditure share for furniture and household appliances has decreased by 1½ percentage points since 1991 and, at last count, amounted to 7%.⁴ By contrast, the budget shares for transport,

storage and communication (over 16%), recreational, cultural and sporting services (9½%) as well as hotel and restaurant services (5½%) have remained relatively constant since 1991.

Private consumption and macroeconomic situation

The cyclical pattern of real private consumption expenditure is closely related to the growth of real GDP. At the same time, the sensitivity of these two variables to cyclical fluctuations has tended to decline in a long-term view. Looking at the period from 1970 to 2006, neither GDP nor private consumption had a clear lead on the other. The cyclical dynamics of macroeconomic activity and consumption are therefore marked by a high comovement. However, there have repeatedly been phases in which the one variable was ahead of the other. For example, the downswing of private consumption towards the middle of the 1970s in the wake of the first oil price shock preceded that of GDP, as did the ensuing recovery. Conversely, macroeconomic activity led the expansion of private consumption both in the late 1980s and in the mid-1990s. The current phase of robust economic expansion has likewise not yet

Generally close link to economic growth

⁴ As goods for these three purposes are generally purchased in high-street shops, it is not surprising that the retail trade's role as an intermediary has become less important for private consumption expenditure. Thus whereas in 1991 36½% of domestic nominal private consumption expenditure was allocated to the retail trade sector (excluding the sale of motor vehicles and automotive fuel), 15 years later this figure amounted to only 30½%.

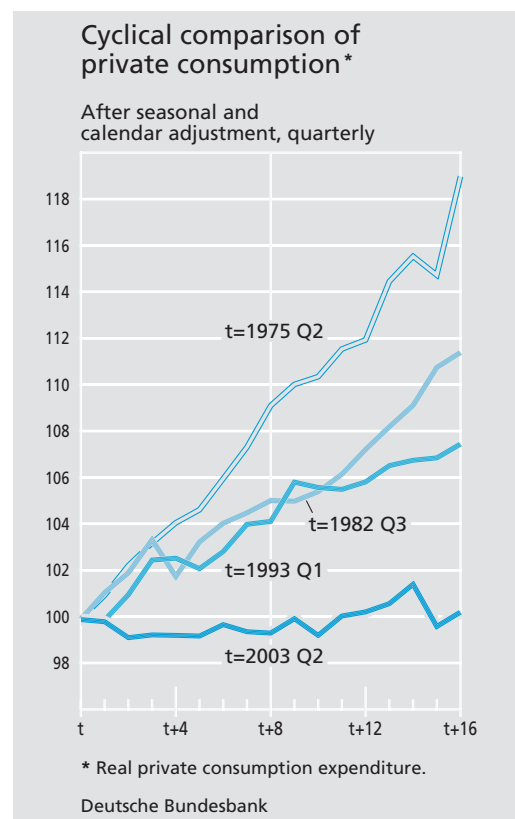
*Atypical
behaviour in
current cycle*

been followed by a corresponding increase in private consumption.

Nevertheless, the fact that private consumption has still not really taken off even four years after the current economic recovery in Germany began is very unusual. In the first four years of the last three upturns, real private consumption expenditure in Germany increased at roughly the same pace as real GDP. Taking that as a benchmark, real consumption spending should have increased at an average annual rate of approximately 2% since the middle of 2003 instead of largely stagnating. While the rise in VAT at the beginning of 2007, which was announced at the end of 2005, along with other factors has played a role, this empirical finding is atypical also when compared with recent developments in other large economies. In contrast to Germany, private consumption in many advanced industrial economies currently experiencing an upswing has actually made a large contribution to economic growth.⁵ This is true for Anglo-Saxon countries, such as the USA, Canada and the United Kingdom, as well as for many euro-area countries. In Germany, by contrast, the current upswing is being driven largely by exports and investment, whereas consumption has generated little stimulus for growth so far.

The role of income and the labour market

Apart from the wealth position, the income stream generated over the household's life-cycle determines its consumption options. In

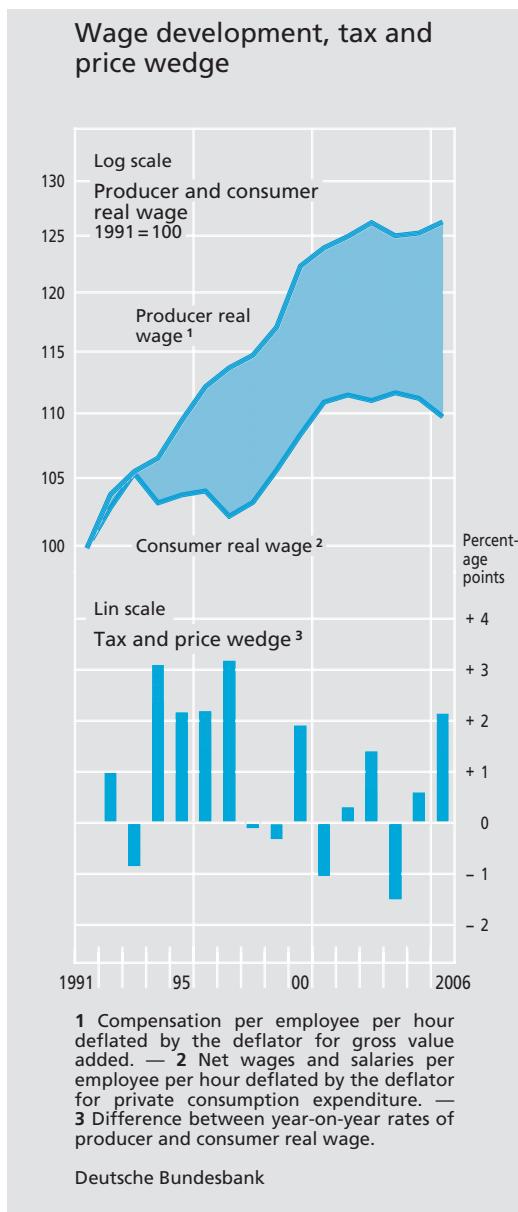


particular, the amount, type and quality of employment as well as the duration of the period of employment are decisive factors in determining the standard of living during working life and in retirement. For a given income path, foregoing consumption today means greater consumption possibilities in the future. From such a microeconomic perspective, saving can ultimately be interpreted theoretically as expenditure on future consumption.

*Income stream
determines
consumption
options over
the life-cycle*

However, postponing consumption to a future date is usually advantageous only if foregoing consumption, and the corresponding utility which it incorporates, today is likely to yield comparatively high returns in the future

⁵ See Bank for International Settlements (2007), 77th Annual Report, in particular pp 23-31.



or if the preference for current consumption is low. But realistically speaking, a pronounced preference for consumption today may be taken as the norm. Moreover, the real interest rate (after taxes), which has a negative effect on current consumption, was by no means high or tending to rise during the period under review.

The persistently weak level of consumption does not indicate sub-optimal intertemporal consumption planning but rather stems from a flattening of the macroeconomic income path, which started in the 1990s and over time has placed an increasing strain on consumption options. Between 1995 and 2006 the disposable income of all domestic sectors, which forms the basis for macroeconomic consumption and saving decisions, grew by only 1½% per year in price-adjusted terms. The share attributable to households increased by a mere 1% on an annual average. This finding cannot be explained by macroeconomic disturbances alone. The analysis needs to focus on underemployment, which has been at a high level in Germany for a long time now and which may also be seen as a clear indication of deep-seated functional disruptions on the labour market.⁶

This has been compounded since the early 1990s by the fact that competition from emerging economies and transition countries has intensified rapidly and that German enterprises have increasingly found themselves confronted with the challenge of meeting the rate of return on fixed assets required by the global market.⁷ Decisive countermeasures were a long time coming, as was the realisation that flexible labour markets themselves generate positive stimuli for the economy.

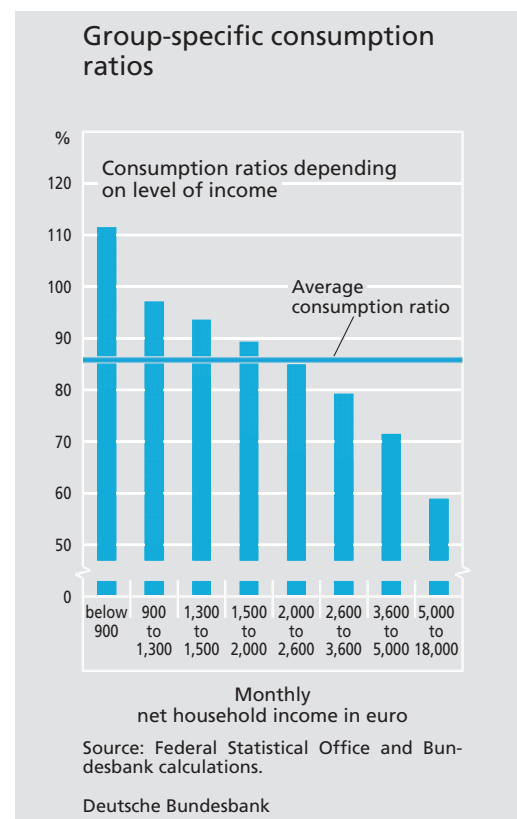
⁶ For more details, see Deutsche Bundesbank, Greater flexibility on the German labour market, Monthly Report, September 2004, pp 43-57 and Deutsche Bundesbank, The labour market in Germany: general developments seen in an international context, Monthly Report, January 2007, pp 31-51.

⁷ See Deutsche Bundesbank, Investment activity in Germany under the influence of technological change and competition among production locations, Monthly Report, January 2007, pp 17-30.

The wage policy adjustments which were finally introduced, along with the reorientation of labour market policy and social policy, *per se* initially restricted working households' scope for expenditure. However, the accusation that the moderate wage policy has, if not caused, then at least amplified the dull consumption demand is short-sighted because a continuation of the wage and economic policy *status quo* would ultimately have merely aggravated the problems. Furthermore, in an environment of manifest cost and competitiveness problems in the corporate sector, higher negotiated wages would probably have been quickly cancelled out by a widening of the negative wage drift. Moreover, wage policy restraint does not mean that households will have their consumption purchasing power cut by the same amount as they are likely to obtain a *partial quid pro quo* in the form of distributed property income⁸ and the overall level of income should also increase due to sharper growth in investment and employment.

Employment
and
consumption
dynamics

This is also suggested by the fact that of the two components of the wage sum, employment dynamics appear to be more important for the development of consumption than the increase in average earnings. The weakness in consumption between 2002 and 2005 coincided with a decline in the number of employees by a total of 800,000. The first signs of a recovery of private consumption in 2006 then came amid an improvement in the labour market situation and in spite of a slight decline in average net earnings, even if some of the higher consumption expenditure was



doubtless due to anticipatory purchases ahead of the rise in VAT.

Another significant constraint on consumer demand was that the subdued development of producer real wages, which are of particular importance for labour demand, was accompanied by even smaller growth in consumer real wages. The associated tax and price wedge, which comprises employee and employer social insurance contributions, direct and indirect taxation of working households, and the divergent development of domestic enterprises' net sales prices and consumer prices, hampered the revival of private consumption.

Tax and price
wedge

⁸ However, possible differences in the consumption ratios for wages and investment income could have differential effects on private consumption.

Indicators of personal income distribution in Germany *

Year	Gini coefficients based on ...	
	... market income	... net income
1991	0.426	0.273
1994	0.447	0.278
1997	0.455	0.264
2000	0.461	0.268
2002	0.475	0.283
2004	0.489	0.291

Source: German Council of Economic Experts (2006), Annual Report 2006/2007, p 433 (complete report available in German only). — * Calculations based on the Socio-Economic Panel. Equivalence-weighted using the modified OECD scale.

Deutsche Bundesbank

Consumer price
inflation

While, at an average annual rate of 1.6%, the deflator for private consumption expenditure increased only slightly more than the GDP deflator between 1991 and 2003, the difference amounted to more than ½ percentage point each year from 2004 to 2006. The main reason for this divergent development was the clear deterioration in the terms of trade that was observed during this period, which in turn was predominantly due to the sharp increase in oil prices which, in euro terms, more than doubled between 2003 and 2006. The constraints on private consumption resulting from indirect taxes has also increased. Since 1999 this has been higher than the average from the beginning of the 1990s. The share of indirect taxes in total expenditure increased again considerably owing to the tobacco tax increases in 2002 and

2003. Following a slight decrease to 14½% in 2006, this share is estimated to have risen further by around ½ percentage points following the VAT hike at the start of this year. With regard to the direct burden of taxes and social contributions, higher social security contributions were more than offset by the second and third stage of the tax reform between 2001 and 2005.

The level of the average consumption ratio or saving ratio simultaneously reflects the personal income distribution of households. Households with higher income tend to spend a smaller portion on consumption. The results of the Federal Statistical Office's income and expenditure survey, which is conducted every five years, show this clearly for 1998 and 2003.⁹ According to this survey, the consumption ratio in the lower income categories in 2003 was around 100% while the upper income brackets used less than three-quarters of their income for consumption purposes. Compared with 1998 there were hardly any changes in the group-specific consumption ratios. However, there is evidence that the distribution of income among households has become more unequal since the early 1990s.¹⁰ Thus the Gini coefficient,

*Shifts in the
distribution
of income*

⁹ See Federal Statistical Office (2001), Einkommens- und Verbrauchsstichprobe 1998, Einnahmen und Ausgaben privater Haushalte, Fachserie 15, Heft 4; Federal Statistical Office (2006), Einkommens- und Verbrauchsstichprobe 2003, Einnahmen und Ausgaben privater Haushalte, Fachserie 15, Heft 4 (in German only).

¹⁰ This is shown both by the results of the income and consumption survey as well as the analyses on the basis of the German Socio-Economic Panel (SOEP). For information on the latter, see German Council of Economic Experts (2006), Entwicklung der personellen Einkommensverteilung in Deutschland, in: Widerstreitende Interessen – Ungenutzte Chancen (Conflicting Interests, Missed Opportunities), Annual Report 2006/2007, pp 428-447 (complete report available in German only).

which is a measure of the inequality of income distribution, was higher in 2004 than in the first half of the 1990s both on the basis of market income and on the basis of net income.¹¹

This situation probably did not change much in 2005 and 2006. This is also suggested by the fact that mixed income and net property income rose by a greater amount than labour income and social transfers received. Calculations made using data from the income and consumption survey and the Socio-Economic Panel (SOEP) indicate that changes in the distribution of income led to an increase of at least 0.3 percentage point in the saving ratio between 2000 and 2004.¹²

Influences on the saving ratio: precautionary motive and private pension provision

*Consumption
smoothing in
the income
cycle*

Some of households' greater aggregate propensity to save may thus be attributed to the shifts in income distribution mentioned above. However, this can by no means explain the increase of 1.3 percentage points observed from 2000 to 2005. This means that other factors must have been in play. In past phases of subdued macroeconomic activity, for example, households tended to reduce the amount of their income that they saved to compensate for the weaker income trend. Theoretical considerations also support such patterns of behaviour. Instead of adjusting the customary level of consumption to the cyclical fluctuations in income, it would be better to save less in periods of low in-

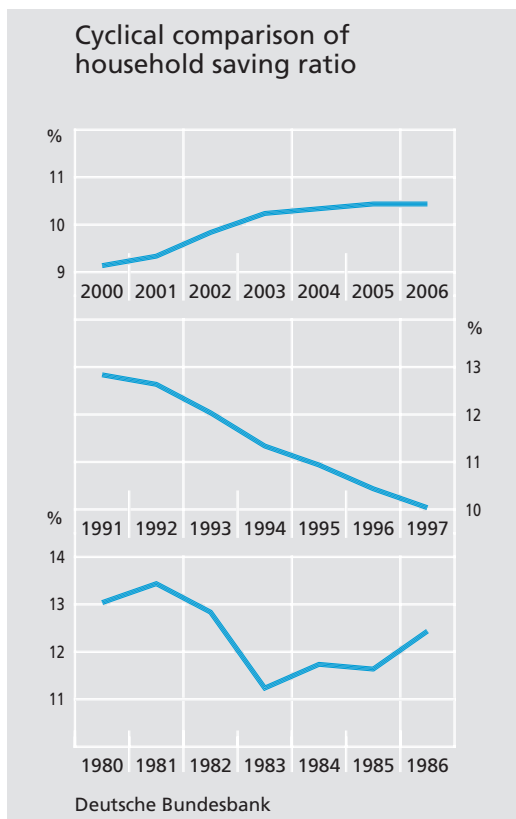
come growth so as to be able to correspondingly increase the amount saved during the ensuing economic upturn. A saving ratio based on that behaviour smoothes consumption and has an anti-cyclical effect.

The procyclical effect observed in the first half of this decade indicates that many households decided that the level of their financial assets was structurally inadequate. There may be various different reasons for this. Against the backdrop of demographic changes and lower growth expectations, households have become more acutely aware of the strains on the public social security systems and the need for private pension provision. From an individual's point of view, permanent corrections to current pension entitlements mean a lower present value of expected future transfer payments and therefore an (anticipated) wealth loss. Given a fairly fixed level of income from employment, the restrictions on private consumption in the retirement phase which result from this can be smoothed out only by shifting the timing of consumption (which is generally beneficial for the parties concerned). The vehicle available for this purpose is (additional) saving at the expense of current consumption. The state, too, has been increasingly promoting private pension provision in the form of the subsidised "Rie-

*Demographic
strains and
saving*

¹¹ See German Council of Economic Experts (2006). The Gini coefficient is a measure of concentration that is based on the Lorenz curve, which describes income distribution. Its value is normalised between 0 and 1. The more unequal the distribution of income, the larger the value of the Gini coefficient.

¹² See Arbeitsgemeinschaft deutscher wirtschaftswissenschaftlicher Forschungsinstitute, Die Lage der Weltwirtschaft und der deutschen Wirtschaft im Frühjahr 2006. Wochenbericht des DIW (German Institute for Economic Research), No 18/2006 (available in German only).



ster pension” since 2002. In addition to the adjustment to the expected level of retirement income, a higher expected level of expenditure, for example for healthcare costs to be paid directly by households, is likely to have played a part in this. Both reasons for increased saving reflect increased precautionary motives.

The objective of achieving a higher ratio of households’ financial assets to their income requires a permanently higher saving ratio but not a permanent increase in the saving ratio. Past experience has shown, however, that such an adjustment does not happen abruptly but over several periods, so that the saving ratio may increase for some time depending on the size of the wealth gap and

Permanently higher saving ratio

the propensity to smooth the consumption profile.

Moreover, the constitution of the labour market, which has been weak for some years now and in some respects has shown signs of worsening, together with widespread uncertainty about the effects of the labour market reforms have led to a situation in which much intended consumption entailing major purchases is being at least postponed in order to increase current financial flexibility and ensure sufficient “rainy day” reserves (see also the box on page 51). As the economic upturn has meanwhile had an uplifting effect right across the labour market, this saving motive may become less significant, which would boost private consumption expenditure. However, precautionary saving will remain important in the future, meaning that a sharp decline in the saving ratio is unlikely.

Greater importance of precautionary saving

Wealth effects on private consumption

In addition to saving or dissaving, the level of wealth can be influenced by valuation changes. To the extent that households did not anticipate changes in asset prices and thus did not take account of them when making their consumption decisions, sizeable movements in asset markets that are considered to be lasting can also trigger reactions in consumption and saving behaviour. Following sharp share price gains in the second half of the 1990s, stock prices plummeted at the beginning of this decade. This resulted in valuation-related losses in households’ financial assets between 2000 and 2002 of over

Potential negative valuation effects ...

Precautionary saving and income uncertainty of households in Germany

In spite of a generally weak development of income, the saving ratio of households in Germany rose from 9.2% to 10.5% between 2000 and 2005. This phenomenon has already been pointed out earlier.¹ In addition to a presumably greater awareness of the need for stronger private pension provision and shifts in the distribution of income, greater caution in connection with the difficult overall situation in the years 2000 to 2005 may also have played a role. The following analysis shows that precautionary saving by households in Germany driven by income uncertainty is important for explaining their consumption and saving behaviour.²

The estimation approach used here is adopted from Carroll and Samwick (1998).³ It is based on the buffer-stock model of saving. In this model, it is assumed that a household targets a specific ratio between wealth and permanent (labour) income.⁴ An occurring shock that brings about a wealth gap prompts a saving phase. Above the targeted wealth-income ratio the preference for current consumption predominates, with the result that the household reduces its wealth.⁵ Carroll and Samwick (1998) show that the buffer-stock model predicts an almost linear relationship between the targeted wealth-income ratio and measures of future income uncertainty. The use of additional control variables results in the following estimation approach:

$$\log(W_i) = \alpha_0 + \alpha_1 \omega_i + \alpha_2 \log(P_i) + \alpha_3 Z_i + \alpha_4 \xi_i + \nu_i$$

In this formula, W stands for wealth, ω is a measure of future income uncertainty, P denotes permanent labour income, Z demographic control variables representing other saving motives, ξ is a measure of risk aversion and ν an error term. The index i represents the household i . The variables Z and ξ relate to the head of the household, ie the person with the highest individual labour income in the household. Precautionary saving implies a positive relationship between W and ω , ie a significantly positive coefficient α_1 .

Data of the Socio-Economic Panel (SOEP) of the German Institute for Economic Research (DIW) are used for the estimation. The cross-section regression relates to the year 2002, since this is the only year – apart from 1988 – for which wealth data were collected. The

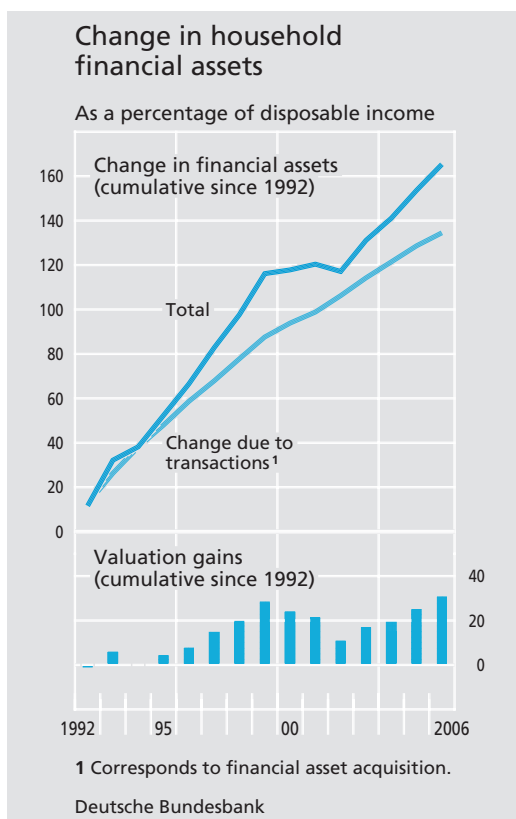
sample used consists of about 1,500 households. Two alternative definitions are chosen for wealth W : first, net financial assets (defined as financial assets less consumer loans) and second, the sum of net financial assets and net real estate assets (real estate assets less mortgages and building loans). For income uncertainty ω , five measures known from the literature are used alternatively in order to be able to estimate the robustness of the results.⁶ All these measures are calculated separately for each individual household from the trend-adjusted total net household income (including transfers but excluding investment income) of the years 1998 to 2002. Permanent labour income P is approximated as a weighted average of the net household income (including transfers and excluding investment income) of the years 1998 to 2001. In order to obtain consistent coefficient estimators, the specified equation is estimated using instrumental variables. As a measure of risk aversion ξ (of the head of the household), risk propensity with reference to financial assets is selected, which was collected in the SOEP for the first time in the 2004 individual question form.

The estimations show that a statistical significance of precautionary saving (significantly positive coefficient α_1) can be demonstrated only for net financial assets. The sum of net financial assets and net real estate assets, by contrast, apparently does not serve as a buffer against negative income shocks for households. This is probably due to the low liquidity level of real estate assets.

In order to determine the share of the stock of (net financial) assets that is attributable to the precautionary motive, the uncertainty measure for all households is set to the smallest value and the corresponding asset total is calculated. The difference between the assets actually held and this benchmark yields that part of the assets that can be attributed to a higher income uncertainty. Depending on the measure that is used for income uncertainty, the share of precautionary wealth is somewhere between 15% and 27%. The stock of net financial assets of German households built up owing to the precautionary motive is thus (for the sample used here) not only statistically significant but also quantitatively important.

1 See Deutsche Bundesbank, Investment and financing in 2004, Monthly Report, June 2005, p 15. — 2 For a detailed presentation, see N Bartzsch, Precautionary saving and income uncertainty in Germany – new evidence from micro-data, Deutsche Bundesbank Research Centre, Discussion paper, Series 1, No 44/2006. — 3 See C Carroll and A Samwick (1998), How important is precautionary saving?, The Review of Economics and Statistics, vol 80, pp 410-419. — 4 Permanent income is the consumption level that an economic agent could maintain for life in view of his

current wealth level and the present value of his current and expected future income. — 5 See C Carroll (1997), Buffer-stock saving and the life-cycle/permanent income hypothesis, The Quarterly Journal of Economics, vol 112, pp 1-55. — 6 The variance of income, the variance of logarithmic income, the logarithmic variance of income and the logarithmic variance of logarithmic income. A further measure is the scaled squared difference between the income of 2002 and 1998.



€200 billion, or around one-seventh of households' annual disposable income. In these three years, a total of around three-fifths of financial savings was dissipated.¹³ The downward revision of share prices has therefore been repeatedly adduced as a significant reason for the prolonged weakness of consumer demand.

Households' total financial assets – with the exception of 2002 – increased steadily from around double their annual disposable income in 1991 to three times as much at last count. Net financial assets after deduction of liabilities also increased sharply since 1991 and, at the end of the period under review, were almost twice as high as annual disposable income. However, the distribution of net financial assets has become less even.¹⁴ The

share price adjustments at the beginning of this decade may have contributed to a certain general wariness among consumers. However, the losses were more than offset subsequently by valuation-related gains, which should have triggered countervailing reactions with regard to private consumption.

Real estate prices, which have been declining or stagnating since 2002, are likewise often cited as being a cause of the recent lacklustre consumption trend in Germany. In contrast to the development in Germany, real estate prices in almost all other western economies have risen sharply in the last few years. Although there are no official data available in Germany on the value of real estate held by households, it is estimated that real estate accounts for approximately two-thirds of households' total wealth, which is made up of net financial assets and real estate. Changes in real estate prices could therefore have a more significant effect on total wealth than stock price movements.

On the other hand, a salient feature of real estate is that it is a less liquid type of asset than, say, securities. The relatively high transaction costs, among other things, act as a counterweight to the propensity to realise changes in the value of real estate assets. Moreover, for transactions within the household sector this is a zero-sum game. Insofar

Effects of changing real estate prices

... but steady increase in financial assets

¹³ A detailed account of the investment and financing of the individual sectors is given each year in the Deutsche Bundesbank's June edition of the Monthly Report.

¹⁴ See A Ammermüller, A M Weber and P Westerheide (2005), Die Entwicklung und Verteilung des Vermögens privater Haushalte unter besonderer Berücksichtigung des Produktivvermögens, Centre for European Economic Research, Mannheim (available in German only).

as real estate prices increase owing to the expectation of higher returns in the form of future rising rent income, this is offset by the expectation of higher expenditure by the tenants or higher imputed costs for the owners, so that in this case, too, households' net wealth position will have hardly changed at all.¹⁵ It should also be noted that historically the use of increased real estate values to secure additional loans to consumers has played a rather minor role in Germany. In general, this means that the macroeconomic wealth effects of a valuation-related increase in real estate assets is likely to be modest.¹⁶

*Wealth effect
of private
consumption*

Nevertheless, empirical studies on the relationship between consumption, income and wealth are usually based on households' total wealth, which comprises net financial assets and real estate assets. Owing to the large share of real estate, the development of households' total wealth in Germany has been very stable. The use of different methods, divergent estimation periods and, not least, a lack of internationally comparable data on households' total wealth hampers the assessment of a potential wealth effect on private consumption in Germany.¹⁷ Calculations based on simple single equations point to an internationally comparable increase in consumption expenditure in the long term of 4 to 5 cent per euro of asset growth (see the box on page 54). However, these results should be interpreted with the necessary caution, not least because changes in asset prices are often only transient and mostly perceived as such. Studies of the dynamic relationship between consumption, income and wealth tend to indicate instead

that real private consumption expenditure in Germany is predominantly dependent on the development of price-adjusted disposable income and that changes in net worth are of lesser importance.

Outlook for private consumption

The conditions for a revival of private consumption are currently very favourable. Firstly, the high degree of price stability is boosting households' real income, so that private consumption is likely to strengthen during the further course of the economic upturn, even though the sharp VAT rise at the beginning of the year will continue to have a certain dampening effect for a time. Secondly, the recovery of the labour market, which has been significantly fostered by the reform measures of the last few years, may be expected to generate positive stimuli. This means that income perspectives have improved considerably. Moreover, the risk of employees losing their job has decreased greatly. The caution exercised in consumption and saving as a result of job uncertainty should therefore diminish for many working households. As a result, the propensity to save for precautionary reasons may well decrease, which should prompt households now to realise much of their pent-up consumption demand. This is also

*Currently
favourable
conditions for
more buoyant
private
consumption ...*

¹⁵ A demand effect could arise only for group-specific consumption ratios.

¹⁶ See W White (2006), Measured wealth, real wealth and the illusion of saving, Keynote speech at the Irving Fisher Committee Conference on "Measuring the financial position of the household sector", Basel, 30-31 August 2006.

¹⁷ See V Labhard, G Sterne, C Young (2005), Wealth and consumption: an assessment of the international evidence, Bank of England Working Paper No 275.

Econometric estimations of the link between consumption, income and wealth in Germany

Given households' intertemporal budget constraint, a long-run relationship may be theoretically postulated between private consumption expenditure and households' income and wealth.¹ A stable long-run equilibrium relationship between the time series for private consumption, disposable income and a wealth variable comprising net financial assets and real estate assets can also be confirmed empirically for households. For the selected study period beginning in the first quarter of 1980 and ending in the fourth quarter of 2003, the estimation based on a vector error correction model produced the following result for the long-run relationship.²

$$\ln c_t = 0.74 \cdot \ln y_t + 0.31 \cdot \ln a_t + 0.05 \cdot DWU_t + \epsilon_t.$$

In the formula c denotes private consumption expenditure. In order to approximate "non-observable consumption" according to the utility concept, the definition of consumption spending used for this estimation excluded expenditure on clothing, shoes, and domestic furniture and appliances.³ y represents households' disposable income and a households' wealth. All three variables are price-adjusted using the deflator for private consumption expenditure, calculated *per capita* and are used in the estimation in logarithmic form. DWU is a dummy variable which describes the level jump in the time series from the first quarter of 1991 caused by German reunification. All coefficients of the long-run relationship have the expected positive sign and are significant. The residual ϵ captures deviations of the variables from their long-run equilibrium.

If and to the extent that changes in wealth are permanent, wealth effects on consumption can be calculated from the coefficients of the aforementioned long-run relationship. Each coefficient describes the elasticity of consumption with respect to the particular influencing variable. The product of the wealth coefficient and the consumption/wealth ratio (an average for the estimation period calculated using annual values) yields a marginal propensity to consume of around 4½ cent per euro of extra wealth per year.

1 See M Lettau, S Ludvigson (2001), Consumption, Aggregate Wealth and Expected Stock Returns, *Journal of Finance*, 56, pp 815-849; M Lettau, S Ludvigson (2004), Understanding Trend and Cycle in Asset Values: Reevaluating the Wealth Effect on Consumption, *American Economic Review*, 94, pp 276-299. — 2 See B Hamburg, J Keller und M Hoffmann, Consumption, wealth and business cycles: why is Germany different?, Deutsche Bundesbank Research Centre, Discussion Paper, Series 1, No. 16/2005. To be released shortly in revised form with the title "Consumption, wealth and business cycles in Germany" in

The derivation of potential wealth effects from the estimated long-run relationship alone is, however, misleading if the dynamic relationships between consumption, income and wealth are not taken into account. The adjustment coefficients ec_{t-1} of the error correction mechanisms for the equilibrium relationship described are shown in the table.

Coefficient	Equation 4		
	$\Delta \ln c_t$	$\Delta \ln a_t$	$\Delta \ln y_t$
ec_{t-1}	0.034 (0.323)	0.112 (1.480)	0.394 (4.432)

In the three equations of the vector error correction model only the adjustment coefficient in the income equation turns out to be significant. This indicates that, above all, income counters deviations from the long-run equilibrium. By contrast, consumption and wealth make little or no contribution to the error correction mechanism. The result is underpinned by a variance decomposition of the three variables which indicates that deviations in consumption, income and wealth from their long-run equilibrium are due primarily to transitory shocks in the income variable.

The empirical results for Germany differ from those obtained for various Anglo-Saxon countries.⁵ There wealth and particularly asset prices play a much more important role in the reversion of the relationship between consumption, income and wealth to its long-run equilibrium. For Germany, however, the results support the hypothesis that it is less likely that a current consumption level perceived as being low will be subsequently offset by above-average growth in consumption or below-average growth in wealth. The moderate growth path of private consumption spending should, rather, be interpreted as signalling expectations of restrained income growth in the future.

Empirical Economics, available there already under ONLINE FIRST. — 3 Estimations which are based instead on total private consumption expenditure produce similar results. — 4 t-values in brackets. — 5 See eg M Lettau and S Ludvigson (2001, 2004) loc cit.; E Fernandez-Corugedo, P Simon and A Blake (2007), The dynamics of aggregate UK consumers' non-durables expenditure, *Economic Modelling*, 24, pp 453-469; A Tan and G Voss (2003), Consumption and Wealth in Australia, *Economic Record*, 79, pp 39-56.

consistent with the increasingly more positive economic expectations of households according to the surveys conducted by the Gesellschaft für Konsumforschung (GfK). A further contributory factor is that after years of wage restraint, which was necessary to restore market-related wages and competitiveness, employees are this year participating in the macroeconomic gains to a greater extent.

... but no sharp growth in consumption in the longer run

In the longer term, the strains on the social security systems resulting from demographic developments and the associated increased recognition of the need for stronger private pension provision will continue to influence consumption and saving behaviour.¹⁸ Thus,

despite the expected lower propensity to save for precautionary reasons, the saving ratio of households is not expected to decrease sharply. While the outlook for the further development of private consumption expenditure is quite favourable, consumption is unlikely to grow sharply given the macroeconomic challenges which go hand in hand with the demographic change in Germany in the longer term. Even so, timely and forward-looking reforms could increase households' planning certainty and have a positive influence on consumption propensity.

¹⁸ See Deutsche Bundesbank, Saving behaviour in an ageing economy, Monthly Report, December 2004, p 23.