

Annual Report 1999



*Innovations for People*

Bayer Annual Report 1999

**Bayer**



## Bayer Key Data

<b>Bayer Group</b>		<b>1999</b>	<b>1998</b>	<b>Change in %</b>
Sales	€ million	<b>27,320</b>	28,062	– 2.6
Operating result	€ million	<b>3,357</b>	3,155	+ 6.4
Income before income taxes	€ million	<b>2,836</b>	2,728	+ 4.0
Net income	€ million	<b>2,002</b>	1,614	+ 24.0
Gross cash flow	€ million	<b>3,252</b>	3,394	– 4.2
Stockholders' equity	€ million	<b>15,182</b>	12,779	+ 18.8
Total assets	€ million	<b>31,279</b>	29,377	+ 6.5
Capital expenditures	€ million	<b>2,632</b>	2,703	– 2.6
Employees	at year end	<b>120,400</b>	145,100	– 17.0
Personnel expenses	€ million	<b>7,549</b>	8,106	– 6.9
Research and development expenses	€ million	<b>2,252</b>	2,045	+ 10.1

<b>Bayer AG</b>		<b>1999</b>	<b>1998</b>	<b>Change in %</b>
Total dividend payment	€ million	<b>949</b>	747	+ 27.0
Dividend per share	€	<b>1.30</b>	1.02	+ 27.5
Tax credit	€	<b>0.08</b>	0.33	– 75.8

## Cover Picture

Annual Report 1999

*Innovations for People*

**Sales, profits, forecasts – behind the sober figures of this Annual Report are people from all parts of the world who have contributed to the performance of our company: employees, business partners, customers.**

**A few of these people are introduced in the brief illustrated statements that appear on the following pages.**



**Some are scientists working for external partners who help us to develop innovative products or research new medicines, and some are customers who benefit from the work of our researchers – customers for whom Bayer products have become an important part of everyday life.**

**The pictures from Mexico, Russia, China, Spain, Germany and the United States will give you insight into the world of Bayer – a world that is as interesting, exciting and multifaceted as life itself.**

This complete version of the Annual Report is published in English and German.

A shorter report on the fiscal year is also available in English, German, French, Italian, Japanese and Spanish. The financial statements of Bayer AG are published in English and German.

All of these publications and lists of Bayer AG's direct and indirect holdings may be obtained on request from Bayer AG, Corporate Communications Division, 51368 Leverkusen, Germany.

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has diabetes. Thanks  
to Glucometer® DEX,  
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**Agriculture:**  
Mexican Chili farmer  
Tomás Ramírez  
Alvarado protects  
his plants with  
Confidor®.



**Polymers:**  
The fascinating styling  
of the Mercedes-Benz  
SLK was made  
possible by modern  
engineering polymers  
from Bayer.



**Chemicals:**  
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resins proved invaluable to experts at  
Munich's Doerner  
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## Board of Management

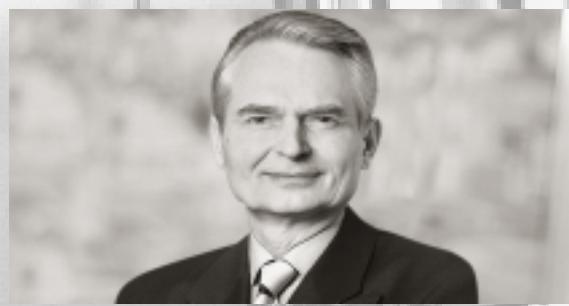
### Dr. Manfred Schneider

Born in 1938. Doctorate in business administration. Joined Bayer AG in 1966, Board Chairman since 1992. Chairman of the Board Committee for Corporate Coordination.



### Hans-Jürgen Mohr

Born in 1938. Degree in law. Joined Bayer AG in 1969, Board member since 1996. Chairman of the Board Committee for Human Resources, Labor Director and representative for the Europe region.



### Dr. Pol Bamelis

Born in 1939. Doctorate in chemistry. Joined Bayer AG in 1965, Board member since 1991. Chairman of the Board Committee for Research and Development and representative for the Agriculture business segment.



### Dr. Attila Molnar

Born in 1948. Doctorate in chemistry. Joined Bayer AG in 1978, Board member since 1999. Member of the Board Committee for Technology and Environment and the Board Committee for Marketing and Logistics; representative for the North America and Mexico region.

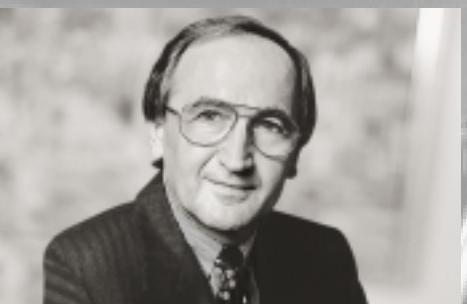
### Werner Spinner

Born in 1948. Degree in business administration. Joined Bayer AG in 1974, Board member since 1998. Chairman of the Board Committee for Marketing and Logistics; representative for the Polymers business segment and the Far East region.



### Dr. Walter Wenninger

Born in 1938. Doctorate in veterinary medicine, diploma in business studies. Joined Bayer AG in 1968, Board member since 1994. Member of the Board Committee for Research and Development and the Board Committee for Corporate Coordination; representative for the Health Care business segment.



### Dr. Udo Oels

Born in 1944. Doctorate in chemistry. Joined Bayer AG in 1976, Board member since 1996. Chairman of the Board Committee for Technology and Environment and representative for the Chemicals business segment.



### Werner Wenning

Born in 1946. Joined Bayer AG as commercial trainee in 1966, Board member since 1997. Chairman of the Board Committee for Finance and representative for the Central and South America, Africa and Middle East regions.

# Dear stockholders:



In 1999, we made further progress in realigning the Bayer Group. We streamlined our portfolio, strengthened our core businesses, boosted our innovative capacity and once again increased productivity.

Following Agfa's successful listing on the stock market, we are now focusing on four business segments – Health Care, Agriculture, Polymers and Chemicals. Convinced of the high potential of this diversified portfolio, we will retain these activities as the cornerstones of our business.

We are especially confident about our health care business, which grew faster than the market in 1999. Here we are concentrating on the use of new technologies, particularly in pharmaceutical research, that are vitally important for maintaining competitiveness in the future. To support these efforts, we are building a network

of cooperations with leading research companies. These activities are bound to add to our growth potential.

The ongoing consolidation trend in the pharmaceutical industry is creating new challenges for us. However, we are benefiting from the multitude of synergies between consumer care products, modern diagnostic technologies and prescription pharmaceuticals, and have one of the world's best research platforms at our disposal. With sales of €8.4 billion in our Health Care segment, we believe we are strong enough to maintain our position in an increasingly competitive environment through organic growth.

The agrochemical industry is also going through dramatic structural change, presenting us with both new opportunities and new challenges. Against this background, we were particularly encouraged by the growth we achieved in 1999 in the face of difficult market conditions. Our profitability is among the best in the agrochemical industry, and we will build on this sound basis to further strengthen our business.

We continue to watch closely the structural change taking place in the pharmaceutical and agrochemical sectors. We are prepared to actively participate in these developments, our prime objective being a steady, long-term increase in the value of our portfolio.

We are equally optimistic about our polymer activities, where we are extremely well placed in the market with our high-quality plastics and isocyanates. By acquiring the polyols business of Lyondell and securing the cost-effective supply of propylene oxide over

the long term, we have closed a strategic gap in our portfolio. This move fundamentally improves our competitiveness in the polyurethanes market.

We remain less than satisfied with the performance of our chemical activities, where we suffered competitive, cyclical and structural setbacks in 1999. Yet we see this as a good opportunity for a turnaround that will contribute to value creation. Businesses that are not sufficiently profitable are being carefully reviewed. We are looking for new partners – as with DyStar – and we are prepared to divest activities that can more fully realize their development potential with other companies or in joint ventures.

Efficiency improvement and value management at Bayer also mean capitalizing on existing resources that are not required for our core businesses. This includes the sale of a large portion of the houses and apartments we own in Germany and increasing cooperation between our service divisions and external partners, for example in the area of power supply.

Further growth in corporate value depends ultimately on the skills and dedication of our staff. To promote these qualities, we have introduced a stock option program under which participants must first invest in Bayer stock. For all of our employees, we are continuing the development of compensation systems related to both corporate profitability and individual performance. I would like to take this opportunity to thank each and every member of our workforce, on behalf of my colleagues on the Board of Management, for their ongoing contribution to Bayer's success.

1999 was not an easy year, but we stood our ground in a difficult business environment. We achieved record earnings, due in large part to the flotation of Agfa. We are proposing to you, our stockholders, that a dividend of €1.30 per share be declared – the sixth consecutive increase.

We have every reason to be optimistic for 2000. A recovery is under way in Europe, the economy of the United States remains strong, and the markets of Asia are back on track. In light of these factors, we expect sales and earnings of our continuing operations to improve.

We will do everything in our power to justify your continued confidence in the company and its employees.

A handwritten signature in blue ink, appearing to read "Manfred Schneider".

Dr. Manfred Schneider



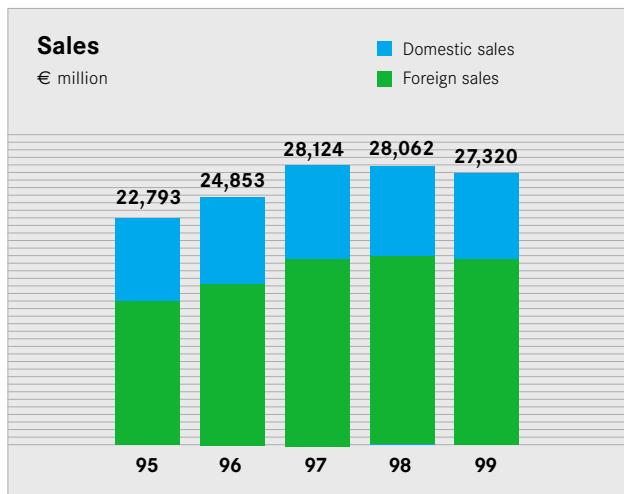
Yunnan Province in southwestern China is an especially unique part of the world. Very few other places contain the wealth of botanical species that are found here. I'm often in the field for weeks at a time in Yunnan, collecting plant samples for our laboratory. We analyze them and perform tests to see if their active substances are suitable for potential drug products. We Chinese have a lot of

experience in this field, since plant-based substances play an important role in traditional Chinese medicine. We're proud that we are able to bring our knowledge of the subject into a research alliance with Bayer to develop modern pharmaceuticals. Nature as a supplier of active substances – that's always been an exciting and encouraging prospect. <>

Professor Liu Jikai, Kunming Institute of Botany, Kunming, China

- Net income jumps 24 percent over 1998
- Sixth consecutive dividend increase
- Significant growth in the Health Care segment

# Earnings on an upward trend



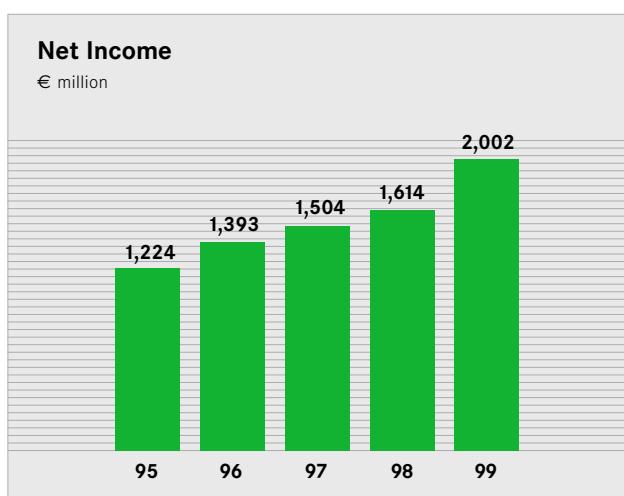
In 1999, business was weak in the first few months but picked up during the year. In addition, the successful flotation of the Agfa-Gevaert group on June 1, 1999 led to a cash inflow of €3 billion and income of €1 billion. Against this background, net income improved by 24 percent to €2 billion, despite restructuring expenses totaling €650 million which we had brought forward into 1999. We want our stockholders to share in this success and are therefore proposing that a dividend of €1.30 per share be declared.

Group sales dipped by 2.6 percent to €27.3 billion. However, the Agfa divestiture alone diminished sales by €2.5 billion. Sales from continuing operations increased by 7.9 percent.

We were especially pleased with the 5 percent, or €1.4 billion, growth in volumes. The effects of currency fluctuations were also positive, pushing sales up by €0.6 billion. Price erosion, however, had a negative impact of €0.6 billion.

The operating result advanced by 6 percent to €3.4 billion. We achieved this new record in part through the gain arising from the divestment of a majority of the shares of the Agfa-Gevaert group. Income from continuing operations before exceptional charges – which were €530 million greater than in the previous year – declined by 3.8 percent to €2.8 billion.

This decline was due mainly to rising costs for raw materials, lower margins on sales to the manufacturing industry,



substantial expenses for process reengineering, and expenditures made to achieve Year 2000 compliance. We also incurred one-time charges related to the Chiron integration, and our biological products experienced production problems that have since been rectified. In addition, we made a substantial strategic increase in our research expenditures, particularly in the life sciences.

#### Change in sales

Total	- 2.6 %
<b>Continuing operations</b>	<b>+ 7.9 %</b>
Volumes	+ 5.0 %
Prices	- 2.0 %
Exchange rates	+ 2.1 %
Other portfolio changes	+ 2.8 %

## Economic Environment

### Overall economic situation

Following the crises in the markets of Asia and Latin America in 1998, the world economy picked up steam during 1999, growing by nearly 3 percent. North America experienced sustained economic growth. In Latin America, the worst appears to be over. The business environment in Europe improved markedly over the course of the year, but the German economy more or less stagnated. The positive indicators outweighed the negative, however, as private consumption stabilized and exports grew again in the second half.

Raw material prices rose steeply, due in particular to the strong U.S. dollar. In contrast, the rise in consumer prices was on average half a percentage point below the previous year.

### Economic situation by industry sector

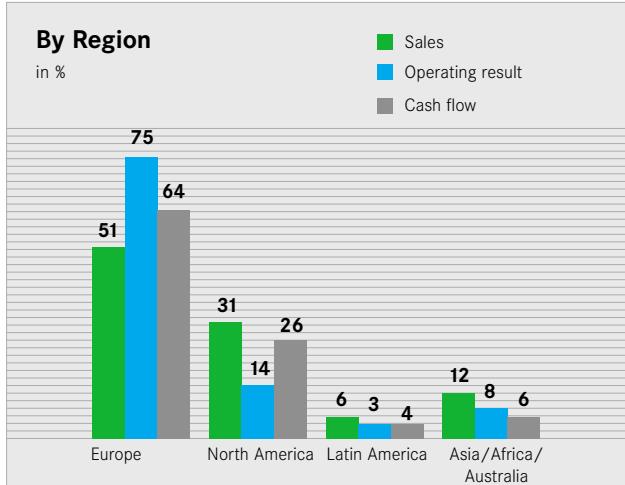
The health care industry was again impacted by state intervention in Europe and Japan, while the world market continued to expand faster than average.

Agriculture was hampered by low prices and low farm incomes, which diminished sales in Latin America and the United States, in particular. In Asia, however, the agricultural industry expanded.

The automotive, electrical and electronics industries, which are among the biggest customers for our polymer products, enjoyed a highly favorable business climate in 1999.

The chemical industry – also one of our major customers – saw an increase in global output in 1999. Margins declined, however, as the effect of a drop in selling prices was exacerbated by the increase in raw material costs.

## Business Trend by Region



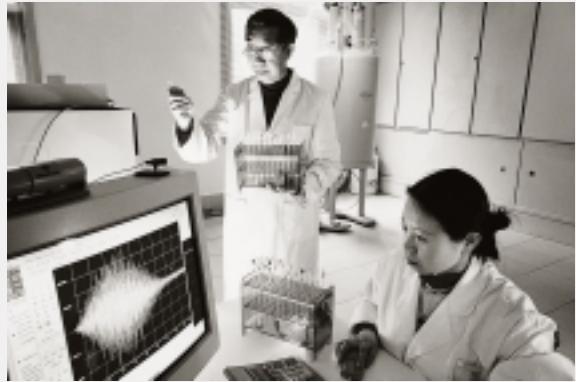
Sales increased in almost all our major markets. The increase was smallest, however, in Europe, which remains our most important market: Sales there rose by €57 million, or 1 percent. Our North American business expanded much more strongly, with sales up by €892 million, or 13 percent. Here the strong U.S. dollar had a positive effect when sales were translated into euros. Business grew by 27 percent in the Asia/Africa/Australia region. Sales in Latin America were down 4 percent.

### Europe

€ million	1999	Change
Sales	<b>12,791</b>	+ 1.6 %
Operating result before exceptional items	<b>2,276</b>	- 3.0 %
Return on sales before exceptional items	<b>17.8 %</b>	- 0.8
Gross cash flow	<b>2,216</b>	+ 1.4 %
CFROI	<b>13.7 %</b>	- 0.7

Sales of our European companies grew by 2 percent to €12.8 billion. Business in this region got off to a weak start in the first quarter with a decline of 8 percent, but demand picked up over the course of the year, resulting in a second-quarter gain of 2 percent, a third-quarter gain of 3 percent, and an increase of 15 percent in the fourth quarter.

Europe accounted for €2.3 billion, or over 50 percent, of Group operating profit before exceptional items. The 3 percent decline was due to rising raw material costs, the continuing low level of selling prices, and charges for process reengineering.



**Leaves, flowers, roots and herbs are the focus of Bayer's research alliance with the Kunming Institute. The scientists' interest centers mainly around natural extracts which may provide specific therapies for widespread conditions like cancer, stroke and asthma.**  
**Above, Professor Wang Dezu (left) and Yue Juang analyze new plant samples in the laboratory.**

Net exceptional charges of €240 million were incurred for restructuring in the Health Care and Polymers segments.

Both the return on sales and the cash flow return on investment (CFROI) were well above the group average at 18 and 14 percent, respectively. The gross cash flow rose by 1.4 percent to €2.2 billion.

### North America

€ million	1999	Change
Sales	<b>7,723</b>	+ 15.1 %
Operating result before exceptional items	<b>580</b>	- 8.7 %
Return on sales before exceptional items	<b>7.5 %</b>	- 2.0
Gross cash flow	<b>929</b>	+ 4.1 %
CFROI	<b>8.7 %</b>	- 1.3

Business in North America grew by 15 percent to €7.7 billion, with Chiron Diagnostics and Gustafson, acquired at the end of 1998, contributing a total of €0.2 billion. Translation of the strong U.S. dollar resulted in a gain of 4 percent or €0.3 billion.

Operating profit before exceptional items declined by 9 percent to €0.6 billion, due primarily to production shortfalls for biological products, the costs for integrating the Chiron Diagnostics business, and a further increase in research expenditures. The return on sales dipped

2 percentage points to 8 percent. Exceptional charges of €210 million were incurred for restructuring in the Health Care and Polymers segments.

North America saw an encouraging 4 percent increase in the gross cash flow, to €0.9 billion. The CFROI was almost unchanged from the previous year, at 9 percent.

### Latin America

€ million	1999	Change
Sales	<b>1,612</b>	- 4.0 %
Operating result before exceptional items	<b>136</b>	- 25.3 %
Return on sales before exceptional items	<b>8.4 %</b>	- 2.4
Gross cash flow	<b>139</b>	- 25.7 %
CFROI	<b>11.3 %</b>	- 5.5

Our Latin American companies posted sales of €1.6 billion in a difficult business environment. The operating result before exceptions declined by 25 percent, however, due mainly to adverse trends in the agricultural market. The return on sales came to 8 percent.

Exceptional charges of €60 million were incurred to consolidate the ABS plastics production network.

In Buenos Aires, Bayer Argentina S.A. brought on stream the world's most modern production facility for non-prescription medicines, mainly Aspirin®. The new facility joins similar operations in North America and Europe to underpin Bayer's global presence in the over-the-counter (OTC) medicines market. The plant has an annual capacity of 3 billion tablets, making it the largest of its kind in Latin America and the third largest in the world.

## Asia, Africa and Australia

	1999	Change
Sales	<b>3,068</b>	+ 29.3 %
Operating result before exceptional items	<b>228</b>	+ 65.2 %
Return on sales before exceptional items	<b>7.4 %</b>	+ 1.6
Gross cash flow	<b>198</b>	+ 44.5 %
CFROI	<b>8.9 %</b>	+ 1.0

Sales in the Asia/Africa/Australia region jumped by 17 percent in local currencies as we capitalized on the clear upward trend in the economy. Due to the favorable swing in exchange rates, sales after translation into euros increased by 29 percent, to €3.1 billion.

We experienced the strongest sales recoveries in South Korea, Indonesia and Thailand. The Plastics Business Group contributed strongly to the expansion of our business in the region.

After a weak performance the year before, the region posted an encouraging 65 percent jump in operating profit, to €0.2 billion. The return on sales climbed to 7 percent, while the gross cash flow surged by 45 percent. The CFROI amounted to 9 percent.

## Business Trend by Segment

Our global business is comprised of 16 business groups that we have pooled in the Health Care, Agriculture, Polymers and Chemicals business segments.

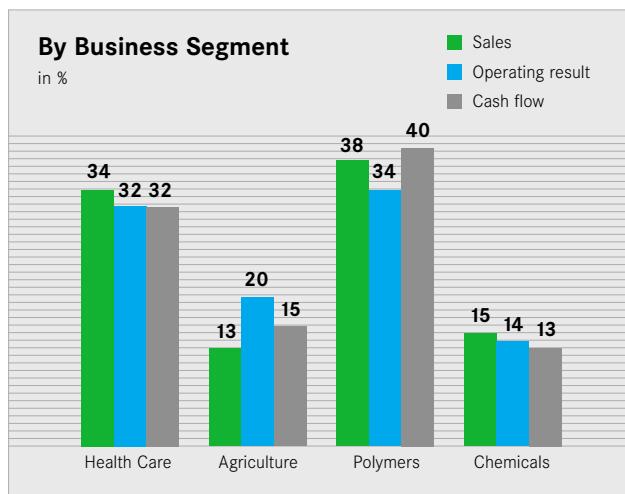
### Business Segment Business Groups

Health Care	Pharmaceuticals; Consumer Care; Diagnostics
Agriculture	Crop Protection; Animal Health
Polymers	Plastics; Rubber; Polyurethanes; Coatings and Colorants; Fibers; Wolff Walsrode
Chemicals	Basic and Fine Chemicals; Specialty Products; Haarmann & Reimer; H. C. Starck; EC Erdölchemie

The Agfa business segment was divested as of May 31, 1999; 70 percent of its shares have since been sold to third parties at a price of €22 per share.

The activities of DyStar, our textile dyes business, are reported as discontinuing operations due to their planned

integration into an expanded joint venture with BASF. The new company will take advantage of synergies to enhance its cost position with respect to its Asian competitors and strengthen its product and technology portfolio.



With the exception of the Chemicals segment, all the business segments had higher sales. As in 1998, the Polymers segment contributed the largest share of group sales from continuing operations – 38 percent – followed by the Health Care segment with 34 percent.

### Health Care

The Health Care segment performed ahead of budget in 1999. Sales climbed by 19 percent to €8.4 billion, with 7 percent of the increase coming from the acquisition of Chiron Diagnostics at the end of 1998. The operating result before exceptions improved by 10 percent to €1.1 billion. We are very pleased with this earnings growth, which was achieved in spite of one-time charges for the integration of Chiron Diagnostics and production shortfalls for biological products. Without these factors, operating profit would have advanced more strongly than sales in 1999.

	1999	Change
Sales	<b>8,367</b>	+ 19.1 %
Operating result before exceptional items	<b>1,095</b>	+ 10.5 %
Return on sales before exceptional items	<b>13.1 %</b>	- 1.0
Gross cash flow	<b>1,138</b>	+ 7.6 %
CFROI	<b>13.7 %</b>	- 1.7

Exceptional charges, comprising restructuring expenses for our health care operations, amounted to €250 million.

The segment's gross cash flow advanced by 8 percent to €1.1 billion. The CFROI came to 14 percent.

## Management Report

Sales of the **Pharmaceuticals** Business Group grew by 15 percent – considerably faster than the world market – to €5 billion. This growth was due in part to high demand for our anti-infective drug Ciprobay®/Cipro®, especially in the United States, Canada, Germany and Italy. Our new respiratory antibiotic Avelox® was also well received. Avelox® has already been launched in 17 countries and has been on the market in Germany since September under the name Avalox®. The U.S. Food and Drug Administration (FDA) recently granted marketing approval for the product in the United States.

Best-selling <b>Bayer Health Care Products</b>		
	€ million	Change
Ciprobay®/Cipro®	1,519	+ 17 %
Adalat®	1,021	+ 6 %
Aspirin®	580	+ 6 %
Kogenate®	377	- 2 %
Glucometer® Elite	354	+ 18 %
Lipobay®/Baycol®	345	+ 205 %
Immunoglobulins	287	+ 59 %
Alka-Seltzer®	240	+ 10 %

Demand for our cardiovascular drug Adalat® and our lipid-lowering agent Lipobay®/Baycol® was also strong. In the United States, Baycol® generated exceptionally strong sales, in part as a result of the higher-dose tablet. In Japan, Lipobay® also got off to a very good start.

The production problems with our genetically engineered drug Kogenate® have now been overcome. However, the lengthy approval process means that product shortages will continue into the first half of 2000. We have begun to restart our plasma production.

We will further enhance our pharmaceutical research activities through the agreement with Incyte Pharmaceuticals Inc. concerning the use of gene databases. We are already supporting the development of innovative products through our collaboration with LION Bioscience, one of the world's leading bioinformatics companies, and through our alliance with the U.S. biotech company Millennium Pharmaceuticals Inc. in the field of genome research. We expect to receive additional impetus from our cooperation with MorphoSys AG of Martinsried, Germany. These moves have allowed us to assemble a research platform of key technologies that external experts regard as one of the best in the pharmaceutical industry.

The **Consumer Care** Business Group boosted revenues by 5 percent to €1.7 billion. Sales of Aspirin® and Baygon® were particularly affected by the recession in Latin America. By contrast, this business group had strong sales in North America, where new vitamin/mineral dietary supplements were well received by the market.

Sales of the **Diagnostics** Business Group climbed by 55 percent to €1.7 billion. The acquisition of Chiron Diagnostics alone generated additional sales of €0.5 billion, placing Bayer among the world's top suppliers of diagnostic products. Through this acquisition we have gained entry to the fast-expanding field of nucleic acid diagnostics, which has an increasing part to play in the detection and monitoring of infectious diseases and cancer. The integration of the Chiron business is proceeding on schedule, and the business group expects to record a clear profit in 2000. The anticipated synergy potential will be fully realized by 2001.

Superior technology and intensified marketing activities have paved the way for the success of our Glucometer® diabetes care systems. Our sales of these systems grew faster than the market in 1999.

### Agriculture

Sales of the Agriculture segment moved up 6 percent to €3.1 billion. Contributing to the increase was the Crop Protection Business Group's acquisition of Gustafson at the end of 1998 and of pbi Home & Garden in February 1999. The operating result however, was down 8 percent to €0.5 billion, the decline being mainly attributable to market weakness in the Americas.

	€ million	1999	Change
Sales		<b>3,094</b>	+ 5.6 %
Operating result before exceptional items		<b>520</b>	- 7.6 %
Return on sales before exceptional items		<b>16.8 %</b>	- 2.4
Gross cash flow		<b>549</b>	+ 7.2 %
CFROI		<b>16.3 %</b>	- 1.8

Although the return on sales dipped by 2 percentage points to 17 percent, we remain a leader among international agrochemical companies in terms of profitability. This strong performance is also reflected in a CFROI of 16 percent, which stems mainly from a 7 percent increase in the operating cash flow.



Natural substance research is a worthwhile, but small-scale research project. At our pharmaceutical research centers in Germany, the United States and Japan, we are employing key technologies to explore 15 important indications. Bayer is expanding its research platform through additional acquisitions and cooperations, such as the collaboration with LION Bioscience. The photo shows LION's founders, Dr. Reinhard Schneider (left) and Georg Casari.

Sales of the **Crop Protection** Business Group advanced by 6 percent to €2.2 billion, with the above-mentioned acquisitions accounting for 3 percent of this growth. The strong performance allowed us to boost our market share by more than 10 percent, to 8.4 percent.

#### Best-selling **Bayer Crop Protection and Animal Health Products**

	€ million	Change
Confidor®/Gaucho®/ Admire®/Provado®	464	+ 11 %
Folicur®/Raxil®	236	0 %
Advantage®	179	- 7 %
Baytril®	151	+ 19 %

The acquisition of pbi Home & Garden Ltd. expands our presence in the U.K. garden products market. This move, which follows our acquisition of the garden activities of the Swedish company Planfer AB and the establishment of a joint venture with Pursell Industries Inc. in the United States, is part of the steady expansion of the garden/professional care business unit formed in 1997.

Sales of the **Animal Health** Business Group, a world leader in its field, grew by 3 percent to €0.9 billion. The largest contribution to growth came from our products for companion and small animals. The livestock market was negatively affected, especially in Europe, by the controversies surrounding BSE and dioxin levels; this factor was offset, however, by brisk sales of our anti-infective drug Baytril® in the United States. The business group will further improve its cost structure by concentrating its worldwide production sites.

We are building a position at the leading edge of technology through a network of research alliances in genomics,

bioinformatics, high-throughput screening and combinatorial chemistry that will benefit all of our life science activities.

We are also continuing to expand our substance libraries. For example, in October 1999 we entered into a collaboration in this field with ArQule Inc., a world leader in the application of combinatorial chemistry.

#### *Polymers*

Sales of the Polymers segment were up 6 percent to €9.3 billion. Of the increase, €72 million came from the plastic sheet business that Bayer acquired in April 1999 from the Dutch chemicals group DSM.

€ million	1999	Change
Sales	<b>9,307</b>	+ 5.7 %
Operating result before exceptional items	<b>1,164</b>	- 3.6 %
Return on sales before exceptional items	<b>12.5 %</b>	- 1.2
Gross cash flow	<b>1,395</b>	+ 6.5 %
CFROI	<b>11.5 %</b>	- 0.5

The operating result before exceptional items declined by 4 percent to €1.2 billion. Exceptional charges for restructuring and streamlining measures, particularly in the Plastics Business Group, totaled €240 million.

The gross cash flow of the Polymers segment rose by 6 percent to €1.4 billion. This was 43 percent of the figure for the whole Bayer Group. The CFROI amounted to 12 percent.

Half a million compounds for testing are stored in Bayer's substance library in Wuppertal (right). The screening robot (below) can test the effects of up to 200,000 substances a day.



The increase in sales was generated in large part by the **Plastics** Business Group, where revenues were up 11 percent to €2.8 billion. The acquisition of DSM's plastic sheet business contributed 3 percentage points. To expand our plastics activities in Australia and New Zealand, we also acquired the Australian company Laserlite, which manufactures and distributes monolithic sheet based on polycarbonate (PC) and polyvinylchloride (PVC). These moves have enhanced the business group's position in the market for PC sheet and at the same time globalized our activities in this field. Our Makrolon® polycarbonate also registered strong demand in Europe and the United States.

Our decision to concentrate our ABS activities on core processes and products also includes the closure of the production plants in Muscatine, Iowa (United States) and Antwerp, Belgium, which are no longer competitive. The plant closures led to exceptional charges of €170 million.

Sales of the **Rubber** Business Group advanced by 2 percent to €1.9 billion, mainly due to a recovery in business in Asia.

The **Polyurethanes** Business Group achieved sales growth of 5 percent, to €2.2 billion. In Asia, in particular, demand for our polyurethane products returned to the level experienced before the economic crisis.

At the end of 1999 we signed an agreement to acquire for US\$ 2.45 billion the polyols business of Lyondell Chemical Company of Houston, Texas, and an equity interest in the production of propylene oxide, a raw material for the manufacture of polyols. The move will allow us to secure and enhance our position in the global polyurethanes market. We also plan an alliance with Lyondell for joint technology development and the expansion of propylene oxide production facilities. The deal gives us access to innovative, patent-protected technologies and products and will enable us to pro-

vide our customers with all raw material components and the necessary technical service from a single source. It is planned to complete the acquisition on April 1, 2000.

Sales of the **Coatings and Colorants** Business Group rose by 11 percent to €1.7 billion, chiefly as a result of rapid expansion in Asia. The successful market- and customer-oriented restructuring of the business group also had a positive effect on its performance. Contributing to sales growth in the field of iron oxide pigments (Bayferrox®) were the new subsidiaries Europigments and Hawley & Son Ltd. Demand for our high-grade polyurethane coating materials, such as light-stable systems based on Desmodur® W diisocyanate, continued to rise. To meet this demand, Desmodur® will in future be produced in Germany as well, to supplement the existing production facility at Baytown, Texas.

Our **Fibers** Business Group performed less well, with sales declining by 10 percent to €0.4 billion. In the second half of 1999, business gradually picked up in important markets. Volumes and earnings from Dralon® and Dorlastan® improved accordingly over the course of the year.

Excluding the Walotheren business divested at the end of March 1999, sales of **Wolff Walsrode** moved ahead 4 percent to €0.4 billion. Its materials for the construction industry made strong gains in the markets of Latin America and eastern Europe. Sales of cellulose products derived from renewable raw materials expanded worldwide. We strengthened our plastic film activities by acquiring the technical films business of Elf Atochem in 1998.

## Chemicals

Sales of the Chemicals segment were stable year-on-year at €3.7 billion. If the sales from the citric acids, titanium dioxide, silicones and zeolites businesses, divested in 1998, and the effects of other restructuring measures are eliminated from the 1998 base figure, sales in 1999 increased by 3 percent.

€ million	1999	Change
Sales	<b>3,704</b>	- 0.3 %
Operating result before exceptional items	<b>414</b>	- 19.5 %
Return on sales before exceptional items	<b>11.2 %</b>	- 2.6
Gross cash flow	<b>447</b>	- 3.7 %
CFROI	<b>8.0 %</b>	- 0.3

The operating result was down 19 percent to €0.4 billion. Earnings were hampered by unfavorable business conditions, rising raw material costs and low selling prices.

Thanks to substantial restructuring in the recent past, the segment's return on sales improved from zero to 11 percent in the space of three years. It was, however, down in 1999 year-on-year due to the difficult operating environment.

The **Basic and Fine Chemicals** Business Group was particularly affected by economic problems in important markets and industry sectors. Sales declined by 6 percent to €0.9 billion. The business group successfully launched its newly developed Baytron®, a conductive polymer for the growing communications and information systems market, and Levasil®, used for surface planarization in the microelectronics industry.

Sales of the **Specialty** Products Business Group grew by 3 percent to €1.1 billion. Our products for leather, in particular, benefited from the recovery in Asia and the growing demand from the North American automotive and furniture industries.

**Haarmann & Reimer's** 7 percent decline in sales was due to the divestiture of the citric acid business. With its core activities, the business group had sales of €0.8 billion, 6 percent more than in 1998. Sales growth accelerated during the year despite strong competition. New production facilities for fragrances and flavors in Colombia and India helped enhance H&R's market presence.

Sales of **EC Erdölchemie** moved ahead 5 percent to €0.5 billion in 1999. This growth was due to an increase in volume sales and to higher selling prices. However, raw material costs increased significantly during 1999, chiefly as a result of the strong U.S. dollar.

**H. C. Starck** benefited especially from the sustained upswing in the microelectronics and telecommunications sectors, to which the company supplies important raw materials. Thanks to rising volumes in the United States, Japan and Thailand, sales of H.C. Starck climbed by 14 percent to €0.4 billion.

## Financial Condition

As a globally operating company, we prepare our financial statements according to the rules issued by the International Accounting Standards Committee (IASC), London.

This provides our stockholders and all other interested parties with a reliable, internationally comparable basis for evaluating our company and its financial performance. It also serves as the foundation for our value-based corporate controlling.

The euro was introduced as the reporting currency of the Bayer Group effective January 1, 1999.

### Liquidity and capital resources

Our internal financing capability is measured by the gross cash flow (GCF). Our yardstick of performance is the cash value added (CVA). This is the difference between the GCF and the GCF hurdle which, in turn, is computed from the capital invested, the cost of capital and the strategic useful life of the assets. The capital invested is the carrying value of the assets at cost, less interest-free liabilities.

The GCF hurdle for 1999 for our continuing operations was €2.9 billion; the cash flow amounted in fact to €3.1 billion. The positive **CVA** of €0.2 billion shows that the Bayer Group earned additional value beyond the net cash inflow required to yield an appropriate return on the capital invested and allow for reproduction of depletable assets.

The GCF is also the numerator of our profitability indicator, the cash flow return on investment (CFROI), by which we measure the profitability of the Bayer Group as a whole and of the individual businesses. The denominator is the capital invested, which increased substantially in 1999 due to the high level of capital expenditures and acquisitions, causing the **CFROI** to drop by 1.2 percentage points to 10.1 percent.

€ million	1999	1998
Gross cash flow	<b>3,058</b>	3,039
CVA	<b>161</b>	312
CFROI	<b>10.1 %</b>	11.3 %
Average capital invested	<b>30,364</b>	26,974

(continuing operations)

## Management Report

Cash and cash equivalents of the Bayer Group on December 31, 1999 were €1.6 billion higher than a year before, at €2.8 billion. The cash flow statement shows the net cash inflows and outflows from operating, investing and financing activities. Net cash inflows of €3.2 billion and €0.2 billion resulted from operating and investing activities, respectively. There was a net cash outflow of €1.8 billion from financing activities and the effects of changes in the composition of the Group of companies consolidated.

### Summary Cash Flow Statements

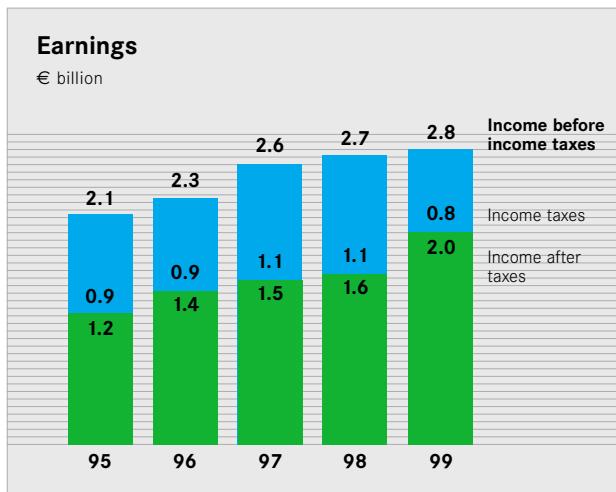
	1999	1998
€ million		
Cash and cash equivalents at beginning of year	<b>1,184</b>	1,746
Gross operating cash flow	<b>3,252</b>	3,394
Discontinuing operations	194	355
Changes in working capital	<b>1</b>	(546)
<b>Net cash provided by operating activities</b>	<b>3,253</b>	<b>2,848</b>
Discontinuing operations	202	431
<b>Net cash provided by (used in) investing activities</b>	<b>214</b>	<b>(3,192)</b>
Discontinuing operations	(32)	(163)
<b>Net cash used in financing activities</b>	<b>(1,729)</b>	<b>(201)</b>
Discontinuing operations	(29)	41
Exchange rate movements/		
Changes in companies consolidated	<b>(110)</b>	<b>(17)</b>
Change in cash and cash equivalents	<b>1,628</b>	<b>(562)</b>
Cash and cash equivalents at end of year	<b>2,812</b>	1,184

The **gross operating cash flow** declined by €142 million, or 4 percent. With working capital virtually unchanged from the previous year, the **net operating cash flow** increased by €0.4 billion to €3.2 billion.

Cash inflows and outflows for **investing activities** were roughly in balance. The €2.2 billion in proceeds from the sale of Agfa shares and the €0.6 billion in proceeds from the sale of Agfa companies previously owned by Bayer to Agfa-Gevaert N.V. at the beginning of the year led to a cash inflow of €2.8 billion. This inflow plus €0.4 billion in interest receipts and proceeds from redemptions of marketable securities offset cash outflows of €2.6 billion for capital expenditures and €0.4 billion for acquisitions.

Part of the operating cash flow was used to reduce net borrowings by €0.6 billion. The high-interest 7¾ percent Notes in the amount of US\$ 300 million issued by Bayer Corporation in 1994 were redeemed on maturity. Disbursements for payment of the dividend for 1998 came to €0.8 billion, interest payments to €0.3 billion. The net cash used in **financing activities** amounted to €1.7 billion.

### Earnings performance



The **operating result** advanced by 6 percent to €3.4 billion. It includes the €2.3 billion result of continuing operations, the €0.1 billion result of discontinuing operations and the €1.0 billion gain on the sale of Agfa shares.

The **result of continuing operations** which, at €2.3 billion, was €0.6 billion below 1998, contains exceptional charges of €646 million for restructuring and plant closures and exceptional income of €73 million consisting mainly of compensation payments from insurers. Net exceptional charges thus amounted to €573 million. In 1998 the figure was €47 million, so the operating result before exceptional items was down 4 percent in 1999.

The ratios of the cost of goods sold and of R&D expenses to net sales increased slightly by 0.3 and 0.7 percentage points, respectively.

	1999	1998
Cost of goods sold (%)	<b>53.9</b>	53.6
R&D expenses (%)	<b>8.5</b>	7.8

The **result of discontinuing operations** comprises the operating result of the Agfa-Gevaert group for the first five months of 1999, amounting to €103 million (1998: €263 million for the full year), and the DyStar group result of minus €24 million (1998: €6 million).

The negative **non-operating result** was larger by 22 percent, at minus €521 million, with net interest expense virtually unchanged, and net expense of €31 million from investments in affiliated companies compared with income of €21 million in 1998, a difference of €52 million.

With the operating result up by €202 million and the non-operating result down by €94 million, **income before income taxes** improved by €108 million, or 4 percent, to €2.8 billion.

Due to the tax-free income from the Agfa divestiture, income tax expense decreased by 26.5 percent to €0.8 billion. The effective tax rate dropped from 41 to 29 percent. Net income advanced by 24 percent to €2 billion, and earnings per share rose by €0.53 to €2.74.

#### Summary Income Statement

€ million	1999	Change in %
Operating result	<b>3,357</b>	+ 6.4
<i>Discontinuing operations</i>	1,109	
Non-operating result	<b>(521)</b>	- 22.0
Income before income taxes	<b>2,836</b>	+ 4.0
Net income	<b>2,002</b>	+ 24.0

The Group profitability ratios computed from the financial statements were as follows:

	1999	1998
Return on sales before exceptional items (%)	<u>Operating result before exceptional items</u> <b>11.2</b>	12.6 <u>Net sales</u>
Return on stock- holders' equity (%)	<u>Income after taxes</u> <b>14.4</b>	12.9 <u>Average stockholders' equity</u>
Return on total assets (%)	<u>Income before income taxes and interest expense</u> <b>10.5</b>	10.9 <u>Average total assets</u>

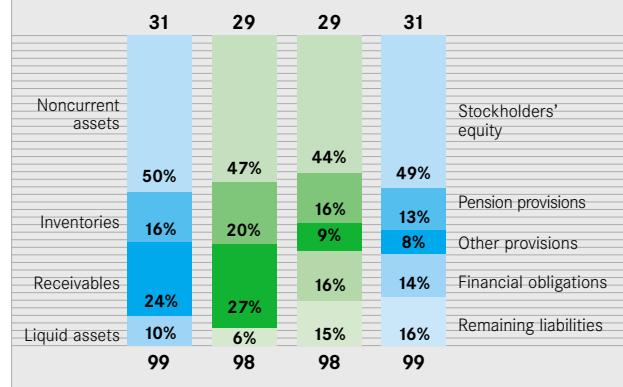
#### Asset and capital structure

Total assets increased by €1.9 billion during 1999, to €31.3 billion.

**Noncurrent assets** grew by €1.6 billion. Capital expenditures of €2.6 billion, acquisitions of €0.4 billion, additions of €0.3 billion to investments, and exchange differences of €1.1 billion were partly offset by depreciation and amortization of €1.8 billion and retirements of €1.0 billion.

#### Balance Sheet Structure

€ billion



#### Summary Balance Sheets

	Dec. 31, 1999	Dec. 31, 1998
Noncurrent assets	<b>15,614</b>	13,981
Current assets	<b>15,665</b>	15,396
Stockholders' equity	<b>15,182</b>	12,779
Liabilities	<b>16,097</b>	16,598
<i>Discontinuing operations</i>	198	1,991
<b>Balance sheet total</b>	<b>31,279</b>	<b>29,377</b>
<i>Discontinuing operations</i>	379	4,259

**Current assets** expanded by €0.3 billion, or 2 percent, which is the balance of a €1.4 billion increase in liquidity and a €1.1 billion decrease in inventories and receivables. The changes are due mainly to the Agfa divestiture.

	1999	1998
<u>Noncurrent assets</u> (%)	<b>49.9</b>	47.6
Total assets (%)		
<u>Depreciation</u> (%)	<b>66.3</b>	56.3
Capital expenditures		
<u>Net sales</u> (%)	<b>5.5</b>	4.9
Inventories		
<u>Net sales</u> (%)	<b>5.1</b>	5.0
Trade accounts receivable		

## Management Report

**Stockholders' equity** grew by €2.4 billion to €15.2 billion. An amount of €1.2 billion was added out of Group net income after payment of the dividend; a further €1.2 billion was added by exchange differences. The equity-to-assets ratio rose by 5 percentage points to 48.5 percent.

	1999	1998
Stockholders' equity Total assets (%)	<b>48.5</b>	43.5
Stockholders' equity Noncurrent assets (%)	<b>97.2</b>	91.4
Short-term liabilities Total liabilities (%)	<b>46.1</b>	47.7

Of the €16.1 billion in **liabilities**, provisions account for 42 percent, financial obligations for 28 percent and the remaining liabilities for 30 percent.

Of the €6.7 billion in total provisions, €4.2 billion are for pension commitments. The €2.5 billion in other provisions are for other personnel commitments, taxes, environmental protection and trade-related commitments.

Debt repayments of €264 million made during the year reduced financial obligations to €4.5 billion, while liquid assets grew by €1.4 billion to €3.1 billion, causing net indebtedness to decline in 1999 by €1.7 billion, or 56 percent, to €1.4 billion.

The €4.9 billion in remaining liabilities are mainly trade accounts payable, taxes and payroll liabilities.

## Value Added

The value added by continuing operations in 1999 was €10.2 billion, which was 5 percent more than in the previous year.

Our employees again received the largest share, namely 67 percent. Governments received 9.5 percent, or €1.0 billion. Interest expense declined by 5 percent to €0.4 billion. The stockholders are to receive €1.0 billion. A further €1.0 billion will be retained by the company.

## Proposal for Distribution of the Profit

Bayer AG, the parent company of the Bayer Group, had net income in 1999 of €1.1 billion.

The operating result before extraordinary personnel expenses declined by 34 percent to €0.6 billion. The extraordinary expenses relate mainly to an assurance given that benefits under the company pension plan will increase by 1 percent annually. The non-operating result improved by €0.5 billion to €1.1 billion due to substantially higher income from investments in affiliated companies. The balance sheet profit amounts to €0.9 billion.

We will propose to the Annual Stockholders' Meeting on April 28, 2000 that a dividend of €1.30 (1998: €1.02) per share (730,341,920 shares) be paid on the capital stock of €1,870 million entitled to the dividend for 1999. Domestic stockholders will also receive a tax credit of €0.08 (1998: €0.33) per share.

After payment of the dividend out of net income, €1.0 billion will remain to strengthen stockholders' equity.

<b>Value Added</b> € million		
<b>Source</b>	1999	Change in %
Net sales	<b>25,194</b>	+ 7.9
Other income	<b>899</b>	- 9.4
<b>Total operating performance</b>	<b>26,093</b>	<b>+ 7.2</b>
Cost of materials	<b>7,837</b>	+ 2.0
Depreciation	<b>1,653</b>	+ 27.3
Other expenses	<b>6,364</b>	+ 14.4
<b>Value added</b>	<b>10,239</b>	<b>+ 4.5</b>

<b>Distribution</b>	1999	Share in %
Stockholders	<b>965</b>	9.4
Employees	<b>6,895</b>	67.4
Governments	<b>975</b>	9.5
Lenders	<b>351</b>	3.4
Earnings retention	<b>1,053</b>	10.3
<b>Value added</b>	<b>10,239</b>	100.0

## Summary Financial Statements of Bayer AG<sup>1</sup>

### Income Statements

	1999 € million	1998 <sup>2</sup>
<b>Net sales</b>	<b>9,749</b>	<b>9,910</b>
Cost of goods sold	(6,000)	(6,271)
<b>Gross profit</b>	<b>3,749</b>	<b>3,639</b>
Selling, R&D and administration expenses	(3,080)	(2,860)
Other operating income (expenses) – net	(116)	57
Extraordinary personnel expenses	(573)	0
<b>Operating result</b>	<b>(20)</b>	<b>836</b>
<b>Non-operating result</b>	<b>1,136</b>	<b>663</b>
<b>Income before income taxes</b>	<b>1,116</b>	<b>1,499</b>
Income taxes	(40)	(404)
<b>Net income</b>	<b>1,076</b>	<b>1,095</b>

### Balance Sheets

	Dec. 31, 1999 € million	Dec. 31, 1998
Intangible assets, property, plant and equipment	2,519	2,218
Investments	6,952	8,899
<b>Noncurrent assets</b>	<b>9,471</b>	<b>11,117</b>
Inventories	1,288	1,279
Receivables	4,652	2,900
Liquid assets	2,672	1,107
<b>Current assets</b>	<b>8,612</b>	<b>5,286</b>
<b>Total assets</b>	<b>18,083</b>	<b>16,403</b>
Stockholders' equity <sup>3</sup>	8,442	8,088
Provisions <sup>3</sup>	4,809	4,209
Other liabilities	4,832	4,106
<b>Total stockholders' equity and liabilities</b>	<b>18,083</b>	<b>16,403</b>

<sup>1</sup> The complete financial statements of Bayer AG with an unqualified opinion by the auditors are published in the "Bundesanzeiger" and have been included in the Commercial Register in Leverkusen. They are available from Bayer AG in English or German.

<sup>2</sup> 1998 figures restated

<sup>3</sup> including share of special item with an equity component

## Employees

The number of employees in the Bayer Group declined by 24,700 in 1999 to 120,400. The payroll shrank by 21,900 due to the divestiture of the Agfa-Gevaert group, while labor turnover led to a reduction of 2,800.

A breakdown of the work force by business segment and region is given in the Notes on pages 98-99.

The average number of employees declined as well, to 121,900. Adjusted for portfolio changes, personnel expenses rose 3.7 percent compared with 1998 to €7.0 billion. The ratio of personnel expenses to sales was 27.3 percent. The value added per employee increased by 3 percent to €85,000.

## Capital Expenditures

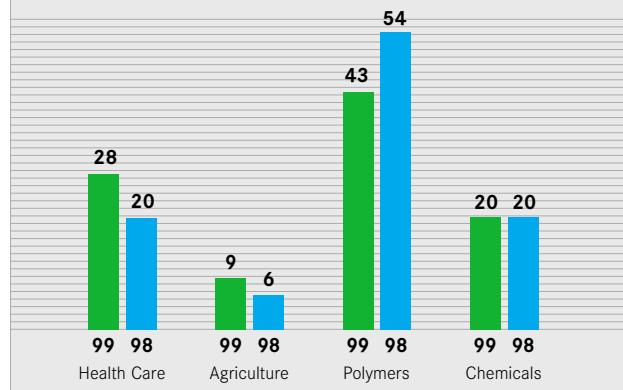
We spent a total of €2.6 billion on intangible assets, property, plant and equipment in 1999, which was €0.1 billion less than in the previous year. Capital expenditures were made for:

	€ million	1999	Change in %
Capacity expansions	1,083	– 20.7 %	
Replacement and modernization	850	+ 13.9 %	
Efficiency improvements	344	+ 28.8 %	
<b>Total capital expenditures</b>	<b>2,277</b>	<b>– 4.3 %</b>	

Spending for environmental protection facilities amounted to €142 million.

## Capital Expenditures

by business segment in %



Bayer formed a genome research alliance with U.S. biotechnology company Millennium Pharmaceuticals Inc. in 1998. The photo shows a system to isolate cells from which gene sequences are taken.



Major projects included:

### Health Care

*Investment volume: €0.7 billion*

- Pilot plant for chemical process development, Wuppertal, Germany
- Expansion of capacities for Kogenate®, Berkeley, California
- Modernization and expansion of blood plasma facilities, Clayton, North Carolina, United States
- Launch plant for Avelox®/Avalox®, Leverkusen, Germany (completed 1999)
- Construction of a pharmaceutical research facility, West Haven, Connecticut, United States
- Expansion of research capacities in Aprath and Wuppertal, Germany
- Consumer Care plant, Pilar, Argentina
- Expansion of production capacities for urine chemistry systems, Mishawaka, Indiana, United States
- Expansion of capacities for Glucometer® DEX and Glucometer® Esprit, Mishawaka, Indiana, United States

### Agriculture

*Investment volume: €0.2 billion*

- Plant for the production of a new insecticide, Dormagen, Germany
- Formulating facility for herbicides, Kansas City, Missouri, United States (completed 1999)
- Construction of a multi-purpose facility for crop protection products, Dormagen, Germany
- Expansion and start-up of new production facilities for animal health products in Shawnee, Kansas, United States (completed 1999)

### Polymers

*Investment volume: €1.1 billion*

- Expansion of bisphenol A and Makrolon® capacities, Antwerp, Belgium
- Polycarbonate plant, Map Ta Phut, Thailand (completed 1999)
- Expansion/restructuring of styrenics facilities, Dormagen, Germany; Tarragona, Spain; and Addyston, Ohio, United States
- Expansion of capacities for Durethan® plastics, Uerdingen, Germany
- Modernization/expansion of the (halo)butyl rubber facility, Sarnia, Ontario, Canada
- Construction of a Therban® facility, Leverkusen, Germany
- Concentration/restructuring of styrene/acrylate and pure acrylate latices production (PolymerLatex GmbH), Worms, Germany
- Expansion of iron oxide production, New Martinsville, West Virginia, United States and Branston, U.K. (completed 1999)
- Expansion of TDA/TDI capacity, Baytown, Texas
- Expansion of Dorlastan® capacity, Bushy Park, South Carolina, United States, and Dormagen, Germany
- Construction of a new facility for polycarbonate production by the melt carbonate process, Antwerp, Belgium
- Expansion of butadiene rubber capacities, Port-Jérôme, France, and Orange, Texas (completed 1999)

## **Chemicals**

*Investment volume: €0.5 billion*

- Expansion of fine chemicals production, Leverkusen, Germany
- Expansion of ethylene oxide / ethylene glycol capacities at EC Erdölchemie, Dormagen, Germany (completed 1999)
- Modernization and expansion of the tantalum/nium facility, Map Ta Phut, Thailand (completed 1999)
- Expansion/modification of chlorine electrolysis plant, Dormagen, Germany (completed 1999)
- Construction of a nitric acid facility at EC Erdölchemie, Dormagen, Germany
- Capacity increase for cracker and propylene oxide facilities at EC Erdölchemie, Dormagen, Germany
- Ion exchange resin facility, Bitterfeld, Germany (completed 1999)

## **Capital expenditure projects**

Our planned investment volume for the year 2000 is €2.4 billion. Our capital expenditures will therefore exceed the expected depreciation by about one third.

The largest share of capital expenditures at our European sites will be made in Germany. We will spend €0.8 billion to increase capacities and modernize facilities at the sites of Bayer AG alone. Major projects involve the Rubber Business Group and our chemicals activities, where the emphasis will continue to shift from basic to specialty chemicals. We will increase the capacity of our polycarbonate facility in Antwerp, Belgium, by 50 percent with the aim of merging our smaller facilities into larger, more cost-effective units. A total of €136 million will be invested at this site. The expansions will make Antwerp one of four major production sites for Makrolon®, alongside Uerdingen, Germany; Map Ta Phut, Thailand; and Baytown, Texas.

As part of our U.S. investment strategy, we will build a new pharmaceutical production plant in Kansas City, Missouri, in which the active ingredients cerivastatin, for the lipid-lowering agent Lipobay®/Baycol®, and moxifloxacin, for our new respiratory antibiotic Avelox®/Avalox®, will be produced starting in the spring of 2005. A total of US\$ 200 million is earmarked for this project. We will also spend US\$ 80 million to expand the pharmaceutical research center at West Haven, Connecticut.

We plan to invest more than US\$ 9 billion over the next five years in capital expenditures, research and development at our sites in the United States – the world's biggest and fastest-growing pharmaceuticals market.

In Asia we will make capital investments of €1.2 billion over the next four years.

Capital expenditures totaling €0.6 billion are planned for the **Health Care** segment worldwide.

The **Polymers** segment will again be the main beneficiary of our capital spending in 2000. Here we will make capital expenditures totaling €1 billion.

Encouraged by favorable growth forecasts for the Asian polycarbonate market, we will spend €960 million there over the next four years on plastics production facilities alone. We also intend to create a second northeast Asian production center for our Makrolon® polycarbonate at the Shanghai Chemical Industry Park in China. The facility will be built in cooperation with Shanghai Chloralkali Company and is scheduled to go on stream in 2003. We see this as the first step in the construction of a fully integrated chemical complex in the region.

Further expenditures will be made at the Leverkusen site in Germany, where €60 million is already being spent to build a new production facility for our hydrogenated nitrile rubber Therban®. The pioneering project is receiving financial backing from the German Ministry of the Environment due to the plant's technologically innovative and environmentally friendly process.

Over the next two years, a further €20 million will be spent to increase capacities for E-SBR (emulsion styrene-butadiene rubber) and NBR (acrylonitrile-butadiene rubber) at our site at La Wantzenau, near Strasbourg, France, from 100,000 to 150,000 tons. This site is to become the European center for these products due to its central position and flexibility.

In the **Agriculture** segment, we will make capital expenditures totaling €0.3 billion. About €110 million is being spent on a multi-purpose facility for crop protection active ingredients at our site in Dormagen, Germany. This will enable us to exploit an array of synergies at the Dormagen site and enhance our position as one of the world's leading suppliers of agrochemical products.

We plan to spend €0.5 billion on projects in the **Chemicals** segment. More than €150 million will go for the construction of a new multi-purpose production facility for fine chemicals in North America. This plant will enable us to meet the growing demand in the North American market out of local production.

### Entering a global future with new standard software

# Using information to gain a competitive edge

The need for a smooth flow of data between our organizational units and affiliates creates a task of great strategic importance for Bayer. Market presence, competitiveness and efficiency will in the future depend increasingly on rapid access to data and information.

To rise to this challenge, we are creating efficient management systems that will support all everyday business processes independent of national boundaries, from the procurement of raw materials to the delivery of the finished product to the customer. The keyword is SAP R/3, the innovative software that will successively replace existing computer programs in controlling, purchasing, manufacturing, marketing, inventory management and human resources. The Consumer Care Business Group in the United States and Bayer Vital in Germany, among others, have been working with this system since 1999. Its installation will have been completed throughout the Bayer Group by 2004.

We plan to spend a total of €1.3 billion between 1998 and 2004 to install SAP R/3. Half of this figure will comprise internal expenditures. There will be an expected cash-out effect of €700 million, and direct savings of €370 million.

Instead of the approximately 350 different applications currently in use, we will in future work with just a handful of programs worldwide that will ensure a uniform, up-to-date and comparable exchange of information. New distribution channels like the Internet and e-commerce are equally interesting and promising.

About 1,200 of our employees are currently participating in international projects to prepare them for the use of the standard business process software. They are gaining knowledge and expertise in a field for which there is currently a shortage of specialists. The involvement of Bayer's and SAP's experts is essential to adapt the program systems to the complex, Bayer-specific conditions and continue developing them.

The early participation of Bayer employees is also important in view of the new business processes that are based on SAP programs. Our employees are not only familiarizing themselves with these modern data systems, they are also adapting to the business processes as a whole. Over 50,000 Bayer employees will be trained in the operation of the new software system – clearly much more than just a computer workshop.

This supplementary information does not form part of the management report.

## Acquisitions

We spent €0.4 billion on acquisitions in 1999, compared with €1.4 billion – mainly for Chiron Diagnostics – in 1998. Major projects included:

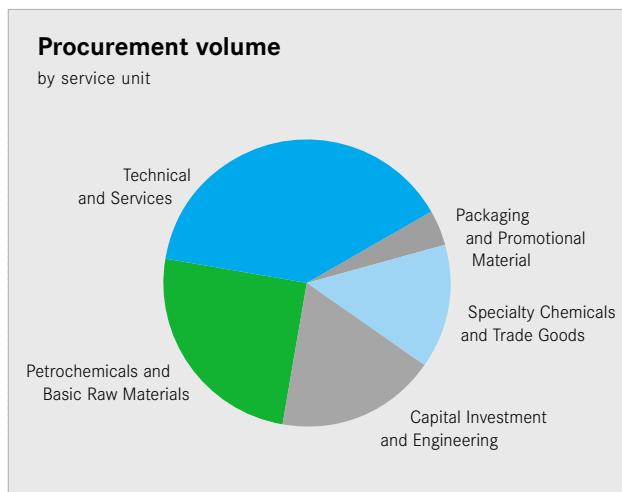
- the acquisition of the plastic sheet business of the chemical company DSM – Axxis N.V. and Sheffield Plastics – for €172 million
- the purchase of the business and assets of Elastochem Inc., United States, for €61 million
- an 11.28 percent equity investment in LION Bioscience AG for €28 million

## Procurement

With cost of materials of about €8 billion worldwide, our globally aligned Procurement Division controls one of Bayer's largest value drivers. To consistently implement Bayer's corporate policy of value creation through synergies, the Procurement Division is divided into five globally oriented service units.

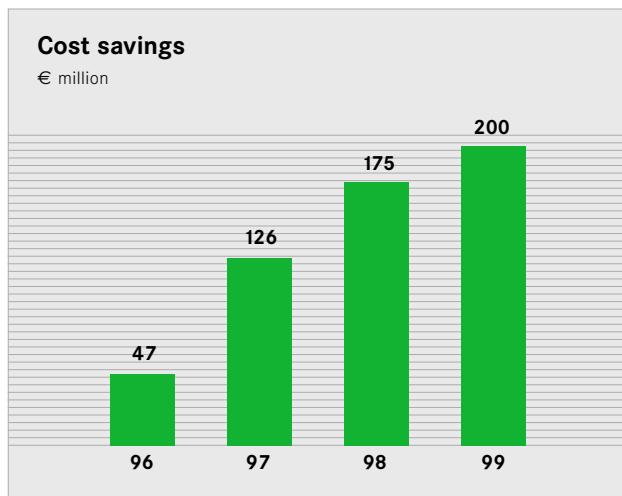
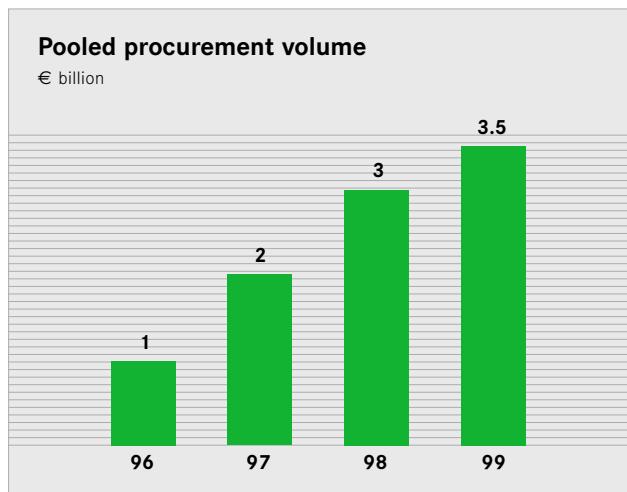
Our service unit for petrochemical and basic raw material procurement pools its global purchasing activities, covering more than 80 percent of demand via long-term contracts. This strategy was successful in 1999.

The Polymers and Chemicals segments both took advantage of the favorable terms negotiated by the packaging and promotional material unit for procuring industrial packaging materials. Despite tangible price increases in the fourth quarter, we were able to obtain consumer packaging materials at lower prices than the year before, causing the service unit's price index to drop by more than two percentage points overall.



With a current market share of about 1.5 % of all chemical processing equipment procured worldwide in 1999, the new capital investment and engineering unit used its buying leverage in a substantial number of projects. The technical and services procurement unit made considerable progress during the year in the standardization and the global or regional pooling of goods and is increasing its cost savings faster than any other unit.

Our international procurement network allows us to strategically pool our buying leverage to obtain more favorable prices and delivery conditions throughout the Group. For the past three years, GLOBE (Global Leverage of Buying



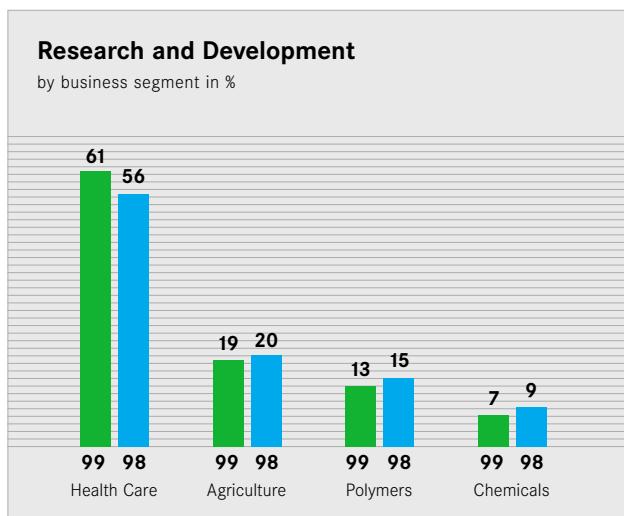
Expertise) teams have developed and implemented strategies to exploit synergy potentials across national boundaries. International steering committees coordinate and monitor the results. Since 1996 the GLOBE project's targeted use of global purchasing resources has led to ever greater cost-savings. Adjusted for currency and market fluctuations, these savings amounted to €200 million in 1999.

An important focus of our efforts in 2000 is on the extended use of e-commerce in our procurement activities.



### Research and Development

The future of our company will be shaped by research, development and innovation. They form the basis for new products and processes and are the originators of growth and value creation. Mindful of the enormous potential for innovation arising from unsolved problems in the fields of health care, agriculture, polymers and chemicals – our core compe-



tencies – we have made R&D a cornerstone of our growth strategy, along with capital investment, acquisitions and cooperations. Our strategic objective is to further strengthen our life science R&D, especially for pharmaceuticals. This includes injecting external expertise into our R&D activities through alliances with international centers of excellence and leading research companies and globalizing our recruitment of research scientists. Closely associated with these objectives is the planned increase in the proportion of external research and development expenditures.

We spent €2.3 billion on research and development in 1999. More than 12,000 employees work in R&D at over 25 sites around the world.

### Health Care

More than 50 percent of R&D spending, or €1.2 billion, was allocated to the Health Care segment in 1999. Our activities in this field focus on: innovative drug products for the treatment of conditions for which current therapeutic options are either inadequate or unavailable, such as arteriosclerosis, diabetes and cancer; the optimization and extension of the indications of over-the-counter medicines such as Aspirin®; and the development of efficient and cost-effective tests and systems for medical diagnostics. At our pharmaceutical research centers in Germany, the United States and Japan, we are concentrating on 15 important indications. Pharmaceutical research is currently experiencing a boom in productivity thanks to new key technologies. We have established the all-important "enabling technologies" in the search for active substances at Bayer through cooperations with leading research companies. These include genome research and bioinformatics as a source of new drug targets, combinatorial chemistry as a basis for large substance libraries and automated, high-throughput screening to find lead structures for active substances. Since 1998, for example, we have been cooperating successfully with the U.S. biotech company Millennium Pharmaceuticals Inc. in the search for genes and proteins that could serve as targets for active substance screening. Our collaboration with LION Bioscience AG of Heidelberg, Germany, uses bioinformatics to scan gene databases to find disease-associated gene sequences (target candidates) that may be suitable starting points for new drug therapies, and to identify genetic diagnostic markers for the early detection of diseases. We are currently developing one of the world's largest computerized test substance warehouses for active ingredient screening, containing more than one million individual compounds. The substance warehouse is based on combinatorial chemistry, our existing substance libraries, and license agreements that give us access to the substance libraries of other international research companies. Our high-throughput screening facilities currently allow us to conduct up to 200,000 tests a day.

The most recent drug product to emerge from our pharmaceutical product pipeline is Avelox®/Avalox®, a new respiratory antibiotic that was launched in Germany in September 1999. Its active ingredient moxifloxacin fulfills all the requirements for market success: rapid action, excellent tolerability and high cure rates. This is demonstrated by clinical tests involving over 8,000 patients so far. Following its introduc-



Over the next five years, Millennium Pharmaceuticals Inc. will analyze for Bayer 225 genes that have implications for conditions like cancer and pain. The genes are sequenced using an electrophoresis gel (photo).

tion in the United States and in the other EU countries, we estimate the annual sales potential for Avelox®/Avalox® at €900 million.

After more than ten years of research work, the Consumer Care Business Group has improved even further its Autan® insect repellent, one of the most successful products of its kind on the market. The patented new active ingredient Bayrepel® has many advantages over other substances. It is so well tolerated, in fact, that Autan® is now also suitable for children from two years of age. With this new spectrum of properties, Autan® boosted its market share in important European countries to 47 percent in 1999.

The successful integration of Chiron Diagnostics in 1999 gave the Diagnostics Business Group entry into the cutting-edge research field of nucleic acid diagnostics (NAD), which is becoming increasingly significant in the diagnosis of diseases like diabetes, cancer, AIDS and Alzheimer's. In the area of laboratory testing, the new ADVIA® Centaur system was introduced in 1999, adding to our existing range of equipment for hospital and commercial laboratories. In the important field of cancer diagnosis with tumor markers, we launched in Europe a fully automated breast cancer monitoring assay that was added to the Bayer Immuno 1® system. The Glucometer® DEX diabetes care system and the latest generation of Clinitek® test strips for urinalysis are performing very well.

## Agriculture

We spent €0.4 billion on research and development in the Agriculture segment in 1999. Our aim is to contribute to the necessary increase in agricultural productivity worldwide by developing innovative crop protection and animal health products that excel in terms of efficacy, user-friendliness, environmental compatibility and cost-effectiveness. At its centers in Germany, the United States and Japan, the Crop Protection Business Group researches new insecticides, fungicides and herbicides. Key technologies like genomics, bioinformatics, combinatorial chemistry and high-throughput screening are indispensable in modern crop protection research, too. We are utilizing these technologies intensively by way of cooperation agreements with leading international research companies. The joint venture with Exelixis Pharmaceuticals Inc. of the United States is aimed at the discovery of new active substance targets so that we can develop more selective insecticides with innovative mechanisms of action for use against insect pests and threadworms. Our cooperation with the U.S company Paradigm Genetics Inc. carries the objective of deciphering the genetic codes in weeds and identifying targets for the development of safer and more specific herbicidal agents. Through our cooperation with LION Bioscience AG, we are also covering the field of bioinformatics, another necessary enabling technology. We are further enhancing our crop protection research by expanding our leading-edge screening technology. Furthermore, we spent more than €20 million in 1999 to build a new research facility at Monheim, Germany, equipped with ultra-high-tech laboratory equipment for efficient, computerized active substance analysis.

**Professor Michael Schindler (left) and Michael Kohnen practice 3-D molecular modeling in crop protection research. This modern research tool allows the Bayer scientists to modify the structure of a substance on the computer screen.**



Two new fungicides emerged from our crop protection research pipeline in 1999. The extremely cost-effective specialty fungicide Teldor® for fruit and vegetables contains the active ingredient fenhexamide, which belongs to an innovative substance class with outstanding environmental properties. Including Melody® (active ingredient: iprovalicarb), which was also launched in 1999, and Win®, introduced in 1998, Bayer has now successfully added three more innovative fungicides to its product line. These launches will be followed by two more promising products in 2000 that will enhance our leading position over the long term.

Research is the basis for market success in the Animal Health Business Group as well. With pioneering products for dogs and cats such as the flea-control agent Advantage®, the anti-infective drug Baytril® and medicines to combat worms, the business group generated almost half its sales in the companion and small animals market. We will further improve our strong position in the companion animals market with innovations like the spot-on application of an all around wormer, which enables the active substance to be applied directly to the animal's skin.

### Polymers

Research and development expenditures in the Polymers segment totaled €0.3 billion in 1999. As a leading polymer manufacturer, our objective is to fully exploit the growth potential for polymeric materials through innovation. We are placing particular emphasis on developing new and improved production processes for our polymers and their base products, improving our product range and opening up new areas of application. Among our plastics, new Makrolon® polycarbonate grades are gaining in importance as carrier materials for optical data storage, for example for the new DVD (digital versatile disc) storage medium. The same size as a handy CD, it stores up to 4.7 billion bytes – enough for a full-length movie with several language tracks. Our Durethan®-based hybrid technology for joining plastics to metals is used to manufacture lightweight yet heavy-duty composite components, particularly for the automotive industry.

Important developments from our rubber research pipeline include two new grades of our Therban® specialty rubber that are particularly suitable for timing belts requiring good low-temperature flexibility and for roll covers used in the paper industry. A new method of manufacturing our Vulkanox® HS antioxidant for rubber will be employed in a facility at our Brunsbüttel site starting in 2001. Our polymer activities were bolstered by the acquisition of the polyols business of Lyondell, which will give us access to innovative, patented technologies and products. We also plan to form an alliance with Lyondell for joint technology development.

Among our coating raw materials, environmentally friendly, waterborne systems are steadily gaining ground. We collaborated with customers and equipment manufacturers to develop novel application techniques that are instrumental in facilitating the industrial-scale use of our patented, waterborne two-component coating systems. Their major advan-

tage in such applications as automotive OEM finishing is their significantly lower level of solvent emissions. For coloring high-performance thermoplastics, we have developed new, low-dust grades of Macrolex® dyes. The research pipeline is stocked with further potent innovations such as new types of high-performance pigments for automotive finishes that are nearly ready for the market.

As our center of expertise for cellulose chemistry, Wolff Walsrode conducts research into the multitude of technical applications for the renewable raw material cellulose. Here a newly-built pilot facility serves as an interface between the laboratory and the market.

## Chemicals

We spent €0.1 billion on research and development in the Chemicals segment in 1999. The segment's broad research spectrum stretches from fine chemicals for the electronics, pharmaceutical and agrochemical industries through fragrances and flavors to metal powders.

Baytron®, a family of modern conductive polymers we supply to the electronics industry (capacitors, displays, organic light emitting diodes) was joined by Levasil®, a promising new development for the fast-growing microelectronics market. Levasil® silica sols improve the surface planarization of computer chips, allowing higher-density circuitry. In the field of fine chemicals, we offer a successful new custom manufacturing service package for the life science industry. Our experts collaborate with customers to develop exclusive syntheses, assist them in using the chemicals and offer product development and manufacturing expertise.

Haarmann & Reimer tapped additional market potential with new technological developments such as the Evocap, Evoglass and Evogram lines of encapsulated flavors.

## Risk Management

As a global company, Bayer is exposed to a multitude of risks. Entrepreneurial activity means that we must take advantage of opportunities while at the same time recognizing and controlling the associated risks. Risk management is thus an integral and essential component of all our business decisions and processes. To take full advantage of the opportunities and challenges of the international markets and hold our own in global competition, we endeavor to identify as early as possible the risks associated with our activities and control them through consistent and foresighted actions. To achieve this, we employ a number of instruments, depending on the particular risk profile. We are constantly upgrading these instruments.

We counter financial and currency risks by financing our business in the local currency or by hedging currency and interest positions with derivative financial instruments. We employ these instruments in accordance with the respective risk assessments, observing detailed guidelines and rules. In future these rules will afford us a certain scope for hedging transactions against currency risks before they are actually recorded.

To counter possible risks arising from the many different laws and regulations concerning taxes, competition, patents, antitrust issues and the environment, our decisions and the design of our business processes are based on comprehensive legal advice, both from our own experts and from acknowledged external specialists. We establish provisions in the balance sheet for any risks resulting from new laws or court decisions that apply retroactively.

To ensure that our employees act responsibly from both a professional and a legal point of view within their respective local environment, we have decided to introduce a worldwide code of behavior, supported by thorough training. This "legal compliance" documents the obligation to observe laws and regulations. Complying with rules at all times and monitoring the way staff handle risks are among the basic duties of all managers and supervisors throughout the Group.

We address product and environmental protection risks through appropriate quality assurance measures. This includes having our activities certified to international standards, consistently upgrading our plants and processes, and

## Management Report

developing new and improved products. We are committed to the international Responsible Care initiative of the chemical industry and to our own safety and environmental management system, which we report on at regular intervals.

Business risks also include those resulting from acquisitions, capital expenditures and research and development. These future-oriented activities are vital to the continued existence of the Group, yet they harbor risks because of the associated uncertainties. We control and reduce operating risks by exercising due diligence prior to acquisitions, capital expenditures or new research projects and by tracking such activities while they are in progress. This allows us to determine not only whether our budgets and original forecasts can be met, but also the potential for new financial or technological risks. We are not aware of any current operating risk that could jeopardize the existence of individual Group companies or the Bayer Group as a whole.

To guard against possible claims and liability risks, we have concluded insurance agreements to ensure that the financial consequences of any possible claims are kept within reasonable limits or are excluded entirely. The insurance contracts are continuously reexamined and adjusted where necessary. Even if there can be no guarantee that the insurance cover eliminates all conceivable risks, it is safe to assume that any claims would not affect the Group's liquidity, financial position or earnings situation to the extent of jeopardizing the company's existence.

Financial reporting is a key element in monitoring and verifying the economic risks of our everyday business, since it ensures on a Group-wide basis that the actual business developments in the individual Group companies are presented and reported to headquarters according to uniform guidelines. The data on which external reporting is based are supplemented by monthly internal reports on aspects such as inventory and earnings development. Detailed reports are

also required on financial obligations and outstanding receivables, listed by debtors' domicile. In addition, the actual data reported are compared to the relevant budget data, ensuring that risks resulting from changes in the business, its structure or external factors are identified in good time. The data collected are included in the reports to management from the worldwide controlling unit. These reports are continuously evaluated by the Board of Management and the organizational units of the company. The Group-wide monitoring system also comprises the internal audit department, which regularly checks that the applicable guidelines and principles are being consistently implemented, the safeguards are effective and the monitoring systems are reliable.

After assessing the current risk situation, we have concluded that we carry sufficient insurance cover and have established adequate provisions in the balance sheet. We have not identified any risks that could jeopardize the existence of the Bayer Group.

## Subsequent Events

Business development at the beginning of 2000 was in line with our expectations, and the growth trend in the economy was as widely forecast. Sales from continuing operations in the first two months of 2000 were up 20 percent.

Following the approval of the relevant antitrust authorities, we are set to acquire for US\$ 2.45 billion the polyols business of U.S.-based Lyondell Chemical Company of Houston, Texas, and an equity interest in the production of propylene oxide, a raw material for the manufacture of polyols.

A further significant announcement subsequent to the close of 1999 was the cooperation with Röhm GmbH Chemische Fabrik of Darmstadt, Germany. This agreement calls for Bayer and Röhm to merge their European polycarbonate and PET sheet activities under the umbrella of the existing joint venture Makroform GmbH. Approval is expected to be granted by the relevant antitrust authorities and supervisory bodies in June 2000. The new group of companies will have annual sales in excess of €100 million and a payroll of some 300.

In January we signed an agreement with the U.S. biotech company Incyte Pharmaceuticals Inc. of Palo Alto, California, in the field of genome research. The agreement gives Bayer access to Incyte's LifeSeq® Gold database for a period of two years.

Bayer also announced in January the establishment of a joint venture for crop protection research with the U.S. company Exelixis Pharmaceuticals Inc. The aim is to develop new insecticides using genetic engineering technology elaborated by Exelixis. We will invest a total of €100 million in the project. Exelixis will receive €20 million up front in return for the granting of license rights.

## Strategy

Bayer will continue to offer a broad range of chemical and pharmaceutical products in the future, concentrating on our core competencies in the Health Care, Polymers, Agriculture and Chemicals business segments.

We aim to strengthen these core businesses and secure our position on the world market through integrated production chains and an expanded product range. Further cooperations should give us access to innovative, patented technologies and products. We will continue to include external growth in our strategy in order to reinforce our position, especially in the rapidly changing life science markets.

We will steadily improve the profitability of our existing portfolio by reviewing the internal resources in all of our functions and business groups. By increasing our research and development productivity, implementing product launches more rapidly and efficiently, and introducing a more competitive cost structure, we will maintain a leadership position on the world market.

By focusing on the **life sciences**, we are strategically exploiting markets with tremendous growth and earnings potential. Our life science business groups accounted for 47 percent of Group sales from our continuing operations in 1999. We plan to increase this share to more than 50 percent over the long term.

Our products Lipobay®/Baycol®, Ciprobay®, Avelox®/Avalox® and Kogenate® give us strong potential for future growth. To boost the profitability of our pharmaceutical activities, we have initiated cost-cutting programs worldwide that will save €360 million a year starting in 2000. These measures will help us expand the operating margin of our **Health Care** segment to over 20 percent by 2002.

New technologies are currently revolutionizing and accelerating the discovery of active substances. Through existing cooperations and license agreements that will be worth up to €900 million if performance criteria are met, we have succeeded in integrating and effectively employing enabling technologies such as genomics, bioinformatics, combinatorial chemistry and high-throughput screening. The associated synergy effects and the resulting boost in efficiency will give us a clear competitive edge.

We are also pursuing a clear growth strategy in the **Agriculture** segment, with equal contributions envisioned from the Crop Protection and Animal Health business groups. Our success in crop protection, where we are among the world's leading suppliers, will hinge on the research and development of new products – in part through wide-ranging cooperations – and on intensive marketing activities.

We will continue to expand in the **Polymers** segment, particularly in the Far East. We will further enhance our position in the European plastic sheet market by combining our polycarbonate and PET sheet activities with those of Röhm AG. Favorable cost structures resulting from our technological expertise and our leading or number two position in relevant market segments will form the basis for sustained growth. An extensive, market-oriented product range will allow us to satisfy our customers' requirements.

Steady capacity increases have allowed us to meet approximately one quarter of the global demand for MDI and TDI. By acquiring the polyols business of Lyondell, we will be able to supply raw material components and the necessary technical service from a single source. An important factor in our success here will be our position in the Asian market, which we intend to enhance by increasing capacities while at the same time optimizing our processes and cost structures.

## Management Report

The acquisition of Chiron Diagnostics placed Bayer among the world's leading suppliers of diagnostic equipment. The photo shows an innovative planar sensing system for biosensor, blood gas and electrolyte analysis.



Further restructuring measures will reduce the **Chemicals** segment's share of our portfolio. Moreover, this business is growing more slowly on the whole due to the maturity of its technologies and markets. Our most important objectives for the Chemicals segment, therefore, are a continued focus on our core businesses and successful cost optimization.

With respect to our regional market presence, we aim to steadily increase the market share of our business segments in North America. In view of the positive growth forecasts for Asia, this region's share of Group sales will climb to about 25 percent over the medium term. To help achieve this, we will spend more than €4 billion through 2010 to build new production facilities and strengthen our research activities in the life sciences. China will play an increasingly important role in our plastics operations due to the heavy demand for polycarbonate in that country.

Our European sites – the foundation of the Bayer Group – will continue to benefit from growth in the chemical and pharmaceutical industries. Our core competencies will remain the focus of our activities, as we are both a technological and a market leader in these fields.

Our primary objective is to achieve a sustained increase in our corporate value through optimum portfolio management. We want to substantially increase our cash flow return on investment, which currently stands at 10 percent. To do this, we are pursuing a consistent value management strategy incorporating specific targets for all operating units. The stock option program we introduced at the beginning of 2000 is linked to the indicators for sustained value creation.

## Outlook

### *Global economic trend*

With perspectives favorable in the economic regions of the world, we anticipate that the current recovery will continue in 2000. In Europe, we see opportunities for a sustained upswing. In our view, the upward trend in Asia will continue, although some uncertainty still surrounds the strategically important Japanese market. We expect a moderate improvement in the business environment in Latin America. We believe the highly favorable economic situation in North America will continue despite higher import prices and an increase in interest rates.

Raw material costs, in particular the price of crude oil, are unlikely to significantly exceed their current high levels. We anticipate that the economic recovery will lead to a slight improvement in selling prices.

We are budgeting for an exchange rate of €1.12 against the U.S. dollar. The external value of the euro should increase as economic growth rates begin to match those in the United States. We believe the exchange rate will be well above parity.

### *Objectives for 2000*

In view of the relatively stable economic conditions, we anticipate sales growth of 7 percent in 2000, to €27 billion. To achieve this, we are planning a 6 percent increase in volumes.

Earnings growth has so far been hampered by the current high raw material costs and the limited scope for price increases. We will counter these factors through aggressive cost containment programs and further actions to restructure our portfolio, as well as through business expansion. We are confident that we will exceed last year's earnings from continuing operations.

In the Polymers segment, we will further enhance our solid market position in 2000. These expectations are based on the improving business environment and the acquisition of the Lyondell activities. Exceptional charges in 2000 will be considerably lower than in 1999.

The Chemicals segment faces another challenging year. We expect sales to grow as a result of higher demand in key consumer industries and an increase in private consumption. In view of price developments in the chemical industry, however, our optimism remains muted.

For the Agriculture segment, we predict another year of stability at the current high level. However, new competing products for Advantage®, the flagship brand of our Animal Health Business Group, could put us under intense pressure to innovate. Our strength in insecticides and fungicides will enable us to weather the problems of the industry better than our competitors.

Our expectations for sales and earnings growth in the Group as a whole are based in large part on the Health Care segment. The Pharmaceuticals and Diagnostics business groups, in particular, possess the potential for significant growth. We are aiming for profitable expansion through intensified research activities and our extensive cooperations in the promising field of biotechnology.

### **Forward-looking information**

*This Annual Report contains statements and forecasts relating to the future development of the Bayer Group as a whole and the individual consolidated companies. Such forecasts constitute estimates we have made on the basis of all the information currently available to us. Should the assumptions underlying these forecasts prove unreliable or should risks as outlined above under "Risk Management" materialize, the companies' actual performance may differ from current expectations.*

Bayer high-rise wrapping a global media event

# 100 years of Aspirin

**March:** Bayer organizes the last in a series of major events to mark the centennial of Aspirin®, the pharmaceutical of the century. The first event, an Aspirin® symposium in Venice, Italy, took place in April 1997 on the 100th anniversary of the discovery of the active ingredient, acetylsalicylic acid (ASA). On March 6, 1999, exactly 100 years after Aspirin® was entered into the trademark register of the Imperial Patent Office in Berlin, 50,000 spectators witness the wrapping of Bayer's high-rise corporate headquarters building in Leverkusen as the world's largest Aspirin® box. Highlights of the »birthday party« include a free-climbing show, a mobile Aspirin® exhibition and a vertical run down the side of the building by Bayer athlete and women's 400 meter relay world champion Anke Feller. Over 22,500 square meters of fabric are used to wrap the 120 meter high building. More than 250 journalists from 29 countries are on hand to report on the event, and numerous television stations broadcast the images around the globe via satellite. Reports on the Aspirin® centennial celebration are seen or heard by more than 500 million people worldwide.

50,000 spectators witness the spectacular wrapping of Bayer's high-rise administration building in Leverkusen as a giant Aspirin® box.

## Market launch

### New antibiotic

**September:** The new respiratory antibiotic Avelox®/Avalox® debuts on the German market. The product is based on Bayer's active substance moxifloxacin, which works reliably against all relevant respiratory pathogens. The substance has proven its worth in clinical trials involving more than 8,000 patients. Moxifloxacin is also characterized by its rapid action, excellent tolerability and high cure rates. Following its introduction in the United States at the end of 1999 and with launches in additional E.U. countries scheduled for 2000, Avelox®/Avalox® has an estimated sales potential of €900 million.

## Competition in Germany

### Junior researchers invited to Bayer



**May:** Bayer hosts the 34th "Jugend forscht" (Young Researcher) competition. The entrants are 184 young people aged 13 to 22 from all over Germany who present a total of 106 projects from various fields to the jury at the Leverkusen Forum. Bayer has sponsored the competition for 34 years and is hosting the event for the third time. Through this kind of commitment, Bayer reaffirms its interest in fostering talented, up-and-coming researchers and giving creative ideas a chance.

## 100 years of Bayer

### Centennial celebrations in Italy, Belgium and Spain

**May, September, October:** Bayer's subsidiaries in Italy, Belgium and Spain celebrate the 100th anniversary of their founding. On May 15, 1999, some 14,000 guests attend a centennial concert organized by Bayer Italia

S.p.A. in Milan Cathedral. Another 4,000 people follow the event live from the cathedral square via a giant screen and loudspeakers. "Federico Bayer & C.ia" was founded on New Year's Eve 1898. Today the company employs 3,000 people. In Brussels, Bayer's Belgian subsidiary celebrates its centennial on September 9, 1999 with a ceremony attended by 300 guests from politics and industry. On October 14, 1999, the Bayer group in Spain invites numerous guests to a ceremony in Barcelona marking the centennial of Bayer Hispania. The highlight of the ceremony is the dedication of the belltower of the Royal Chapel of St. Agatha. Bayer sponsored the restoration of this Gothic monument.



Dr. Manfred Schneider welcomes 300 guests from politics and industry to the centennial celebrations for Bayer's Belgian subsidiary in September.

## Open house

# Record number of visitors

**September:** A record 82,000 people attend open house events at 11 German sites of Bayer AG and its subsidiaries. Throughout Germany, 450,000 people participate in similar events held under the auspices of the German Chemical Industry Association (VCI).



## Expanding polycarbonate capacities in Asia

# Makrolon to be produced in China starting in 2005

**November:** Bayer and Shanghai Chloralkali Company sign a letter of intent to build a production plant for Bayer's Makrolon® polycarbonate in Caojing, China. The facility will have an annual capacity of 100,000 tons of this thermoplastic and is scheduled to begin production in 2005. The project, which represents a total invest-

ment of €430 million, is another important step in building a solid presence for Bayer in China. The new facility will supplement Bayer's polycarbonate plant in Map Ta Phut, Thailand, which went on stream in November 1999 and is due to have a capacity of 120,000 tons by 2001.

## Plastic sheet

# Acquisitions strengthen global presence

**February/March:** Bayer makes two important acquisitions to enhance its position in the fast-growing market for transparent plastic sheet and globalize its activities in this field. In February 1999, Bayer acquires the global transparent polycarbonate and polyester sheet business of the Dutch chemical company DSM. These products are manufactured in Belgium and the United States. DSM had annual revenues of more than €120 million from the plastic sheet business. Bayer's acquisition of the Australian company Laserlite in March 1999 makes it one of the leading suppliers of polycarbonate sheet in Australia and New Zealand as well.

## January:

Bayer invests €22 million in a new research facility at Monheim for crop protection products and veterinary pharmaceuticals.

## February:

Together with experts from Onyx Pharmaceuticals, Bayer researchers discover a new lead substance for the manufacture of drugs in the fight against cancer.

## March:

By acquiring the U.K. company pbi Home & Garden Ltd., Bayer strengthens its presence in the British market for plant protection products and fertilizers used in the household and garden sector.

## April:

After completion and start-up of the new ion exchange resin plant in Bitterfeld, Bayer's investments at this site in eastern Germany total more than €500 million.

## May:

Bayer receives marketing approval from the U.S. Food and Drug Administration (FDA) for a new, once-a-day presentation of the lipid-lowering drug Baycol®.

## June:

Bayer brings the world's most modern production facility for non-prescription medicines on stream in Buenos Aires, Argentina.

On June 1, Bayer lists 70 million Agfa shares on the Brussels and Frankfurt stock exchanges at an offer price of €22.

## July:

In recognition of the environmentally advanced process technology to be employed at the new Therban® rubber production facility under construction in Leverkusen, the project receives financial support from the German Ministry of the Environment.

Bayer announces the expansion of its biotechnology operations in Berkeley, California. Some €340 million will be invested at the site through 2004.

## August:

Bayer intensifies its research into Alzheimer's disease by forming a network between universities and industry.

## September:

Bayer spends €80 million to expand its pharmaceutical research center in West Haven, Connecticut. The investment will create 200 new jobs there by 2003.

## October:

Bayer's first biotech drug to emerge from research in Germany enters clinical testing. Fermentation of this asthma medicine begins at the biotechnology pilot plant in Wuppertal.

## November:

BASF, Bayer and Hoechst announce plans to combine their global textile dyes businesses. For this purpose, the textile dyes activities of BASF and DyStar – the current 50:50 joint venture between Bayer and Hoechst – will be combined effective April 2000.

## December:

The FDA grants approval for Bayer's new respiratory antibiotic Avelox® in the United States. Avelox® is already registered in 30 other countries.



I can confirm the advice of many financial experts: stocks are a tremendous capital investment. Especially when we're talking about equities like Bayer. We recently did the calculations: I bought my first Bayer shares in 1978 and reinvested the dividends regularly in more shares, achieving an average annual return of 16.1 percent. This has allowed me to build up considerable capital over time. The

initial investment alone – DM 1,000 in 1978 – is now worth almost DM 27,000. That kind of return certainly makes Bayer stock an attractive investment, which is why I continued to invest. The shares gave my wife and me the sound financial basis we needed to realize our dream: our own sailboat.

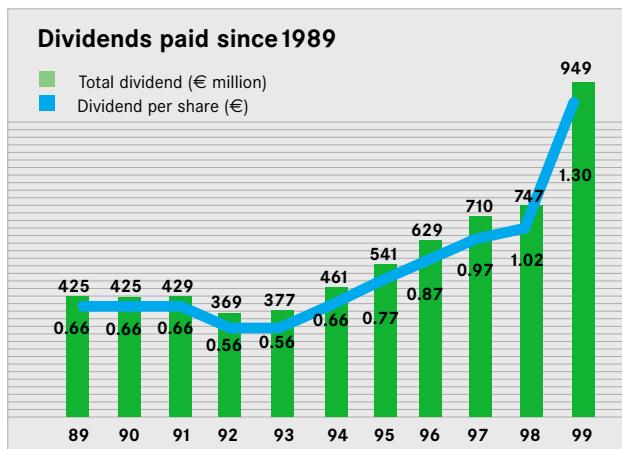
*Horst Bilio, Head of the Technical Department at KVP Pharma + Veterinär Produkte GmbH, Kiel, Germany*

# Substantial dividend increase

The Board of Management and the Supervisory Board are proposing a dividend for 1999 of €1.30 per share, 27.5 percent more than for the previous year. The dividend reflects the increase in net income in 1999. Including the tax credit of €0.08 per share, the gross dividend for domestic stockholders amounts to €1.38. The dividend yield comes to 2.9 percent. The total payout is €949 million, the payout ratio 47 percent.

## Stock appreciates in 1999

In 1999 Bayer stock performed approximately in line with the German market trend. After a hesitant start, the share price gained strongly at mid-year, outperforming the German share index DAX. But the biggest improvement came at the end of the year: Bayer stock closed 1999 at €47.15, up 32 percent year-on-year from €35.74 at the end of 1998. The investment return amounts to 35 percent if the cash dividend is included. This means Bayer stock did slightly less well than the German market as a whole (DAX: + 39 percent), which was driven mainly by telecommunications and technology equities, but outperformed the chemical industry index C-DAX-Chemie, which gained 32 percent on the year.



Bayer stock data		1999	1998
Dividend	€	<b>1.30</b>	1.02
Tax credit	€	<b>0.08</b>	0.33
Earnings per share	€	<b>2.74</b>	2.21
Cash flow per share	€	<b>4.45</b>	4.65
Equity per share	€	<b>20.79</b>	17.50
Year-end price*	€	<b>47.15</b>	35.74
High for the year*	€	<b>47.15</b>	49.27
Low for the year*	€	<b>30.25</b>	30.22
Shares issued as of year end	million	<b>730.34</b>	730.34
Shares to be issued upon the exercise of warrants	million	<b>0.0</b>	0.0
Share turnover on German stock exchanges	{ million € billion}	<b>1,837.4</b> <b>70.5</b>	2,199.3 84.6
Market capitalization	€ billion	<b>34.4</b>	26.1
Total dividend payment	€ million	<b>949</b>	747
Price/earnings ratio		<b>17.2</b>	16.2
Price/cash flow ratio		<b>10.6</b>	7.7
Dividend yield	%	<b>2.9</b>	3.8

\*fixing on the Düsseldorf Stock Exchange

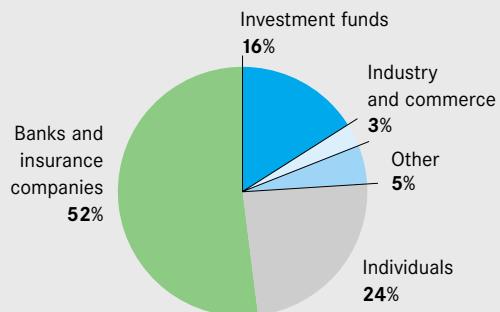
## Share ownership

		Number of stockholders		
	1999	in %	1993	in %
Individuals	375,553	93.3	282,600	95.8
Insurance companies, banks	2,276	0.6	2,100	0.7
Investment funds	3,357	0.8	1,600	0.5
Industry and commerce	6,825	1.7	4,500	1.5
Other	14,537	3.6	4,200	1.5
	<b>402,548</b>	<b>100</b>	<b>295,000</b>	<b>100</b>

## Foreign holdings by country

Country	% of total stock in survey		% of foreign ownership	
	1999	1993	1999	1993
U.K.	12	16	27	32
U.S.A.	9	12	21	25
Switzerland, Liechtenstein	8	4	18	8
Luxembourg	4	1	9	2
Netherlands	3	1	7	3
Belgium	2	5	5	10
Other countries	6	11	13	20
	<b>44</b>	<b>50</b>	<b>100</b>	<b>100</b>

## Percentages of Bayer stock held by respondents to the 1999 survey



## High-yielding investment

The positive trend in the share price and the consistently high dividend yield make Bayer stock a particularly attractive long-term investment. For example, an investor who purchased Bayer shares worth DM 10,000 at the start of 1990 would have had a portfolio worth DM 42,200 by the end of 1999. That equates to an average annual return of 16 percent.

## Number of stockholders greatly increased

The results of the share ownership survey of July 16, 1999, based on responses representing 91 percent of the capital stock, reflect the popularity of the stock with investors. Compared with 1993, when the previous survey was carried out, the number of stockholders had risen by 37 percent, to 402,548. Of the total number of stockholders, 93 percent were individuals, who owned 24 percent of the stock between them. Institutional investors such as banks, insur-

ance companies and investment funds held 68 percent of the stock. With 95 percent of its shares widely held, Bayer AG has one of the broadest shareholder bases among major German corporations.

## An attractive security on the international stage

Bayer's international orientation is also reflected in the fact that 44 percent of the stock is held outside Germany. British and American investors continue to be the largest foreign shareholder groups, together accounting for 48 percent of non-German share ownership.

# Group portfolio strengthened for the long term

*The goal of Bayer's corporate strategy is to generate a sustained increase in the company's value. In pursuit of that goal we are actively managing our portfolio, steadily improving our cost structures, investing in new manufacturing capacities and researching new products and processes. During 1999 Bayer's market capitalization increased by €8 billion to €34 billion. With considerable upside potential remaining, Bayer stock continues to represent an excellent investment opportunity.*

## New system of performance indicators based on the capital market

Value is created if the company earns more than the cost of capital plus the cost of reproducing depletable assets. Our profitability yardstick since 1994 has been the CFROI, which is the ratio of the gross cash flow to the capital invested. Businesses with CFROIs above the hurdle have generated an excess return, in other words they have contributed to value creation. Multiplying this excess return by the capital invested gives the cash value added (CVA) by the company or an individual business group in the respective year. An additional parameter we use for portfolio management purposes is the change in the CVA from one year to the next, the delta CVA. A positive delta CVA means that more value was created than in the previous year; a negative delta CVA indicates that value was destroyed.

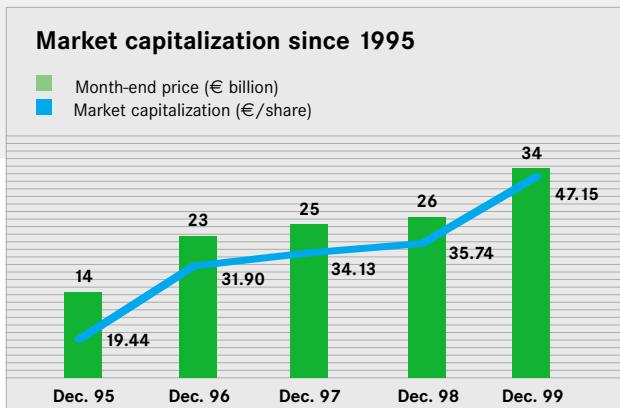
## Expanding in the life sciences

We will achieve further growth in Bayer's value by continuing to realign the portfolio toward the high-earning life science activities of our Health Care and Agriculture business segments. Our goal is for the life sciences to account for at least 50 percent of sales in the medium to long term. We will work toward this goal through a combination of organic growth, major investment in R&D, and selective acquisitions, alliances and joint ventures. Our expansion plans focus heavily on the U.S. health care and agrochemical markets.

Long-term success in the life sciences depends on the innovative potential of our research. For that reason we again strategically increased our R&D spending last year, particularly in pharmaceuticals. As a result, we are now a world leader among pharmaceutical companies in terms of the enabling technologies: genomics, bioinformatics, high-throughput screening, combinatorial chemistry and substance libraries. This has already greatly improved the productivity of our research, with nine development candidates entering our pharmaceutical pipeline in 1999. In the medium term we plan to come up with more than 20 new development candidates each year.

We are equally encouraged by the success of our agrochemical research, where we use the same technology platform to discover innovative active ingredients for crop protection products.

Another focus of our value-based portfolio management is on expanding the leading position we hold in the polymers business throughout the world. Here, too, we are not only making substantial capital expenditures to increase our capacities but also making selective acquisitions to enhance our portfolio. Last year, we reinforced our global leadership in isocyanates for the long term by agreeing to acquire the polyols business of Lyondell and form a production joint venture for propylene oxide. These actions, combined with the continuing high demand for our polymer products, will increase the Polymers business segment's share of the Group portfolio to about 35 percent.



In Chemicals, we will concentrate even more on profitable specialties, thereby reducing this segment's share of sales to around 10 percent.

We took a further step toward realizing this target portfolio when we successfully floated Agfa on the stock market in 1999, divesting 70 percent of Agfa shares. The remaining 30 percent we continue to hold is a purely financial investment of no strategic significance.

### Further increase in capital and R&D spending

To step up our growth potential, we invested a total of €4.6 billion for capital expenditures and R&D. 70 percent of the €2.3 billion spent on research served to strengthen our long-term innovative potential in the life sciences. In 1999, we again entered into collaborations with companies that are leaders in their fields. Notable examples are

- the license agreement with MorphoSys that provides us with access to an antibody library
- the agreement with the U.S. biotechnology company Incyte Pharmaceuticals giving us access to its gene database
- the cooperation with LION Bioscience of Heidelberg, Germany, to develop a new concept for analyzing information from gene databases
- the joint venture with the U.S. company Exelixis, providing us with information that will be used to develop more selective crop protection insecticides
- the collaboration with Paradigm Genetics to decipher the genetic codes of weeds.

Capital expenditures amounted to €2.3 billion, of which 48 percent went to create additional production capacities, particularly in the Polymers segment.

### Stock option program launched

Further increases in corporate value depend ultimately on the skills and dedication of our staff. For this reason we are increasing the proportion of variable components in our employees' compensation. At the beginning of 2000 we also launched a stock option program for the Board of Management and the first management level below the Board. Gains from the program are only possible if Bayer stock exceeds a 30 percent performance threshold or outperforms the Dow Jones EURO STOXX 50SM index at the time the options are exercised and the delta CVA of the business for which the manager is responsible is positive over a three-year period. Business group managers who do not contribute to value creation will not benefit from the program even if Bayer stock has met the performance criteria. We will introduce other stock incentive programs for all employees during 2000.

### Investor relations activities expanded

In keeping with our declared objective of pursuing a frank and open dialogue with the stockholders, we again stepped up our investor relations activities last year.

Our 1999 roadshow program focused on the United States, where we hope to gain new investors in preparation for our listing on the New York Stock Exchange, which will take place by mid-2001. In November we held a special R&D Investor Conference, attended by over 120 analysts and investors, at which we gave detailed information about our research activities in the life sciences. In December we redesigned our Internet site for private and institutional investors, accessible at [www.investor.bayer.com](http://www.investor.bayer.com) or [www.investor.bayer.de](http://www.investor.bayer.de). We will, of course, continue to intensify our dialogue with investors.



My goal is to become an electricista. I want to someday be an electrician in control of large industrial plants – a highly responsible task that requires a solid education. I'm currently receiving that education at Bayer's training center in Mexico City. I'm proud of this, because there's something very special about this school. It's a fantastic opportunity for many young Mexicans who want to gain the necessary skills to work in the chemical industry. Bayer's training center offers something in its everyday cur-

riculum for young people that is far from commonplace in our country: the combination of practical vocational training with a school education and a placement at the company. What's more, Bayer doesn't charge tuition, but instead pays its trainees a wage. Our company also provides us with tools, materials and work clothes, as well as board and accident insurance. It's a great deal – and it makes learning fun.

Hector Hernández Trejo, age 21, from Mexico City



# New roads to the future

*We are increasing our international competitiveness and corporate value through profitability-oriented and performance-enhancing compensation systems, flexible working hours and changes in the pattern of our social commitment.*

Flexibility, performance-related pay and personal initiative are key terms in a compensation policy that forms part of Bayer's prudent realignment of its human resources policies. The compensation system based on corporate profitability and individual performance that has proven effective for managerial staff has also been extended at Bayer AG to employees covered by the collective agreement. We are supplementing this system with long-term stock incentive plans not only for senior executives but for all company employees. A key aspect of the plans is the employees' own investment in Bayer stock.

For managerial staff, the variable component now accounts for a larger proportion of total compensation than before and depends on the attainment of individual performance targets. Bayer is implementing the principle of performance-enhancing compensation on a Group-wide basis – taking care to adjust the concept to local conditions. The variable component was phased in as far back as 1996 at Bayer's foreign affiliates to enhance the motivation and commitment of our employees.

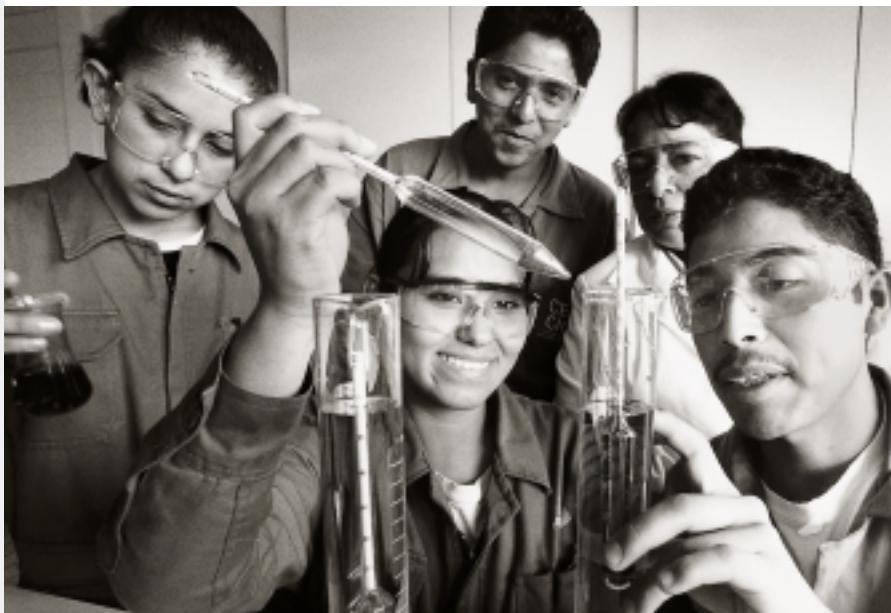
## **Modern worktime systems improve efficiency**

As with compensation, rigid arrangements in the area of work organization also are no longer in keeping with the times. Flexitime systems allow our employees to better coordinate their presence at the workplace with the requirements of their individual units while at the same time accommodating their personal needs. Flexitime, part-time

employment and shift systems have been introduced in line with recent ergonomic findings to boost efficiency and help reduce costs. Flexitime models already apply to 40 percent of Bayer AG employees. Another 22 percent work in special shift systems. The proportion of part-time employees is increasing and currently stands at 7 percent. Experiments in telecommuting have also been very successful.

We are steadily implementing our own pioneering teamworking concept whereby chemical production technicians work with maintenance specialists and colleagues from a variety of other disciplines in teams that have responsibility for a specific plant or product. Last year 3,500 employees were organized according to the teamworking system in almost 40 production units at Bayer AG. By 2003 the concept will be in place in all manufacturing and technology units.

For this reason the teamworking philosophy is already a key focus at the training stage. Right from the beginning, each trainee receives insight into other occupations that can be of great value later in the workplace. Bayer's vocational training instructors are just as impressed with the results as their colleagues in the production facilities: Teamwork boosts self-confidence, encourages employees to take the initiative, and increases motivation.



Young people can prepare for a career at the training center of Bayer de México. Training is based on the "dual system" – vocational college plus practical training.

We are also exploring ways to restructure our social commitment. We have decided to sell a large portion of the houses and apartments we own in Germany, at the same time ensuring that the tenants' interests will be taken into account in the long term. We can reinvest the proceeds much more profitably in our core businesses to enhance our competitiveness. This is a further step to equip our company for the challenges of the future and safeguard our commercial success.

### Trainee numbers remain high

The number of young people entering vocational training programs at Bayer AG and its German affiliates in 1999 was 1,044, including 800 at the parent company. Once again, this is a significantly larger number of youngsters than we are likely to need. Bayer AG's five German sites currently have 2,650 trainees. Employment contracts of unlimited duration were signed with 622 young people who successfully completed their training in 1999.

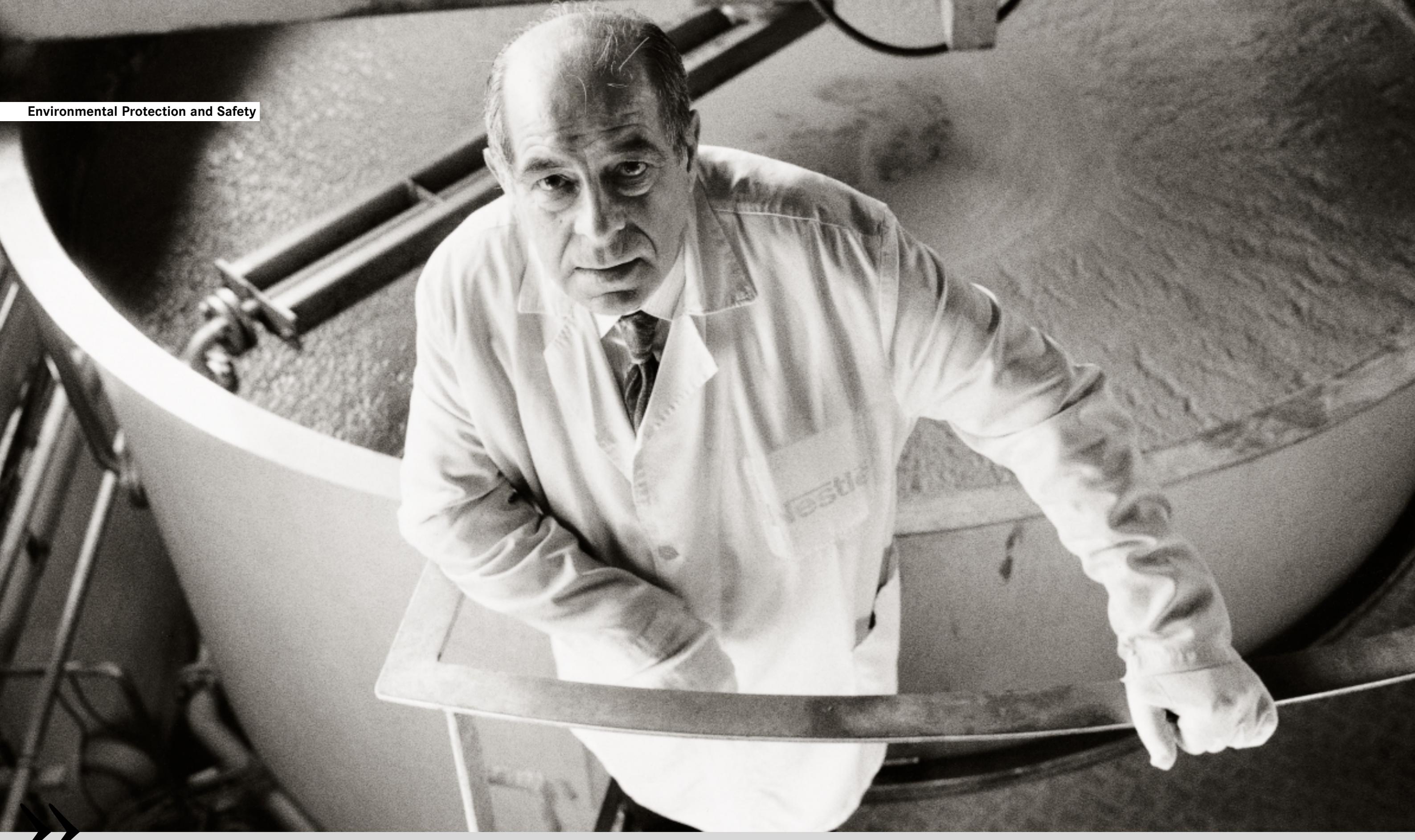
As a global player, Bayer has designed its educational programs with an international perspective. One example is the training and study program entitled "Marketing and International Business Studies." Bayer runs business training programs in 18 countries based on the German "dual system" that features a combination of vocational college and practical training. In addition, we sponsor technical and scientific training courses in Brazil and Mexico for 90 young people.

Since 1992 we have organized management seminars as part of our international human resources development concept. Programs designed to foster the development of managerial staff and trainees at the headquarters of our foreign affiliates are running very successfully in Russia, Poland, Thailand, China and Singapore.

### Regular dialogue through the European Forum

One instrument we use to promote cross-border dialogue is our European Forum, a venue aimed at a pan-European exchange of information and opinions between Bayer management and employees. In this respect we are pioneers among European chemical companies. Our European Forum was held for the eighth time in June 1999, attended by 70 representatives from 15 countries, and the event is being steadily developed. The six-member Joint Committee of the European Forum can be convened at short notice to discuss current topics, thereby increasing the effectiveness of the employer-employee dialogue at the European level.

On December 31, 1999 the Bayer Group had a total of 120,400 employees worldwide – 24,700 fewer than at the end of 1998. The decrease was mainly the result of the Agfa flotation.



We're very proud of where we live. Santiago de Compostela is one of the most beautiful cities in Europe. Its cathedral and historic city center are cultural gems. But to preserve these monuments and the picturesque cityscape, we have to make an active commitment to environmental protection. Only the best is

good enough. So I'm pleased my company decided to use the Bayer Tower Biology process in our wastewater treatment plant. It's by far the best way to deal with wastewater from the production of evaporated milk. And there's no noise or odor causing inconvenience to people in the neighborhood.

*Jesus Guimarey Mascaro, Technical Manager at the Nestlé plant in Santiago de Compostela, Spain*



# Responsible Care knows no boundaries

*For years, Bayer has been coming up with technical innovations that have set standards in environmental protection and safety. The most recent example: the Bayer Site Information System, which registers data from all of Bayer's production sites and evaluates it according to uniform standards.*

The sheer size of our global production network is apparent from the following figures: 750 production facilities at 200 sites on six continents, 120,000 employees, 350 affiliates, and more than 10,000 commercial products.

Global commitment means a global responsibility – especially to protect the environment. Our response to this challenge is in keeping with the principles of the Responsible Care initiative. For Bayer, the same standards apply not just in Germany and elsewhere in Europe, but in all regions and countries of the world. We spelled out this policy some years ago in our "Guidelines for Responsible Care in Environmental Protection and Safety."

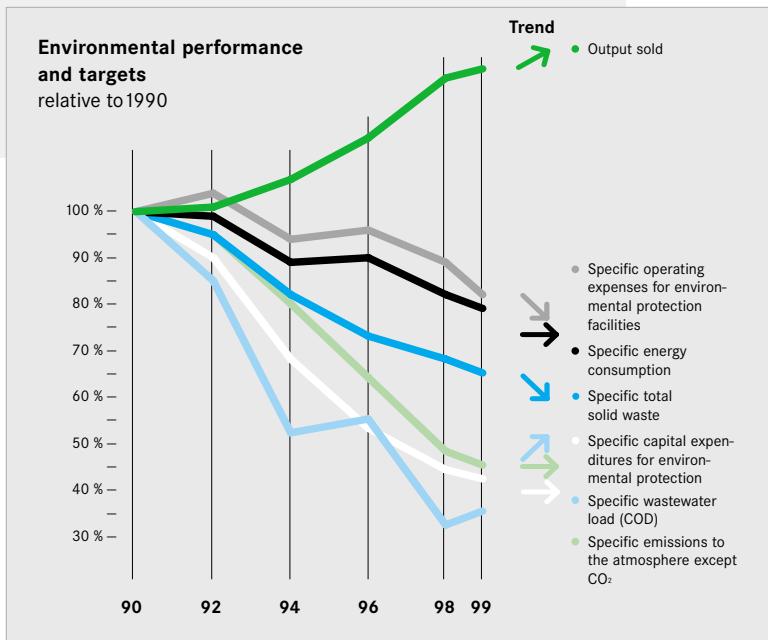
To attain this challenging corporate objective, we have developed a program to introduce a comprehensive HES (health, environment and safety) communication and management system that unites the requirements of international standards with Bayer's own policy guidelines, facilitates communication and ensures transparency.

At the heart of the program, launched in 1998, is the Group-wide Bayer Site Information System (BASIS), which manages the environmental and safety data of all Bayer

sites, checks their plausibility and identifies possible weaknesses. This enables us to continuously review, extrapolate and communicate our goals in the areas of product stewardship, environmental protection, plant safety, transportation safety, hazard prevention, and occupational health and safety, and ensure they meet the latest standards. Development of BASIS is complete, and the system can now be made available to other companies.

## Responsible Care Report now presents data from more than 150 sites

In 1999 BASIS also supplied the data for our HES report, which for the first time was entitled "Responsible Care Report." The 82-page brochure documents Bayer's global commitment to environmental protection and contains facts and figures on topics such as surface water protection, resource conservation, emissions to the atmosphere, industrial waste management and occupational safety. As with the previous report, the facts and figures section of the Responsible Care Report was verified by independent experts. Our innovative information system allowed us for the first time to include HES data from more than 150 Bayer sites in 33 countries – almost twice the data volume of the previous report. BASIS also enables Bayer to provide detailed responses to incoming HES queries. Bayer's inclusion in the new Dow Jones sustainability index is testimony to our activities in this field.



In the closed "towers" of the wastewater treatment facility at Nestlé's site in Spain (left), the process developed by Bayer ensures that the organic load from the milk processing plant does not enter the Rio Ulla (above).

## 20th anniversary of a pioneering wastewater treatment technology

Over the past two decades, Bayer has developed a number of new technologies to help protect the environment. Examples are the catalytic degradation of the greenhouse gas nitrous oxide, the LOPROX® low-pressure oxidation process for wastewater, and the Bayer Tower Biology wastewater treatment process. We introduced Tower Biology exactly 20 years ago, and this innovative technology remains state-of-the-art today. It derives its name from the four 25 meter high tanks at the Leverkusen site.

The wastewater in the tanks is mixed very efficiently using special compressed-air injectors developed by Bayer to provide the microorganisms with oxygen. The system saves energy and has low noise and odor levels.

First introduced in Germany, Tower Biology was soon in use around the world. Bayer employs the technique not just in Brunsbüttel and Leverkusen in Germany, but also at its production facilities at Antwerp in Belgium, Thane in India and our U.S. sites in Bushy Park, South Carolina and Baytown, Texas. What's more, our experts have since adapted this water treatment technology for use at breweries, petrochemical facilities, textile plants and paper mills in many countries.

Once an end-of-the-pipe treatment process, Tower Biology has advanced to become a vital element in today's network of environmental protection measures, allowing further ecological improvements. Tower Biology has also assumed additional tasks. At the Leverkusen site, for example, nitro-

gen compounds are oxidized to nitrate by a special process in two tower-shaped tanks. The nitrate is then fed into a third tank, where other bacteria reduce it to nitrogen.

The Tower Biology process and the in-process environmental protection concept have enjoyed great practical success, as the data recorded in BASIS show (see chart). The specific wastewater load (COD) of Bayer's sites has dropped continuously over the past decade, with 1999 levels 50 percentage points below those recorded in 1990. In-process environmental protection also means we are producing less solid waste, thus freeing up capacities in our waste management facilities and allowing us to offer their services to other companies.



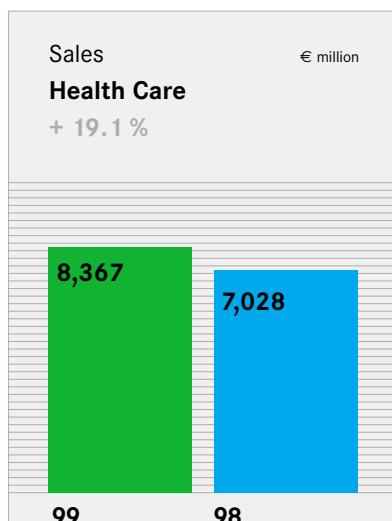
The diagnosis struck like a bolt from the blue: diabetes. That was a year ago – since then almost every aspect of my life has been impacted by the disease. It was a big shock for my whole family. Insulin shots, hospital visits and a blood sugar test twice a day – how were we supposed to manage all that when the nearest hospital where I can be treated is 60 miles away? In our little village, tucked away in the mountains of Oregon, there's not even a doctor. My parents would have had to give up their jobs

and move with me to the city – an absolute catastrophe. But then we found the answer. Bayer launched the new Glucometer® DEX, which allows me to monitor my blood glucose levels myself – at home. The device can store up to 100 measurements automatically. Once a week I e-mail the data to the doctor, and I only have to go for a check-up four times a year. It's really awesome that we've got such a device. DEX is like a member of the family – it's one of my best friends.

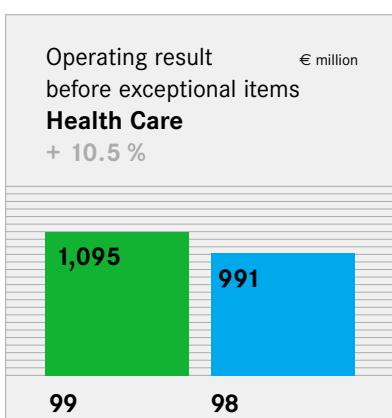
*Kristin Vieira, age 12, from Toketee Falls, Oregon, U.S.A.*

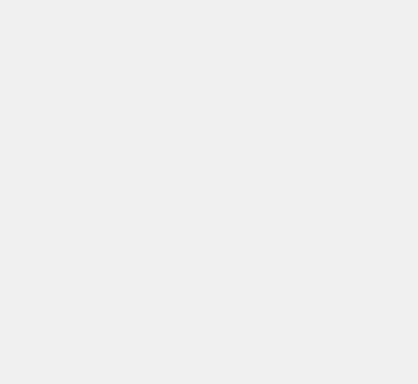
- Pharmaceuticals: Sales grow by 15 percent
  - Consumer Care: New products a success
  - Diagnostics: World's fourth-largest supplier

# Strong growth in sales and good future prospects



*Good news from the Health Care business segment: Sales climbed by 19 percent compared to 1998, to a new high of €8.4 billion. Growth was particularly strong in the Diagnostics Business Group, where 1999 sales were 55 percent above the previous year. Sales of the Pharmaceuticals Business Group grew considerably faster than the world market, increasing by 15 percent over 1998. Exceptional charges from the successful integration of Chiron Diagnostics Inc. and temporary production problems for biological products hampered the growth in operating profit, which nevertheless increased by 10.5 percent to €1.1 billion, giving a 13 percent return on sales. By 2002 this will reach 20 percent, driven by our future pharmaceutical blockbusters Lipobay®/Baycol®, Kogenate® and Avelox®/Avalox® and a consistent cost management program. We have established leadership positions in key drug-discovery technologies such as genomics, bioinformatics, combinatorial chemistry and high-throughput screening, and will expand this technology platform to provide continuing opportunities for profitable organic growth in the long term.*





Thanks to the easy-to-use Glucometer<sup>®</sup> DEX from Bayer, 12-year-old Kristin from Oregon can check her own blood glucose levels daily to accurately dose her insulin shots.

## Pharmaceuticals

### *Using innovative key technologies in the search for active substances*

The future depends on research. In 1999, the Pharmaceuticals Business Group spent €950 million on research and development – more than 40 percent of Bayer's total R&D expenditures.

Bayer took action at an early stage to establish one of the leading international high-tech research platforms for pharmaceuticals. We are securing access to new expertise and promising substances through close cooperation with a number of biotechnology companies. To form this international network, we have signed cooperation and license agreements worth €900 million since 1997.

Since 1998 we have enjoyed a very successful research alliance with Millennium Pharmaceuticals Inc. of the United States. Another important partner is LION Bioscience AG of Heidelberg, Germany: This collaboration, begun in June 1999, will allow us to step up our use of bioinformatics over the next five years, scanning global databases to identify disease-associated gene sequences. Our cooperation with MorphoSys AG of Martinsried near Munich, Germany, will provide us with access to a collection of more than one billion different human antibodies that will help us to find potential active ingredients for new drugs. From the U.S. biotech company Incyte Pharmaceuticals Inc., Palo Alto, California, Bayer has acquired the right to use the LifeSeq<sup>®</sup> Gold database of over 480 patented genes for research purposes for a two-year period. It is the aim of the Pharmaceuticals Business Group to launch at least two new drug products each year over the long term.

Most recently emerged from its research pipeline is Avelox<sup>®</sup>/Avalox<sup>®</sup>, an anti-infective drug to combat infections of the respiratory tract that was launched in Germany in September 1999. The active ingredient moxifloxacin fulfills all the requirements for market success: rapid action, excellent tolerability and high cure rates. Moxifloxacin has proven its worth in clinical trials involving over 8,000 patients so far. Avelox<sup>®</sup>/Avalox<sup>®</sup> was introduced in the United States and other countries at the end of 1999. We estimate its annual sales potential at €900 million.

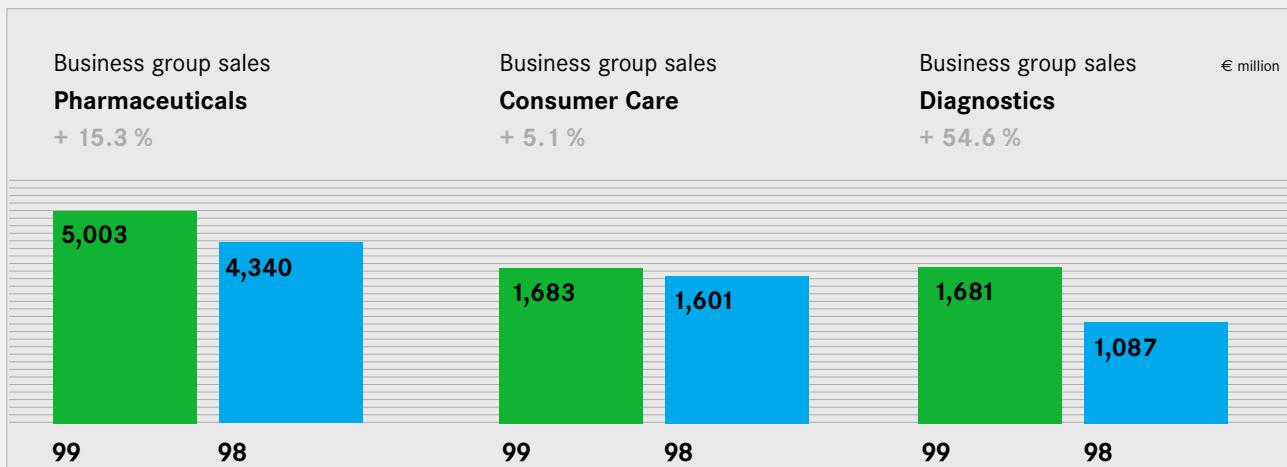
We acquired the patent license for another, equally promising antibiotic from the Japanese company Suntory Ltd. and expect to launch this broad-spectrum product on the world market starting in 2004. We put its annual sales potential at more than €500 million.

Bayer's established drug products also performed well in 1999. Sales of the anti-infective Ciprobay<sup>®</sup>/Cipro<sup>®</sup>/Ciproxin<sup>®</sup>, the new lipid-lowering agent Lipobay<sup>®</sup>/Baycol<sup>®</sup> and the cardiovascular drug Adalat<sup>®</sup> grew strongly to record levels. Only our genetically engineered drug Kogenate<sup>®</sup> for the treatment of hemophilia registered a 2 percent decline in sales, attributable to production problems that have since been rectified.

We nevertheless continue to regard Kogenate<sup>®</sup> as a future blockbuster along with Lipobay<sup>®</sup>/Baycol<sup>®</sup> and Avelox<sup>®</sup>/Avalox<sup>®</sup>. This would give the Health Care segment three more products with sales of over €500 million each in addition to the current blockbusters Ciprobay<sup>®</sup>, Adalat<sup>®</sup> and Aspirin<sup>®</sup>.

Thanks to its line of innovative products, the Pharmaceuticals Business Group had sales in 1999 of €5 billion, which

## Health Care



was 15 percent above the previous year. Sales developed particularly well in North America, gaining 22 percent.

To set the course for the future, the Pharmaceuticals Business Group embarked at the end of 1998 on an extensive restructuring program that includes divesting activities we no longer regard as strategic core businesses. Two examples of such action are the divestiture of the allergens business and the sale of Troponwerke GmbH & Co. KG. By continuing to eliminate excess capacities and optimize its product portfolio, the Pharmaceuticals Business Group will achieve total annual cost savings of €360 million by 2002.

### Consumer Care

*Sales climb by a further 5 percent*

Mosquitoes, ticks, horseflies – it makes your skin crawl just thinking about them, and not without reason: These miniature vampires are not just bothersome, their bites can also transmit serious diseases such as yellow fever and malaria, or trigger allergic reactions. In other words, repelling insects means protecting your health.

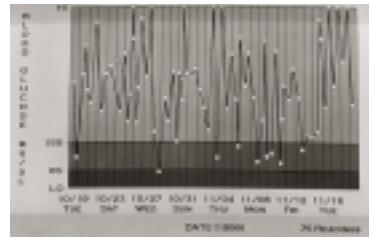
That's why Bayer has been active in this field for more than 95 years. Our Autan® is one of the most successful insect repellents in the market. Following ten years of research, the product has been improved even further. The new, patented active ingredient Bayrepel® has many advantages over other substances. It is so well tolerated, in fact, that Autan® with Bayrepel® is also suitable for children over two years of age.

With a new spectrum of properties, Autan® remains on the right track. It is a market leader in Germany, the United Kingdom, Spain and Italy.

In the United States, our new One-A-Day® Specialized Blends product line continued to perform well. Sales of these vitamin/herbal/mineral combinations jumped by 19 percent, accounting for almost one in every five dollars in sales of One-A-Day® vitamins in 1999. Together with Bayer® Aspirin, One-A-Day® helped us achieve above-average growth in the United States in 1999. This is reflected in the financial results of the Consumer Care Business Group: Sales rose by 5 percent to €1.7 billion.

Other regions showing strong growth were Southeast Asia and China. Sales of our household insecticide Baygon® advanced strongly in Thailand, and we maintained our leading market position with this product in Indonesia, Singapore and the Philippines.

Even 100 years after its market launch, demand for Bayer's blockbuster Aspirin® continues to grow. In its centennial year, the "pharmaceutical of the century" broke records not only with the spectacular wrapping of Bayer's high-rise administration building in Leverkusen as the "biggest Aspirin® box in the world," an event witnessed directly or indirectly by more than 500 million people around the globe.



Aspirin® also contributed a record €532 million to sales of the Consumer Care Business Group in 1999. The sales growth was due in part to the new cold remedy Aspirin Complex®, which we launched in Spain in 1999. In Germany, we gained market share with the improved “Aspirin® direkt” chewable tablet.

In the United Kingdom, we considerably enhanced our line of skincare products – which includes brands such as Canesten® – by acquiring the Germolene® and Germoloids® brands from SmithKline Beecham, at the same time improving our position in the important U.K. market.

## Diagnostics

### *Integration of Chiron Diagnostics boosts growth*

“Integration going well.” – That was the encouraging news just a few months after the acquisition of U.S. industry leader Chiron Diagnostics had transformed Bayer’s Diagnostics Business Group into the world’s fourth-largest source of diagnostics technology. Given our highly motivated team – now comprising over 7,500 employees – and the benefits derived from the acquisition, the future looks promising indeed.

Prominent among those benefits are portfolio additions that have bridged strategic gaps in immunodiagnostics and testing for infectious diseases. For example, Bayer has entered the fast-expanding field of nucleic acid diagnostics, which has an increasing part to play in the detection and

Kristin Vieira enters her blood glucose levels into the computer and e-mails them to her doctor. Self-testing with the Glucometer® DEX enables the Vieira family to continue living in the mountains of Oregon despite their daughter's illness.

monitoring of infectious diseases and cancer. We are now the global number three in this market, sharing in its annual growth of 20 percent.

In the laboratory testing segment, the acquisition significantly broadened our customer base, greatly strengthening our position in the United States and Japan. In 1999, the ADVIA® Centaur system joined the ADVIA® family of products for large hospital and commercial labs.

In November 1999 we purchased the Cambridge, Massachusetts-based oncology diagnostics (OSDI) business of OSI Pharmaceuticals. This acquisition is a key part of our strategy to become the world leader in cancer diagnostics. The clinical research capabilities of this business are the ideal complement to Bayer’s expertise in commercializing assays across testing platforms, an example of which is the recent addition to the Bayer Immuno 1® system in Europe of a fully automated assay to monitor breast cancer, “HER-2/neu.”

In self-testing, complementing the outstanding popularity of the Glucometer® Elite, the Glucometer® DEX/Esprit Diabetes Care System continued to perform well around the world and met with an excellent market response in the United States following its launch there in 1999.

Clinitek® 500, the latest generation of the highly successful Clinitek® family of urine chemistry instruments, was introduced in 1999. This system is now offered in more than 20 countries, with demand exceeding expectations.

The first beneficial effects of the rapid and successful integration of Chiron Diagnostics were felt in the business group’s financial performance: Sales in 1999 climbed by 55 percent from the previous year to a new record of €1.7 billion. Earnings were negative because of expenses for the integration, but will be clearly positive again in 2000. The annual synergies of €125 million will be fully realized from 2001.



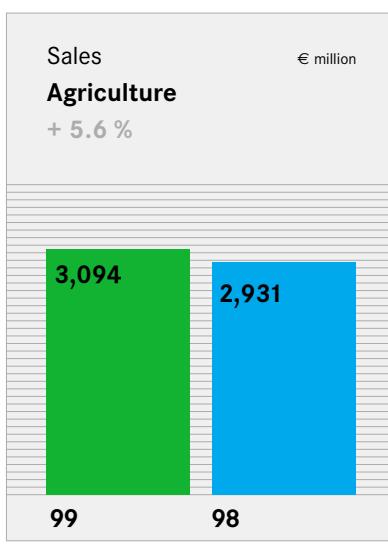
Chili is our life. We've been chili farmers for generations, with all of our hearts. And when harvest time comes around, the whole family turns out for the occasion. But in the meantime, the plants need loving care. With every change in the weather, we fret that the cold and dampness might damage their delicate skins. Of course, there's nothing we can do about the weather, but for a while now, we have been well armed against our plants' other arch enemy: insect pests. We use Confidor® from Bayer,

which protects our crops really well and reduces the amount of chemicals introduced to the environment. We used to have to spray large amounts of pesticides over our fields. Now all it takes is a couple of dozen grams of Confidor®, applied at the roots of the plants, and the insects don't stand a chance. Confidor® gives our chili peppers the protection they need, and they maintain their most prized attribute: their fiery nature.

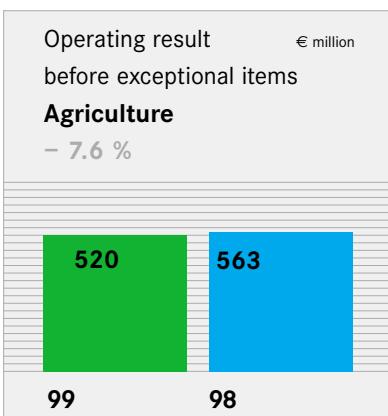
*Tomás Ramírez Alvarado, chili farmer from Bataoto in the Mexican state of Sinaloa*

- **Crop Protection: Continued growth**
  - **Animal Health: Leading position expanded**

# Positive development against the market trend



*With an operating margin of 17 percent in 1999, Bayer's Agriculture segment continues to hold a leading position in the world market. Although business was under pressure from the economic weakness in some key countries and sharply declining prices for herbicides, sales grew by 6 percent from 1998, to €3.1 billion. This positive development was mainly the result of our firm commitment to chemical crop protection, which continues to be reflected in strong sales of our state-of-the-art fungicides and insecticides. Our business in animal health products also performed well and harbors further growth opportunities. Our primary challenge for the future is to stabilize sales at this high level.*



**Every member of the family turns out for the chili harvest in Mexico. Thanks to intelligent crop protection, in which Confidor® from Bayer plays a key role, Tomás Ramírez Alvarado can harvest up to 260 tons of chili each year.**



## Crop Protection

### *Broadly based commitment*

One substance, many uses. That's imidacloprid's recipe for success. This active ingredient has exceeded all expectations as a seed treatment in sugar beet, corn and cereals. Combining imidacloprid with fungicidal active ingredients creates additional uses – and market opportunities. It allows growers to simultaneously protect their seed from both insect pests and fungal diseases. Farmers who use Bayer seed treatments have at their disposal the complete offering of the Crop Protection Business Group, which includes customized formulations, advice on different application techniques, and comprehensive service back-up.

Our top-selling active substance imidacloprid therefore remains a strong performer. Sales of products based on it rose substantially to more than €460 million in 1999, thanks to the use of the insecticides Gaucho®, Confidor®, Admire® and Provado® in additional crops and the growth in combinations of imidacloprid with other active ingredients. Imidacloprid has garnered a strong position in the Mexican chili and melon-growing markets, for example, because its use has led to significant progress in crop production and profitability.

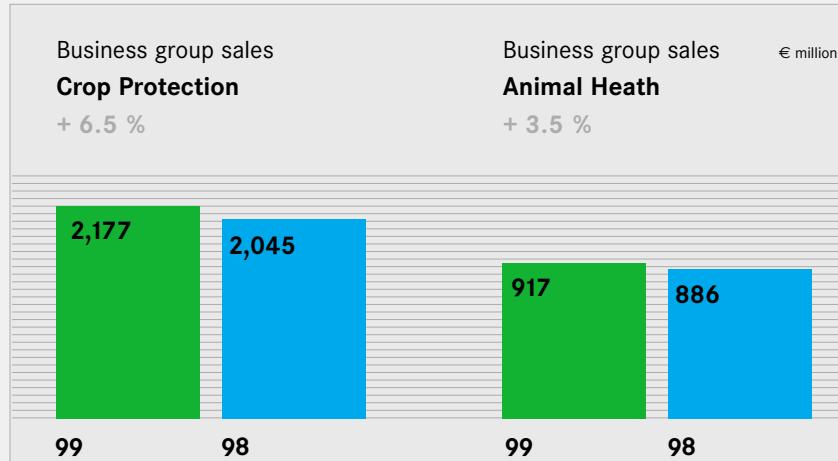
The active ingredient flufenacet is also gaining ground in the market. This new Bayer herbicide is being sold as Herold® or Terano® in Europe and as Axiom® in the United States. The suitability of flufenacet for use in a wide variety of crops makes it another major success for Bayer's

research, which is becoming more and more efficient through the use of ultra-modern screening technology.

In 1999 we invested over €20 million to build a new research facility at Monheim, Germany, equipped with the latest laboratory apparatus for applying innovative, efficient screening methods. The Crop Protection Business Group boasts a well-stocked R&D pipeline. Following two product launches in 1999, we will bring two more promising products to market in 2000 that will enhance our leading market position over the long term.

Another new market introduction is the highly cost-effective specialty fungicide Teldor® for fruit and vegetables. Its active ingredient fenhexamide belongs to an innovative substance class with excellent environmental properties. Including Win®, which was launched in 1998 and is doing particularly well in Japan, and Melody® (active ingredient: iprovalicarb), introduced in 1999, Bayer has now added three more modern, successful fungicides to its product line.

## Agriculture



The new garden/professional care business unit performed well. We anticipate further success in 2000 with our move into the U.S. consumer lawn, garden and home pest control market through a joint venture with Pursell Industries, a leading manufacturer of special fertilizers. This business unit is expanding in the United Kingdom too: The 1999 acquisition of pbi Home & Garden Ltd. will strengthen our marketing operation in the U.K., which is Europe's second largest home gardening market. New, innovative formulations of our dependable Provado® and Lizetan® insecticides for amateur gardeners are allowing even safer, more targeted and more environmentally friendly application.

In early 2000, building on the successful cooperation with Exelixis Pharmaceuticals Inc. which we began in 1998, we established a crop protection research joint venture with that company. The joint venture, in which we hold a majority interest, is named "GenOptera" and headquartered in San Francisco. It will develop new agricultural insecticides with the aid of the gene technology used by Exelixis.

Sales of the Crop Protection Business Group increased by 6.5 percent to €2.2 billion in 1999, driven by its success in North America and a tangible increase in demand in Southeast Asia, Japan and India. This positive trend stood in sharp contrast to the development of the agrochemical industry as a whole, which saw steep declines in prices and volumes. At the same time, our 1999 results confirm the wisdom of our steadfast commitment to conventional crop protection. Our product innovations, combined with further growth in the seed treatment and home gardening businesses, provide a solid foundation for continuing success.

We are also closely observing the "green biotechnology" market, which we are prepared to enter if the conditions are right.



This chili farmer has been protecting his crops with Confidor® – and seeing a bigger harvest – for the past six years. One application per cycle is enough to provide effective protection from insects. Adequate protection from the sun is a must during the chili harvest (right).

## Animal Health

### *Growth above the market average*

Europe and North America are the Animal Health Business Group's largest and fastest-growing markets. There are 60 million cats and over 50 million dogs in the United States alone. This gives us a considerable potential for growth – especially with such products as our innovative flea control agent Advantage®, the anti-infective drug Baytril®, and wormers for small animals.

With products like these in its portfolio, the business group generates almost half of its sales in the companion and small animals market, which was again the main growth driver in 1999. Despite certain weaknesses in the livestock market, sales grew by 3.5 percent – faster than the market as a whole. With 1999 sales of €917 million, Bayer reinforced its position among the world's top three suppliers of animal health products, with the largest contributions to growth coming from North America and the Far East.

We will further improve our strong position in the companion animals market with innovations such as the spot-on application of an all around wormer, which enables the active substance to be applied directly to the animal's skin.

Bayer's Checkmite® also proved very popular in 1999, protecting thousands of bee colonies in the United States against hive beetles and mites.

With two thirds of the world's population living in areas where diseases like malaria are endemic or pests destroy a large proportion of stored agricultural products, a healthy environment for both people and animals is of growing importance. Our products to combat insects and rodents are therefore in increasing demand, helping the hygiene business unit to achieve an average 10 percent growth rate over the last few years.

The Animal Health Business Group is creating the basis for future success in the market by investing heavily in research and development and building new production plants. Following the expansion of facilities in the United States and the groundbreaking ceremony for a new production plant in China, the business group began construction in the summer of 1999 of a new facility at the Kiel, Germany, site of Bayer subsidiary KVP Pharma + Veterinär Produkte GmbH. About half of all veterinary pharmaceuticals sold by Bayer worldwide are manufactured by KVP, which exports its output to approximately 100 countries.



We had one goal in mind when we designed the SLK: to develop a car that spontaneously stirs the emotions. A car with passion that makes every mile a memorable experience. Low windshield, a swooping hood, wide doors and powerful haunches – those are the SLK's trademarks, attributes of a classic roadster that now has an even more dynamic appeal with redesigned bumpers and skirts. No doubt

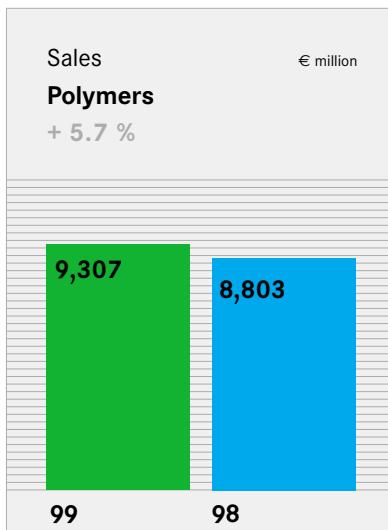
about it: Without the use of modern plastics from companies like Bayer, we would never have been able to make this exciting design a reality. Plastics give us much more design freedom than other materials, plus they can be molded with extreme precision and have a number of other invaluable properties, such as low weight and good dimensional stability. Cars like the SLK would be inconceivable without them. <<

*Michael Plessing, designer with Mercedes-Benz, Sindelfingen, Germany*

## Polymers

- **Plastics: Growth in business**
- **Rubber: Developing on schedule**
- **Polyurethanes: Acquisition brings new potential**
- **Coatings and Colorants: Technological leadership expanded**
- **Fibers: Standing our ground in a difficult market**
- **Wolff Walsrode: Upward trend in methylcellulose**

# Poised for further growth



*Polymers remains the Bayer Group's largest business segment in terms of sales, its six business groups posting total revenues in 1999 of €9.3 billion, 6 percent more than in the previous year. In a difficult business environment, however, margins were squeezed by a combination of higher raw material costs and a continuing decline in the overall level of selling prices. The operating result declined by 4 percent to €1.2 billion, giving a return on sales of 12.5 percent. By acquiring the polyols business of Lyondell Chemical Company and at the same time securing access to propylene oxide supplies at cost, we are reinforcing our core business in polyurethanes. This acquisition closes a strategic gap in Bayer's product portfolio, giving us a strong technological and commercial position. At the same time we are investing in expanding economies such as the People's Republic of China and pioneering new applications for our plastics. All this means that Bayer's Polymers segment is poised for global growth.*



Engineering polymers play an increasingly important role in the design of new automobiles. Bumpers (left) and other add-on parts are now almost always made of these materials. Mercedes designer Michael Blessing can attest to their excellent molding properties.

## Plastics

### *Bayer raw materials for high-tech applications*

Whether your favorite movie star is Julia Roberts, Hugh Grant or Tom Cruise, before long you'll be watching them all on DVD rather than a video cassette. DVD stands for digital versatile disc, the data storage medium of the future. The same handy size as a CD, it stores up to 4.7 billion bytes – enough for a full-length movie with several language tracks – and is scanned by a laser in a special DVD player.

A proven substrate for this optical data carrier is a Bayer thermoplastic that has a steadily expanding range of other uses, too: Makrolon® polycarbonate. Demand for this product continued to grow rapidly in 1999, confirming our strategy of global capacity expansions. Our polycarbonate capacities now total 550,000 tons a year following the start-up of a new facility at Map Ta Phut, Thailand, and further increases are planned. At the same time we have built a new plant for the polycarbonate precursor bisphenol A (BPA) at our site in Baytown, Texas, increasing our total BPA capacities by 160,000 tons.

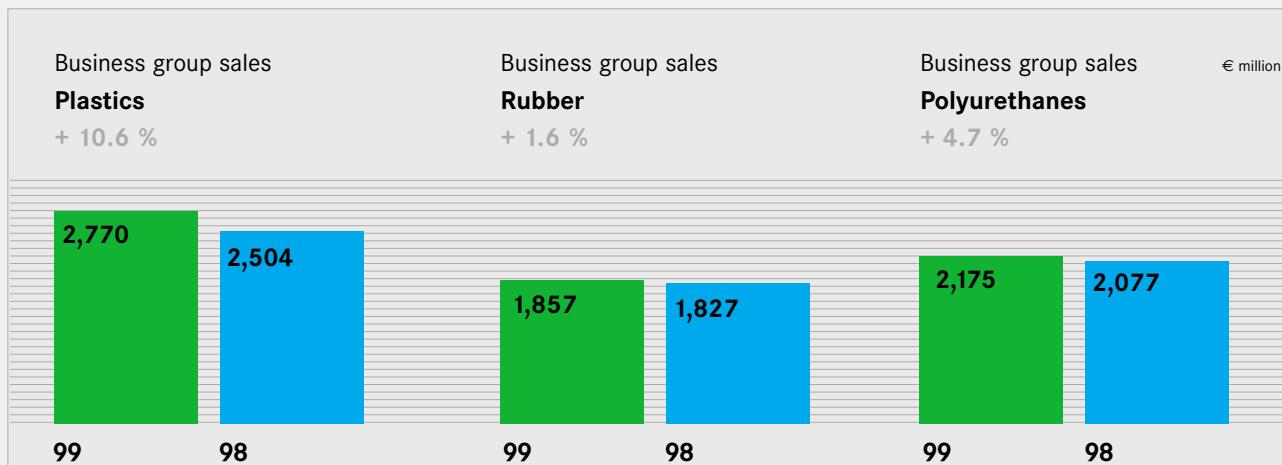
Sales of the Plastics Business Group rose 11 percent from the previous year, to €2.8 billion. A major part of this expansion was due to Bayer's strong presence in the Far East, where growth rates exceeded our expectations in 1999 and also are expected to be highest in the future. In China, for example, we signed a letter of intent in early November 1999 to build a production facility for 100,000 tons per year of polycarbonate and a plant to manufacture BPA. Total investment in this joint venture with Shanghai Chloralkali Company will be €430 million. The facility will be built in two phases and is scheduled for completion in 2005. The Plastics

Business Group plans to invest a total of €960 million in Asia, with further capacity increases planned for Map Ta Phut, to 120,000 tons of polycarbonate and 160,000 tons of BPA.

We continued to pursue our selective forward integration strategy in 1999, acquiring three companies that manufacture transparent plastic sheet of Makrolon®: Axxis N.V. in Belgium, DSM Sheffield Plastics Inc. in the United States and Laserlite in Australia. Integration of these companies' operations into the Plastics Business Group is steadily enhancing our market presence as a supplier of high-performance semi-finished products.

Other Bayer plastics with excellent future prospects are our styrenics Lustran®, Bayblend® and Novodur®. These are used by auto component suppliers to manufacture intricate parts that improve safety and comfort for car occupants and enhance functional efficiency. Many of the plastics components in innovative cars like the new Mercedes SLK or the Rover 75 are made from these Bayer materials. To further improve our cost structures, we will consolidate our styrenics activities in Europe and the NAFTA region over the next two years at our facilities at Dormagen in Germany, Tarragona in Spain and Addyston, Ohio in the United States, increasing our global capacity to 850,000 tons a year.

Our Durethan® thermoplastic has an important role to play in the application of our hybrid technology for joining plastics



to metals. This process, developed by Bayer scientists, is used to manufacture lightweight yet heavy-duty composite components, particularly for the automotive industry. Durethan® is also increasingly popular on its own, the most recent example of a large-scale application being the installation in summer 1999 of approximately 50,000 new, comfortable Durethan® seats in the Berlin Olympic Stadium.

### Rubber

#### *Further increase in global production capacities*

The demands made on car tires have increased greatly since the early days of the automobile. Today's tires have to be high-tech products made from high-performance materials. Thanks to improved formulations, new designs and new production methods, they are better able to meet the growing demands regarding safety, comfort, durability, reduced rolling resistance and lower noise levels. It is the chemical industry that supplies the material tires are made of: customized synthetic rubber.

The high-grade halogenated butyl rubber supplied by Bayer's Rubber Business Group meets the tire industry's increasing requirements for durability and air impermeability, making it a material of choice for innerliners. Butyl rubber in the innerliner or innertube also helps prolong the service life of truck tires, enabling them to be retreaded several times.

To meet the rising demand for halogenated butyl rubber, we are currently investing €87 million to expand production capacity at our site in Sarnia, Canada.

Capacity expansions for butadiene and styrene-butadiene rubber were successfully completed in 1999, increasing total annual output at our European and North American facilities by 100,000 tons. The construction of a new production facility for our Therban® specialty rubber in Leverkusen is on schedule. In recognition of the environmentally advanced process technology to be employed, the project is receiving financial support from the German Ministry of the Environment. The total investment will amount to €58 million. Therban® will find increasing use especially for heavy-duty, heat-resistant parts. In 1999, Bayer scientists developed two new grades of this hydrogenated nitrile rubber that are particularly suitable for timing belts requiring good low-temperature flexibility and for roll covers used in the paper industry.

Our ethylene-propylene (EPDM) rubber is also performing well in the market. With this cost-efficient material replacing other types of synthetic rubber in many end-use areas, global demand for it is growing faster than average. Bayer has raised its total annual EPDM capacity at Marl, Germany and Orange, Texas by 10,000 tons.

Another of our scientists' recent achievements is the development of a new method to manufacture our Vulkanox® HS antioxidant. This method will be employed for the first time in a facility at our Brunsbüttel site, where output of Vulkanox® HS will reach 15,000 tons a year by 2001.

Our subsidiary Rhein Chemie also enjoys worldwide success with its line of rubber chemicals. In 1999, Rhein Chemie built a new plant in China with an annual capacity of 10,000 tons and strengthened its U.S. operations by acquiring the assets of Elastochem Inc., which specializes in the development and production of customized multiple-ingredient dispersions of rubber chemicals. Our affiliate PolymerLatex initiated a number of projects to cut production costs, greatly improving its earnings performance compared with 1998.

Sales of the Rubber Business Group rose 2 percent from the previous year, to €1.9 billion, mainly thanks to a business recovery in Asia.

## Polyurethanes

### *Major acquisition makes Bayer an all around supplier*

In the old days, motorists knew that even the slightest collision could mean a substantial repair bill. But now things have changed. Car bumpers often come out of minor accidents completely unscathed, reverting to their original shape after slight knocks sustained during parking maneuvers, for example. A modern engineering polymer – polyurethane – makes this possible.

Many automakers now use polyurethane as an energy-absorbing material, not only for front and rear bumpers but increasingly in vehicle interiors in the form of side impact protection systems that also shield the head, helping cars to comply with the strictest safety regulations.

Polyurethane's robustness, elasticity and versatility also come to the fore in other industry sectors such as construction, furniture and mattresses, and they are widely used to insulate pipelines, refrigerators and refrigerated containers. Even the tracks for Japan's Shinkansen high-speed trains have ties made of fiber-reinforced polyurethane.

Bayer has systematically expanded its production capacities in recent years and now meets more than one quarter of world demand for the polyurethane raw materials toluene diisocyanate (TDI) and diphenylmethane diisocyanate (MDI). By acquiring the polyols business of U.S.-based Lyondell Chemical Company and at the same time securing access to propylene oxide supplies at cost, we will in the future be

able to supply the necessary large quantities of polyols, the other major polyurethane raw material. This will enable us to build on our already strong market position. The Lyondell acquisition makes Bayer an all around supplier, offering its customers not only a wide variety of raw materials for different fields of application but technical support as well, all from a single source. The €2.3 billion acquisition includes production facilities in the United States, Belgium and France, along with majority holdings in joint ventures in Indonesia and Taiwan. These polyol facilities have a total annual capacity of 700,000 tons. On top of this, Bayer gains the long-term right to purchase supplies of propylene oxide on an as-if-producer basis. The acquisition also gives us access to innovative, patented technologies and products. In addition, Bayer and Lyondell will form an alliance for joint technology development and expansion of production capacities for the polyol precursor propylene oxide.

As one of the world's major suppliers to the polyurethanes industry, Bayer shared in the continued worldwide growth in polyurethanes in 1999. Sales of the business group rose 5 percent from the previous year, to €2.2 billion. The increase was partly the result of more stable economic conditions in the Asian region, which is among the business group's most important markets. Growth rates in Asia are now back to 1997 levels.

We are steadily expanding production capacities for polyurethane raw materials and gaining entry to new markets and new application areas with the help of capable local partners. In China, for example – which has the world's fastest-growing market for polyurethanes – Bayer Jinling Polyurethane Company Ltd. began producing polyol formulations in March 1999. The expansion of our production facilities in Baytown, Texas is on schedule, with a new MDI plant already on stream since last year and a new world-scale TDI facility nearing completion.

### Coatings and Colorants

#### *Growth in environmentally compatible coating systems*

The principle of product stewardship embodied in the global Responsible Care initiative has long been a priority for the Coatings and Colorants Business Group. Its scientists in research and technical marketing feel responsible not only for product development but also for ensuring that Bayer's systems are used correctly and in an environmentally responsible manner. In the area of waterborne two-component coatings, they collaborate with customers and equipment manufacturers to develop novel application techniques that are instrumental in facilitating the industrial-scale use of this advanced, environmentally friendly technology. In August 1999 the European Patents Office granted Bayer the basic patent that describes waterborne two-component polyurethane coatings for the first time.

Increasing quantities of water-reducible coating resins are also used in areas such as plastics, wood and furniture finishing, as evidenced by the exceptionally high demand for our Bayhydrol® and Bayhydur®, which posted double-digit growth in 1999.

We also did good business in aqueous dispersions for the adhesives industry. Sales of Dispercoll® again increased, and we predict substantial growth for this product line in the future. With this in mind we will expand production capacities for solvent-free polyurethane dispersions in the United States and the Far East. Other adhesives raw materials such as Baycoll® and Desmodur® S also performed well in the market.

We have developed new, low-dust grades of Macrolex® dyes for coloring high-performance thermoplastics. Macrolex® sales advanced significantly in 1999, especially in North America. The restructuring of our distribution system for inorganic iron oxide pigments, begun in 1996, has brought us closer to the customer and resulted in substantially higher volumes.

This business group's research pipeline is stocked with further potent innovations such as new high-performance pigments for automotive finishes that are nearly ready for the market. Moreover, in 2000 we will add a new microgranular product to our Bayplast® line of organic pigments for the plastics industry.

To meet future market expectations, we are currently investing in the construction of a large-scale production facility for hexamethylene diisocyanate (HDI) in Leverkusen. This is the precursor for Desmodur® N, the world's top-selling polyisocyanate hardener for lightfast polyurethane coatings. The new 30,000-ton-a-year plant, due on stream in 2002, will strengthen our leading position as a supplier of raw materials for polyurethane coatings.

At the start of 1999, all of Bayer's activities in the coatings, pigments, dyes and adhesives fields were placed into the Coatings and Colorants Business Group. The success of this realignment, made to sharpen our market and customer focus, is clearly apparent: Sales in 1999 moved ahead 11 percent to €1.7 billion.

This gratifying trend is due in no small measure to the economic recovery in the Far East. Bayer's response to the high growth expectations for this region includes planning a new facility for aliphatic polyisocyanate hardeners in Asia.

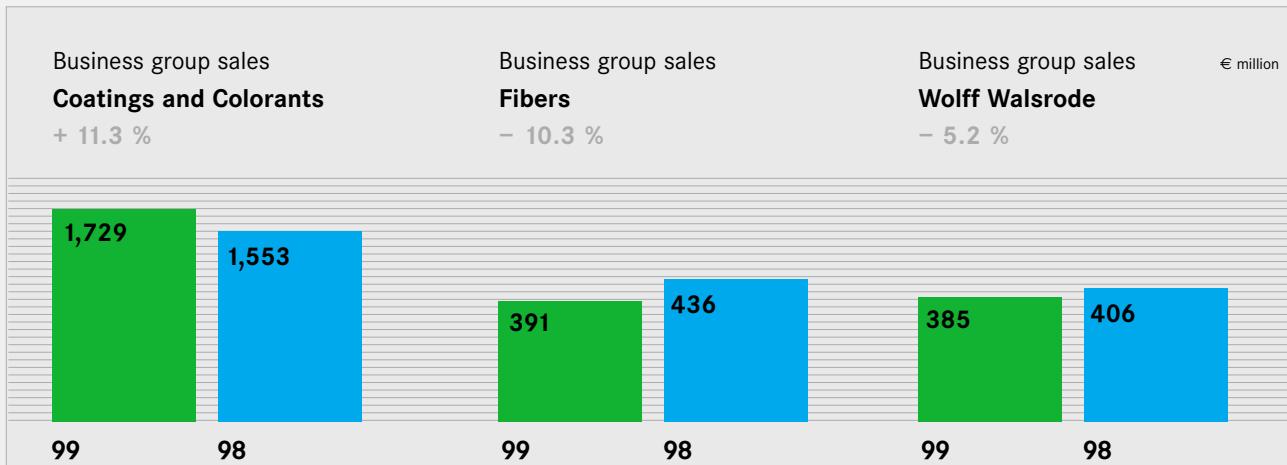
As part of our continuing efforts to enhance customer focus, four new market-based business units were established at the beginning of 2000: industrial coatings, construction materials, adhesive materials, and special coatings and colorants. In the wake of this reorganization, the business group is even better equipped to speedily and efficiently meet the needs of its customers and partners.

### Fibers

#### *Investing in all business units*

Our Dralon® manmade fiber is found in such varied items as blankets, sweaters, carpets and brake-liner reinforcements. Despite price erosion and loss of sales volume in textile markets, mainly due to the Asian crisis, we believe this versatile acrylic fiber holds good prospects for the future. In 1999 we introduced a two-stage dry-spinning process, modernized our logistics and built new production plants. These actions form the basis for our remaining a leader in terms of quality and productivity.

Another fiber with a broad array of applications is Bayer's Dorlastan® spandex, used to enhance the comfort and fit of swimwear, hosiery, intimate apparel and outerwear garments. Once production capacities have been expanded and new equipment featuring the latest spinning technology has been installed, we will substantially extend the Dorlastan® product line. In 1999, however, even Dorlastan®



sales were hurt by adverse business conditions in the textile industry, preventing us from matching the previous year's excellent result.

Sales in the monofilament business unit, whose output includes paper machine clothing (PMC) yarns made from Bayer's Perlon® fiber, were also below expectations in a weak business environment. However, we expect business with the paper industry to recover and have developed new grades of PMC yarn for this market.

Sales of the Fibers Business Group in 1999 fell by 10 percent compared with the year before, to €391 million.

## **Wolff Walsrode**

### *Films business acquired from Elf Atochem Deutschland*

Bayer's Wolff Walsrode Business Group continues to enjoy outstanding success with its products for the construction industry. Our subsidiary is a supplier of methylcellulose, which is one of the key additives for premixed mortars, plasters, tile cements and other building materials and makes them easier and quicker to use. This, in turn, offers the industry substantial cost savings and higher quality.

Good business in methylcellulose helped Wolff Walsrode to

further expand its global market position in 1999, the strongest growth being recorded in eastern Europe and Latin America.

Wolff Walsrode is our competence center for cellulose, a natural product made from renewable raw materials. The company researches a wide array of potential applications for cellulose derivatives in dry mortars, emulsion paints, coatings, paper, pharmaceuticals and cosmetics, to name but a few examples. Such applications are tested in a newly built pilot-plant facility that serves as the interface between the laboratory and the market.

Business in plastics films was also encouraging, posting double-digit growth following our acquisition of the films activities of Elf Atochem Deutschland. Sales of the restructured business group advanced by 4 percent on an adjusted basis to €385 million, with business outside Germany accounting for 55 percent of the total. Wolff Walsrode invested €29 million to expand and modernize its facilities at Bomlitz, Germany.



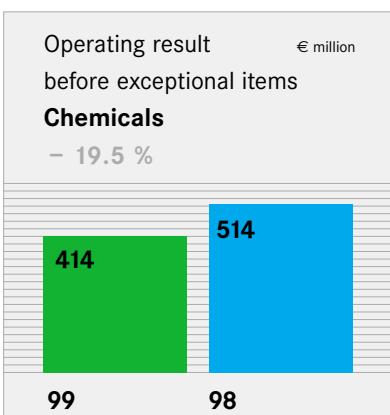
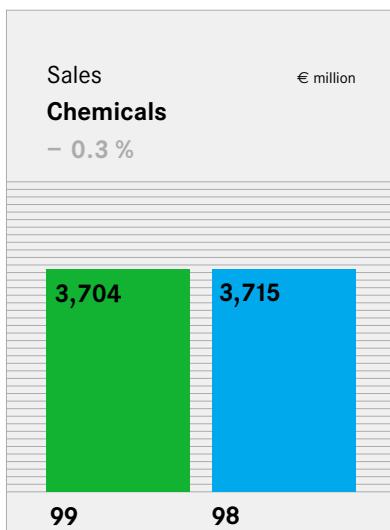
April 21, 1988 was an unhappy day for us at the Alte Pinakothek museum in Munich. Five valuable paintings by Albrecht Dürer, all dating from around 1500, were badly damaged with sulfuric acid by a mentally disturbed attacker. The shock ran deep, but we immediately began thinking about the best way to restore them and looking for a product that would neutralize the acid without itself causing further damage. Bayer provided the answer: a Lewatit® ion exchange resin in powder form that

is normally used in water treatment. We made the product into a paste, which we carefully applied to the damaged parts of the paintings. It worked wonders. The ion exchange resin softened the acid crust and extracted the damaging chemicals. Removing the resin afterwards was no problem. That's how the Bayer product cleared the way for the actual restoration of the paintings – an intricate process that kept our experts busy for ten years. <<

Veronika Poll-Frommel, Doerner Institute of the Bavarian State Art Collections, Munich, Germany

- **Basic and Fine Chemicals:** Significant economies achieved
- **Specialty Products:** Growth despite a slow start
- **Haarmann & Reimer:** Positive development continues
- **EC Erdölchemie:** Consistent strategy of expansion
- **H.C. Starck:** Continuing upward trend

# Realignment starts to bear fruit



*Higher productivity, lower costs, more effective synergy management: These ambitious goals we set ourselves when we realigned the Chemicals segment in 1998 cannot be achieved in the space of a few months. But the progress made in 1999 proves we are headed in the right direction. The segment's operating margin was 11 percent, compared to almost zero just three years ago. Sales in 1999 were down 0.3 percent to €3.7 billion due to the divestiture of the citric acid business and the placing of the silicones and titanium dioxide activities into joint ventures. Other contributory factors were the slowness of the recovery in the European economy and the unexpected setbacks for fine chemicals. The operating result dropped by 19.5 percent to €414 million. The main task of the Chemicals segment remains to contain costs for basic chemicals and at the same time focus increasingly on the specialty and fine chemicals businesses.*



**It took the team of experts from the Doerner Institute in Munich, Germany (left) years of painstaking work to restore the Dürer paintings after they had been attacked. The damage was examined in fine detail under a microscope and captured on film.**

## Basic and Fine Chemicals

### *New structure puts us on the right track*

Substantial portfolio changes necessitated a restructuring among the chemical business groups that went into effect on January 1, 1999. The aims of this restructuring have been realized: The concentration of resources, which has benefited particularly the Basic and Fine Chemicals Business Group, has accelerated new developments and allowed a more targeted approach to marketing. The measurable results of this strategy are increased competitiveness and greater flexibility.

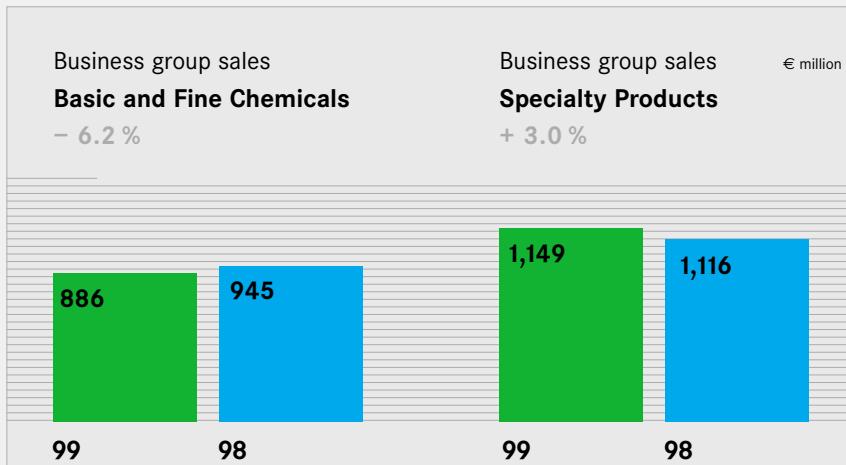
In 1999, this structural transition phase coincided with economic problems in key markets and industry sectors. Sales of the Basic and Fine Chemicals Business Group were down 6 percent from the year before, to €886 million.

The need for globalization – especially in fine chemicals – is another challenge we are addressing to safeguard future growth. We will substantially expand our marketing, distribution and R&D activities in the United States and are planning to invest more than €150 million in a new multi-purpose manufacturing facility that will enable us to meet the growing North American demand for life science intermediates and fine chemicals from local production. The modernization and expansion program at our sites in Leverkusen and Dormagen, Germany, is on schedule.

The strength of our chemicals business lies partly in our integrated production network for basic chemicals, which facilitates a broad product offering, and partly in flexible manufacturing systems that enable us to customize high-end fine chemicals. An example is Baytron®, a family of modern conductive polymers we supply to the electronics industry for a variety of uses, including the counterelectrodes of tantalum and aluminum capacitors. Sales of Baytron® for this application are benefiting particularly from the rapid expansion of the communication and information systems market. Its high conductivity improves the properties of these novel polymer capacitors, especially at high frequencies, enabling them to achieve above-average growth rates in the market. In view of rising demand for flat-panel screens and displays, we believe Baytron® has good prospects for continued growth in applications such as the polymer interlayer of the organic light emitting diodes (OLED) used in these articles.

Another promising new development for the expanding microelectronics market is our Levasil® line of specialty silica sols, which are used for the surface planarization of silicon wafers and computer chips, allowing higher-density circuitry.

## Chemicals



Our Baysix® wafers have given us a firm foothold in the new and expanding market for silicon wafers used in high-performance solar cells.

Sales of the Baypure™ family of biodegradable functional polymers and complexing agents continued to grow in 1999, necessitating the addition of new capacity at the production facility.

Mindful of the fact that modern technology needs to be accompanied by modern product management, the business group has developed a new custom manufacturing service package that has been well received by the pharmaceutical, agrochemical and photographic industries. Bayer experts collaborate with customers to develop exclusive syntheses, assist them in using the chemicals and offer product development and manufacturing expertise. Service packages of this kind provide optimum customer support and are gaining ground in other industry sectors as well.

### Specialty Products

*Strong market position thanks to wide-ranging portfolio*

Tiny beads with a big impact – one way you might describe the appearance and properties of Lewatit® from Bayer. But there's more to it than that: The beads contain ion exchange resins that soften, demineralize and remove hazardous substances from water in research facilities, industry and the home. For example, Lewatit® softens water by substituting sodium ions for the calcium and magnesium ions that make drinking water "hard." This keeps appliances such as dishwashers and coffee makers free of lime scale.

Bayer manufactures ion exchange resins in Leverkusen, and also in Bitterfeld since the spring of 1999. Bitterfeld is home to a new facility for Lewatit® MonoPlus, which sets new standards in water treatment. In light of increasing demand for these monodisperse ion exchange resins from power plants, electroplating facilities and the electronics and pharmaceuticals industries, the Lewatit® product line has a bright future.

The ion exchange resins and water chemicals business unit has been part of the reorganized Specialty Products Business Group since January 1999. Growth in this business group was also spurred by the integration of the polymer additives and material protection businesses. Sales rose by 3 percent in 1999, despite a weak first half, to €1.1 billion.

Bayer reinforced its position among the leading suppliers of specialties to the paper industry, to which we offered new optical brighteners in 1999. Our global production network



With the help of Lewatit® ion exchange resin and their usual tools, the restoration experts neutralized the sulfuric acid in the paintings.



enabled us to supply larger volumes and meet rising demand, especially in the Asia-Pacific growth region, resulting in a 30 percent share of the world market. Our new high-tech surface sizing agent Baysynthol® AGP was successful in the European, North American and Australian markets. Production of this chemical continues to take place in Leverkusen at present, but will be partly extended to other sites in the near future. Baysynthol® AGP is particularly suitable for paper used in ink jet printers.

Our scientists have developed new lines of solvent-free inorganic Levanox® LF pigment preparations specially for use in wood and resin coloring and Bayscript® pigment preparations for ink-jet printing. A recent addition to our product offering for the textile industry is Diadavin® EPF, which saves our customers time and money in the dyeing of polyamide/spandex fabrics.

A research alliance between Bayer and the enzyme producer Novo Nordisk has brought forth a new decoloration agent, Baysolex® RP. This product is a world first, removing the color components from dyeing plant effluents quickly, completely and in an environmentally compatible manner. This helps to speed up textile dyeing processes and saves energy.

In the field of material protection, Bayer continued to build on its strong position in 1999. Our active ingredients for wood preservatives were particularly successful in the markets of eastern Europe. Acquisition of the Bronopol business from Union Carbide greatly strengthened our position in the area of in-can preservation.

The leather business unit saw volumes increase in the second half of 1999, especially in Asia. The products of our joint venture Bayer Wuxi Leather Chemicals Co. Ltd. were well received in the Chinese market, and the sales trend in South America also was much better than expected. In North America, too, business moved ahead, the main stimulus in this region coming from the growing demand for leather products in the automotive and furniture industries.

The restructured polymer additives business unit is already acknowledged as a competent supplier of plasticizers, modifiers, emulsifiers, stabilizers, bonding agents, blowing agents and flame retardants. In 2000 we will substantially increase production capacities for azodicarbonamide-based blowing agents and aryl phosphate flame retardants.



With a steady hand and a watchful eye, the experts restored the damaged paintings millimeter by millimeter. After ten years of precision work, every last detail is now once again visible in all its original beauty.



### Haarmann & Reimer

#### *Upward trend in Asia*

It was exactly 125 years ago that the success story of Bayer's Holzminden, Germany-based subsidiary Haarmann & Reimer (H&R) began with the idea of synthesizing the coveted fragrance and flavor component vanillin. But instead of lavishly celebrating the anniversary of its founding, H&R chose to mark the occasion by launching a special training program and creating additional employment opportunities for young and jobless people.

The anniversary year was a good one for the Haarmann & Reimer Business Group, especially in the important Asian region, with substantial growth in orders registered in China, Japan and Singapore. In the United States, H&R strengthened its position in fragrances for household products, and in France it expanded activities in the area of fine fragrances.

The flavors business unit created and cultivated additional market opportunities with new technological developments such as the Evocap, Evoglass and Evogran lines of encapsulated flavors.

Construction of new production facilities helped to boost H&R's presence in important regional markets, an example being a new plant in Bogotá, Colombia, that plays a major role in supplying fragrances and flavors to Latin America. In Thane, India, we built another new plant whose output will, in the future, include our successful Optamint® line of fla-

vors for toothpastes and oral care products. Our aroma chemicals and cosmetic ingredients both increased their market shares. Among products for the cosmetics industry, H&R's NeoHeliopan® sunscreens showed strong growth.

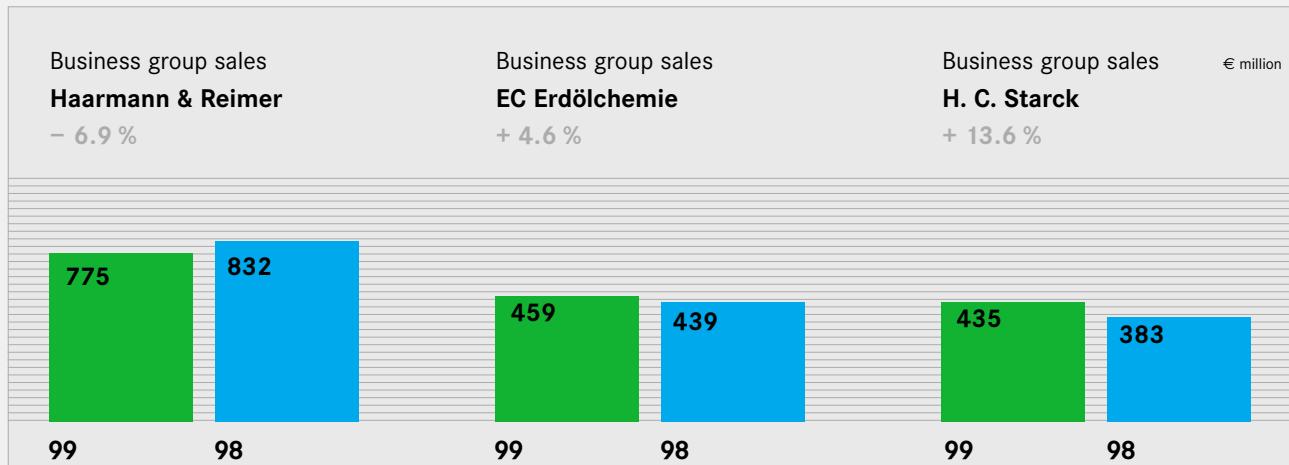
Despite economic weakness in important markets and heavy pressure on prices at the international level, the business group performed in line with expectations in 1999. However, because of the divestment of the citric acid business in 1998, sales were down by 7 percent to €775 million.

### EC Erdölchemie

#### *Major investment*

EC Erdölchemie GmbH of Cologne, Germany, is implementing a large-scale investment program to pave the way for future growth. In 1999 the company almost doubled its capital expenditures compared with the previous year to €90 million, continuing its program of capacity expansion. The enlarged ethylene oxide plant and a new ethylene glycol facility were successfully brought on stream, while the ethanol plant, which was no longer competitive, was closed down. Volumes were only slightly higher than in 1998 due to a number of scheduled temporary shutdowns. Earnings were impaired by a sharp increase in raw material costs.

Bayer owns 50 percent of EC Erdölchemie. In 1999 the joint venture contributed €459 million to Bayer Group sales, 4.6 percent more than in the previous year.



## H. C. Starck

### *Strong sales of intermediates for microelectronics*

Smaller and lighter, yet increasingly versatile – that's the current trend for personal computers, cellular phones and many other electronic products. Bayer subsidiary H.C. Starck of Goslar, Germany, is one of the companies that makes this progress possible, supplying advanced intermediates for the computer chips and capacitors found in almost every modern appliance.

Among the most innovative of these materials is tantalum. H.C. Starck produces almost one half of the world's requirements of this special metal, partly in the form of tantalum metal powder for electrolytic capacitors. The company is therefore benefiting from the rapid advances in microelectronics and telecommunications. Driven by the favorable development of its electronics and optics business unit, sales of H.C. Starck grew in 1999 by 13.6 percent to €435 million.

Other products from this subsidiary that enhance the performance of electronic equipment are cobalt and nickel

compounds. These are raw materials for the rechargeable nickel metal hydride batteries that allow notebook computers and mobile phones to operate for long periods. In 1999, H.C. Starck started production of spherical nickel hydroxide for battery applications at a new facility in Sarnia, Canada.

The company's hardmetal industry business unit registered a drop in demand accompanied by selling price erosion, and was therefore unable to match the previous year's sales level. The advanced ceramics and surface technology business unit posted encouraging sales growth for major products.



» A scientist derives his greatest satisfaction when his theoretical findings take on practical relevance. Thanks to our alliance with Bayer, that's now likely to happen more and more often here at our institute. German-Russian cooperation in the field of chemical research is important for everyone involved. It gives us the means to continue employing highly experienced scientists, modernize

our laboratory equipment and step up the dialogue with our colleagues in the West. This is why we are confident that soon we will not only be supplying our German partners with constructive ideas for new, groundbreaking processes – we will also join with them to make these ideas a reality. <<

*Professor Leonid M. Kustov, Vice Chairman of the Zelinsky Institute of Organic Chemistry, Moscow*

# Regional diversification – just one of our strengths

## Europe

*The economy in Germany grew at a much slower pace in 1999 than in the previous year, lagging behind that of other industrialized nations with real GDP growth of only 1.4 percent. However, brisk export business contributed to an upswing in the second half. Low interest and inflation rates maintained a favorable climate for investment. Against this background, our German companies developed as follows:*

**Bayer AG** had sales of €9.7 billion, which was slightly below the previous year's level. The operating result declined significantly, due mainly to unsatisfactory margins in chemicals. Extraordinary charges associated with our corporate pension plan were a further factor. However, higher income from affiliates led to net income of €1.1 billion.

Sales of **EC Erdölchemie GmbH**, our petrochemical joint venture with BP, grew by 4 percent to €1.3 billion. Raw material prices climbed steadily from the beginning of 1999, and we were unable to pass on the increases to customers. Income before transfer was therefore significantly lower than in the previous year, at €54 million.

**Bayer Vital GmbH & Co. KG**, our domestic marketing company for life science products, expanded sales by 7 percent to €0.9 billion, due in part to the newly acquired Chiron Diagnostics activities. Earnings were below the previous year, partly due to substantial charges for process reengineering.

Sales of **Wolff Walsrode AG** remained stable at €395 million. Adjusted for the divestiture of the Walothen business, sales rose by 11 percent. One-time expenses related to the company pension plan diminished net income by 18 percent.

Sales of the flavor and fragrance manufacturer **Haarmann & Reimer GmbH** matched the previous year's level, at €369 million, thanks to high demand from abroad. An improvement in margins was offset by non-recurring personnel expenses and a decline in income from affiliates, resulting in net income of only €10 million.

**H.C. Starck GmbH & Co. KG**, a leading manufacturer of specialty metals, grew sales by 7 percent to €334 million. The company's sales to the electronics industry, in particular, benefited from faster-than-average growth in the mobile communications and computer sectors. Net income, however, at €28 million, was slightly below the previous year's level due to declining volumes and prices in the hardmetal business.

**Bayer Faser GmbH** was affected by weak textile sales worldwide. Sales declined by 12 percent, to €242 million, as a result of lower selling prices for Dralon®. Raw material prices increased significantly compared with 1998, and income before transfer dipped to €17 million despite the success of our Dorlastan® spandex fiber.

**PolymerLatex GmbH & Co. KG**, our joint venture with Degussa-Hüls AG, continued to build on its leadership position in western Europe. Its volume sales increased year-on-year, against the market trend. However, adverse price movements diminished sales by 8 percent, to €235 million, and led to a significant drop in earnings.

Sales of **Rhein Chemie Rheinau GmbH**, a supplier of specialty chemicals and additives, remained steady at €201 million. This company also saw net income decline, to €6 million, due to non-recurring pension-related expenses.



At the Zelinsky Institute of Organic Chemistry in Moscow, Russian scientists like Dr. Alexander Ivanov are researching new product concepts and processes on Bayer's behalf.

*Economic growth in Belgium declined to just under 2 percent, due to lower domestic demand and lower exports.*

Sales of **Bayer Antwerpen N.V.**, which is active primarily in the Polymers and Chemicals segments, increased slightly to €922 million, even after the divestiture of certain business activities. Non-recurring restructuring expenses for the polymers business led to a 36 percent decline in net income.

Higher exports allowed **Bayer Rubber N.V.** to expand sales by 6 percent to €183 million. Full capacity utilization and strict cost management boosted net income by 24 percent, to €26 million.

*After an extended period of growth, the economy in Denmark slowed down. Domestic demand, in particular, declined, while exports picked up. Overall economic growth amounted to 1.5 percent.*

Sales of **Bayer A/S** climbed by 69 percent to €176 million. This growth resulted mainly from the realignment of our distribution system for Scandinavia. Strong pressure on prices and weak demand for animal health, polyurethane and chemical products prevented an even stronger sales increase. Net income advanced to €3 million.

*Positive development in the second half caused the French economy to grow by 2.5 percent.*

Despite a slight decline in sales to €393 million, our marketing company for crop protection and industrial products, **Bayer S.A.**, saw net income advance to €10 million.

**Bayer Pharma S.A.** achieved sales growth of 16 percent, to €288 million. Marketing of our active ingredient cerivastatin was particularly successful. Earnings remained negative, however, due to government levies on pharmaceutical products.

*Strong domestic demand in the second half led to economic growth of 1.5 percent in the United Kingdom.*

**Bayer plc** saw its business grow considerably faster than the economy. Adjusted for the divestiture of the citric acid business, sales of our British subsidiary increased by 7 percent, to €588 million. Net income, hampered by exceptional charges in 1998, increased markedly in 1999, to €14 million.

*The Italian economy grew by 1 percent. Negative factors were the continuing inflationary trend and a productivity increase below the E.U. average.*

The production and marketing company **Bayer S.p.A.** boosted sales by 5 percent to €815 million, due in part to the acquisition of Chiron, and posted a gratifying improvement in its operating result. Net income declined to €12 million due to the write-off of an investment in a subsidiary.

## Regional Report



Professor Kustov knows how important it is for the scientists to meet each day to confer and compare notes (left). The cooperation with Bayer has allowed the institute to steadily modernize its equipment (above).

*In Switzerland, the gross domestic product grew by 1.3 percent, due primarily to an increase in export demand and to investment in equipment and construction.*

**Bayer International S.A.**, which markets our synthetic rubber and polyurethanes, achieved sales growth of 8 percent, to €463 million. Net income grew much more strongly, advancing by 69 percent to €44 million. This improvement in performance was driven by higher volumes combined with stable selling prices and cost savings.

*The Spanish economy grew more slowly in 1999 than in the previous year. Nevertheless, Spain's 3.5 percent growth rate remained above the E.U. average, due in particular to strong domestic demand.*

**Bayer Hispania, S.A.** had sales of €378 million, 8 percent below the 1998 figure. This decline was due to lower prices for polymers, the divestiture of certain chemical product lines and changes in the company's distribution structure. Lower dividend and interest income and exceptional charges for investment projects diminished net income to €39 million.

Sales of the health care company **Química Farmacéutica Bayer, S.A.** increased by 5 percent, to €310 million, due to the acquisition of the Chiron Diagnostics activities and the successful launch of a new pharmaceutical product. Net income, at €16 million, remained at the previous year's level, hampered by non-recurring personnel charges.

## North America and Latin America

*The economy of the United States continued to grow in 1999, with the main impetus coming from domestic demand. Inflation increased slightly. Unemployment was at its lowest level in 30 years.*

**Bayer Corporation** expanded its sales by 14 percent to €8.4 billion. This gratifying growth was spurred mainly by the Pharmaceuticals Business Group and the Chiron Diagnostics business, which was acquired at the end of 1998. Polymers also showed encouraging growth. Our American subsidiary spent €100 million to acquire the U.S. plastic sheet business of the DSM group, which was transferred to the newly established Sheffield Plastics Inc. The integration of Chiron combined with high exceptional charges for restructuring to trim net income to €143 million.

*Canada's economy benefited from favorable economic conditions in the United States, expanding faster than expected. Higher incomes and a drop in unemployment led to growth in demand.*

**Bayer Inc.** had sales of €807 million, which was 2 percent below the previous year. Adjusted for the divestiture of the Agfa activities effective January 1, 1999 in preparation for the stock market listing, however, sales climbed by 11 percent. Strong earnings from continuing operations were offset by a write-off of previously acquired goodwill, and the company recorded a loss.

*Many Latin American countries suffered from economic crises in 1999. Growth was particularly impaired by budget deficits and the fall in the value of the Brazilian currency, another factor being the drop in world market prices for Latin American export goods. Toward the end of the year, however, there were first indications of a moderate recovery, although in most countries this did not yet translate into positive growth. Only Mexico, helped by strong exports, benefited from the more stable economic environment.*

**Bayer de México, S.A. de C.V.** achieved sales growth of 10 percent, to €340 million. After adjusting for portfolio changes, sales rose by almost 20 percent, with the operating result improving accordingly. Net income – positively influenced in 1998 by the divestiture of an affiliate – amounted to €36 million.

Due to a recessionary business environment, **Bayer Argentina S.A.** was unable to repeat its previous year's performance. The economic crisis had a negative impact on exports in the second half, especially because of the seasonal agriculture business. Sales were down by 13 percent to €285 million. Earnings were marred by exceptional charges in the Crop Protection and Plastics business groups; net income declined to €6 million.

Our Brazilian subsidiary **Bayer S.A.** also saw a significant decline in sales, to €511 million, as a result of the country's economic problems and a substantial shift in currency parities. Earnings were also impaired by one-time pension charges and write-downs. The company posted a net loss of €19 million.

## **Asia, Africa and Australia**

*The Asian countries have overcome the recent economic crisis by adopting a strict monetary and fiscal policy and taking initial steps to restore confidence in the corporate and banking sector. In Japan, the first signs of a modest recovery were apparent, but there was as yet no indication of a long-term upward trend.*

Sales of our pharmaceutical company **Bayer Yakuhin, Ltd.** advanced by 22 percent to €676 million. Restructuring measures carried out in 1998 and the sale of research results had a positive effect on net income, which improved to €25 million.

**Bayer Ltd.** also achieved a significant 18 percent increase in sales, with its business groups sharing in this growth to different degrees. While sales of the Animal Health Business Group were down compared to 1998 as a result of lower selling prices, the Polymers segment, in particular, boosted its revenues. The company generated sales of €212 million and net income of €3 million in 1999.

The strong product portfolio of **Nihon Bayer Agrochem K.K.** helped to increase its share of the Japanese market. With sales up by 21 percent, the company broke even.

The polymers and chemical company **Sumitomo Bayer Urethane Co., Ltd.** compensated for declining selling prices with higher volume sales. Sales rose by 20 percent, to €227 million, while earnings climbed by 50 percent.

*Singapore has succeeded in overcoming the effects of the Asian economic crisis. Buoyed by the chemicals and electronics industries, the country's economy expanded by over 5 percent.*

**Bayer (Singapore) Pte. Ltd.** generates 75 percent of its sales through export business. Sales rose 21 percent to €163 million, and net income improved to €3 million.

*South Africa's economy, which had been stagnant over the past two years, picked up in 1999. Inflation receded slightly, influenced by the positive development of the market. Economic growth stabilized at 1 percent.*

**Bayer (Proprietary) Ltd.** had sales of €193 million and net income of €12 million. While sales advanced by 2 percent (adjusted for the divestiture of Agfa activities), net income increased by 50 percent due to a lower tax charge.

*Australia's economy expanded by 4 percent in 1999 – the country's eighth consecutive year of economic growth. Key factors here were low inflation and a strong currency.*

Sales of **Bayer Australia Ltd.** climbed by 23 percent to €223 million. Half of the increase was due to the Chiron Diagnostics acquisition. However, earnings were hampered by exceptional charges for integrating the Chiron activities.

## Consolidated Companies

Company Name and Place of Business	Bayer's interest (%)	Stockholders' equity € million	Sales* € million	Net* income € million	Employees
<b>Germany</b>					
EC Erdölchemie GmbH, Cologne	50	164	1,312	54**	2,173
Bayer Vital GmbH & Co. KG, Cologne	100	114	944	15	1,650
DyStar group	50	315	733	(58)	3,034
Wolff Walsrode AG, Walsrode	100	98	395	9	2,001
Haarmann & Reimer GmbH, Holzminden	100	370	369	10	1,665
H.C. Starck GmbH & Co. KG, Goslar	99.9	124	334	28	1,638
Bayer Faser GmbH, Dormagen	100	66	242	17**	900
PolymerLatex GmbH & Co. KG, Marl	50	28	235	(4)	527
Rhein Chemie Rheinau GmbH, Mannheim	100	32	201	6	563
<b>Other European Countries</b>					
Bayer Antwerpen N.V., Belgium	100	465	922	28	2,472
Bayer Rubber N.V., Belgium	100	111	183	26	464
Bayer A/S, Denmark	100	16	176	3	139
Bayer S.A., France	99.9	238	393	10	538
Bayer Pharma S.A., France	99.9	46	288	(2)	701
Bayer plc, U.K.	100	93	588	14	1,273
Bayer S.p.A., Italy	100	220	815	12	2,213
Bayer International S.A., Switzerland	100	61	463	44	70
Bayer Hispania, S.A., Spain	100	217	378	39	1,051
Química Farmacéutica Bayer, S.A., Spain	100	132	310	16	1,058
<b>North America</b>					
Bayer Corporation (group)	100	4,315	8,352	143	22,224
Bayer Inc., Canada	100	418	807	(130)	2,246
<b>Latin America</b>					
Bayer de México, S.A. de C.V., Mexico	100	216***	340***	36***	2,057
Bayer Argentina S.A., Argentina	99.9	207***	285***	6***	1,031
Bayer S.A., Brazil	99.9	280***	511***	(19)***	2,256
<b>Asia / Africa / Australia</b>					
Bayer Yakuhin, Ltd., Japan	75.6	582	676	25	1,614
Bayer Ltd., Japan	100	139	212	3	266
Nihon Bayer Agrochem K.K., Japan	99.5	253	208	.	325
Sumitomo Bayer Urethane Co., Ltd., Japan	50	68	227	3	150
Bayer (Singapore) Pte. Ltd., Singapore	100	25	163	3	227
Bayer (Proprietary) Ltd., South Africa	100	69	193	12	1,230
Bayer Australia Ltd., Australia	99.9	57	223	1	610

\* The figures are taken from the respective financial statements prepared in line with local regulations. Foreign companies' figures are translated at average rates of exchange.

\*\* income before transfer

\*\*\* These figures are taken from the hard-currency statements used for the consolidation.



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### Management Responsibility for Financial Reporting

The consolidated financial statements of the Bayer Group have been prepared by the management, who are responsible for the substance and objectivity of the information contained therein. The same applies to the management report, which is consistent with the financial statements.

Our financial reporting takes place according to the rules issued by the International Accounting Standards Committee, London.

Effective internal monitoring procedures instituted by Group management at the consolidated companies along with appropriate staff training ensure the propriety of our reporting and its compliance with legal provisions. Integrity and social responsibility form the basis of our corporate principles and of their application in areas such as environmental protection, quality, product safety, plant safety and adherence to local laws and regulations. The worldwide implementation of these principles and the reliability and effectiveness of the monitoring procedures are continuously verified by our Corporate Auditing Department.

These measures in conjunction with a uniform reporting system throughout the Group ensure that Group companies present the management with an accurate view of their business operations, enabling us to discern risks to our assets or fluctuations in the economic performances of Group companies at an early stage and at the same time providing a reliable basis for the consolidated financial statements and management report.

The Board of Management conducts the business of the Group in the interests of the stockholders and in awareness of its responsibilities toward employees, communities and the environment in all the countries in which we operate. Our declared aim is to deploy the resources entrusted to us in order to increase the value of the Bayer Group as a whole.

In accordance with the resolution of the Annual Stockholders' Meeting, the Board of Management appointed PwC Deutsche Revision Aktiengesellschaft as independent auditors of the consolidated financial statements and of their compliance with the International Accounting Standards. The scope of the auditors' report, which appears on the following page, also includes Bayer's risk management system, which they have audited in light of the German Law on Corporate Supervision and Transparency. The consolidated financial statements, the management report and the auditors' report were discussed in detail, in the presence of the auditors, by the Presidial Committee of the Supervisory Board and at a plenary meeting of the Supervisory Board. The Report of the Supervisory Board appears separately on pages 122 – 123 of this Annual Report.

The Board of Management

## Independent Auditors' Report

We have audited the consolidated financial statements of the Bayer Group, comprising the income statement, the balance sheet, the statement of changes in stockholders' equity and the statement of cash flows as well as the notes to the financial statements for the financial year from January 1 through December 31, 1999. The preparation and the content of the financial statements according to the International Accounting Standards of the IASC (IAS) are the responsibility of the Board of Management of Bayer AG. Our responsibility is to express an opinion, based on our audit, about whether the consolidated financial statements are in accordance with IAS.

We conducted our audit of the consolidated financial statements in accordance with German auditing standards and the International Standards on Auditing (ISA). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatements. The evidence supporting the amounts and disclosures in the consolidated financial statements is examined on a test basis within the framework of the audit. The audit includes assessing the accounting principles used and significant estimates made by the Board of Management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, based on our audit, the consolidated financial statements give a true and fair view of the net worth, financial position, results of operations and cash flows of the Bayer Group for the financial year in accordance with IAS.

Our audit, which – according to German auditing regulations – also extends to the Group management report prepared by the Board of Management for the financial year from January 1 through December 31, 1999, has not led to any objections. In our opinion, the management report provides, on the whole, a fair understanding of the Group's position and adequately presents the risks related to its future development. In addition, we confirm that the consolidated financial statements of the Bayer Group and the Group management report for the financial year from January 1 through December 31, 1999 satisfy the conditions required for the company's exemption from its obligation to prepare the consolidated financial statements and the Group management report in accordance with the German Commercial Code.

Essen, March 2, 2000

PwC Deutsche Revision  
Aktiengesellschaft  
Wirtschaftsprüfungsgesellschaft

C.-F. Leuschner (Certified Public Accountant)	J. Schilling (Certified Public Accountant)
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**Bayer Group Consolidated Statements of Income**

€ million	Note	1999	1998*
<b>Net sales</b>	[1]	<b>27,320</b>	<b>28,062</b>
<i>Discontinuing operations</i>	[5]	(2,126)	(4,710)
Continuing operations		25,194	23,352
Cost of goods sold		(13,585)	(12,510)
<b>Gross profit</b>		<b>11,609</b>	<b>10,842</b>
Selling expenses		(5,679)	(5,343)
Research and development expenses	[2]	(2,141)	(1,811)
General administration expenses		(773)	(760)
Other operating income	[3]	702	688
Other operating expenses	[4]	(1,470)	(730)
<b>Result of continuing operations</b>		<b>2,248</b>	<b>2,886</b>
<i>Discontinuing operations</i>	[5]	79	269
<i>Income from the Agfa divestiture</i>		1,030 **	
<b>Operating result</b>	[6]	<b>3,357</b>	<b>3,155</b>
Income (Expenses) from investments in affiliated companies – net	[7]	(31)	21
Interest expense – net	[8]	(185)	(179)
Other non-operating expenses – net	[9]	(305)	(269)
<b>Non-operating result</b>		<b>(521)</b>	<b>(427)</b>
<b>Income before income taxes</b>		<b>2,836</b>	<b>2,728</b>
Income taxes	[10]	(818)	(1,113)
<b>Income after taxes</b>		<b>2,018</b>	<b>1,615</b>
Minority stockholders' interest	[12]	(16)	(1)
<b>Net income</b>		<b>2,002</b>	<b>1,614</b>
<b>Earnings per share (€)</b>	[13]	<b>2.74</b>	<b>2.21</b>

\* 1998 figures restated

\*\* The income from the sale of Agfa-Gevaert shares is tax-free.

## Bayer Group Consolidated Balance Sheets

€ million	Note	Dec. 31, 1999	Dec. 31, 1998*
<b>Assets</b>			
<b>Noncurrent assets</b>			
Intangible assets	[17]	2,213	1,909
Property, plant and equipment	[18]	11,986	10,970
Investments	[19]	1,415	1,102
		<b>15,614</b>	<b>13,981</b>
<b>Current assets</b>			
Inventories	[20]	4,992	5,781
Receivables and other assets			
Trade accounts receivable	[21]	5,333	5,573
Other receivables and other assets	[22]	1,576 6,909	1,659 7,232
Liquid assets	[23]	3,140	1,721
		<b>15,041</b>	<b>14,734</b>
<b>Deferred taxes</b>			
<b>Deferred charges</b>			
		<b>31,279</b>	<b>29,377</b>
<i>Discontinuing operations</i>	[34]	379	4,259
<b>Stockholders' Equity and Liabilities</b>			
<b>Stockholders' equity</b>			
Capital stock of Bayer AG		1,870	1,867
Capital reserves of Bayer AG		2,942	2,945
Retained earnings		7,965	7,121
Net income		2,002	1,614
Translation differences		227	(979)
Minority stockholders' interest		176	211
	[26]	<b>15,182</b>	<b>12,779</b>
<b>Liabilities</b>			
Long-term liabilities			
Long-term financial obligations	[29]	2,359	2,404
Miscellaneous long-term liabilities	[31]	232	132
Provisions for pensions and other post-employment benefits	[27]	4,178	4,717
Other long-term provisions	[28]	1,192	926
		7,961	8,186
Short-term liabilities			
Short-term financial obligations	[29]	2,107	2,326
Trade accounts payable	[30]	1,556	1,613
Miscellaneous short-term liabilities	[31]	1,801	1,894
Short-term provisions	[28]	1,344 6,808	1,628 7,454
		<b>14,769</b>	<b>15,640</b>
<i>Discontinuing operations</i>	[34]	198	1,991
<b>Deferred taxes</b>			
<b>Deferred income</b>			
		<b>31,279</b>	<b>29,377</b>

\* 1998 figures restated

**Bayer Group Consolidated Statements of Changes in Stockholders' Equity**

€ million	Capital stock of Bayer AG	Capital reserves of Bayer AG	Retained earnings	Net income	Bayer stock-holders' interest	Trans-lation differ-ences	Minority stock-holders' interest	Total
<b>Dec. 31, 1997</b>	<b>1,867</b>	<b>2,945</b>	<b>6,277</b>	<b>1,504</b>	<b>12,593</b>	<b>(584)</b>	<b>223</b>	<b>12,232</b>
<b>Changes in stockholders' equity resulting from capital contributions and dividend payments</b>								
Capital contributions								
Dividend payments				(710)	(710)		(3)	(713)
				<b>(710)</b>	<b>(710)</b>		<b>(3)</b>	<b>(713)</b>
<b>Other changes in stockholders' equity not recognized in income</b>								
Exchange differences						(395)		(395)
Other differences		50			50		(10)	40
		<b>50</b>			<b>50</b>	<b>(395)</b>	<b>(10)</b>	<b>(355)</b>
<b>Changes in stockholders' equity recognized in income</b>								
Allocation to retained earnings			794	(794)	0			0
Income after taxes for 1998				1,614	1,614		1	1,615
		<b>794</b>	<b>820</b>	<b>1,614</b>			<b>1</b>	<b>1,615</b>
<b>Dec. 31, 1998</b>	<b>1,867</b>	<b>2,945</b>	<b>7,121</b>	<b>1,614</b>	<b>13,547</b>	<b>(979)</b>	<b>211</b>	<b>12,779</b>
<b>Changes in stockholders' equity resulting from capital contributions and dividend payments</b>								
Capital contributions	3	(3)			0			0
Dividend payments				(747)	(747)		(23)	(770)
	<b>3</b>	<b>(3)</b>		<b>(747)</b>	<b>(747)</b>		<b>(23)</b>	<b>(770)</b>
<b>Other changes in stockholders' equity not recognized in income</b>								
Exchange differences						1,206		1,206
Other differences		(23)			(23)		(28)	(51)
		<b>(23)</b>			<b>(23)</b>	<b>1,206</b>	<b>(28)</b>	<b>1,155</b>
<b>Changes in stockholders' equity recognized in income</b>								
Allocation to retained earnings			867	(867)	0			0
Income after taxes for 1999				2,002	2,002		16	2,018
		<b>867</b>	<b>1,135</b>	<b>2,002</b>			<b>16</b>	<b>2,018</b>
<b>Dec. 31, 1999</b>	<b>1,870</b>	<b>2,942</b>	<b>7,965</b>	<b>2,002</b>	<b>14,779</b>	<b>227</b>	<b>176</b>	<b>15,182</b>

## Bayer Group Consolidated Statements of Cash Flows

€ million	Note	1999	1998*
<b>Cash and cash equivalents at beginning of year</b>		<b>1,184</b>	<b>1,746</b>
Operating result		3,357	3,155
Income taxes currently payable		(774)	(863)
Depreciation and amortization		1,811	1,543
Change in long-term provisions		(167)	(335)
Gains (Losses) on retirements of noncurrent assets		(975)	(106)
<b>Gross cash provided by operating activities</b>		<b>3,252</b>	<b>3,394</b>
Decrease (Increase) in inventories		134	(376)
Increase in trade accounts receivable		(459)	(135)
Increase (Decrease) in trade accounts payable		(11)	51
Changes in other working capital		337	(86)
<b>Net cash provided by operating activities</b>	[38]	<b>3,253</b>	<b>2,848</b>
<i>Discontinuing operations</i>	[41]	202	431
 Cash outflows for additions to property, plant and equipment		(2,632)	(2,703)
Cash inflows from sales of property, plant and equipment		63	536
Cash inflows and outflows related to investments		2,775	(25)
Cash outflows for acquisitions		(347)	(1,444)
Interest and dividends received		146	247
Cash inflows from marketable securities		209	197
<b>Net cash provided by (used in) investing activities</b>	[39]	<b>214</b>	<b>(3,192)</b>
<i>Discontinuing operations</i>	[41]	(32)	(163)
 Capital contributions		10	0
Bayer AG dividend and dividend payments to minority stockholders		(770)	(712)
Issuances of debt		1,222	1,697
Retirements of debt		(1,831)	(822)
Interest paid		(360)	(364)
<b>Net cash used in financing activities</b>	[40]	<b>(1,729)</b>	<b>(201)</b>
<i>Discontinuing operations</i>	[41]	(29)	41
 <b>Change in cash and cash equivalents due to business activities</b>		<b>1,738</b>	<b>(545)</b>
Change in cash and cash equivalents due to changes in companies consolidated		(124)	(18)
Change in cash and cash equivalents due to exchange rate movements		14	1
 <b>Cash and cash equivalents at end of year</b>	[42]	<b>2,812</b>	<b>1,184</b>
Marketable securities and other instruments		328	537
 <b>Liquid assets as per balance sheets</b>		<b>3,140</b>	<b>1,721</b>

\* 1998 figures restated

### Notes to the Consolidated Financial Statements of the Bayer Group

#### Accounting policies

The consolidated financial statements of the Bayer Group are prepared – pursuant to Article 292a of the German Commercial Code – in accordance with the rules of the International Accounting Standards Committee (IASC), London, in effect at the closing date. They comply with the European Union's guidelines on consolidation of financial statements (Directive 83/349/EEC).

The financial statements of the consolidated companies are prepared according to uniform recognition and valuation principles. Valuation adjustments made for tax reasons are not reflected in the Group statements. The individual companies' statements are prepared as of the closing date for the Group statements.

Certain income statement and balance sheet items are combined for the sake of clarity, as explained in

the Notes. For the first time, a distinction is made in the balance sheet between long-term and short-term liabilities in accordance with IAS 1 (Presentation of Financial Statements – revised 1997). Liabilities are stated as short-term if they mature within one year.

Changes in recognition and valuation principles are explained in the Notes. The previous year's figures are restated accordingly.

In a few instances, estimates and assumptions have to be made. These affect the classification and valuation of assets, liabilities, income, expenses and contingent liabilities. The actual values may vary from the estimates.

#### Companies consolidated

The financial statements of the Bayer Group include Bayer AG and 35 German and 152 foreign consolidated subsidiaries in which Bayer AG, directly or indirectly, has a majority of the voting rights or which are under its uniform control. The number of companies consolidated has decreased by 46 from the previous year. Excluded from consolidation are 99 subsidiaries that in aggregate are of minor importance to the net worth,

financial position and earnings of the Bayer Group; they account for less than 1 percent of Group sales.

Forty-two joint ventures – on aggregate the same number as last year – are included by proportionate consolidation in compliance with IAS 31 (Financial Reporting of Interests in Joint Ventures – revised 1998). Their effect on the Group balance sheet and income statement is as follows:

	€ million
Noncurrent assets	568
Current assets	745
Pension provisions	(82)
Other provisions	(77)
Financial obligations	(262)
Remaining liabilities	(334)
<b>Net assets</b>	<b>558</b>

	€ million
Income	1,762
Expenses	1,755
<b>Income after taxes</b>	<b>7</b>

Thirteen companies – including, for the first time, Agfa-Gevaert N.V., Belgium – are stated at equity. Thirty-six associated companies that in aggregate are of minor importance are stated at their accounting values.

Eighteen companies are included in the statements for the first time. Sixty-four companies are no longer consolidated. Of the latter, 39 are Agfa affiliates and 20 are affiliates of Chiron Diagnostics, acquired in 1998, that have since been integrated into existing Bayer companies.

In 1999 a total of €356 million was spent on **acquisitions**. The purchase prices of the foreign acquisitions are translated at the exchange rates in effect at the respective dates of acquisition.

On April 1, 1999 Bayer purchased the global polycarbonate and polyester plastic sheet business of the Dutch chemicals group DSM for €172 million. The acquisition comprises two companies – Axxis N.V. in Belgium and Sheffield Plastics Inc. in the United States. These companies are consolidated as of the date of acquisition. The purchase price includes goodwill of €108 million, which will be amortized over an estimated economic life of 10 years.

The assets of the Australian company Laserlite, also a manufacturer of plastic sheet, were acquired on March 15, 1999 for €15 million. The company will be consolidated as of 2000.

Effective October 31, 1999, our U.S. subsidiary Rhein Chemie Corporation acquired the business and the assets of Elastochem, Inc., one of the leading American suppliers of customized additives and specialties for the rubber industry, for €61 million. The goodwill of €47 million will be amortized over an estimated economic life of 10 years.

In 1999 we concluded a five-year research agreement with LION Bioscience AG of Heidelberg, Germany, with the aim of applying modern genomics and information technologies more efficiently to research and develop innovative drugs and diagnostic markers for the Pharmaceuticals and Diagnostics business groups. As part of this cooperation, Bayer purchased an 11.28 percent interest in LION on August 26, 1999 for €28 million.

On December 17, 1999 we acquired the remaining 33.3 percent of the shares of Bayer Polímeros S.A.,

Brazil. This manufacturer of acrylonitrile-butadiene-styrene (ABS) plastics is now a wholly owned subsidiary. Under the agreement reached when we first purchased an interest in 1997, the price paid for the remainder of the shares was €19 million. The goodwill of €13 million was written off in 1999 due to a loss of value.

On February 1, 1999, our subsidiary Bayer plc purchased 100 percent of the shares of pbi Home & Garden Limited, United Kingdom, from Sumitomo Corporation of Japan for €13 million. The acquisition of this company, which supplies plant protection products and fertilizers for amateur gardeners, marked our entry into Europe's second largest market for home garden products. The goodwill of €13 million will be amortized over a 10-year period, and the company is consolidated from the date of acquisition.

Our Diagnostics Business Group acquired the oncology diagnostics business – headquartered in Cambridge, Massachusetts – of OSI Pharmaceuticals, Inc. on December 2, 1999 for €11 million. The acquisition, effected through our U.S. subsidiary Bayer Corporation, comprises mainly patents and know-how in the field of cancer diagnostics.

The most significant **divestiture** during 1999 was the sale of 70 percent of the stock of Agfa-Gevaert N.V. of Belgium. On June 1, 1999, Bayer disposed of 70 million shares – one half of its total holding – to private and public investors by way of an initial public offering at an offer price of €22 per share. In addition, the Belgian holding company Gevaert N.V. acquired 20 percent of the shares – 15 percent at the time of the stock market listing and a further 5 percent on August 31, 1999 – also for €22 per share. Gevaert N.V. has the option of purchasing from Bayer a further interest in Agfa-Gevaert N.V., amounting to at most 10 percent of the stock, within one year from the date of purchase of its initial holding.

Acquisitions and divestitures of subsidiaries or businesses affected the Group's assets and liabilities as of

€ million	Acquisitions	Divestitures
Noncurrent assets	223	1,040
Current assets (excluding liquid assets)	67	3,561
Liquid assets	7	207
<b>Assets</b>	<b>297</b>	<b>4,808</b>
Pension provisions	1	663
Other provisions	0	333
Financial obligations	7	982
Remaining liabilities	28	643
<b>Liabilities</b>	<b>36</b>	<b>2,621</b>

Lists of Bayer AG's direct and indirect holdings of at least 20 percent have been included in the Leverkusen commercial register. They also are available directly from Bayer AG on request.

The following domestic subsidiaries availed themselves in 1999 of certain exemptions granted under Article 264, paragraph 3 of the German Commercial Code regarding the preparation, auditing and publica-

the dates of acquisition or divestiture as follows:

tion of financial statements: Agfa AG, Leverkusen; Bayer Bitterfeld GmbH, Greppin; Bayer Buna GmbH, Marl; Bayer Faser GmbH, Dormagen; Bayer-Kaufhaus GmbH, Leverkusen; Bayer Kautschuk GmbH, Leverkusen; Bayer Solar GmbH, Freiberg; Faserwerke Lingen GmbH, Lingen; Generics Holding GmbH, Leverkusen; IAB Ionenaustauscher GmbH, Greppin; KVP Pharma+Veterinär Produkte GmbH, Kiel.

### Foreign currency translation

The financial statements for 1999 are drawn up in euros (€) for the first time. 1998 figures are converted at the official rate of €1 = DM 1.95583.

Most foreign currency receivables and payables of the consolidated companies are hedged, and are translated at the hedged rates in their financial statements. The remaining foreign currency receivables and payables are translated at closing rates.

The majority of foreign consolidated companies are to be regarded as foreign entities since they are financially, economically and organizationally autonomous. Their functional currencies according to IAS 21 (The Effects of Changes in Foreign Exchange Rates) are thus the respective local currencies. The assets and liabilities of these companies are therefore translated at closing rates, income and expense items at average rates for the year.

Where, in exceptional cases, the operations of a foreign company are integral to those of Bayer AG, the functional currency is the euro. A temporal translation method is therefore used that is recognized in income. Property, plant and equipment, intangible assets,

investments in affiliated companies and other securities included in investments are translated at the average exchange rates in the year of addition, along with the relevant amortization, depreciation and write-downs. All other balance sheet items are translated at closing rates. Income and expense items (except amortization, depreciation and write-downs) are translated at average rates for the year.

Companies operating in hyperinflationary economies prepare their statements in hard currency and thus, in effect, by the temporal method described above.

Exchange differences arising from the translation of foreign companies' balance sheets are shown in a separate stockholders' equity item. In case of divestiture, the respective exchange differences are reversed and recognized in income.

The exchange rates for major currencies against the euro varied as follows:

€1		Closing rate		Average rate	
		1999	1998*	1999	1998*
U.S.A	USD	1.00	1.17	1.07	1.11
U.K.	GBP	0.62	0.70	0.66	0.67
Japan	JPY	102.73	134.84	121.05	144.94
Canada	CAD	1.46	1.82	1.59	1.65
Switzerland	CHF	1.61	1.60	1.60	1.61

\* euro exchange rates computed from DM rates (€1 = DM 1.95583)

## Consolidation methods

Capital consolidation is made according to IAS 22 by offsetting investments in subsidiaries and joint ventures against the underlying equities at the dates of acquisition. The identifiable assets and liabilities of subsidiaries and joint ventures are included at their fair values in proportion to Bayer's interest. Remaining differences are recognized as goodwill.

Where the statements of individual consolidated companies reflect write-downs or write-backs of investments in other consolidated companies, these are reversed for the Group statements.

Intragroup sales, profits, losses, income, expenses, receivables and payables are eliminated.

Deferred taxes are recognized for temporary differences related to consolidation entries.

Joint ventures are included by proportionate consolidation according to the same principles.

Intercompany profits and losses on transactions with companies included at equity were immaterial in 1999.

## Cash flow statement

The cash flow statement shows how the liquidity of the Bayer group was affected by the inflow and outflow of cash and cash equivalents during the year. The effects of acquisitions, divestitures and other changes regarding the companies consolidated are eliminated. Cash flows are classified by operating, investing and financing activities in accordance with IAS 7 (Cash Flow Statements). An adjustment is shown to reconcile cash and cash equivalents at the end of the year to the liquid assets reflected in the balance sheet.

The amounts reported by foreign consolidated companies are translated at average exchange rates for the year, with the exception of cash and cash equivalents, which are translated at closing rates as in the balance sheet. The effect of changes in exchange rates on cash and cash equivalents is shown separately.

**Notes to the Statements of Income**

**[1] Net sales**

Sales declined by €0.7 billion compared with 1998, to €27.3 billion. Sales growth of €1.4 billion from higher volumes and €0.6 billion from exchange rate fluctua-

tions was offset by declines of €0.5 billion from price changes and €2.2 billion from the net effect of acquisitions and divestitures, which is comprised as follows:

€ million	
<b>Acquisitions</b>	
Chiron Diagnostics (from Chiron in 1998)	504
Plastic sheet business (from DSM)	72
Seed treatment business in U.S.A. and Canada (from Gustafson in 1998)	49
pbi Home & Garden Limited, U.K. (from Sumitomo Corporation)	18
Elastochem Inc., U.S.A.	11
Other	14
	<b>668</b>
<b>Divestitures</b>	
Agfa-Gevaert group	(2,548)
Titanium dioxide (placed into joint venture with Kerr-McGee in 1998)	(131)
Silicones (placed into joint venture with GE Plastics in 1998)	(113)
Citric acid (to Tate & Lyle in 1998)	(102)
Other	(19)
	<b>(2,913)</b>
<b>Other changes in companies consolidated</b>	
	<b>78</b>
	<b>(2,167)</b>

Breakdowns of net sales by business segment and by region are given in the table on pages 98-99.

**[2] Research and development expenses**

According to IAS 9 (Research and Development Costs), research costs cannot be capitalized; development costs can only be capitalized if specific conditions are fulfilled. Development costs must be capitalized if it is sufficiently certain that the future economic benefits to the company will cover not only the usual production, selling and administrative costs but also the develop-

ment costs themselves. There are also several other criteria relating to the development project and the product or process being developed, all of which have to be met to justify asset recognition. As in previous years, these conditions are not satisfied.

### **[3] Other operating income**

Among the items of other operating income from continuing operations for 1999 are €123 million (1998: €83 million) from reversals of unutilized provisions, €16 million (1998: €148 million) from retirements of noncurrent assets, and €32 million (1998: €24 million) from sideline operations. The cost of goods sold incurred for sideline operations has been offset against

the corresponding revenues to present a clearer picture of the earnings situation.

Income from divestments of business activities totals €1,039 million (1998: €149 million). Almost the entire amount (€1,030 million) results from the sale of 70 percent of the shares of Agfa-Gevaert N.V.

### **[4] Other operating expenses**

Included in other operating expenses for continuing operations for 1999 are €54 million (1998: €35 million) in write-downs of receivables, €163 million (1998: €69 million) in amortization of acquired goodwill and €54 million (1998: €22 million) in losses from the sale of property, plant and equipment.

Also reflected here is an exchange loss of under €1 million (1998: €31 million) recorded on operating activities after the results of hedging transactions are offset against the underlying foreign currency receivables or payables.

In addition, €449 million (1998: €242 million) was spent on restructuring. Of this amount, the streamlining of the styrenics activities of the Plastics Business Group accounts for €169 million, and restructuring related to the integration of Chiron Diagnostics, acquired in 1998, accounts for €111 million.

### **[5] Discontinuing operations**

Due to the sale of a total of 70 percent of the shares of Agfa-Gevaert N.V., the companies of the Agfa-Gevaert group are no longer consolidated as of June 1, 1999. Since Bayer has ceased to hold a majority interest, the former Agfa business segment is no longer part of the Bayer Group. The operating result of the Agfa business up to the date of divestiture, amounting to €103 million, is therefore reflected separately in the income statement under discontinuing operations. The operating result for 1998 was €263 million.

In November 1999, Bayer, Hoechst and BASF announced their intention to combine the textile dyes activities of BASF with those of the existing Bayer-Hoechst joint venture DyStar in 2000. This will reduce Bayer's interest in DyStar to below 50 percent, and DyStar will no longer be included by proportionate consolidation in the Bayer Group financial statements. The operating result of the DyStar Business Group, amounting to minus €24 million (1998: €6 million), previously included in that of the Chemicals segment, is therefore reflected in discontinuing operations.

The non-operating results and the income taxes attributable to Agfa and DyStar are reflected in the corresponding items of the income statement.

A breakdown of the results of discontinuing operations is given below.

€ million	Agfa		DyStar		Total	
	1999	1998	1999	1998	1999	1998
<b>Net sales</b>	<b>1,801</b>	<b>4,349</b>	<b>325</b>	<b>361</b>	<b>2,126</b>	<b>4,710</b>
Cost of goods sold	(1,098)	(2,730)	(241)	(248)	(1,339)	(2,978)
Selling expenses	(388)	(928)	(65)	(69)	(453)	(997)
Research and development expenses	(101)	(224)	(10)	(10)	(111)	(234)
General administration expenses	(81)	(203)	(27)	(14)	(108)	(217)
Other operating income	25	109	4	13	29	122
Other operating expenses	(55)	(110)	(10)	(27)	(65)	(137)
<b>Result of discontinuing operations</b>	<b>103</b>	<b>263</b>	<b>(24)</b>	<b>6</b>	<b>79</b>	<b>269</b>
Non-operating result	(23)	(41)	(7)	(6)	(30)	(47)
<b>Income (Loss) before income taxes</b>	<b>80</b>	<b>222</b>	<b>(31)</b>	<b>0</b>	<b>49</b>	<b>222</b>
Income taxes	(24)	(105)	(4)	(3)	(28)	(108)
<b>Income (Loss) after taxes</b>	<b>56</b>	<b>117</b>	<b>(35)</b>	<b>(3)</b>	<b>21</b>	<b>114</b>

### [6] Operating result

Certain leases are capitalized under property, plant and equipment for the first time in 1999 in compliance with IAS 17 (Leases – revised 1997) and depreciated accordingly. For purposes of comparison, an adjustment has been made to reflect the effects that capitalization of these leases in 1998 would have had on that year's

income statement. The operating results for 1999 and 1998 are each increased by €10 million.

Breakdowns of the operating result by business segment and by region are given in the table on pages 98-99.

### Notes on segment reporting

In accordance with IAS 14 (Segment Reporting – revised 1997), a breakdown of certain data in the financial statements is given by business segment and geographical region; the business segments and regions are the same as those used for internal reporting. The aim is to provide users of the financial statements with information regarding the profitability and future prospects of the Group's various activities. To allow a more accurate appraisal of continuing operations, the discontinuing operations are shown separately.

The business segments shown as **continuing operations** embrace the following activities:

- The **Health Care** segment comprises the Pharmaceuticals, Consumer Care and Diagnostics business groups, which develop, manufacture and market throughout the world both prescription and over-the-counter pharmaceuticals, diagnostic systems and household insecticides.
- The **Agriculture** segment consists of the Crop Protection and Animal Health business groups. These research, develop and market crop protection products for all climate zones as well as healthcare, nutrition and grooming products for livestock and companion animals.

- The business groups in the **Polymers** segment develop, manufacture and market a wide variety of polymeric materials for diverse applications. In addition to the Plastics, Rubber, Polyurethanes, and Coatings and Colorants business groups, this segment also includes the subsidiaries Bayer Faser and Wolff Walsrode.
- In the **Chemicals** segment, organic and inorganic chemical products and specialty chemicals for industrial use are developed, manufactured and marketed. The segment comprises the Basic and Fine Chemicals and the Specialty Products business groups, the subsidiaries Haarmann & Reimer and H.C. Starck, and the joint venture EC Erdölchemie.

In line with internal financial controlling principles, the table shows the data for the business segments before consolidation. A **reconciliation** to the Group totals for continuing operations is given in a separate column; this reflects intersegment items and income and expenses not allocable to segments, such as central R&D expenses, corporate costs, and revenues and expenses from sideline operations.

Business activities which Bayer has already divested or intends to divest are shown as **discontinuing operations**. For 1999 these are the former Agfa business segment and the DyStar Business Group, which was previously included in the Chemicals segment. Bayer already holds only a 30 percent minority interest in Agfa following the 1999 stock market listing and subsequent sale of further shares. Bayer's interest in DyStar, too, will fall below 50 percent when BASF's textile dyes business is combined with that of DyStar.

The business segment and regional data are calculated as follows:

- The intersegment and interregional sales reflect intra-group transactions effected at transfer prices fixed on an arm's-length basis.
- The other operating income comprises that reflected in the income statement, including such income from discontinuing operations.

- Comparability of the operating results of different years may be restricted by exceptional items relating particularly to restructuring measures and acquisitions or divestitures of companies or businesses. For this reason an operating result before exceptional items is shown in addition.
- The return on sales before exceptional items is the ratio of the operating result before exceptional items to external sales.
- Gross operating cash flow is the excess of cash receipts over cash disbursements before any application of funds.
- The capital invested comprises all the assets that serve a business segment and are required to yield a return, less interest-free liabilities. It is stated as of December 31.
- The CFROI is the ratio of the gross cash flow to the average capital invested for the year.
- The equity items are those reflected in the balance sheet and income statement. They are allocated to the business segments where possible.
- The remaining liabilities do not include the financial obligations shown in the balance sheet.
- Capital expenditures, amortization and depreciation relate to intangible assets, property, plant and equipment.
- The research and development expenses are those reflected in the income statement.

**Key Data by Business Segment and Region**

€ million	1999	1998	1999	1998	1999	1998
Business segments	Health Care		Agriculture		Polymers	
Net sales (external)	8,367	7,028	3,094	2,931	9,307	8,803
- Change in €	19.1%	3.2%	5.6%	3.0%	5.7%	0.6%
- Change in local currencies	15.2%	4.8%	2.5%	5.2%	4.2%	0.7%
Intersegment sales	32	17	58	53	175	219
Other operating income	138	134	110	93	215	234
Operating result before exceptional items	1,095	991	520	563	1,164	1,208
Return on sales before exceptional items	13.1%	14.1%	16.8%	19.2%	12.5%	13.7%
Exceptional items	(247)	32	13	(2)	(244)	(93)
Operating result	848	1,023	533	561	920	1,115
Gross cash flow	1,138	1,058	549	512	1,395	1,310
Capital invested	8,748	7,923	3,486	2,997	12,742	11,029
CFROI	13.7%	15.4%	16.3%	18.1%	11.5%	12.0%
Equity-method income	(8)	0	2	2	0	0
Equity-method investments	25	28	10	10	20	0
Remaining liabilities	1,169	913	383	334	1,205	1,098
Capital expenditures	730	489	217	144	1,117	1,319
Amortization and depreciation	504	326	149	113	706	514
Research and development expenses	1,193	932	370	337	265	251
Number of employees (as of Dec. 31)	42,300	44,100	14,800	14,900	37,200	37,300

**Regions**      **Europe**      **North America**      **Latin America**

Net sales (external) - by market	11,097	11,040	7,584	6,692	1,902	1,975
Net sales (external) - by point of origin	12,791	12,592	7,723	6,707	1,612	1,680
- Change in €	1.6%	0.5%	15.1%	2.1%	-4.0%	-0.7%
- Change in local currencies	1.6%	0.4%	11.3%	0.3%	-6.4%	-2.7%
Interregional sales	2,598	2,329	1,081	1,018	46	30
Other operating income	478	410	34	73	38	93
Operating result before exceptional items	2,276	2,347	580	635	136	182
Return on sales before exceptional items	17.8%	18.6%	7.5%	9.5%	8.4%	10.8%
Exceptional items	(239)	(39)	(214)	(114)	(57)	26
Operating result	2,037	2,308	366	521	79	208
Gross cash flow	2,216	2,186	929	892	139	187
Capital invested	16,273	15,033	11,342	9,795	1,301	1,128
CFROI	13.7%	14.4%	8.7%	10.0%	11.3%	16.8%
Equity-method income	(22)	7	(8)	0	0	0
Equity-method investments	645	192	39	30	18	16
Remaining liabilities	1,779	1,768	1,393	1,040	145	151
Capital expenditures	1,475	1,201	916	1,016	87	106
Amortization and depreciation	767	713	669	463	110	56
Research and development expenses	1,264	1,088	610	468	14	17
Number of employees (as of Dec. 31)	70,700	72,400	23,900	24,800	9,300	9,800

1999	1998	1999	1998	1999	1998	1999	1998	1999	1998
<b>Chemicals</b>		<b>Reconciliation</b>		<b>Continuing operations</b>		<b>Discontinuing operations</b>		<b>Bayer Group</b>	
3,704	3,715	722	875	25,194	23,352	2,126	4,710	27,320	28,062
-0.3%	-9.4%			7.9%	-1.0%			-2.6%	-0.2%
-2.1%	-9.1%			5.4%	-0.4%			-4.7%	0.5%
478	531	(743)	(820)						
128	130	111	97	702	688	29	122	731	810
414	514	(372)	(343)	2,821	2,933	1,113	272	3,934	3,205
11.2%	13.8%			11.2%	12.6%			14.4%	11.4%
(44)	(76)	(51)	92	(573)	(47)	(4)	(3)	(577)	(50)
370	438	(423)	(251)	2,248	2,886	1,109	269	3,357	3,155
447	464	(471)	(305)	3,058	3,039	194	355	3,252	3,394
5,845	5,227	775	779	31,596	27,955	401	4,188	31,997	32,143
8.0%	8.3%			10.1%	11.3%			9.8%	10.8%
0	0	(22)	7	(28)	9	0	0	(28)	9
0	0	658	210	713	248	0	3	713	251
501	484	467	429	3,725	3,258	35	555	3,760	3,813
528	495	30	49	2,622	2,496	10	207	2,632	2,703
211	272	83	73	1,653	1,298	91	223	1,744	1,521
137	147	176	144	2,141	1,811	111	234	2,252	2,045
23,000	23,800	1,500	1,500	118,800	121,600	1,600	23,500	120,400	145,100

Asia/Africa/ Australia		Reconciliation		Continuing operations		Discontinuing operations		Bayer Group	
4,611	3,645			25,194	23,352	2,126	4,710	27,320	28,062
3,068	2,373			25,194	23,352	2,126	4,710	27,320	28,062
29.3%	-9.0%			7.9%	-1.0%			-2.6%	0.2%
17.2%	3.5%			5.4%	-0.4%			-4.7%	0.5%
172	77	(3,897)	(3,454)						
50	23	102	89	702	688	29	122	731	810
228	138	(399)	(369)	2,821	2,933	1,113	272	3,934	3,205
7.4%	5.8%			11.2%	12.6%			14.4%	11.4%
(12)	(12)	(51)	92	(573)	(47)	(4)	(3)	(577)	(50)
216	126	(450)	(277)	2,248	2,886	1,109	269	3,357	3,155
198	137	(424)	(363)	3,058	3,039	194	355	3,252	3,394
2,593	1,941	87	58	31,596	27,955	401	4,188	31,997	32,143
8.9%	7.9%			10.1%	11.3%			9.8%	10.8%
2	2			(28)	9	0	0	(28)	9
11	10			713	248	0	3	713	251
408	299			3,725	3,258	35	555	3,760	3,813
143	172	1	1	2,622	2,496	10	207	2,632	2,703
107	66			1,653	1,298	91	223	1,744	1,521
77	94	176	144	2,141	1,811	111	234	2,252	2,045
14,200	13,900	700	700	118,800	121,600	1,600	23,500	120,400	145,100

### [7] Income (Expenses) from investments in affiliated companies – net

This comprises the following items:

€ million	1999	1998
Dividends and similar income	9	14
• of which €2 million (1998: €7 million) from subsidiaries		
Income from profit and loss transfer agreements	1	2
• of which €1 million (1998: €2 million) from subsidiaries		
Expenses from loss transfer	0	(2)
• of which €0 million (1998: €2 million) from subsidiaries		
Income (Expense) from companies included at equity	(28)	9
Gains from the sale of investments in affiliated companies	0	10
Losses from the sale of investments in affiliated companies	(2)	(10)
Write-downs of investments in affiliated companies	(11)	(2)
	(31)	21

### [8] Interest expense - net

Interest income and expense comprises:

€ million	1999	1998
Income from other securities and loans included in investments	16	23
Other interest and similar income	150	169
• of which €3 million (1998: €4 million) from subsidiaries		
Interest and similar expenses	(351)	(371)
• of which €4 million (1998: €11 million) to subsidiaries		
	(185)	(179)

Interest expense incurred to finance the construction phase of major investment projects is not included here. Such interest expense, amounting to €32 million

in 1999 (1998: €53 million), is capitalized as part of the cost of acquisition or construction of the property, plant or equipment concerned.

### [9] Other non-operating expense – net

This item comprises:

€ million	1999	1998
Write-downs of investments and marketable securities	0	(3)
Interest portion of interest-bearing provisions	(275)	(309)
Miscellaneous non-operating expenses	(51)	(38)
Miscellaneous non-operating income	21	81
	(305)	(269)

The miscellaneous non-operating income and expenses for 1999 contain the exchange gains and losses (including hedging costs), respectively, pertaining to non-operating activities. These result in a net exchange loss of €27 million (1998: €16 million). Miscellaneous non-operating income includes €9 million (1998: €12 million)

in gains from the sale of marketable securities.

Certain leases are capitalized under property, plant and equipment for the first time in compliance with IAS 17 (Leases – revised 1997). The interest portion of the lease payments is reflected in miscellaneous non-operating expenses. The 1998 figure is adjusted by €10 million.

## [10] Income taxes

This item comprises the income taxes paid or accrued in the individual countries, plus deferred taxes. Deferred taxes arise from temporary differences between the carrying amounts of assets or liabilities in the accounting and tax balance sheets, from consolidation measures and from realizable loss carryforwards. Deferred taxes are calculated at the rates which – on the basis of

the statutory regulations in force, or already enacted in relation to future periods, as of the closing date – are expected to apply in the individual countries at the time of realization.

The breakdown of income taxes by origin is as follows:

€ millions	1999	1998
Income taxes paid or accrued		
- Germany	71	444
- Other countries	429	419
	<b>500</b>	<b>863</b>
Deferred taxes		
- from temporary differences	305	245
- from loss carryforwards	13	5
	<b>318</b>	<b>250</b>
	<b>818</b>	<b>1,113</b>

Changes in tax rates increased deferred tax expense for 1999 by €41 million; in 1998, such changes diminished it by €1 million.

The deferred taxes are allocable to the various balance sheet items as follows:

€ million	Dec. 31, 1999	Dec. 31, 1998		
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Intangible assets	101	28	144	14
Property, plant and equipment	18	1,409	18	1,339
Investments	10	40	0	45
Inventories	266	92	243	106
Receivables	76	28	23	33
Other current assets	14	74	13	47
Pension provisions	265	131	398	1
Other provisions	210	26	119	15
Other liabilities	150	32	201	4
Loss carryforwards	0	–	13	–
	<b>1,110</b>	<b>1,860</b>	<b>1,172</b>	<b>1,604</b>
Changes in companies consolidated			56	22
Set-off *	(703)	(703)	(842)	(842)
	<b>407</b>	<b>1,157</b>	<b>386</b>	<b>784</b>

\* According to IAS 12 (Income Taxes), deferred tax assets and deferred tax liabilities should, under certain conditions, be offset if they relate to income taxes levied by the same taxation authority.

Utilization of tax loss carryforwards from previous years diminished the amount of income taxes paid or accrued in 1999 by €9 million (1998: €9 million) and increased deferred tax expense by €13 million (1998: €5 million). The potential tax savings relating to tax loss carryforwards are only recognized as deferred tax income if it is sufficiently certain that this income will be realized. Tax loss carryforwards of €181 million (1998: €22 million) remained unutilized.

The actual income tax expense of €818 million for 1999 is €394 million less than the €1,212 million that would result from applying to the pre-tax income of the Group a tax rate of 42.7 percent (1998: 40.0 percent), which is the weighted average of the theoretical tax rates for the individual Group companies. The reconciliation of theoretical to actual income tax expense for the Group is as follows:

	1999		1998	
	€ million	%	€ million	%
Theoretical income tax expense	1,212	100	1,091	100
Lower taxes due to tax-free income	(434)	(36)	(69)	(6)
Higher taxes due to non-tax-deductible expenses	90	7	155	14
Other tax effects	(50)	(4)	(64)	(6)
<b>Actual income tax expense</b>	<b>818</b>	<b>67</b>	<b>1,113</b>	<b>102</b>
Effective tax rate in %		28.8		40.8

Income tax expense for 1999 includes income of €1 million (1998: €2 million) relating to prior periods.

The gain on the sale of 70 percent of the shares of Agfa-Gevaert N.V. was tax-free.

### [11] Other taxes

Other taxes amounting to €189 million (1998: €179 million) are included in the cost of goods sold, selling expenses, research and development expenses

or general administration expenses. These are mainly property-related taxes.

### [12] Minority stockholders' interest

Minority interest in income amounts to €16 million (1998: €7 million), and minority interest in losses to €0 million (1998: €6 million), yielding a net minority

interest of €16 million (1998: €1 million) in Group income after taxes.

### [13] Earnings per share

Earnings per share are determined according to IAS 33 (Earnings Per Share) by dividing the net income by the average number of shares.

In 1999, as in 1998, the number of shares remained

constant at 730,341,920. Earnings per share were €2.74 (1998: €2.21).

There were no subscription rights outstanding in 1999 or 1998, and therefore no dilutive potential shares.

## [14] Cost of materials

The total cost of materials for continuing operations amounted to €7,837 million (1998: €7,687 million), comprising €7,267 million (1998: €7,131 million) in expenses for raw materials, supplies and goods purchased for resale, and €570 million (1998: €556 million) in expenses for purchased services.

The cost of materials for discontinuing operations was €1,305 million (1998: €1,850 million). Agfa accounted for €1,180 million (1998: €1,663 million), including €14 million (1998: €46 million) for purchased services, and DyStar for €125 million (1998: €187 million), including €1 million (1998: €1 million) for purchased services.

## [15] Personnel expenses

Personnel expenses for continuing operations in 1999 rose by €248 million to €6,895 million. Half of the

increase is due to exchange rate fluctuations. The breakdown of personnel expenses is as follows:

€ million	Continuing operations			Discontinuing operations		
			1999	1998	Agfa	
	1999	1998			1999	1998
Wages and salaries	5,484	5,262	417	1,038	64	62
Social expenses	1,411	1,385	161	347	12	12
- <i>of which pension expenses</i>	[367]	[357]	[76]	[141]	[3]	[3]
	<b>6,895</b>	<b>6,647</b>	<b>578</b>	<b>1,385</b>	<b>76</b>	<b>74</b>

## [16] Number of employees

The average number of employees in continuing operations, classified by corporate functions, was as follows:

	1999	1998
Marketing	34,732	33,362
Technology	63,411	63,866
Research	12,090	11,693
Administration	10,046	10,039
<i>of which trainees</i>	<b>120,279</b>	<b>118,960</b>
	2,671	2,768

The employees of joint ventures are included in the above figures in proportion to Bayer's interests in the respective companies. The total number of people employed by our joint ventures in 1999 was 3,368 (1998: 3,070).

The figures in the above table do not include people employed in discontinuing operations. In 1999, DyStar employed on average 3,216 people (1998: 3,106); Agfa employed on average 22,368 people in 1998.

**Notes to the Balance Sheets**

**[17] Intangible assets**

Intangible assets that have been acquired are recognized at cost and amortized over their estimated useful lives. Purchased software is amortized over a maximum period of four years. Write-downs are made for any declines in value that are expected to be permanent. Assets are written back if the reasons for previous years' write-downs no longer apply.

Goodwill, including that resulting from capital consolidation, is capitalized in accordance with IAS 22 and amortized on a straight-line basis over its estimated useful life, which currently is a maximum period of 15 years. The value of goodwill is reassessed regularly and written down if necessary.

Self-created intangible assets are not capitalized.

Changes in intangible assets in 1999 are as follows:

€ million	Acquired concessions, industrial property rights, similar rights and assets, and licenses thereunder	Acquired goodwill	Advance payments	Total
Gross carrying amounts, Dec. 31, 1998	1,101	1,369	61	2,531
Exchange differences	167	47	8	222
Changes in companies consolidated	66	8	1	75
Acquisitions	11	219	-	230
Capital expenditures	266	2	87	355
Agfa divestiture	(61)	(19)	(20)	(100)
Retirements	(323)	(80)	0	(403)
Transfers	676	(602)	(53)	21
<b>Gross carrying amounts, Dec. 31, 1999</b>	<b>1,903</b>	<b>944</b>	<b>84</b>	<b>2,931</b>
Accumulated amortization and write-downs, Dec. 31, 1998	465	157	-	622
Exchange differences	31	9	-	40
Changes in companies consolidated	14	(3)	-	11
Amortization and write-downs in 1999	317	163	-	480
<i>- of which write-downs</i>	<i>[58]</i>	<i>[68]</i>	<i>[ ]</i>	<i>[126]</i>
Write-backs	-	-	-	-
Retirements	(314)	(80)	-	(394)
Agfa divestiture	(33)	(7)	-	(40)
Transfers	(1)	-	-	(1)
<b>Accumulated amortization and write-downs, Dec. 31, 1999</b>	<b>479</b>	<b>239</b>	<b>-</b>	<b>718</b>
<b>Net carrying amounts, Dec. 31, 1999</b>	<b>1,424</b>	<b>705</b>	<b>84</b>	<b>2,213</b>
Net carrying amounts, Dec. 31, 1998	636	1,212	61	1,909

The exchange differences are the differences between the carrying amounts at the beginning and the end of the year that result from translating foreign

companies' figures at the respective different exchange rates and changes in their assets during the year at the average rate for the year.

## (18) Property, plant and equipment

Property, plant and equipment is carried at the cost of acquisition or construction. Assets subject to depletion are depreciated over their estimated useful lives. Write-downs are made for any declines in value that are expected to be permanent, aside from those reflected in depreciation. Assets are written back if the reasons for previous years' write-downs no longer apply.

The cost of construction of self-constructed property, plant and equipment comprises the direct cost of materials, direct manufacturing expenses, appropriate allocations of material and manufacturing overheads, and an appropriate share of the depreciation and write-downs of assets used in construction. It includes the shares of expenses for company pension plans and discretionary employee benefits that are attributable to construction.

If the construction phase of property, plant or equipment extends over a long period, the interest incurred on borrowed capital up to the date of completion is capitalized as part of the cost of acquisition or construction.

Expenses for the repair of property, plant and equipment are normally charged against income. They are, however, capitalized in exceptional cases if they result in an enlargement or substantial improvement of the respective assets.

Property, plant and equipment is depreciated by the straight-line method, except where the declining-balance method is more appropriate in light of the actual utilization period.

The following depreciation periods, based on the estimated useful lives of the respective assets, are applied throughout the Group:

	20	to	50	years
Buildings				
Outdoor infrastructure	10	to	20	years
Plant installations	6	to	20	years
Machinery and apparatus	6	to	12	years
Laboratory and research facilities	3	to	5	years
Storage tanks and pipelines	10	to	20	years
Vehicles	4	to	8	years
Computer equipment	3	to	5	years
Furniture and fixtures	4	to	10	years

In accordance with IAS 17 (Leases – revised 1997), assets leased on terms equivalent to financing a purchase by a long-term loan (finance leases) are capitalized at the lower of their fair value or the present value of the minimum lease payments. The leased assets are depreciated over their estimated

useful life except where subsequent transfer of title is uncertain, in which case they are depreciated over their estimated useful life or the respective lease term, whichever is shorter. The future lease payments are recorded as liabilities.

Changes in property, plant and equipment in 1999 are as follows:

€ million	Land and buildings	Machinery and technical equipment	Furniture, fixtures and other equipment	Construction in progress and other advance payments to vendors and contractors	Total
Gross carrying amounts, Dec. 31, 1998	7,648	18,070	2,476	1,507	29,701
Exchange differences	368	805	113	134	1,420
Changes in companies consolidated	28	63	4	4	99
Acquisitions	13	30	1	1	45
Capital expenditures	75	514	263	1,425	2,277
Retirements	(135)	(908)	(194)	(16)	(1,253)
Agfa divestiture	(688)	(1,953)	(385)	(35)	(3,061)
Transfers	220	1,239	82	(1,562)	(21)
<b>Gross carrying amounts, Dec. 31, 1999</b>	<b>7,529</b>	<b>17,860</b>	<b>2,360</b>	<b>1,458</b>	<b>29,207</b>
Accumulated depreciation and write-downs, Dec. 31, 1998	4,215	12,819	1,697	-	18,731
Exchange differences	77	385	68	-	530
Changes in companies consolidated	5	13	19	-	37
Depreciation and write-downs in 1999	214	981	272	7	1,474
- <i>of which write-downs</i>	[8]	[69]	[–]	[7]	[84]
Write-backs	(152)	(37)	(17)	-	(206)
Retirements	(102)	(859)	(165)	-	(1,126)
Agfa divestiture	(393)	(1,559)	(268)	-	(2,220)
Transfers	3	(1)	(1)	-	1
<b>Accumulated depreciation and write-downs, Dec. 31, 1999</b>	<b>3,867</b>	<b>11,742</b>	<b>1,605</b>	<b>7</b>	<b>17,221</b>
<b>Net carrying amounts, Dec. 31, 1999</b>	<b>3,662</b>	<b>6,118</b>	<b>755</b>	<b>1,451</b>	<b>11,986</b>
Net carrying amounts, Dec. 31, 1998	3,433	5,251	779	1,507	10,970

The exchange differences are the differences between the carrying amounts at the beginning and the end of the year that result from translating foreign companies' figures at the respective different exchange rates and changes in their assets during the year at the average rate for the year.

Capitalized property, plant and equipment includes assets with a total net value of €188 million (1998: €158 million) held under finance leases. The gross carrying amounts of these assets total €245 million (1998: €200 million). Leased assets in the net amount of €180 million are capitalized for the first time according to IAS 17 (Leases – revised 1997); their

gross carrying amounts total €232 million. The 1998 figures are adjusted accordingly (gross value €169 million, net value €141 million). The leased assets are mainly buildings, furniture and fixtures.

Also included are products leased to other parties, except where the lessee is to be regarded as the economic owner and the relevant agreements therefore constitute finance leases as defined in IAS 17 (Leases – revised 1997); in this case a receivable is recognized in the balance sheet in the amount of the discounted future lease payments.

## [19] Investments

Investments in non-consolidated subsidiaries, other affiliated companies and other securities are carried individually at cost. Write-downs are made for any declines in value that are expected to be permanent. Investments are written back if the reasons for previous years' write-downs no longer apply.

The cost of acquisition of investments in companies included at equity is adjusted annually to reflect changes in Bayer's share of their stockholders' equity.

In the first-time consolidation, differences between the cost of acquisition and the underlying equities at the dates of acquisition of the investments are allocated to assets or liabilities by the same method applied to fully consolidated subsidiaries.

Loans receivable that are interest-free or bear low rates of interest are carried at present value; other loans receivable are carried at nominal value.

Changes in investments in 1999 are as follows:

€ million	Investments in subsidiaries	Loans to sub- sidiaries	Investments in other affiliated companies	Other companies	Loans to other affiliated companies	Other securities	Other loans	Total
<b>Gross carrying amounts,</b>								
Dec. 31, 1998	269	4	366	118	25	113	320	1,215
Exchange differences	13	1	12	5	2	13	12	58
Changes in companies consolidated	(90)	-	2	(1)	16	(2)	38	(37)
Acquisitions	2	-	3	28	-	-	-	33
Other additions	20	6	8	-	-	19	18	71
Retirements	(8)	(1)	(32)	-	(8)	(11)	(133)	(193)
Agfa divestiture	(23)	(3)	464	(3)	(25)	(11)	(16)	383
Transfers	3	-	(3)	-	-	-	-	-
<b>Gross carrying amounts, Dec. 31, 1999</b>	<b>186</b>	<b>7</b>	<b>820</b>	<b>147</b>	<b>10</b>	<b>121</b>	<b>239</b>	<b>1,530</b>
Accumulated write-downs,								
Dec. 31, 1998	17	1	73	1	-	3	18	113
Exchange differences	1	-	2	-	-	-	-	3
Changes in companies consolidated	(2)	-	-	(1)	-	-	(1)	(4)
Write-downs in 1999	14	-	2	-	-	-	1	17
Write-backs	-	(1)	-	-	-	-	(3)	(4)
Retirements	(8)	-	-	-	-	-	-	(8)
Agfa divestiture	-	-	-	-	-	(2)	-	(2)
Transfers	-	-	-	-	-	-	-	-
<b>Accumulated write- downs, Dec. 31, 1999</b>	<b>22</b>	<b>-</b>	<b>77</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>15</b>	<b>115</b>
<b>Net carrying amounts, Dec. 31, 1999</b>	<b>164</b>	<b>7</b>	<b>743</b>	<b>147</b>	<b>10</b>	<b>120</b>	<b>224</b>	<b>1,415</b>
Net carrying amounts, Dec. 31, 1998	252	3	293	117	25	110	302	1,102

The exchange differences are the differences between the carrying amounts at the beginning and the end of the year that result from translating foreign companies' figures at the respective different exchange rates and changes in their assets during the year at the average rate for the year.

The investments in associated companies comprise mainly the 30 percent interest in Agfa-Gevaert N.V., Belgium. The fair value of other securities included in investments exceeds their carrying amount by €7 million (1998: €5 million).

### [20] Inventories

Raw materials, supplies, and goods purchased for resale are valued at the cost of acquisition; work in process and finished goods are valued at the cost of production. If the inventory values are lower at the closing date because of a drop in market prices, for example, the lower amounts are shown. Of the €4,992 million in inventories carried as of December 31, 1999, €439 million represents those included at their net realizable value.

Inventories are normally valued by the weighted-average method.

The cost of production comprises the direct cost of

materials, direct manufacturing expenses, appropriate allocations of material and manufacturing overheads, and an appropriate share of the depreciation and write-downs of assets used for production. It includes the shares of expenses for company pension plans and discretionary employee benefits that are attributable to production. Administrative costs are included where they are attributable to production.

Work in process and finished goods are grouped together in light of the production sequences characteristic of the chemical industry.

Inventories are comprised as follows:

€ million	Dec. 31, 1999	Dec. 31, 1998
Raw materials and supplies	978	1,012
Work in process, finished goods and goods purchased for resale	4,006	4,758
Advance payments	8	11
	<b>4,992</b>	<b>5,781</b>

### [21] Trade accounts receivable

Trade accounts receivable are stated at nominal value, less write-downs of €173 million (1998: €240 million) for amounts unlikely to be recovered.

Trade accounts receivable as of December 31, 1999 include €5,325 million (1998: €5,518 million) maturing within one year and €8 million (1998: €55

million) maturing after one year. Of the total, €25 million (1998: €38 million) is receivable from subsidiaries, €77 million (1998: €81 million) from other affiliated companies and €5,231 million (1998: €5,454 million) from other customers.

### [22] Other receivables and other assets

Other receivables and other assets are stated at nominal value, less any necessary write-downs for amounts unlikely to be recovered. As of December 31, 1999 they include, among other items, claims for tax refunds (€451 million), short-term loans receivable (€65 million) and accrued interest on loans receivable (€34 million).

Lease agreements in which the other party, as

lessee, is to be regarded as the economic owner of the leased assets (finance leases) give rise to accounts receivable in the amount of the discounted future lease payments. These receivables amount to €93 million, while the interest portion pertaining to future years amounts to €29 million. The lease payments are due as follows:

€ million	Lease payments	Of which interest	Account receivable
2000	14	3	11
2001 to 2004	70	16	54
After 2004	38	10	28
	<b>122</b>	<b>29</b>	<b>93</b>

Total other receivables and other assets include €85 million (1998: €85 million) pertaining to subsidiaries and €50 million (1998: €29 million) pertaining to other affiliated companies.

Total other receivables and other assets in the amount of €297 million (1998: €351 million) mature

in more than one year; of this amount, €32 million (1998: €33 million) pertains to subsidiaries.

Other assets include €34 million (1998: € 34 million) that represents income earned in the fiscal year but not due to be received until after the closing date. This income consists mainly of accrued interest.

## [23] Liquid assets

Liquid assets comprise the following items:

€ million	Dec. 31, 1999	Dec. 31, 1998
Marketable securities and other instruments	328	537
Cash and cash equivalents	2,812	1,184
	<b>3,140</b>	<b>1,721</b>

Marketable securities are shown at the lower of cost of acquisition or fair value as of the closing date.

The fair values of marketable securities and other instruments as of December 31, 1999 amount to €376 million (1998: €607 million).

## [24] Deferred taxes

Deferred taxes result primarily from temporary differences between the carrying amounts of assets or liabilities in the accounting and tax balance sheets of the individual consolidated companies, as well as from con-

solidation measures. The deferred taxes are computed according to IAS 12 (Income Taxes). Deferred taxes are comprised as follows:

€ million	Dec. 31, 1999	Dec. 31, 1998
Deferred tax assets	407	386
• of which from consolidation measures	[237]	[250]
Deferred tax liabilities	(1,157)	(784)

## [25] Deferred charges

Deferred charges as of December 31, 1999 include unamortized debt discounts of €22 million (1998: €23 million). The debt discounts are amortized annually over the lives of the underlying liabilities.

Total deferred charges include €162 million that is expected to be used up in 2000.

Due to certain leases being capitalized for the first time according to IAS 17 (Leases – revised 1997), lease payments made in advance are no longer reflected in deferred charges. The 1998 amount has been adjusted by €19 million.

## [26] Stockholders' equity

The capital stock of Bayer AG amounts to €1,870 million. It was increased by a €3 million transfer from capital reserves to round up the “proportionate amount” per share to the next whole cent, pursuant to the resolution of the Annual Stockholders' Meeting of April 30, 1999. The capital stock is divided into 730,341,920 no-par bearer shares of a single class.

Authorized capital totaling €256 million was approved by the Annual Stockholders' Meeting on April 30, 1997. It expires on April 30, 2002. The authorized capital can be used to increase the capital stock through the issuance of new shares against cash contributions.

Capital reserves include the paid-in surplus from the issuance of shares and subscription rights by Bayer AG. They amount to €2,942 million, having decreased by €3 million from the previous year due to the above-mentioned transfer to the capital stock.

The retained earnings contain prior years' undistributed income of companies included in the consolidation.

Minority interest comprises third parties' shares in the equity of consolidated subsidiaries. Substantial minority interests exist in the equity of Bayer Yakuhin, Ltd., Japan, and the Indian subsidiaries Bayer (India) Ltd. and Bayer ABS Ltd.

The changes in the various components of stockholders' equity during 1999 and 1998 are shown in the statements of changes in stockholders' equity.

### [27] Provisions for pensions and other post-employment benefits

Group companies provide retirement benefits for most of their employees, either directly or by contributing to independently administered funds. The way these benefits are provided varies according to the legal, fiscal and economic conditions of each country, the benefits generally being based on the employees' remuneration and years of service. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Group companies provide retirement benefits under defined contribution and/or defined benefit plans.

In the case of **defined contribution plans**, the company pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. Once the contributions have been paid, the company has no further payment obligations. The regular contributions constitute

expenses for the year in which they are due and as such are included in the cost of goods sold, selling expenses, research and development expenses or general administration expenses, and thus in the operating result. In 1999, these expenses totaled €399 million (1998: €412 million). A further €47 million (1998: €92 million) in contributions was paid in 1999 with respect to discontinuing operations, principally Agfa.

All other retirement benefit systems are **defined benefit plans**, which may be either unfunded, i.e. financed by provisions (accruals), or funded, i.e. financed through pension funds. In 1999, expenses for defined benefit plans amounted to €353 million (1998: €374 million). These expenses – except for the interest portion – are included in the cost of goods sold, selling expenses, research and development expenses or general administration expenses. They are comprised as follows:

€ million	Pension plans in Germany		Pension plans in other countries		Discontinuing operations	
	1999	1998	1999	1998	1999	1998
Expenses for pension entitlements earned during the year	127	107	126	104	6	42
Expenses for pension entitlements earned in prior years	6	1	15	9	0	0
Interest portion of pension entitlements earned in prior years	420	432	139	109	26	61
Return on plan assets	(319)	(320)	(173)	(112)	(20)	(45)
Amortization of actuarial gains/losses	20	28	(8)	16	26	5
	<b>254</b>	<b>248</b>	<b>99</b>	<b>126</b>	<b>38</b>	<b>63</b>

The pension provisions for defined benefit plans are calculated in accordance with IAS 19 (Employee Benefits – revised 1998) by the projected unit credit method. The future benefit obligations are valued by actuarial methods on the basis of a prudent assess-

ment of the relevant parameters. Benefits expected to be payable after retirement are spread over each employee's entire period of employment, allowing for future changes in remuneration.

All defined benefit plans necessitate actuarial computations and valuations. These are based not only on life expectancy but also on the following parameters,

which vary from country to country according to economic conditions:

	Parameters for Germany		Parameters for other countries	
	Dec. 31, 1999	Dec. 31, 1998	Dec. 31, 1999	Dec. 31, 1998
Discount rate	6.5 %	6.0 %	3.0 to 7.3 %	3.0 to 8.8 %
Projected future remuneration increases	3.0 %	2.5 %	1.0 to 5.4 %	1.0 to 7.0 %
Projected future pension increases	2.0 %	1.5 %	1.0 to 5.4 %	1.0 to 7.0 %
Projected employee turnover (according to age and gender)	2.0 %	2.0 %	empirical data	
Projected return on plan assets (where applicable)	6.5 %	6.5 %	3.0 to 19.0 %	2.1 to 16.4 %

In Germany, the status of unfunded and funded defined benefit obligations, computed by the appropriate methods, is as follows:

€ million	1999	1998
Present value of defined benefit obligation (unfunded)	3,722	4,101
Present value of defined benefit obligation (funded)	3,727	3,983
<b>Defined benefit obligation</b>	<b>7,449</b>	<b>8,084</b>
Fair value of included plan assets	4,330	4,103
Adjustment for unrecognized actuarial gains/losses	88	(352)
Adjustment for past service cost	–	(6)
<b>Net recognized liability</b>	<b>3,207</b>	<b>3,623</b>

The adjustments, as yet unrecognized in the income statement, represent the difference between the defined benefit obligation – after deducting the fair value of plan assets – and the net liability recognized in the balance sheet. They arise mainly from actuarial gains or losses caused by differences between actual and previously assumed trends in employee turnover and remuneration. In accordance with IAS 19, these

amounts are reflected in the balance sheet and will be recognized in the income statement over the expected remaining working lives of existing employees (currently 15 years in Germany).

The net liability under these defined benefit plans changed as follows:

€ million	1999	1998
Net liability recognized at beginning of year	3,623	3,609
Service cost	292	287
Pension payments	(257)	(273)
Agfa divestiture	(458)	0
Changes in companies consolidated	7	0
<b>Net liability recognized at end of year</b>	<b>3,207</b>	<b>3,623</b>

The capital of pension funds is invested worldwide in real estate, stocks and fixed-income securities. The

funded retirement benefit obligations of the foreign affiliated companies are as follows:

€ million	Plans with assets in excess of obligation		Plans with obligation in excess of assets	
	1999	1998	1999	1998
Defined benefit obligation	3,965	1,633	383	326
Fair value of plan assets	4,691	1,645	292	189
<b>Excess</b>	<b>726</b>	<b>12</b>	<b>(91)</b>	<b>(137)</b>

Funds and benefit obligations are valued on a regular basis at least every three years. For all major funds, comprehensive actuarial valuations are performed annually.

Provisions are also set up under this item for the obligations of Group companies in the United States to provide health care and certain other benefits ("other post-retirement benefits") to their retirees, since these obligations are similar in character to pension obligations. Like pension obligations, they are valued in line with international standards; the valuation is based on the assumption that health care costs will increase at an annual rate of 5 percent in the long term. In 1999 such obligations amounted to €258 million (1998:

€247 million). The resulting expenses for 1999 amounted to €24 million, comprising €20 million in expenses for entitlements earned during 1999, €1 million in expenses for entitlements earned in prior years, €30 million in interest cost, €22 million in return on plan assets and €5 million in actuarial gains.

Other post-employment benefits covered by provisions also include severance payments and early retirement benefits. These benefit obligations are determined using actuarial methods on the basis of local discount rates.

### [28] Other provisions

Other provisions are established to cover future payment obligations, foreseeable risks and uncertain liabilities of the Group, based on reasonable estimates

of such commitments as of the closing date. Interest-bearing provisions are discounted to present value.

€ million	Dec. 31, 1999		Dec. 31, 1998	
	Total	Maturing in 2000	Total	Maturing in 1999
Provisions for taxes	493	254	432	370
Provisions for personnel commitments	947	456	994	597
Provisions for environmental protection	246	32	303	25
Provisions for trade-related commitments	254	254	326	326
Miscellaneous provisions	596	348	499	310
	<b>2,536</b>	<b>1,344</b>	<b>2,554</b>	<b>1,628</b>

Personnel commitments mainly include annual bonus payments, long service awards and vacation entitlements.

Provisions for environmental protection relate to future relandscaping, landfill modernization and the

remediation of land contaminated by past industrial operations. Sufficient provisions have been established for such commitments.

### [29] Financial obligations

Financial obligations are carried at nominal or redemption value, whichever is higher. They comprise the following:

€ million	Dec. 31, 1999		Dec. 31, 1998	
	Total	Maturing in 2000	Total	Maturing in 1999
Debentures	1,809	10	1,903	296
Liabilities to banks	1,959	1,658	1,610	1,039
Liabilities under lease agreements	181	23	133	15
Liabilities from the issuance of promissory notes	1	1	3	3
Commercial paper	314	314	917	917
Other financial obligations	202	101	164	56
	<b>4,466</b>	<b>2,107</b>	<b>4,730</b>	<b>2,326</b>

The financial obligations are predominantly in U.S. dollars, which account for €2.5 billion (1998: €3.0 bil-

lion). U.S. dollar borrowings represent 55 percent (1998: 64 percent) of total financial obligations.

Debentures include the following:

	Volume	€ million
<b>Bayer Corporation</b>		
2½% Bonds with Warrants Attached 1987/2002	Sfr 250 million	156
<b>Bayer Corporation</b>		
6½% Notes 1995/2002	US\$ 400 million	398
7¾% Notes 1995/2015	US\$ 200 million	199
6¾% Notes 1996/2001	US\$ 250 million	249
2¼% Bonds 1997/2002	Sfr 200 million	125
3½% Revenue Bonds 1997/2009	US\$ 20.6 million	20
4% Revenue Bonds 1997/2027	US\$ 25 million	25
6.65% Notes 1998/2028	US\$ 350 million	348
6.20% Bonds 1998/2028	US\$ 250 million	249
		40
<b>Other debentures</b>		<b>1,809</b>

The other debentures are due between 2000 and 2011; their average interest rate is 11.3 percent.

Liabilities under finance leases are recognized as financial obligations if the leased assets are capitalized under property, plant and equipment. They are stated

at present values. Lease payments totaling €277 million, including €96 million in interest, are to be made to the respective lessors in future years. The liabilities mature as follows:

€ million	Lease payments	Of which interest	Liability
2000	31	11	20
2001 to 2004	93	33	60
After 2004	153	52	101
	<b>277</b>	<b>96</b>	<b>181</b>

Certain leases are capitalized under property, plant and equipment for the first time in compliance with IAS 17 (Leases – revised 1997). The liabilities under lease agreements reflected in the 1998 balance sheet have

been adjusted accordingly by €122 million to facilitate comparison.

The other financial obligations include €43 million (1998: €27 million) to non-consolidated subsidiaries.

### [30] Trade accounts payable

Trade accounts are payable mainly to third parties; they are carried at nominal or redemption value,

whichever is higher. As in the previous year, the entire trade accounts payable are due within twelve months.

### [31] Miscellaneous liabilities

Miscellaneous liabilities are carried at nominal or redemption value, whichever is higher. The individual items are as follows:

€ million	Dec. 31, 1999		Dec. 31, 1998	
	Total	Maturing in 2000	Total	Maturing in 1999
Payroll liabilities	526	419	463*	375 *
Tax liabilities	209	206	233	229
Liabilities for social expenses	126	125	173	172
Accrued interest on liabilities	79	54	73	54
Advance payments received	28	28	61	51
Liabilities from the acceptance of drafts	10	10	13	13
License liabilities	26	26	25	25
Other miscellaneous liabilities	1,029	933	985*	975 *
	<b>2,033</b>	<b>1,801</b>	<b>2,026</b>	<b>1,894</b>

\* 1998 figures restated

Tax liabilities include not only Group companies' own tax liabilities, but also taxes withheld for paying over to the authorities on behalf of third parties.

Liabilities for social expenses include, in particular, social insurance contributions that had not been paid over by the closing date.

The other miscellaneous liabilities comprise numerous individual items such as guarantees, commissions to customers, and expense reimbursements.

The total of miscellaneous liabilities includes €67 million (1998: €80 million) to non-consolidated subsidiaries and €16 million (1998: €12 million) to other affiliated companies.

### [32] Further information on other liabilities

Other liabilities (financial obligations, trade accounts payable and miscellaneous liabilities) include €1,071 million (1998: €1,135 million) maturing in more than five years.

The volume of other liabilities secured – mainly by

mortgages – is €43 million (1998: €78 million). Other liabilities include €85 million (1998: €104 million) that represents expenses attributable to the fiscal year but not due to be paid until after the closing date. These expenses consist partly of accrued interest.

### [33] Deferred income

In accordance with IAS 20 (Accounting for Government Grants and Disclosure of Government Assistance), grants and subsidies that serve to promote investment are treated as deferred income. The amounts – which are mainly from government sources – are gradually

reversed during the useful lives of the respective assets and recognized in income. Deferred income as of December 31, 1999 includes €125 million (1998: €115 million) in investment grants; the amount reversed and recognized in income in 1999 was €16 million.

### [34] Discontinuing operations

Assets and liabilities as of the respective closing dates include the following amounts pertaining to the discontinuing operations of Agfa and DyStar:

€ million	Agfa		DyStar		Discontinuing operations	
	Dec. 31, 1999	Dec. 31, 1998	Dec. 31, 1999	Dec. 31, 1998	Dec. 31, 1999	Dec. 31, 1998
Noncurrent assets	0	980	91	86	91	1,066
Current assets (excluding liquid assets)	0	2,695	278	331	278	3,026
Liquid assets	0	144	10	23	10	167
<b>Assets</b>	<b>0</b>	<b>3,819</b>	<b>379</b>	<b>440</b>	<b>379</b>	<b>4,259</b>
Pension provisions	0	659	17	15	17	674
Other provisions	0	310	23	20	23	330
Financial obligations	0	283	122	126	122	409
Remaining liabilities	0	510	36	68	36	578
<b>Liabilities</b>	<b>0</b>	<b>1,762</b>	<b>198</b>	<b>229</b>	<b>198</b>	<b>1,991</b>

### [35] Contingent liabilities

Contingent liabilities as of December 31, 1999 – almost all of which exist toward third parties – amount to €212 million. They result from:

€ million	Dec. 31, 1999	Dec. 31, 1998
Issuance and endorsement of bills	21	98
Guarantees	30	47
Warranties	161	152
	<b>212</b>	<b>297</b>

### [36] Other financial commitments

In addition to provisions, other liabilities and contingent liabilities, there are other financial commitments resulting primarily from long-term lease and rental agreements.

Minimum non-discounted future lease payments total €851 million (1998: €706 million). These commitments also include agreements under which Group companies, as lessees, are to be regarded as the economic owners of the assets, which are therefore capitalized in the balance sheet (finance leases); such leases result in future commitments of €302 million

Financial commitments resulting from orders already placed under purchase agreements related to planned or ongoing capital expenditure projects total €391 million (1998: €450 million); the payments concerned are due almost entirely in 2000. A total of €512 million will be payable in the coming years under

(1998: €211 million). The commitments under lease and rental agreements mature as follows:

€ million	
2000	193
2001	153
2002	105
2003	87
2004	45
after 2004	268
	<b>851</b>

the terms of several research collaboration agreements. Further financial commitments result from possible future acceptances of part-time work arrangements offered to older employees under collective agreements.

### [37] Financial instruments

Financial instruments entail contractual claims on financial assets. Under IAS 32 (Financial Instruments: Disclosure and Presentation), financial instruments include both primary instruments, such as trade accounts receivable and payable, investments, and financial obligations; and derivative financial instruments, which are used to hedge risks arising from changes in currency exchange and interest rates. The following paragraphs report on both types of financial instrument.

#### Primary financial instruments

Primary financial instruments are reflected in the balance sheet. Those on the asset side are recognized at nominal value less any necessary write-downs; financial instruments constituting liabilities are carried at nominal or redemption value, whichever is higher.

#### Fair value

The fair value of a primary financial instrument is the price at which it could be exchanged in a current transaction between knowledgeable, willing parties in an active market. The fair values of other securities included in investments (€127 million) and marketable securities (€376 million) are derived from their market prices. Financial obligations are valued mainly on the basis of quoted prices, or in some cases by discounting future cash flows. Their total fair value is €86 million less than their carrying value. The remaining receivables and liabilities and the liquid assets have such short terms that there is no significant discrepancy between their fair and carrying values.

#### Credit risk

Credit risk arises from the possibility of asset impairment occurring because counterparties cannot meet their obligations in transactions involving financial instruments.

Since we do not conclude master netting arrangements with our customers, the total of the amounts recognized in assets represents the maximum exposure to credit risk.

#### Currency risk

Currency risk is the potential decline in the value of financial instruments due to exchange rate fluctuations. Exposure to currency risk arises mainly when receivables and payables are denominated in a currency other than the company's local currency or will be denominated in such a currency in the planned course of business.

Such risks may be naturally hedged, as when a receivable in a given currency is matched, for example between Group companies, by one or more payables in the same amount, and having an equivalent term, in the same currency. They may also be hedged using derivative financial instruments.

All currency risks arising on financial transactions, including interest, are generally fully hedged. The instruments used are mainly currency swaps, interest and principal currency swaps and forward exchange contracts. Currency risks relating to operating activities are systematically monitored and analyzed. The level of hedging required is reviewed regularly, depending on exchange rate movements. At the end of 1999, the situation was as follows:

€ million	Dec. 31, 1999	Dec. 31, 1998
Foreign currency risks relating to assets	2,774	2,332
Foreign currency risks relating to liabilities	913	1,581
Natural hedges	(784)	(1,159)
Hedging through derivative financial instruments	(2,220)	(1,106)
<b>Residual unhedged currency risks</b>	<b>683</b>	<b>1,648</b>

On the asset side, 80 percent of currency risks relate to the U.S. dollar and 8 percent to the Japanese yen. On the liabilities side, 71 percent of foreign currency risks relate to the U.S. dollar and 19 percent to DM/euro risks of subsidiaries domiciled outside the euro zone. The U.S. dollar also accounts for 82 percent of the assets and 85 percent of the liabilities hedged through derivative financial instruments. Yen receivables and DM/euro payables of subsidiaries outside the euro zone each account for 9 percent of hedged liabilities. The increased proportion of dollar hedging is partly due to the permanent fixing of exchange rates in the euro zone, where the need for hedging ceased to exist as of the beginning of 1999.

Of the €0.7 billion residual unhedged currency risks, U.S. dollars account for 70 percent. The unhedged DM/euro risks of subsidiaries domiciled outside the euro zone account for 29 percent.

The other securities included in investments are almost exclusively denominated in the currency used by the Group company making the investment, so no currency risk is involved. Similarly, the other loans are made only to borrowers in the same currency zone. Where intragroup loans exposed to currency risk have no natural hedge, they are hedged through derivative financial instruments.

#### *Interest rate risk*

An interest rate risk – the possibility that the value of a financial instrument will change due to movements in market rates of interest – applies mainly to receivables and payables with maturities of over one year.

Items with such long maturities are not of material significance on the operating side but are relevant in the case of investments and financial commitments. Here, derivative financial instruments are used as the main method of interest rate hedging, though in some cases interest rate risk is not hedged, especially where attractive fixed interest rates are obtained.

The other securities included in investments are mostly floating rate investments at market rates of interest. For a small proportion of them, interest rate swaps are used to effectively convert floating rate investments into fixed rate investments.

The other loans chiefly comprise loans to employees, generally at market-oriented, fixed interest rates. A small proportion of loans to employees are interest-free. Since the interest rates on loans to employees are fixed, they are exposed to an interest rate risk. However, since this risk was entered into for specific reasons, it is not hedged. More than three-quarters of loans to employees have terms of over five years.

#### **Derivative financial instruments**

The derivatives we use are mainly over-the-counter instruments, particularly forward exchange contracts, option contracts, interest rate swaps, and interest and principal currency swaps. We deal only with banks of high credit standing. The instruments are employed according to uniform guidelines and are subject to strict internal controls. Their use is confined to the hedging of the operating business and of the related investments and financing transactions.

### *Market risk*

Market risk arises from the fact that the value of financial instruments may be positively or negatively affected by fluctuating prices on the financial markets.

The fair values quoted are the current values of the derivative financial instruments, disregarding any opposite movements in the values of the respective hedged transactions. The fair value is the repurchase value of

the derivatives on the closing date, based on quoted prices or determined by standard methods. The notional amount is the total value of the hedged purchase and sale transactions. The notional amounts and fair values of the derivative financial instruments held at the closing date were as follows:

€ million	Notional amount		Fair value	
	Dec. 31, 1999	Dec. 31, 1998	Dec. 31, 1999	Dec. 31, 1998
Forward exchange contracts	2,172	1,586	(90)	(19)
Currency options	62	191	(1)	(7)
Currency swaps and other exchange hedging instruments	165	284	5	13
Interest rate hedging instruments	2,664	1,546	(49)	(34)
	<b>5,063</b>	<b>3,607</b>	<b>(135)</b>	<b>(47)</b>

Gains and losses from changes in fair values are offset – wherever possible – against corresponding losses and gains from operating activities. Provisions are established for excess losses from operating activities; excess gains are not recognized.

### *Credit risk*

Credit risk exposure is €30 million (1998: €60 million), this amount being the total of the positive fair values of derivatives that give rise to claims against the other parties to the instruments. It represents the losses that could result from non-performance of contractual obligations by these parties. We minimize this risk by imposing a limit on the volume of business in derivative financial instruments transacted with individual parties.

### *Currency risk*

Exchange hedging instruments in the notional amount of €2.2 billion (1998: €1.9 billion) mature within one year, while instruments in the amount of €0.2 billion (1998: €0.2 billion) have longer remaining terms.

### *Interest rate risk*

Short-term interest rate hedging contracts (including interest and principal currency swaps) total €1.3 billion (1998: €130 million); those maturing after more than one year total €1.4 billion (1998: €1.4 billion).

## Notes to the Statements of Cash Flows

### [38] Net cash provided by operating activities

The cash flow statement starts from the operating result. The gross cash flow of €3.2 billion (1998: €3.4 billion) is the cash surplus from operating activities before any changes in working capital. Breakdowns of the gross cash flow by business seg-

ment and by region are given in the table on pages 98 – 99. The net cash flow of €3.3 billion (1998: €2.8 billion) takes account of changes in working capital.

### [39] Net cash provided by (used in) investing activities

Additions to property, plant and equipment and intangible assets resulted in a cash outflow of €2.6 billion in 1999. Cash outflows for acquisitions amounted to €0.3 billion. The proceeds of the sale of Agfa shares and the related divestitures of companies totaled

€2.8 billion. Sales of property, plant and equipment led to a cash inflow of €0.1 billion. The cash inflow from interest and dividend receipts and redemptions of marketable securities was €0.4 billion.

### [40] Net cash used in financing activities

The reduction in the Group's net borrowings in 1999 resulted in a net cash outflow of €0.6 billion. The high-interest 7½ percent Notes in the amount of US\$ 300 million issued by Bayer Corporation in 1994

were redeemed on maturity. Our stockholders received a total dividend payment of €0.8 billion for the 1998 fiscal year. Interest paid in 1999 amounted to €0.3 billion.

### [41] Discontinuing operations

Discontinuing operations affected the Group cash flow statements as follows:

€ million	Agfa		DyStar		Discontinuing operations	
	1999	1998	1999	1998	1999	1998
Net cash provided by operating activities	167	425	35	6	202	431
Net cash used in investing activities	0	(144)	(32)	(19)	(32)	(163)
Net cash provided by (used in) financing activities	0	28	(29)	13	(29)	41
<b>Change in cash and cash equivalents</b>	<b>167</b>	<b>309</b>	<b>(26)</b>	<b>0</b>	<b>141</b>	<b>309</b>

### [42] Cash and cash equivalents

Cash and cash equivalents as of December 31, 1999 amounted to €2.8 billion (1998: €1.2 billion). The liquid assets of €3.1 billion (1998: €1.7 billion) shown

in the balance sheet also include marketable securities and other instruments.

### Total remuneration of the Board of Management and the Supervisory Board, advances and loans

The remuneration of the Board of Management for 1999 amounted to €8,219,011. Emoluments to retired members of the Board of Management and their surviving dependents amounted to €7,069,509.

Pension provisions for these individuals, amounting to €61,993,824 are reflected in the balance sheet of Bayer AG.

The remuneration of the Supervisory Board amounted to €1,811,250.

There were no loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 1999. Repayments during the year amounted to €54,716.

The members of the Board of Management and the Supervisory Board are listed on page 120 of the Annual Report.

Leverkusen, February 29, 2000  
Bayer Aktiengesellschaft  
The Board of Management

## Corporate Officers

### Supervisory Board

#### Prof. Dr. Herbert Grünwald

**Honorary Chairman**, Leverkusen

#### Prof. Dr. Kurt Hansen

**Honorary Chairman**, Leverkusen

Members of the Supervisory Board – in addition to performing individual supervising functions at companies affiliated to those in which they hold legal offices – hold offices as members of the supervisory board or a comparable supervising body of the corporations listed:

#### Hermann Josef Strenger

*Former Chairman of the Company's Board of Management*, Leverkusen

#### Chairman

Agfa-Gevaert N.V. (effective April 26, 1999)

Commerzbank AG

Degussa Hüls AG

Linde AG

Veba AG

#### Rolf Nietzard

*Chemical Laboratory Technician*, Leverkusen

#### Vice Chairman

#### Dr. Klaus Alberti

*Chemist*, Leverkusen

#### Werner Bischoff, MdL

*Member of the Executive Committee of the German Mine, Chemical and Power Workers Union*, Hannover

Hüls AG

HMR-Deutschland GmbH

Hoechst AG

VIAG AG

#### Petra Brayer

(effective April 1, 1999)  
*Chemical Laboratory Assistant*, Dormagen

#### Detlef Fahlbusch

(effective April 1, 1999)  
*North Rhine District Secretary of the German Mine, Chemical and Power Workers' Union*, Düsseldorf

Metallgesellschaft AG

Rheinbraun AG

RAG EVB AG

#### Erhard Gipperich

*Lathe operator*, Leverkusen

#### Dr. h. c. Martin Kohlhaussen

*Chairman of the Board of Managing Directors of Commerzbank AG*, Frankfurt (Main)

Assicurazioni Generali S.p.A.

Bertelsmann AG

DaimlerChrysler AG

Infinion Technologies AG

Hochtief AG

Karstadt Quelle AG

Kreditanstalt für Wiederaufbau (until March 2000)

Linde AG

Rheinhyp Rheinische Hypothekenbank AG

Schering AG

#### Hilmar Kopper

*Chairman of the Supervisory Board of Deutsche Bank AG*, Frankfurt (Main)

Akzo-Nobel N.V.

DaimlerChrysler AG

Mannesmann AG (until May 28, 1999)

Solvay S.A.

Unilever N.V.

Xerox Company

#### Dr.-Ing. Manfred Lennings

*Management Consultant*, Essen-Kettwig

Deilmann-Haniel GmbH

Deutsche Post AG

Gildemeister AG

IVG Holding AG

Lufthansa Consulting GmbH

Privatbrauerei Diebels GmbH

Thyssen Krupp AG

#### Dr. h. c. André Leysen

*Chairman of the Board of Directors of Gevaert N.V.*, Mortsel, Belgium

Agfa-Gevaert AG; Agfa-Gevaert N.V.

Cobepa N.V.

Deutsche Telekom AG

GIB Group

IVG Holding AG (effective September 1999)

Philips Electronics N.V.

Philip Holzmann AG (effective March 1999)

Schenker AG

SHV Holdings N.V. (effective September 1999)

Tessenderlo Chemie N.V.

VEBA AG

#### Dr. h. c. Helmut Oswald Maucher

*President and Chief Executive Officer of Nestlé S.A.*, Vevey, Switzerland

Deutsche Bahn AG

Henkel KGaA

Kog Holding AS (effective March 1999)

L'Oréal/Gesparal S.A.

Montreux Palace S.A.

Nestlé S.A.

Ravensburger AG

#### Dieter Meinhardt

*Machine Fitter*, Dormagen

#### Hans-Dieter Peppmeier

*Engineering Draftsman*, Krefeld

#### Dr. Heinrich v. Pierer

*Chairman of the Board of Management of Siemens AG*, Munich

Hochtief AG

Münchener Rückversicherungs-Gesellschaft

Volkswagen AG

#### Bernd Reckschwardt

(until March 31, 1999)  
*Chemical Worker*, Leverkusen

#### Waltraud Schlaefke

*Chemical Laboratory Technician*, Walsrode

Wolff Walsrode AG

#### Hubertus Schmoldt

*Chairman of the German Mine, Chemical and Power Workers Union*, Hannover

Buna Sow Leuna Olefinverbund GmbH

RAG Coal International AG

VEBA AG

#### Dieter Schulte

*Chairman of the German Unions Federation (DGB)*, Düsseldorf

Fried. Krupp AG Hoesch-Krupp (until February 1999)

Kreditanstalt für Wiederaufbau

Hermes Kreditversicherungs-AG

Thyssen AG (until February 1999)

Thyssen Krupp AG (effective April 1999)

#### Lodewijk Christiaan van Wachem

*Chairman of the Supervisory Board of Royal Dutch Petroleum Company*, The Hague, Netherlands

Akzo Nobel N.V.

ATCO Ltd.

BMW AG

IBM Corporation

Philips Electronics N.V.

Zurich Allied / Allied Zurich

Zürich Financial Services

#### Prof. Dr. Ernst-Ludwig Winnacker

*President of the German Research Association*, Bonn

GPC Pharmaceuticals

MediGene AG

#### Dr. Hermann Wunderlich

*Former Vice Chairman of the Company's Board of Management*, Odenthal

Babcock-Borsig AG

Freudenberg & Co.

#### Werner Spinner

Wolff Walsrode AG (until January 19, 2000)

#### Werner Wenning

Agfa-Gevaert AG

Agfa-Gevaert N.V.

Dresdner Bank Lateinamerika AG

EC Erdölchemie GmbH

Gerling-Konzern Allgem. Versicherungs-AG

Rheinhyp Rheinische Hypothekenbank AG

#### Dr. Walter Wenninger

VEMAG AG

### Board of Management

Members of the Board of Management – in addition to performing individual supervising functions at affiliated companies – hold offices as members of the supervisory board or a comparable supervising body of the corporations listed:

#### Dr. Manfred Schneider

##### Chairman

Allianz AG

DaimlerChrysler AG

Metro AG

RWE AG

#### Dr. Pol Bamelis

Agfa Gevaert AG

Agfa-Gevaert N.V.

(until April 26, 1999)

Bekaert N.V.

#### Dr. Dieter Becher

(until April 30, 1999)

Wolff Walsrode AG (until March 22, 1999)

#### Hans-Jürgen Mohr

Bayer Faser GmbH

#### Dr. Attila Molnar

(effective April 1, 1999)

#### Dr. Udo Oels

Agfa Gevaert AG

EC Erdölchemie GmbH

Haarmann & Reimer GmbH

Wolff Walsrode AG (effective January 19, 2000)

**Additive**

A substance added to another in relatively small amounts to effect a desired change in properties or facilitate processing.

**Bioinformatics**

Interdisciplinary science combining molecular biology and information technology which involves the editing and evaluation of biological data for e.g. genome databases. Bioinformatics allows researchers to analyze the enormous volume of data and establish connections between normal and pathologically altered gene sequences.

**Blockbuster**

A product with annual sales in excess of €500 million.

**Blowing agent**

One of a group of substances that form propellant gases in the presence of heat or other chemicals. Blowing agents – which function according to different chemical and/or physical principles and vary greatly in composition, depending on their application – are used in e.g. the manufacture of foams and expanded concrete.

**BPR**

Abbreviation for business process reengineering. BPR involves redesigning the core processeses of an organization from scratch, clearly documenting the to-be processes and ensuring the establishment of new processes within the organization. In general, the new processes will aim to reduce complexity and simplify the interfaces between functional areas while raising process quality, efficiency and speed.

**COD**

Abbreviation for chemical oxygen demand, the amount of oxygen required to chemically oxidize water constituents by a standardized method.

**Colorant**

A substance, such as a dye or pigment, used for coloring a material.

**Combinatorial chemistry**

An approach to chemical synthesis that enables the creation of large numbers of organic compounds by putting chemical building blocks together in every possible combination.

**CVA**

Abbreviation for cash value added, which is the difference between the actual cash flow for a given period and the minimum cash flow required to yield an appropriate return and cover the cost of replacing depleted assets.

**DCVA**

Abbreviation for delta cash value added, which is the difference between the CVAs of two consecutive periods.

**Dow Jones Sustainability Group Index**

Ranking of companies by Dow Jones for investment purposes based on the five principles of corporate sustainability: technology, governance, shareholders, industry and society.

**Engineering thermoplastic**

A thermoplastic (see below) that gives molded articles with the kind of performance characteristics – such as high heat resistance and impact strength – that enables them to be used in demanding technical applications.

**High-throughput screening**

An automated method of testing the biological effects of chemical compounds on a molecular target.

**Lead substance**

A compound exhibiting pharmacological properties that suggest its value as a starting point for drug development.

**Modifier**

A substance, usually a polymer, that is added to plastics to improve certain properties (e.g. impact strength, heat resistance, processability).

**Product portfolio**

The range of products offered by a company.

**Responsible Care**

A global initiative by the chemical industry to steadily improve the protection of health and the environment and the safety of employees and the community. Bayer joined the initiative in 1994 together with the German Chemical Industry Association.

**SAP**

Abbreviation for systems, applications and products in data processing. SAP is both the most widely used commercial system software and the name of the manufacturer.

**Semi-finished product**

A material that has already been given its basic shape by processes such as extrusion and can then be fabricated into ready-to-install end products. In the Plastics Business Group, the term refers primarily to transparent plastic sheet.

**Silica sol**

A colloidal dispersion of silicic acid or amorphous silica in water. Silica sols are used as textile processing chemicals, binders for precision-casting shells and ceramic fibers, and for the fining of wine and fruit juices (together with gelatins).

**Thermoplastic**

A plastics material that softens when heated to certain temperatures, without undergoing chemical change, and can then be molded into the required shape.

**Tumor marker**

A substance or cellular alteration whose qualitative or quantitative analysis provides information on the presence, progression or prognosis of malignant diseases.

**Wafer**

A slice cut from monocrystalline silicon or another semiconductor. Wafers are less than 1 millimeter thick and up to 300 millimeters in diameter. They are the base material for the production of integrated circuits and other electronic components.

**Waterborne two-component technology**

Technology for the low-emission production and application of high-performance polyurethane coatings based on two water-compatible raw materials: an aqueous polyol and a polyisocyanate hardener.

*Dear stockholders:*



During 1999 the Supervisory Board monitored the conduct of the company's business and acted in an advisory capacity. We performed these functions on the basis of detailed reports from the Board of Management received at our meetings. In addition, the Chairman of the Supervisory Board and the Chairman of the Board of Management maintained a constant exchange of information and ideas. In this way the Supervisory Board was kept continuously informed about:

- *the company's business strategy;*
- *corporate planning, including financial, investment and human resources planning;*
- *the company's earnings performance; and*
- *the general state of the business.*

The documents relating to Board of Management decisions or actions requiring the approval of the Supervisory Board were inspected by the Supervisory Board at its plenary meetings, sometimes after preparatory work by its committees. In certain cases the Supervisory Board gave its approval on the basis of documents circulated to its members.

We discussed at length the business trends described in the reports from the Board of Management and the prospects for the development of the Bayer

Group, the individual business groups and the principal affiliated companies in Germany and abroad. Figuring prominently in these discussions were the company's investment and research strategies, especially research spending in the Health Care and Agriculture segments and capital expenditures in the Polymers segment. We paid close attention to the increasing consolidation endeavors in certain markets, particularly pharmaceuticals. Also of major interest to us was the Board of Management's report on the introduction of a global software to support business processes throughout the Bayer Group. In the field of compensation policy, we gave detailed consideration to the stock incentive programs being introduced for different groups of employees.

Further matters dealt with by the Supervisory Board and its Extended Affiliates Committee included:

- *the acquisition of the polyols business of Lyondell Chemical Company and the safeguarding of propylene oxide supplies through the formation of joint ventures with Lyondell;*
- *the change in the ownership structure of DyStar to include an additional partner;*
- *the sale of a large proportion of the company-owned houses and apartments in Germany.*

Other major topics reported to us and discussed during the year included:

- *the stock market flotation of Agfa-Gevaert and its outcome;*
- *the integration of the diagnostics business acquired from Chiron;*
- *the research alliance formed with LION Bioscience AG to establish a bioinformatics infrastructure for identifying potential candidates for drug development.*

The Social Policy Committee reviewed in detail the agreement concluded with the Employee Committee concerning the variable components of non-exempt Bayer AG employees' compensation.

During the year there were four plenary meetings of the Supervisory Board, one meeting of the Affiliates Committee convened in the form of the Extended Affiliates Committee, one meeting of the Social Policy Committee, and one meeting of the Presidial Committee. The Human Resources Committee met once, and on another occasion made a decision on the basis of circulated documents.

The consolidated financial statements of the Bayer Group were drawn up according to the International Accounting Standards (IAS). These statements, as well as the financial statements of Bayer AG and the combined management report of the Bayer Group and Bayer AG, have been examined by the auditors, PwC Deutsche Revision Aktiengesellschaft Wirtschaftsprüfungs-gesellschaft, Essen. The conduct of the audit is explained in the Independent Auditors' Report. The auditors find that Bayer has fully complied with the International Accounting Standards and issue an unqualified opinion to the consolidated financial statements of the Bayer Group. The financial statements and management report of Bayer AG, the consolidated financial statements and management report of the Bayer Group, and the audit reports were submitted to all members of the Supervisory Board. They were discussed in detail by the Presidial Committee and at a plenary meeting of the Supervisory Board. The auditors submitted a report on both occasions and were present during the discussion.

We examined the financial statements and management report of Bayer AG, the consolidated financial statements and management report of the Bayer Group, and the proposal for distribution of the profit. We found no objections, thus we concur with the result of the audit.

We have approved the financial statements of Bayer AG prepared by the Board of Management. These financial statements are thus confirmed. We are in agreement with the management report of Bayer AG and, in particular, with the assessment of the company's future development.

We also concur with the dividend policy and the allocations to retained earnings. We assent to the proposal for distribution of the profit, which provides for payment of a dividend of €1.30 per share.

Bernd Reckschwardt and Werner Bischoff retired from the Supervisory Board on March 31, 1999; our sincere thanks go to them for their dedicated service. Their seats were taken by Petra Brayer and Detlef Fahlbusch.

Dr. Dieter Becher, who had been a member of the Board of Management since October 1, 1990, retired on April 30, 1999. We would like to take this further opportunity to thank him for his valuable service to the company.

Leverkusen, March 2000

For the Supervisory Board



Hermann J. Strenger

Chairman

## Organization Chart

<b>Board of Management</b>	<b>Member of Board Committees for (Chairman in bold type)</b>	<b>Representative for Business Segment(s)</b>	<b>Representative for Region(s)</b>	<b>Chairman of Central Conference(s)/ Committee(s) (CC)</b>
<b>M. Schneider</b> <i>Chairman</i>	<b>Corporate Coordination</b> Finance			Bayer Group Strategy Conference Bayer Group Conference Bayer AG Management Conference
<b>P. Bamelis</b>	<b>Research and Development</b> Technology and Environment	Agriculture		CC Research and Development
<b>H.-J. Mohr</b> <i>Labor director</i>	<b>Human Resources</b> Finance Marketing and Logistics		Europe	CC Human Resources
<b>A. Molnar</b>	Technology and Environment Marketing und Logistics		North America Mexico	CC Environmental Protection and Safety
<b>U. Oels</b>	<b>Technology and Environment</b> Research and Development Corporate Coordination	Chemicals		CC Manufacturing and Technology
<b>W. Spinner</b>	<b>Marketing and Logistics</b> Human Resources Technology and Environment	Polymers	Far East	CC Marketing CC Logistics and Business Processes
<b>W. Wenning</b>	<b>Finance</b> Corporate Coordination Human Resources		Central and South America, Africa Middle East	Executive Management Development Conference
<b>W. Wenninger</b>	Research and Development Corporate Coordination	Health Care		

### Business Groups

<b>Health Care</b>	
<b>Pharmaceuticals</b>	D. Ebsworth
<b>Consumer Care</b>	F.-J. Morich
<b>Diagnostics</b>	R. A. Classon
<b>Polymers</b>	
<b>Plastics</b>	G. Zaby
<b>Rubber</b>	J. Ick
<b>Polyurethanes</b>	H.-J. Kaiser
<b>Coatings and Colorants</b>	U. Koemm
<b>Fibers</b>	K. Schrewe
<b>Wolff Walsrode</b>	A.-C. Heitmann

<b>Agriculture</b>	
<b>Crop Protection</b>	J. Wulff
<b>Chemicals</b>	
<b>Basic and Fine Chemicals</b>	M. Wienkenhöver
<b>Specialty Products</b>	
<b>DyStar*</b>	A. X. Rad
<b>EC Erdölchemie*</b>	H. Noerenberg
<b>Haarmann &amp; Reimer</b>	L. Courth
<b>H. C. Starck</b>	P. Kähler

\* Bayer's interest: 50 %

### Service Divisions

<b>Corporate Divisions</b>	
Corporate Planning and Controlling	G. Plumpe
Corporate Finance, Accounting and Taxes	K. Kühn B.-J. Menn
Legal, Patents, Licenses and Insurance	R. Hartwig
Corporate Communications	H. Springer
BPR/SAP Program Management Bayer	H. Läpple
<b>Central Service Divisions</b>	
Procurement	G. Römer
Informatics	B. Fink
Human Resources	W. Böckly
Site Services, Environmental Protection and Safety	L. Schmidt
Central Research	F.-R. Heiker
Central Logistics	A. Endlicher
Central Technology	K.-P. Ochel

as of January 1, 2000

## Ten-Year Financial Summary

Bayer Group (€ million)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Bayer Group (€ million)
Net sales	21,292	21,679	21,063	20,967	22,200	22,793	24,853	28,124	28,062	27,320	Net sales
Sales outside Germany	78.3%	78.3%	78.7%	81.0%	81.6%	80.5%	82.2%	83.9%	83.6%	84.3%	Sales outside Germany
Sales of foreign consolidated companies	58.1%	60.1%	61.2%	64.5%	65.3%	63.4%	65.4%	67.0%	67.5%	68.3%	Sales of foreign consolidated companies
Operating result	1,816	1,625	1,419	1,200	1,656	2,102	2,306	3,077	3,155	3,357	Operating result
Income before income taxes	1,721	1,639	1,377	1,204	1,684	2,140	2,282	2,611	2,728	2,836	Income before income taxes
Income after taxes	973	947	799	701	1,029	1,238	1,405	1,509	1,615	2,018	Income after taxes
<b>Noncurrent assets</b>	<b>7,952</b>	<b>7,865</b>	<b>7,987</b>	<b>8,256</b>	<b>8,563</b>	<b>9,437</b>	<b>10,689</b>	<b>12,230</b>	<b>13,981</b>	<b>15,614</b>	<b>Noncurrent assets</b>
Intangible assets	144	165	161	164	386	488	729	1,051	1,909	2,213	Intangible assets
Property, plant and equipment	7,137	7,215	7,262	7,506	7,548	7,966	8,974	10,307	10,970	11,986	Property, plant and equipment
Investments	671	485	564	586	629	983	986	872	1,102	1,415	Investments
<b>Current assets</b>	<b>11,450</b>	<b>11,522</b>	<b>11,610</b>	<b>12,283</b>	<b>13,097</b>	<b>13,211</b>	<b>14,593</b>	<b>15,467</b>	<b>15,396</b>	<b>15,665</b>	<b>Current assets</b>
Inventories	4,304	4,267	4,355	4,176	4,261	4,762	5,144	5,424	5,781	4,992	Inventories
Receivables	5,505	5,483	5,336	5,427	5,881	5,787	7,028	7,588	7,894	7,533	Receivables
Liquid assets	1,641	1,772	1,919	2,680	2,955	2,662	2,421	2,455	1,721	3,140	Liquid assets
<b>Stockholders' equity</b>	<b>8,207</b>	<b>8,561</b>	<b>8,971</b>	<b>9,309</b>	<b>8,720</b>	<b>9,357</b>	<b>10,765</b>	<b>12,232</b>	<b>12,779</b>	<b>15,182</b>	<b>Stockholders' equity</b>
Capital stock of Bayer AG	1,633	1,649	1,681	1,715	1,772	1,803	1,851	1,867	1,867	1,870	Capital stock of Bayer AG
Capital reserves and retained earnings	5,404	5,782	6,303	6,695	5,709	6,082	7,287	8,638	9,087	11,134	Capital reserves and retained earnings
Net income	962	933	775	679	1,007	1,224	1,393	1,504	1,614	2,002	Net income
Minority stockholders' interest	208	197	212	220	232	248	234	223	211	176	Minority stockholders' interest
<b>Liabilities</b>	<b>11,195</b>	<b>10,826</b>	<b>10,626</b>	<b>11,230</b>	<b>12,940</b>	<b>13,291</b>	<b>14,517</b>	<b>15,465</b>	<b>16,598</b>	<b>16,097</b>	<b>Liabilities</b>
Provisions	5,597	5,765	5,657	6,003	6,788	6,923	7,057	7,275	7,271	6,714	Provisions
Other liabilities	5,598	5,061	4,969	5,227	6,152	6,368	7,460	8,190	9,327	9,383	Other liabilities
<b>Total assets</b>	<b>19,402</b>	<b>19,387</b>	<b>19,597</b>	<b>20,539</b>	<b>21,660</b>	<b>22,648</b>	<b>25,282</b>	<b>27,697</b>	<b>29,377</b>	<b>31,279</b>	<b>Total assets</b>
<b>Proportion of total assets</b>											<b>Proportion of total assets</b>
Noncurrent assets	41.0%	40.6%	40.8%	40.2%	39.5%	41.7%	42.3%	44.2%	47.6%	49.9%	Noncurrent assets
Current assets	59.0%	59.4%	59.2%	59.8%	60.5%	58.3%	57.7%	55.8%	52.4%	50.1%	Current assets
Stockholders' equity	42.3%	44.2%	45.8%	45.3%	40.3%	41.3%	42.6%	44.2%	43.5%	48.5%	Stockholders' equity
Liabilities	57.7%	55.8%	54.2%	54.7%	59.7%	58.7%	57.4%	55.8%	56.5%	51.5%	Liabilities
Financial obligations	3,075	2,624	2,528	2,691	3,209	3,205	3,520	3,896	4,730	4,466	Financial obligations
• Long-term	1,755	1,644	1,568	1,319	1,259	1,436	1,615	2,150	2,404	2,359	• Long-term
• Current	1,320	980	960	1,372	1,950	1,769	1,905	1,746	2,326	2,107	• Current
Interest income (expense) – net	(121)	(128)	(92)	(26)	45	6	(44)	(157)	(179)	(185)	Interest income (expense) – net
Noncurrent assets financed by stockholders' equity	103.2%	108.8%	112.3%	112.8%	101.8%	99.1%	100.7%	100.0%	91.4%	97.2%	Noncurrent assets financed by stockholders' equity
Noncurrent assets and inventories financed by stockholders' equity and long-term liabilities	116.0%	119.1%	122.1%	124.7%	116.7%	112.4%	114.9%	115.5%	106.1%	112.3%	Noncurrent assets and inventories financed by stockholders' equity and long-term liabilities
Return on sales	8.5%	7.5%	6.7%	5.7%	7.5%	9.2%	9.3%	11.0%	12.6%	11.2%	Return on sales
Return on stockholders' equity	11.9%	11.3%	9.1%	7.7%	11.4%	13.7%	14.0%	13.1%	12.9%	14.4%	Return on stockholders' equity
Operating cash flow (gross)	2,744	2,582	2,401	2,481	2,529	2,751	2,959	3,313	3,394	3,252	Operating cash flow (gross)
Capital expenditures	1,885	1,572	1,462	1,614	1,794	1,620	1,931	2,331	2,703	2,632	Capital expenditures
Depreciation and amortization	1,316	1,372	1,305	1,374	1,243	1,184	1,326	1,479	1,521	1,744	Depreciation and amortization
Depreciation and amortization in percent of capital expenditures	69.8%	87.3%	89.3%	85.2%	69.3%	73.1%	68.7%	63.4%	56.3%	66.3%	Depreciation and amortization in percent of capital expenditures
Personnel expenses (including pension expenses)	6,844	7,467	7,380	7,315	7,392	7,477	7,718	7,895	8,106	7,549	Personnel expenses (including pension expenses)
Number of employees (year end)	171,000	164,200	156,400	150,400	146,700	142,900	142,200	144,600	145,100	120,400	Number of employees (year end)
Research and development expenses	1,400	1,537	1,583	1,614	1,624	1,666	1,845	1,983	2,045	2,252	Research and development expenses
<b>Bayer AG</b>											<b>Bayer AG</b>
Income after taxes/Net income	532	531	446	418	476	592	695	746	1,095	1,076	Income after taxes/Net income
Allocation to retained earnings	107	102	77	41	15	51	66	36	348	127	Allocation to retained earnings
Total dividend payment	425	429	369	377	461	541	629	710	747	949	Total dividend payment
Dividend per share (in €)	0.66	0.66	0.56	0.56	0.66	0.77	0.87	0.97	1.02	1.30	Dividend per share (in €)