Success Starts with Innovative People

Annual Report | 2001

The Best Year Ever – Creating Long-Term Value

Pharmaceuticals

Sales	EUR 3,323 million
Operating result	EUR 581 million
Return on sales	17.5 %
EBIT	EUR 1,067 million

Ethicals used in the treatment of metabolic and cardiovascular diseases, generics and consumer health care products are the core of our pharmaceuticals business. Sales in Pharmaceuticals rose 14 %. Investments in research and development rose 5.6 % to EUR 479 million; in Ethicals we invested EUR 406 million or 20 % of this division's sales. The Pharmaceuticals business sector contributed 44 % of the Merck Group's total sales, its share of the total operating result was 66 %.

Specialty Chemicals

Sales	EUR 1,132 million
Operating result	EUR 165 million
Return on sales	14.6 %
EBIT	EUR 109 million

The Specialty Chemicals business sector consists of four divisions which supply high-tech products: liquid crystals for displays, electronic chemicals for chip manufacture, effect pigments and specialty chemicals for the technical industry, as well as active ingredients and chemicals for the cosmetic, pharmaceutical and food industries. Sales rose 2.7 %. The operating result decreased 24 %. The Specialty Chemicals business sector contributed 15 % of the Merck Group's total sales and 19 % of the total operating result.

Laboratory Products

Sales	EUR 565 million
Operating result	EUR 39 million
Return on sales	6.9 %
EBIT	EUR 19 million

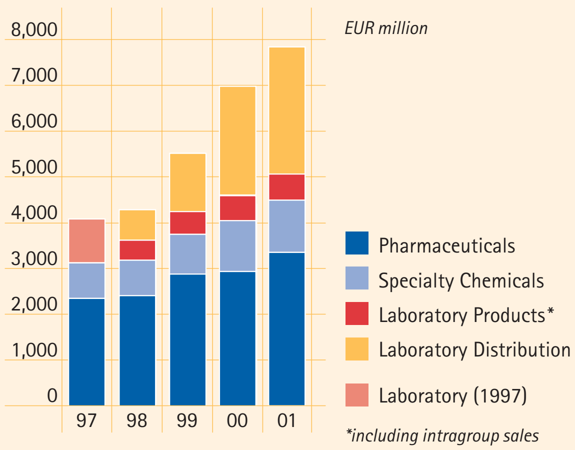
The Laboratory Products business sector comprises the businesses of the Laboratory Reagents and Scientific Laboratory Products divisions. Sales increased 4.7 %. The operating result increased 28 %. Excluding intragroup sales, the Laboratory Products business sector contributed 5 % of the Merck Group's total sales, the share of the total operating result was 4 %.

Laboratory Distribution

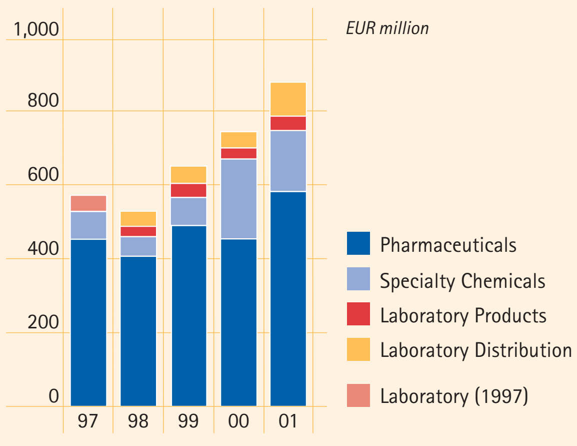
Sales	EUR 2,754 million
Operating result	EUR 92 million
Return on sales	3.3 %
EBIT	EUR 91 million

With its laboratory chemicals, equipment and consumables and its comprehensive service offering, Merck is the world's leading full-service provider in the laboratory sector. Laboratory Distribution sales rose 16 %. The operating result increased 107 %. This business sector, comprising the two divisions Merck Eurolab and VWR, contributed 36 % of the Merck Group's total sales and 10 % of the total operating result.

Sales by Business Sector



Operating Result by Business Sector



Merck Business Development 1997–2001*

		1997	1998	1999	2000	Change in %	2001
EUR million							
Sales		4,077	4,149	5,347	6,740	11.7	**7,528**
Pharmaceuticals		2,331	2,391	2,858	2,914	14.0	**3,323**
Specialty Chemicals		769	768	861	1,102	2.7	**1,132**
Laboratory Products		952	433	493	540	4.7	**565**
Laboratory Distribution			660	1,262	2,374	16.0	**2,754**
Intragroup sales			−127	−151	−190	29.0	**– 246**
Operating result		584	537	659	746	17.5	**877**
Pharmaceuticals		461	413	498	455	27.9	**581**
Specialty Chemicals		79	56	79	217	−24.0	**165**
Laboratory Products		47	31	40	30	27.9	**39**
Laboratory Distribution			41	47	44	107.0	**92**
Earnings before interest and tax (EBIT)		707	571	581	747	72.2	**1,286**
Profit before tax		581	473	440	524	105.9	**1,078**
Profit after tax		400	342	235	262	150.2	**655**
Free cash flow		66	−173	−1,081	324	105.2	**664**
EBITDA (EBIT before depreciation and amortization)		976	836	900	1,184	43.1	**1,694**
Investments in property, plant and equipment		272	319	359	427	10.2	**470**
Research and development		392	405	498	546	5.7	**577**
Balance sheet total		5,757	5,550	7,845	8,235	0.2	**8,255**
Net equity		1,653	1,626	1,870	1,947	20.0	**2,336**
Employees (No. as of Dec. 31)		28,949	28,911	32,721	33,520	2.3	**34,294**
Return on sales (ROS: operating result/sales)	%	14.3	12.9	12.3	11.1		**11.6**
Return on capital employed (ROCE: operating result/average operating assets)	%	14.1	12.1	11.9	11.6		**13.5**
Earnings per share (for calculation see page 38)	EUR	2.27	1.94	1.32	1.44	154.2	**3.66**
Dividend per share	EUR	0.77	0.82	0.85	0.90	5.6	**0.95**

* *Due to the changed definition of the Group, the previous year's figures are presented on a comparable basis (see preliminary remarks in the notes on p. 57).*

The Merck Annual Report 2001 has been published in German and English. Both versions are available on the Internet at **www.merck.de**. Full and short versions of the Report can be requested, free of charge, from **Corporate Communications, Merck KGaA, D- 64271 Darmstadt, Germany**. For further information, please contact us at: **corpcom@merck.de**

Merck will be number one in its core businesses through innovations created by talented, entrepreneurial employees.

Merck is a leading pharmaceutical and chemical company operating in 55 countries with more than 34,000 employees.

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Our Vision

Cover photo:

Stephanie Czasch and her colleagues work at our Institute of Toxicology in Darmstadt. Early insights into the toxic effects of compounds can save time in the drug discovery process.

In 2001, we celebrated 333 years of Merck in Darmstadt, Germany.

In 2002, we celebrate 175 years of research-driven production of chemicals and pharmaceuticals.

Dear shareholders and friends,

The year 2001 was, from a financial perspective, the best one in the 333 years of Merck. Sales, operating result and profit after tax all grew at double-digit rates. We made progress towards achieving our mid-term margin targets of 15% for return on sales and return on capital employed. At the same time the balance sheet was improved significantly.

The primary driver of our excellent financial performance came from the Pharmaceuticals business. Our top three products in 2001 were Glucophage®, Concor® and EpiPen®, all part of our mainstay Ethicals. The development of the products of the Glucophage® franchise, the "gold standard" for treating type 2 diabetes, was very satisfactory. We were equally satisfied with the development of Generics. This success goes beyond the successful divestiture of our stake in Pharmaceutical Resources. Nevertheless, this private placement transaction was very well received by the investment community and resulted in a profit after tax of EUR 232 million. We intend to use these proceeds to expand our core activities. The divestiture did not jeopardize our overall Generics strategy.

Beyond the success of Pharmaceuticals, most noteworthy is the turnaround of the Laboratory Distribution business. VWR International, the legal entity for this business sector, met its ambitious targets and is hence on track for the envisaged initial public offering (IPO) in the United States.

Our Chemicals business suffered less than many others from the difficult economic environment. This is due primarily to the fact that Merck's chemicals activities are focused on attractive and less cyclical niches in which we enjoy leading positions.

There were other highlights that did not immediately contribute to financial performance but that will help secure the mid- and long-term success of Merck. The in-licensing of Theratope® from Biomira further expands our impressive oncology pipeline. Oncology and diabetes remain our two core activities within Ethicals. While we continue to increase our R&D budget, there is need to focus. We are approaching the critical mass in terms of the depth of expertise needed to successfully develop and commercialize products in these two important areas. Since we have had success in other therapeutic areas, we are very pleased that we have found excellent partners for two of our central nervous system (CNS) projects. At the beginning of the year we out-licensed our novel antidepressant vilazodone to GlaxoSmithKline. At the end of 2001 we granted US rights for our antialcoholic product Campral™ to Forest Laboratories. We are confident that together with our partners we can maximize the value of our CNS and other franchises.

On the issue of people, it is a source of pride that we can not only retain existing talent but also attract new people with diverse skills and perspectives. In October we nominated a non-European as a member of our Executive Board for the first time in our history. Matthew Emmens is now heading Ethicals. He brings world-class pharmaceutical expertise and a new cultural influence to our management team.

We are serious about our focus on innovation and people. To reward entrepreneurship we developed a special program that will offer Merck inventors around the world, and those employees who contribute to the success of an invention, rights to participate in the commercial success of innovations. The profit share offered by Merck is more generous than the provisions of German inventor law.

In 2001, we also highlighted Merck's value and Merck's culture by putting renewed emphasis on our well-known brand: Merck. The process of reshaping our corporate identity serves this purpose.

In a continuing effort to maximize opportunities by focusing, we restructured our Specialty Chemicals and Laboratory Products business sectors to form one new entity Chemicals. We expect the new business sector to be more efficient and less cyclical. Following the IPO of the Laboratory Distribution business, Merck will be positioned as a pharmaceutical company with an attractive chemicals business.

While we are proud of our record year 2001, the year 2002 will be a challenge. A difficult economic environment has hampered especially our Chemicals business. We do not expect the situation to improve significantly before the second half of this year. The impact of generic competition for Glucophage® will be significant and cannot be offset in the short term. At the same time, we need to invest in our attractive pipeline. We need to have adequate R&D support and continue with our geographical expansion and focus on the United States. Hence, we expect single-digit growth in sales and an operating result that is lower than in 2001. However, this should not be perceived as a gloomy outlook for 2002. We expect to reach important milestones in our pharmaceutical pipeline as several proof of concept studies come to fruition. Our oncology studies are progressing well and are on schedule. We expect results from proof of concept studies in diabetes, in CNS, and in cardiovascular.

You will recognize in this Annual Report of the Merck Group that Merck KGaA is the holding company for our consolidated financial statements. This move is a consequence of a segregation of the corporate governance of E. Merck and Merck KGaA. The management of E. Merck will look after the assets of the partners; the management of Merck KGaA will run the business.

All in all, we remain very confident about the future of Merck. Following our vision we will master the challenges ahead of us. We very much count on the support of our shareholders and friends. On behalf of all 34,000 Merck employees worldwide, I would like to thank you for your trust in Merck.

Sincerely,

Bernhard Scheuble

Prof. Dr. Bernhard Scheuble

Executive Board

Bernhard Scheuble

born in 1953, Ph.D. in physics from the University of Freiburg; with Merck for 19 years

Chairman

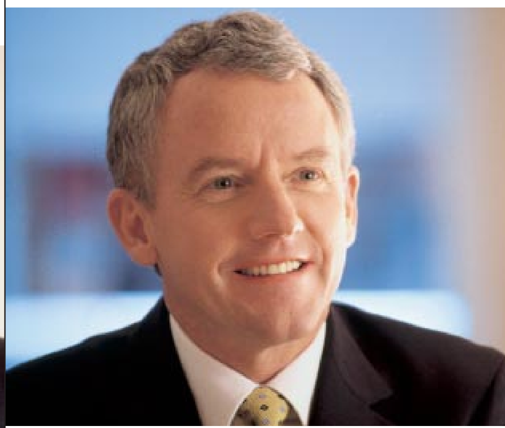
Pharmaceuticals
Laboratory Distribution
Law, Patents, Trademarks

Michael Römer

born in 1946, Ph.D. in chemistry from the Technical University of Darmstadt; with Merck for 23 years

Vice Chairman

Operations
Purchasing and Logistics
Environmental Protection
Safety and Health
Regions Europe and Africa



Matthew W. Emmens*

born in 1951, BS in business management from Fairleigh Dickinson University, New Jersey; with Merck for 2 years

Ethicals

*Nominated as Member of the Executive Board, subject to approval of an amendment of the Articles of Incorporation by the Annual General Meeting 2002.

We focus our activities on business segments in which we achieve competitive advantages.

Thomas Schreckenbach

born in 1946, Ph.D. in biochemistry from the University of Munich; with Merck for 15 years

Specialty Chemicals
Laboratory Products
Regions Asia and Oceania

Michael Becker

born in 1948, Ph.D. in law from the University of Augsburg; with Merck for 3 years

Accounting and Controlling
Finance
Taxes
Insurance

Jan Sombroek

born in 1947, Ph.D. in chemistry from the University of Cologne; with Merck for 26 years

Human Resources
Information Services
Corporate Communications
Regions North America and Latin America

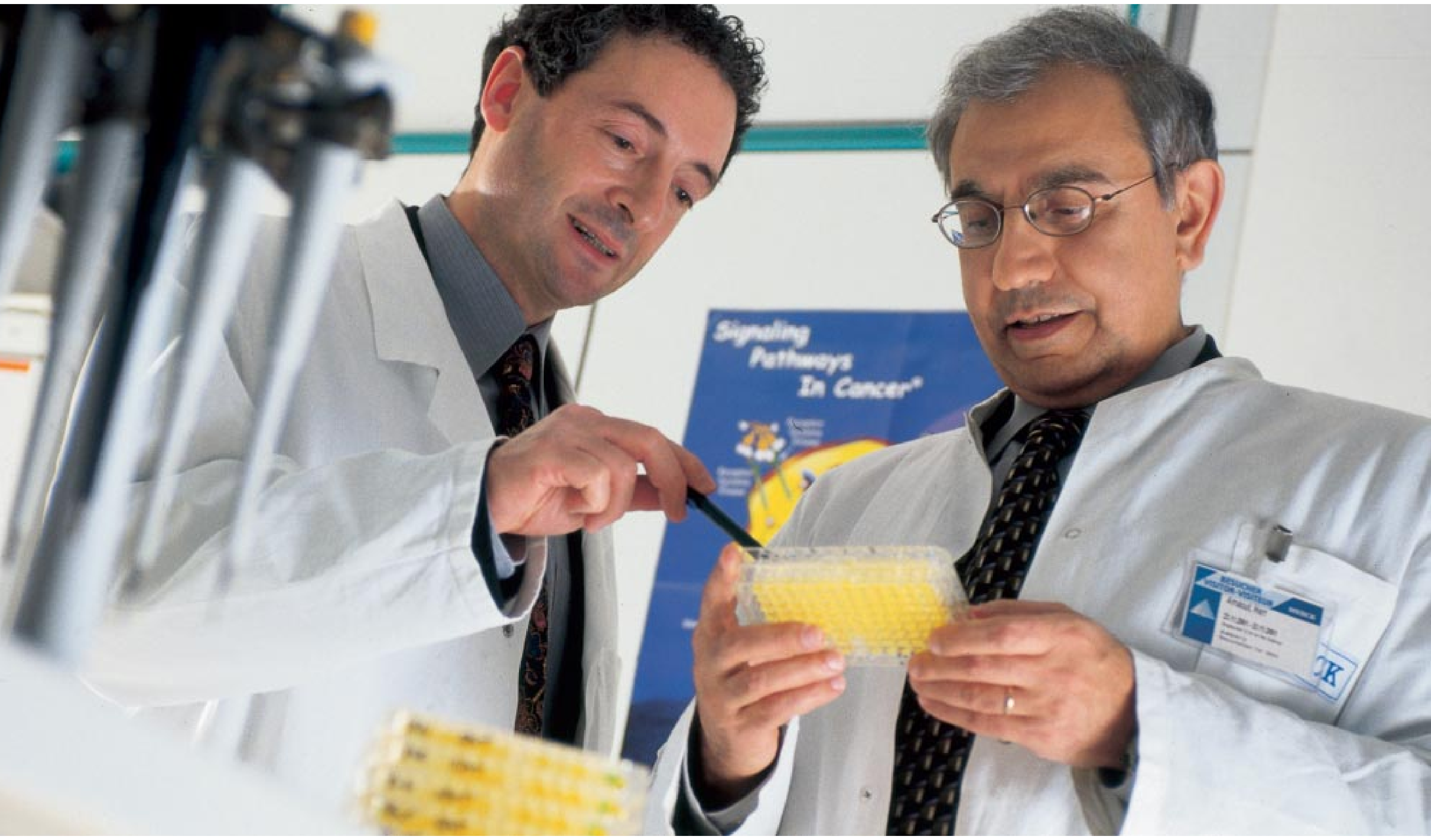
Success – Our Foundation for the Future

The year 2001 was the most successful year in our 333-year-old Merck history. We recorded double-digit growth rates in sales and operating result for the Merck Group. It was very pleasing to note that the increase in sales relied almost exclusively on organic growth, which was essentially achieved by strong performances in the Pharmaceuticals and Laboratory Distribution business sectors.

Pharmaceuticals Leading the Way

Key products in Pharmaceuticals provided improved health and quality of life for patients worldwide. Merck's vision to be number one is already reality in one of our core businesses: Merck is the global leader in the oral treatment of diabetes. Around eight million patients in more than 100 countries worldwide profit from the leading preparations for type 2 diabetes. This is a disease that can lead to serious complications and greatly reduced quality of life and life expectancy for patients.

Recent results of the landmark Diabetes Prevention Program in the United States showed that the risk of type 2 diabetes is significantly reduced by intervention with Glucophage® (metformin) or intensive lifestyle modification. Our family of products (Glucophage®,



Simon L. Goodman of Merck's preclinical oncology team in Darmstadt discusses an integrin inhibition study with Amin Arnaout of Massachusetts General Hospital in Boston. Their groups collaborated to first solve a crystal structure from this important class of cellular receptors.

Glucovance®, and Glucophage® XR) garnered more than 40% of all new U.S. prescriptions for diabetes by the end of the year. Sales increased to EUR 3,201 million (including sales by licensees).

Success can also be seen in the progress that our projects in pharmaceutical research and development have made (see section on innovation starting on p. 12). Merck's strategy in oncology continues to gain momentum. Cetuximab (C225) is a monoclonal antibody tumor fighter expected to reach peak sales of EUR 1 billion within 5–7 years after market introduction. We obtained worldwide rights to develop and commercialize the cancer drug cetuximab outside the United States and Canada from ImClone Systems, Inc., New York, in December 1998. Compared to cetuximab our compound EMD 72000 is a fully humanized monoclonal antibody. It showed very promising results in initial clinical development studies testing its use as a single-agent therapy for certain types of cancer.

Focus on Niche Markets Helped Chemicals in a Difficult Year

The effect of the overall economy on the chemical industry led to a significant downswing, but our chemical business still saw growth since we have focused our activities on niche markets in which we could keep our leading positions.

Turning ideas into innovative products secures our success and offers competitive advantages to our customers. Merck's effect pigments Colorstream®, for example, give extraordinary color changes, which vary with the angle of viewing, to all kinds of products. We are leading the market for liquid crystals where our division of the same name could double its sales in the last five years. To pave the way for future growth and to triple our output of liquid crystals, production facilities are under construction in Darmstadt, Germany, and made visible progress in 2001.

www.merck.de/success

Success also stems from continuing efforts to improve products as well as business processes. For scientists in laboratories around the world Merck's CHEMDAT® is the database for finding reliable products for experiments and processes. In 2001 it has broadened its scope of information and now offers a new graphical structure search facility. The turnaround to success for Laboratory Distribution was reached by VWR International completing its first year as a truly global organization: double-digit growth in sales and doubled operating result were significant milestones in VWR's aim and vision to become the most successful distributor for people involved in science. We are on track for the envisaged initial public offering (IPO) in the United States.

The good performance of our divisions can be found in the section on the business sectors starting on page 18.

Entrepreneurial Excellence – The Merck Definition of Success

Economic success, however, is just one part of the greater, long-term entrepreneurial success we are striving for. At Merck, we believe that entrepreneurial success means making our vision a reality. We want to be recognized as the market leader in the areas on which we focus our activities – through the undisputed quality of our products and excellence of our services, the expertise and competence of our employees, and the satisfaction of our customers. We also strive to be an attractive employer for talented and entrepreneurial people. Our scientists enjoy a stimulating environment for innovative research. We are a reliable and preferred partner in scientific research cooperations and several strategic marketing alliances. For our shareholders we continue to be a safe and rewarding investment.

Branding for the Future

Today more than ever, a strong company needs a strong corporate brand – one that is unique and unmistakable in all of the world's markets. This brand has to be the special expression of the company, its strategy, its culture, its people and their values. Last year we began the process of reshaping our corporate identity. Our goal was to build on past strengths and, at the same time, focus on better meeting our strategic needs as we move ahead. On October 1, we introduced a new and unique brand design. It reflects our clear commitment to the future, with innovative products in new and established markets.

MERCK EMD

The New Logo

The new logo connects our strong historic roots with the potential for future growth. The traditional Merck Blue reappears in the new logo in a new typeface. It is the visual symbol that our long-standing Merck culture will play a vital part in our future. The color elements that have been incorporated into the logo are meant to be an expression of the openness to change that we consider essential for future success. They symbolize movement and stand for our commitment to innovative research and meeting growing customer expectations, the linking of different cultures, and rapidly changing market requirements.

New Branding Solutions for New Legal Identities

Our new branding follows the corporate strategy. In the strategically important market of North America we concentrate our pharmaceutical business under the brand name EMD. To establish a close visual connection between EMD and Merck we use the same design principles, ensuring that Merck will be recognized as one and the same company on both sides of the Atlantic.

At the same time, the Merck Group will be easier to distinguish from the U.S. pharmaceutical company Merck & Co. The historic roots of both companies are the same and began in Darmstadt, Germany. This is where Friedrich Jacob Merck bought the pharmacy "Engel-Apotheke" back in 1668 – more than 333 years ago. In 1827, Heinrich Emanuel Merck began the industrial-scale production of alkaloids, plant extracts, and other chemicals. Following successful export to the United States, a branch was founded in New York that evolved into an independent U.S. company after the First World War: Merck & Co. The two companies are no longer commercially associated with each other, but still share the same name – "Merck." We own worldwide rights to the name except in North America. Rights to the "Merck" name in North America belong to Merck & Co., which in the rest of the world is known as MSD.

New legal identities were also created for the wide variety of enterprises that have developed over Merck's long history. Activities that are characterized to a large degree by research and innovation and strongly support our vision logically come under the Merck or EMD brand. Thus, the French pharmaceutical subsidiary Lipha now bears the name Merck.

VWR International, Inc., the company that operates our laboratory distribution business, represents the far end in our brand architecture: No longer linked to the brand Merck, the VWR brand is signaling the "company on its own", which we intend to take public in the United States.

A Streamlined Organization for Chemicals

We have decided to focus our business activities on Pharmaceuticals and Chemicals. As of January 1, 2002, core activities of two business sectors (**Specialty Chemicals** and **Laboratory Products**) have been restructured and combined into one new business sector named **Chemicals**. The **Scientific Laboratory Products** business has been transferred to the new **Life Science Products** division, structured according to the needs of the research-driven pharmaceutical, biotechnological, and agricultural industries. The global business with laboratory reagents and analytical solutions has been complemented to form the new **Analytics & Reagents** division. Based on an integrated product offering, the new division takes on the position of an analytical systems provider for laboratory and production. The **Electronic Chemicals** and **Liquid Crystals** divisions remain unchanged. The portfolio of effect pigments in the existing **Pigments** division has been combined with cosmetic pigments and active ingredients for the global cosmetics industry. The **Cosmetics, Health, Nutrition** division was discontinued.

The restructuring will further increase market orientation and customer focus, resulting in efficiency gains for the Merck Group. This strategic step will enable our chemicals businesses to grow above market average by better meeting our customers' expectations.

www.merck.de/structure

New Business Structure as of January 1, 2002

Business Sectors	Divisions	Indications/Products
Pharmaceuticals	Ethicals	• Metabolism/Diabetes *(Glucophage® family of products)* • Cardiovascular *(Concor® ...)* • Cancer/Oncology • Women's Health *(Lutényl®, Fem7® ...)* • Central Nervous System *(Campral® ...)*
	Generics	• Off-patent high-quality low-price drugs
	Consumer Health Care	• Vitamins, minerals, supplements *(Multibionta®, Cebion®, Bion®3, Seven Seas® ...)*
Chemicals	Liquid Crystals	• Components (LCs, ITO glass ...) for liquid crystal displays (LCDs) in monitors, notebooks, mobile phones ...
	Pigments	• Effect pigments *(Iriodin®, Colorstream®, Xirallic® ...)*, cosmetics, optics *(Patinal® ...)*
	Electronic Chemicals	• Process chemicals including supply systems for chip manufacture, functional materials
	Analytics & Reagents	• Salts, acids, alkalis, solvents, special products, e.g. for chromatography *(Chromolith® ...)*
	Life Science Products	• Reagents and processing materials for biosciences, pharmaceutical compounds
Laboratory Distribution (VWR International, Inc.)	VWR North America	• Distribution of laboratory chemicals and equipment in North America ...
	VWR Europe	• ... and in Europe

People – Our Key to Success

The Merck vision is ambitious – to be number one in our core businesses. For us, that means putting people first, not only when they are our customers. To address the unmet medical needs in crucial areas like cancer and diabetes, and to develop novel chemical products we need the right people: people with an entrepreneurial spirit, committed to finding innovative solutions, and open to the challenge of lifelong learning. Our success is built on highly competent people who respect each other and the differences in each other's cultures. With a keen sense of responsibility to our customers, to our shareholders, and to all the communities at our 60 production sites in 27 countries where we want to be active corporate citizens, Merck's more than 34,000 employees around the world work with motivation to turn our visions of today into tomorrow's reality.

Commitment to Talent

To secure our long-term success we want to retain highly qualified and motivated people while continually attracting new top talent from outside the company. Our recruitment team for university graduates provides job-related information for potential applicants and links them to contact persons at Merck. We also introduced an innovative online application system in 2001. Located at www.come2merck.de, our web-based recruitment tool has

Besides the quality of our products, it is very often the personalized relationship with our customers that leads to our business success. Marcela Torres Romay and her colleagues of Merck Mexico discuss innovative ways of marketing our chemical products.

significantly improved the quality and speed with which we process the more than 15,000 applications we receive in Darmstadt each year.

Our commitment to attracting and developing talent is an intrinsic part of our corporate culture. While realizing how important competitive compensation plans are, we are aware that these alone are not enough to retain the best people. Over more than three centuries, Merck has developed a culture marked by a special responsibility for its employees and its business sites. In the face of today's rapidly changing environment, we take pride in the stability that our culture offers our employees. It is a culture built to embrace change, not fear it.

Keeping Top People Tip-Top

Top people want to remain first-class. They demand and deserve challenging work assignments, professional development, succession planning, and the chance for continuing education. Developing talent is not just a responsibility to academics but to all Merck employees. We are proud that so many of our commercial and technical employees participate in the training programs we offer. We consider it essential to bring people of different cultures together and to promote international networking.

In August 2001, Merck Online Campus began offering a wide range of e-learning opportunities. We have also continued to develop and expand the programs we offer at various locations around the world. A new MBA program through Pforzheim Graduate School, Germany, which began in 2001, complements the existing partnership program at Ashridge, Great Britain. We also enhanced international exchange opportunities and continued the Merck University: Our first group of about 40 top managers completed their studies at Northwestern University in Chicago, the London Business School, the Hong Kong University for Science and Technology, and the Graduate School of Management in Koblenz, Germany. A second group began in fall 2001.

www.merck.de/people
www.come2merck.de

Recognizing Success Fosters Success

Recognizing achievement and sharing success is an important part of fostering success at Merck. A performance management system measures crucial leadership factors. Setting clear employee objectives, coaching toward achievements, and establishing rewards and career development opportunities are primary. Stock option programs for selected managers are now in place and, for the first time, salaried employees in Darmstadt received a bonus directly related to the operating result. We want all those who contribute to our success to share in it. The employee suggestion scheme established at our German business sites has received more than 20,000 suggestions for improvements since 1986. One suggestion made in 2001 led to savings of more than EUR 3 million and a record compensation of EUR 312,000 for the employee.

For more than ten years now we have honored those employees who contribute to our success through distinguished customer orientation with the "Yellow Truck Award": Around 1,500 nominations resulted in over 40 awards worldwide. The "Innovation Award"was established three years ago (see p. 12). To both promote and reward the pioneering spirit of our employees, we have developed the "Merck Award Plan for Inventions". This program will reward all inventors in the Merck Group throughout the world on an equal basis. It also includes a special feature: Not only the direct developers of an invention are eligible for compensation, but also those who contributed to the development. The compensation offered by Merck is higher than that provided by the respective German law.

Innovation – The Challenge to Compete

As a global company, we welcome innovation as our chance to grow. It is the key to new products for the world's most important markets. Being innovative is the best way to provide our customers with the unique solutions they need and to ensure our shareholders that they will get the best possible return on their investment.

For our employees, innovation is also the challenge to compete on a world-class scale. It means using the most advanced technologies available to search for ever better solutions. And it increasingly demands crossing geographical, cultural, and functional boundaries to bring our best people together in teams that combine experience, knowledge and skills with a special focus on market needs.

Innovation as Part of Our Corporate Culture

Innovation is the driving force behind scientific, technological, and economic progress. We provide a stimulating environment for creative and innovative work and have established the "Merck Innovation Award" for our employees. It was awarded to a team of Japanese researchers for the development of our new effect pigments Xirallic® in 1999 and to a German team for the development of chromatographic separation columns of the Chromolith® line in 2000. Both innovations continue to be a major market success.

Jonathan Davies and Christel Aperlo work at EMD Lexigen near Boston, United States.
The focus of our oncology research is on fighting cancer with innovative biological therapies.

Last year – for the first time – not a research group, but the team of Corporate Communications was honored for its achievements. This recognition also signaled that at Merck, innovation is an essential part of everyone's job in every part of the company, not just the job of people in Research and Development (R&D).

Focused Strategies for Efficient Pharmaceutical Research

The search for new target molecules to more effectively battle disease is a challenge to science and technology, and to the creativity of all researchers. In addition to state-of-the-art high-throughput screening technologies, genomics and proteomics play an increasingly important role today. By establishing so-called gene expression profiles our researchers attempt to define the differences in the genetic activity between normal and diseased cells (e.g. tumor cells) and to identify suitable targets for pharmaceutical treatment. To support this process, our bioinformaticians have developed algorithms for automated target identification in extensive genome databases.

Once a target has been identified, intelligent test systems and test strategies are used to identify novel compounds by high-throughput screening, resulting in lead compounds suitable for further evaluation and optimization. Disease-relevant biological models are used to elaborate the desired pharmacological profile. Advanced drug candidates are further selected on the basis of their pharmacokinetic and, specifically, their safety profile. Increased emphasis is being put on identifying surrogate biological markers and parameters applicable in clinical development to identify the appropriate clinical trial strategy.

www.merck.de/innovation

Prediction is difficult in the discovery research process. To reduce the inherent risks involved, Merck has clearly defined steps and milestones in the research process in order to select drug development candidates having the greatest potential for success. Regular project evaluation is a key success factor, and knowledge sharing in alliances and partnerships saves both time and money.

Teaming Up Our Forces

Merck's core R&D facilities in Pharmaceuticals are located in Darmstadt, Germany, Lyon, France, and Lexington, Massachusetts, United States. They are complemented by smaller units that concentrate on specific activities like Biovation in Great Britain. Biovation focuses on eliminating immunogenic properties of antibodies and proteins in order to increase their safety and tolerability. Such approaches can be applied to many therapeutic proteins and are a valuable addition to our technology platforms.

In the past, Merck has continuously extended its pharmaceutical research capabilities through the acquisition of companies and through partnerships and strategic alliances. A new corporate research strategy has been developed to improve operational efficiency and to increase competitiveness. It has been devised by a team of experts from seven research sites (Darmstadt, Lyon, Chilly-Mazarin, Monaco, Lexington, Aberdeen, and Barcelona) within the "Symphony" project. This has been established to optimize the drug discovery process by leveraging skills, capabilities, and technologies at the corporate level. We have created a transparent research framework that gives ample room for creativity and entrepreneurial initiatives. We have made significant headway to achieve a company-wide research culture and to instill the feeling of common ownership.

Merck has approximately 30 drug projects in various stages of development; the table on p. 14 shows projects which are in clinical phase II and III studies. Our focus is on drugs that address major medical needs and have the potential to be launched quickly

www.merck.de/pipeline

on a global basis. Many of our new cancer products are in the late, extensive phases of clinical trials. To make these promising innovative drugs available to doctors and patients as soon as possible, we are currently investing significantly in their clinical development.

Oncology: Cutting-Edge Approaches in Biological Cancer Therapy

www.merck.de/oncology

Cancer is the second most frequent cause of death in Western industrialized nations. Merck is focusing on a promising alternative to surgery, radiotherapy, or chemotherapy – the treatment options currently available. Our oncology projects focus on novel biotherapeutic strategies that represent more selective modes of tumor destruction and have fewer side effects. Through our own research capabilities and strategic research alliances, eight potential cancer drugs have been advanced to various stages of clinical development (see table; plus one in phase I). Our oncology portfolio is based on four innovative approaches:

Monoclonal antibodies bind to cancer cells and can thus inhibit tumor growth. Cetuximab (C225), licensed from ImClone Systems, Inc., New York, is currently being tested in combination with chemotherapy and radiotherapy. The first promising results from clinical phase II trials indicate that co-treatment with cetuximab can benefit in particular patients with head and neck cancer as well as patients with colorectal cancer who have failed to respond to standard therapies. Large-scale clinical phase III studies for these indications are currently being conducted or planned. Market introduction of cetuximab (trademark Erbitux™) in the United States may be delayed since the U.S. Food and Drug Administration (FDA) did not

A Strong Pipeline – Status of 19 Innovative Drugs

▲ = Decision on full development
■ = Estimated launch

Therapeutic Area	Compound	Indication	Status	2001	2002	2003	2004	≥2005
Cancer/ Oncology	Cetuximab (C225, Erbitux™; EGFR-specific monoclonal antibody)	EGFR-carrying tumors: colorectal, head and neck, non-small-cell lung	Phase III	▲		■		
	Theratope® (cancer vaccine)	Breast cancer	Phase III			▲	■	
	Mitumomab (BEC2; cancer vaccine)	Small-cell lung cancer	Phase III				▲	■
	EMD 72000 (EGFR-specific monoclonal antibody)	EGFR-carrying tumors: gastric, cervical, non-small-cell lung	Phase II		▲			■
	Cilengitide (angiogenesis inhibitor)	Pancreatic cancer, breast cancer, melanoma, non-small-cell lung cancer	Phase II			▲		■
	Immunocytokine KS-IL2	EPCAM-expressing tumors: renal, breast, non-small-cell lung	Phase II			▲		■
	BLP 25 (cancer vaccine)	MUC1-expressing tumors: non-small-cell lung, prostate, ovarian	Phase II			▲		■
Metabolism/ Diabetes	EML 16336 (insulin mimetic)	Type 2 diabetes and insulin resistance	Phase II		▲			■
	EML 16257 (glucose-specific insulin secretagogue)	Type 2 diabetes and insulin resistance	Phase II		▲			■
	EML 4156 (insulin metabolic syndrome modulator)	Type 2 diabetes and dyslipidemia	Phase II			▲		■
Cardiovascular	EMR 6203 (PDE V inhibitor)	Male erectile dysfunction	Phase II		▲			■
Central Nervous System	Vilazodone	Depression	Phase II	▲				■
	Sarizotan	Dyskinesia in Parkinson's disease	Phase II		▲			■
	Asimadoline	Irritable bowel syndrome	Phase II			▲		■
Women's Health	EMM 220066 (E2/Nomac, oral)	Continuous hormone replacement therapy	Phase II		▲			■
	EMM 110525 (new progestagen)	Menstrual disorders	Phase II			▲		■
	EMM 210525 (E2/TX 525, oral)	Continuous hormone replacement therapy	Phase II			▲		■
	EMM 310525 (EE/TX 525, oral)	Contraception	Phase II			▲		■
	EMM 310066 (E2/Nomac, oral)	Contraception	Phase II		▲			■

E2 = estradiol, EE = ethinyl estradiol, EGFR = epidermal growth factor receptor, EPCAM = epithelial cell adhesion molecule, LNG = levonorgestrel, MUC = mucinous adenocarcinoma of the stomach, Nomac = nomegestrol acetate, PDE = phosphodiesterase, TX = thromboxane.

accept ImClone's application for approval of cetuximab. Meanwhile, we continue with our own multicenter, controlled clinical studies in several European countries as scheduled. On the basis of these we will apply for market approval through the European Agency for the Evaluation of Medicinal Products (EMEA). We expect the launch of cetuximab in Europe in 2003. While Merck holds the worldwide rights outside North America, ImClone and BMS will commercialize the compound there. In Japan, Merck and ImClone/BMS share the development and commercialization rights. EMD 72000, a fully humanized monoclonal antibody designed and developed in Darmstadt, is in clinical phase II. The phase I studies indicated a favorable tolerability and safety profile as well as evidence of its viability as a single-agent therapy.

Cancer vaccines are based on antibodies and trigger the body's own immune response by mimicking surface molecules present on cancer cells. Mitumomab (BEC2), developed in cooperation with ImClone, is currently undergoing a large-scale clinical phase III trial in a multinational study involving patients with small-cell lung cancer. A previous U.S. study indicated an improvement in life expectancy of patients vaccinated with Mitumomab. With our Canadian collaborator Biomira we are developing Theratope® for the treatment of advanced or metastatic breast cancer. After promising clinical phase II results, the recruitment of patients in a large multinational phase III trial has been completed and an interim analysis is planned for the third quarter of 2002. For this vaccine the FDA has granted fast-track approval. The vaccine BLP25, also developed together with Biomira, is currently in a clinical phase II trial of patients with non-small-cell lung cancer.

Angiogenesis inhibitors interfere with tumor growth by inhibiting the formation of blood vessels supplying the tumor. In collaboration with research institutes in Munich and San Diego, United States, we are developing the integrin inhibitor cilengitide. Preliminary results from phase II clinical studies indicate that it is well tolerated and safe in patients with advanced solid tumors.

Immunocytokines are molecules combining monoclonal antibodies specific for cancer cells and cytokines, proteins that locally stimulate the immune response at the tumor site. The first two of these fusion proteins, KS-IL2 and 14.18-IL2, are currently in clinical studies.

Addressing Type 2 Diabetes with Three Innovative Compounds

Around 90% of some 150 million diabetics worldwide suffer from type 2 diabetes and the number is expected to double by 2025. With Glucophage® as the leading drug for oral treatment of type 2 diabetes, the battle to provide new and more effective options for diabetes patients is far from over. The Merck pipeline in diabetes offers a "holistic" approach by addressing the key issues of this disease: treating glycemic disorders and diabetic complications such as dyslipidemia or microvascular complications.

www.merck.de/diabetes

Three innovative compounds with new mechanisms of action have been developed and are currently in phase II clinical studies. The insulin sensitizer EML 16336 and the beta-cell sensitizer EML 16257 focus on the treatment of type 2 diabetes. EML 16257 has the potential to stimulate the beta cells to secrete insulin and thus helps in insulin resistance. EML 4156 is a new effective insulin resistance metabolic syndrome modulator aiming at reducing both glycemic and lipid levels. Given proof of concept, we anticipate that all three may enter into phase III in 2002.

Cardiovascular Research: A New Indication for One of Our Compounds

Cardiovascular diseases remain the leading cause of death. Our R&D activities in this area focus on innovative therapeutic approaches to address acute and chronic cardiac diseases with high medical need. To continue Merck's pioneering work in the oral treatment of heart failure (Concor®COR), we are investigating sodium–proton exchange inhibitors. Our long-standing research in targeting isoenzymes of phosphodiesterase (PDE) resulted in a PDE V inhibitor for the treatment of male erectile dysfunction. Our target profile is fewer side effects, a faster onset of action, and no food interactions, as compared to available agents.

Central Nervous System and Women's Health: Successful Concepts

Diseases of the central nervous system are an area of high medical need. Our researchers in Darmstadt have discovered and developed the antidepressant vilazodone, which has a novel mechanism of action. To bring this highly innovative drug to patients worldwide, we signed a development and commercialization agreement with GlaxoSmithKline – a powerful alliance with an experienced partner.

Our Women's Health business focuses on hormone replacement therapy to alleviate menopausal symptoms and on contraception. Five projects in these areas are currently in clinical phase II (see table on p. 14). With EMM 210066 and Fem7® Plus, two innovative products for sequential and continuous hormone replacement therapy, respectively, have already entered the marketing approval process.

Innovation as the Driving Factor in Chemicals

By turning new ideas quickly into production, Merck has gained leadership in specialty chemicals for high-value applications such as liquid crystal (LC) displays or effect pigments. New technologies and improved production procedures make us a valuable partner for high-tech industries like the electronics, optics, and life sciences industries. Our scientists and marketing experts cooperate closely with customers from industry worldwide to stay at the cutting edge of market requirements. But innovation does not just stem from research: We have established an IT-based system ("TOPAS") that monitors the continuous improvement of our business processes along the entire value-added chain.

www.merck.de/NewBusinessChemicals

Focus on Flat Panel Displays and Effect Pigments

Requirements for even better flat panel displays represent challenges to our physicists and chemists. We are developing novel LC mixtures which can be controlled by using even lower voltages and which allow shorter switching times. The result is faster image response. With our core competence in LC mixtures and ITO (Indium Tin Oxide) glass we have focused our research on new components for flat panel displays, such as color filters and touch panels. We want to secure our position by introducing functional polymers as a replacement for silicon in electronics applications.

Our R&D activities in Pigments focus on new product categories based on innovative substrate and coating technologies. We further develop our competence in solving problems over the broad spectrum of effect pigment applications for the printing, plastics, and paints industries.

With new applications of materials in optical communication technologies and in video projection systems our vapor deposition chemicals Patinal® gain particular importance. Our depth of know-how makes customized and advanced products for several technical and consumer industries available. Emblica®, for example, was one of Merck's patented market introductions for the cosmetics industry in 2001; by preventing further oxidation and capturing free radicals it helps to slow down the skin aging process.

Innovations for Laboratories Worldwide

Merck is known to be a world leader in analytics, offering, for example, the fastest chromatography column available on the market: Chromolith®SpeedROD is used mainly in the pharmaceutical and food industries worldwide and allows a chromatographic separation five to ten times faster than with conventional separation columns. Other innovations introduced in 2001 make us the only company offering easy-to-use rapid test strips and culture media for the detection of food-borne pathogens as well as mobile analytical systems for the wine and dairy industries. With many new life sciences reagents for biomedical research from our Scientific Laboratory Products we keep pace with the rapid developments in molecular biology and biotechnology.

The Future: New Business Areas

Besides new product developments in the divisions, promising technologies for all businesses are being pursued under the common roof of "New Businesses". We are doing intensive research in fields like nanomaterials, analytical chip/array technology, phase-change and battery materials as well as chemicals for high-temperature superconductors. R&D in the newly structured business sector Chemicals (see p. 9) will be aligned according to this strategy. To enforce the common use of new technologies, cross-divisional competence centers will be set up. Complementary to our own research we are investigating novel ideas through international cooperations with more than 35 universities.

Patents and Licenses: Securing Our Competitive Advantage

As a research-driven company, Merck needs effective protection of its inventions and resulting technology through registered patents. Only successfully secured intellectual property rights justify the costly investments in R&D necessary to develop a novel marketable product. On a firm legal basis, competitive advantages can be established and turned into economic success. At Merck, the number of basic patent applications has drastically increased over the past five years, from 145 in 1997 to nearly 400 in 2001 – strong evidence for the innovative power of our researchers. Of last year's basic patent applications, over 80 resulted from an interdisciplinary effort of our preclinical R&D department to identify new targets in Merck's primary therapeutic areas based on the latest results from Merck's genomics projects. The success of the project "Sixty Patents from Genomics" was made possible through the close collaboration of R&D with our patent department.

As a research-driven company, a significant portion of our revenues is derived through outlicensing of patent rights. Merck actively pursues this strategy and successfully markets its intellectual property. Over the last five years, income from licenses in Liquid Crystals has tripled. We also acquire appropriate licenses to optimize our patent portfolio. In order to efficiently secure Merck's leading position through early patent applications, we nearly doubled the number of specialists working in our patent department in 2001.

Bernd Schneider-Lowitz of Merck's oncology team discusses computer tomography images with cancer researcher Udo Vanhoefer. With his team at the Tumor Research Center of the University of Essen, Germany, we cooperate closely in the development of EMD 72000, a monoclonal antibody with promise in cancer therapy.

Pharmaceuticals

Michel Peres and Christiane Quentana work for Merck in Lyon, France. Originally developed in Lyon, our blockbuster Glucophage® is the leading drug worldwide for type 2 diabetes and means improved chances of survival and quality of life for millions of patients.

Ethicals used in the treatment of metabolic and cardiovascular diseases, **generics**, and **consumer health care** products are the core of our pharmaceuticals business. Sales in **Pharmaceuticals** rose 14 % to EUR 3,323 million. The operating result amounted to EUR 581 million, a 28 % increase compared to the previous year. The return on sales (ROS) of 17.5 % came closer to our ambitious target of 20 % in spite of our substantial investments for the future. The **Pharmaceuticals** business sector contributed 44 % of the Merck Group's total sales. The share of the total operating result was 66 %.

Outstanding Success to Fuel R&D Efforts

All three divisions of the **Pharmaceuticals** business sector increased their sales in 2001. The **Ethicals** division saw an exceptionally strong growth rate of 14% with sales rising to EUR 2,084 million, thus contributing 63% to total sales of this business sector. The **Generics** division maintained its strong growth pattern with sales rising 19% to EUR 925 million. We divested our 43% interest in the U.S. generics manufacturer Pharmaceutical Resources Inc. in the third quarter of 2001 and expanded our Japanese business with the acquisition of Mohan at the beginning of 2002. Sales by the **Consumer Health Care** division rose 6.7% to EUR 314 million. To provide the organizational basis for further expansion we have formed a separate holding company for our consumer health care business.

The Glucophage® family of antidiabetics was again very successful.

Most Successful in the Key U.S. Market

Merck's sales in **North America** rose 35% to EUR 1,015 million, the majority of sales revenues being generated by licensee agreements with other companies. The Ethicals division produced outstanding contributions in North America with an increase of 35% to EUR 749 million. The Generics division was also very successful, with an increase in sales of 37% to EUR 265 million.

In **Europe** sales increased 6.9% to EUR 1,438 million, a quarter of this being achieved by Generics. In France, our most important market in Europe, sales jumped 11% to EUR 491 million. In Germany we saw a decline in sales by 2.2% to EUR 332 million and in Great Britain by 4.8% to EUR 204 million. In Spain sales rose 19% to EUR 93 million. Following our separation from Bracco, we doubled our sales in Italy to EUR 33 million. We also increased our sales in Eastern Europe, with growth of 33% to EUR 53 million.

Sales jumped in the United States and in France.

Sales growth of 5.6% to EUR 328 million was recorded in **Latin America**, driven by a 14% rise in Mexico to EUR 114 million and a 16% rise in Venezuela to EUR 41 million. In Brazil, sales decreased 9.5% to EUR 65 million. Sales generated in **Asia, Africa, and Australia** rose 6.6% to EUR 543 million, significantly influenced by the increase of 9.7% to EUR 214 million achieved by Generics in Australia. The major Asian markets Japan and India saw increases in Pharmaceuticals sales of 8.5% and 7.2%, respectively. In Africa we achieved sales growth of 12% to EUR 43 million.

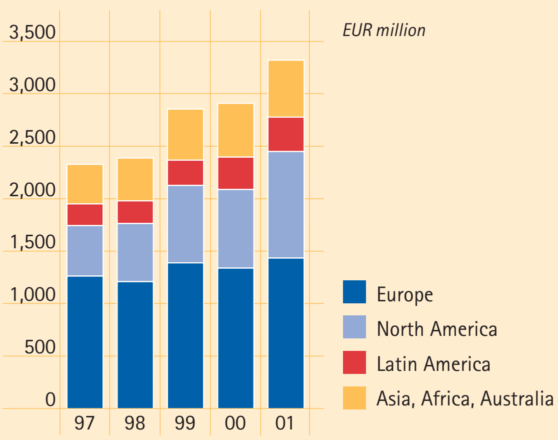
Pharmaceuticals – Key Figures

EUR million	2001	2000	Change in %
Sales	**3,323**	2,914	14
Operating result	**581**	454	28
Return on sales	**17.5%**	15.6%	
EBIT	**1,067**	592	80

Sales by Division

EUR million	2001	2000	Change in %	Share in %
Ethicals	**2,084**	1,826	14	63
Generics	**925**	778	19	28
Consumer Health Care	**314**	294	6.7	9

Pharmaceuticals – Regional Sales Development



Ethicals

Progress in the Treatment of Major Diseases

The **Ethicals** division produced its best-ever sales, with an increase of 14% to EUR 2,084 million, contributing a 63% share of total Pharmaceuticals sales. This rise was mainly due to sales generated by our diabetes franchise. We invested EUR 406 million in R&D projects focused on medically and economically promising therapeutic areas

The growth in sales of Ethicals – i. e. prescription drugs developed or inlicensed by Merck – was boosted by a 48% jump in sales to EUR 605 million for the family of antidiabetic drugs – Glucophage®, Glucovance®, and Glucophage XR®. This foundation of success has allowed us to invest EUR 406 million (+7.3%) in research and development (R&D) or 20% of Ethicals' sales. Our R&D is focused on projects ensuring sustainable and profitable growth especially in oncology. Our pipeline is the strongest in the Company's history (see the section on innovation on p. 14). Our new compounds hold the promise of being both innovative and globally relevant. They are targeted toward treatment areas where there is high medical need. Our pipeline holds the key to enhancing our business with new and innovative products that can help millions of patients worldwide.

In 2001 Glucophage® was the undisputed number one preparation for treating type 2 diabetes.

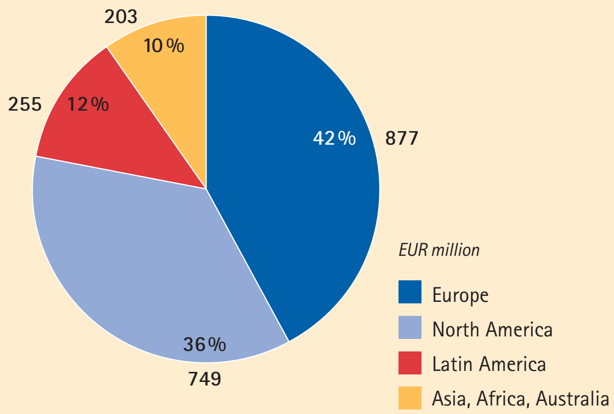
Medical and Financial Success in Diabetes with Glucophage®-Based Products

Due to the ever-increasing worldwide prevalence of type 2 diabetes and the expansion of the global market for this indication to EUR 8 billion in 2001, drugs to treat metabolic disorders are a major focus in our global Pharmaceuticals business. Type 2 diabetes occurs primarily in adults and accounts for 90–95% of all cases of diabetes. The current estimated number of about 135 million is expected to almost double by the year 2025. Annual treatment costs of long-term complications are ten times as high in untreated diabetics as in adequately treated non-insulin-dependent diabetics – a savings potential of many billion euros worldwide. Results communicated from the landmark Diabetes Prevention Program in September 2001 showed that the onset of type 2 diabetes can be significantly delayed by intervention with metformin (the active ingredient of Glucophage®) or intensive lifestyle modification.

www.merck.de/diabetes

Approximately eight million patients benefit from Glucophage® in more than 100 countries worldwide. By the end of 2001, more than 40 % of new prescriptions written in the United States for the diabetes market were for Glucophage®-based products. Including the sales of our licensee Bristol-Myers Squibb, total sales rose 43% to

Ethicals – Sales by Region



EUR 3,201 million. In the top 11 pharmaceutical markets, the Glucophage® franchise had 34% of the diabetes market. Since Glucophage® is the first oral antidiabetic approved for pediatric use we were also able to provide a therapeutic alternative in the fast-growing U.S. market segment of children with diabetes. We will face competition by generics for Glucophage® in 2002, but patents for Glucovance® and Glucophage XR®, both available in the U.S. market, protect some of the revenues.

In February 2001, the European regulatory authority EMEA recognized Glucophage® as the first oral antidiabetic to reduce long-term complications in type 2 diabetes. A landmark study conducted in Great Britain (UK Prospective Diabetes Study) demonstrated that in intensively diet-treated overweight patients Glucophage® significantly reduces major cardiovascular complications such as heart attack and stroke as well as premature mortality.

Combining the positive effects of metformin with those of glibenclamide – a drug of the sulfonylurea class – Glucovance® has been a new therapeutic option in the United States since August 2000. It is indicated as first-line therapy after failure of diet measures and as second-line therapy when the initial treatment has failed to achieve adequate glycemic control. More than five million prescriptions have been written since launch in the USA giving us a market share of nearly 7%. The Mutual Recognition Procedure started at the end of October 2001. Launches in some European countries are expected to begin in the second quarter of 2002. Glucophage XR®, the once-daily version of Glucophage® introduced to the U.S. market in November 2000, recorded sales of more than EUR 300 million. Patients will continue to benefit from our focus on diabetes in the future through our ongoing efforts to improve the efficacy and safety of treatments for type 2 diabetes. Three new compounds in this therapeutic area are currently in phase II (see p. 14).

Great Performance in the Cardiovascular Area

The Concor® line of beta-blockers increased 13% to EUR 229 million, driven by local sales through Merck companies and the two new line extensions – the low-dose combination product Lodoz® and Concor®COR for the new therapeutic indication of chronic heart failure. These two products accounted for one quarter of our cardiovascular sales.

Increasing sales for the Concor® line of beta-blockers worldwide

Cardiovascular diseases remain the number one cause of death worldwide. Generating global sales of EUR 50 billion, drugs for treating these disorders represent the largest pharmaceutical market segment. Every year, about three million people die from

Peter Wendel works in the highly adaptive production facilities for new active ingredients from our preclinical and clinical development in Darmstadt. Our new compounds hold the promise of being both innovative and globally relevant to medical needs.

acute myocardial infarction in the industrialized nations. Chronic heart failure is growing in prevalence. Mortality within one year of a newly diagnosed onset has increased to 33% and there is a high degree of morbidity associated with disabling symptoms and complications.

Bisoprolol, the active ingredient of our beta-blocker Concor®, has been introduced in more than 80 countries and ranks among the top beta-blockers in most of these countries. Merck has been a pioneer in the new therapeutic indication of chronic heart failure, which was originally seen as a contraindication for beta-blockers. Today beta-blockers are acknowledged by European guidelines as part of standard therapy. When given in addition to standard drugs, bisoprolol can increase the chances of survival for heart failure patients and also helps reduce hospitalizations for worsening heart failure. In most European countries bisoprolol is available in this new indication (Concor®COR, Cardicor®, Cardensiel®, Emconcor®CHF). Other marketing approval processes and launches are under way. Positive news confirming a cardioprotective effect came for our product nicorandil (Dancor®, Adancor®), which has been on the European market since 1994. These new findings for nicorandil announced at the Congress of the American Heart Association may lead to a change in the treatment guidelines for angina pectoris.

www.merck.de/cardiovascular

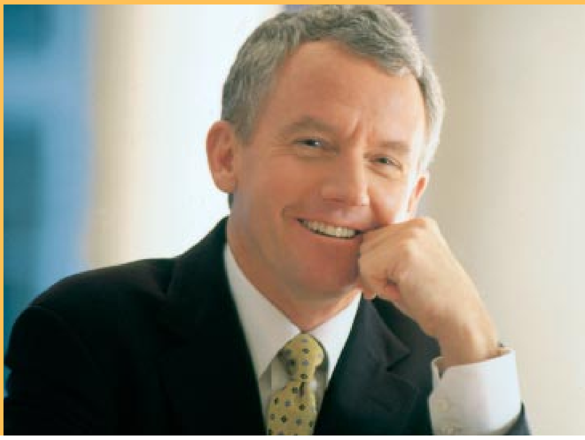
Our new treatment for moderate hypertension is a very low-dose combination of bisoprolol and a diuretic, ideal for first-line therapy to normalize blood pressure and with fewer side effects compared to other therapies. In the United States, our partner American Home Products markets this product under the brand name of Ziac®. Being our first European launch in France, Lodoz® could more than double sales in its second year on the market. Following pan-European approval, we will next launch this product in Italy and Norway, as well as in other countries.

Positive Developments in the Areas Women's Health, Central Nervous System, Thyroid Disorders, and Respiratory Diseases

In the growth market of **women's health** we are concentrating on hormone replacement therapy. With hormone patches of the Fem7® family to alleviate menopausal symptoms and products from our subsidiary Théramex, Monaco, we achieved sales of EUR 135 million. Our top-selling product Lutényl®, a drug prescribed for menstrual disorders, generated sales of EUR 44 million. In 2001, Fem7® Combi, the first seven-day combination hormone patch for sequential HRT, was launched in eight countries. Estreva® Gel, another product for the climacteric period, was introduced in nine additional countries.

www.merck.de/WomensHealth

Baby Gumiran works under cleanroom conditions for Dey, Inc., Napa, California. Our subsidiary specializes in prescription drugs for respiratory diseases and respiratory-related allergies.



Matthew W. Emmens,
new Head of the Ethicals division and
former Head of EMD Pharmaceuticals

Pipeline Strengths Mean Help for Millions of Patients Worldwide

Consistent with more focus on oncology and diabetes, the foremost strategic goal for Merck has been to establish a significant ethical pharmaceutical presence in the United States, the fastest growing market accounting for approximately half of global prescription drug sales. We have already built a solid foundation, establishing a capability for basic research of biologicals in the Boston area with EMD Lexigen, and EMD Pharmaceuticals as regional headquarters in Durham, North Carolina.

Although we have identified oncology and metabolism as the two areas of primary focus, the productivity of our drug discovery area has allowed us to create value in other treatment areas as well. The most recent example was our out-licensing of the antidepressant vilazodone to GlaxoSmithKline in February. This demonstrates Merck's creativity and competence in discovery and our ability to address attractive areas of medical need. We have other non-core projects that could be chosen for either our own commercial efforts, or in partnering or out-licensing arrangements. Areas of opportunity include cardiovascular with a compound for erectile dysfunction and other compounds in the areas of central nervous system and women's health.

Our sales for Glucophage® will be affected by the advent of generic competition in the United States in 2002. In anticipation, we have developed plans to move our R&D pipeline forward as efficiently as possible. In addition, we are actively seeking in-license candidates to strengthen our product line. We are choosing to focus on oncology and metabolism because we believe we not only have the necessary scientific expertise but also the commercial competence to assure ultimate market success.

In the area of oncology we have eight projects in clinical development and twenty clinical trials ongoing. In the case of cetuximab (C225), an in-licensed monoclonal antibody, we are conducting our own multicenter, controlled studies in Europe. We strive for European approval in 2003. Recently, Bristol-Myers Squibb obtained U.S. marketing rights. Merck retains marketing rights for most other territories. In May 2001, we in-licensed Theratope®, an innovative cancer vaccine currently being studied in phase III for patients with breast cancer.

In metabolism we have focused our research on diabetes and the complications that surround this life-altering disease. Our success with the Glucophage® product family has helped us to establish novel research models and has given us the opportunity to collaborate with important scientific leaders. Our hope is to improve the efficacy and safety of treatment for the millions of people with diabetes. We currently have four compounds in clinical trials and more in preclinical development.

The year 2001 has been pivotal for Merck's pharmaceutical business. Beyond record market success, we have put in place a strong foundation for the future – a future filled with hope, promise, and exciting new therapeutic possibilities for patients worldwide.

A new research center near Boston, "Campus 2002", will be the Merck Group's future research location in North America. Scott Lauder and Lauren Lovasco are among EMD Lexigen's fifty-five employees who will move there by the end of 2002.

More than three million people worldwide suffer from so-called alcohol dependence syndrome in which signs of organ damage are already evident. With acamprosate, marketed under the brand name Campral®, we offer a novel drug to help reduce patients' pathological craving for alcohol. This syndrome is related to hyperexcitability in the **central nervous system** (CNS), within the context of withdrawal therapy. Campral® reduces relapse and maintains abstinence in alcohol-dependent patients. We experienced double-digit sales growth in 2001. We have selected Forest Laboratories, Inc., New York, as our partner for marketing and distribution of acamprosate in the United States. We expect to receive marketing approval in 2002.

For vilazodone, an antidepressant with a novel mechanism of action and the most advanced project in our pipeline for CNS diseases, we signed a worldwide development and commercialization agreement with GlaxoSmithKline in February 2001.

www.merck.de/thyroid

Sales of our **thyroid preparations**, which are marketed in over 48 countries, increased 8% to EUR 81 million in 2001. As a global market leader, Merck offers drugs for the treatment of hypothyroidism, hyperthyroidism, and for the prevention and therapy of iodine deficiency disorders, with well-known brands such as Euthyrox®, Novothyral®, Thyrozol®, Jodid, and Jodthyrox®. Worldwide sales of our leading thyroid product, Euthyrox®, rose 12% to EUR 56 million.

www.merck.de/RespiratoryDiseases

Generating global sales of over EUR 20 billion, **respiratory diseases** rank fifth among medical indications in terms of economic importance. Our U.S. subsidiary Dey Inc., Napa, California, specializes in prescription drugs used in the treatment of selected respiratory diseases and respiratory-related allergies. With sales totaling EUR 291 million (+7%), Dey maintained its leading U.S. market position with its sterile unit-dose inhalation solution products. Sales of EpiPen®, a life-saving epinephrine autoinjector for the treatment of anaphylaxis, were 53% higher than in the previous year.

Following FDA approvals two new unit-dose inhalation solutions, DuoNeb® and AccuNeb®, were launched in 2001. DuoNeb® is the first combination inhalation solution available in the United States, indicated for the treatment of chronic obstructive pulmonary disease. AccuNeb® is the first inhalation solution for the treatment of asthma in children. Early sales figures are encouraging.

Pili Feijoo Estella and Granciano Rodriguez Campos carry out controls at Merck Farma y Química S.A. Spain. More than one hundred pharmaceutical products are manufactured at this facility located in Mollet del Vallès, near Barcelona.

Generics

Success in the Growing Generics Market

Sales in the Generics division rose 19 % to EUR 925 million. This increase was largely due to organic growth and in line with our strategic plans for long-term growth. The generics business contributed 28 % of total Pharmaceuticals sales.

The global market for generic pharmaceutical products is estimated to be worth EUR 25 billion, with the top ten companies accounting for one third of this. Started in 1994, the Merck Generics Group is among these and is one of the fastest growing. It specializes in the development, manufacture, and sale of value-added generic pharmaceutical products, totaling 22 companies and operating in 20 countries worldwide. We are highly successful with the rapid marketing approval and launch of off-patent drugs. Our growth has been fueled by an outstanding record of developing and successfully launching generic versions of major brands as they come off patent. Merck Génériques in France, Generics UK in Great Britain, and Alphapharm in Australia already are market leaders in their respective countries and many other companies are growing faster than the market average. With a number of significant brands coming off patent in 2001 we were able to maintain strong growth.

www.merck.de/generics

Significant Growth in France and the United States

In **Europe** generic drug sales posted strong gains, increasing 18 % to EUR 335 million. The strongest performer was France where new product launches, a strong sales team, and increased generic substitution resulted in a 40 % rise in sales. Despite strong government pressure on pricing, our subsidiary Generics UK successfully maintained its leading position.

In Germany sales increased 4.5 % to EUR 71 million despite extremely strong competition. Major products such as Omeprazol dura® and Calcium dura® contributed significantly to the performance, as did a significant number of new product launches. Spain and Portugal also achieved good results with sales doubling during the year. With the launch of our Italian operation in October 2001 we have now completed coverage in all European countries. Merck Generics Italia will take advantage of the new Italian legislation, which will allow greater generic substitution, a trend that is expected to continue.

In **North America** we recorded sales growth of 37 % to EUR 264 million. A principal contributor to this was the launch of fluoxetine tablets (a generic version of the best-selling antidepressant Prozac) in the United States. In the third quarter of 2001, we

Alfredo Villapando works in the granulation department of Alphapharm's manufacturing facility in Brisbane, Australia. Alphapharm is the largest subsidiary of the Merck Generics group.

sold our 43 % interest in the U.S. generics manufacturer Pharmaceutical Resources, Inc. (Par), thus realizing a substantial profit on our original investment. Sales generated by Par were deconsolidated as from September 2001. However, owing to ongoing development and distribution agreements between Par and the Merck Generics Group, we will continue to share in the profits of many Par products such as fluoxetine.

In the emerging markets of **Latin America** we were able to increase sales by 57 % to EUR 13 million, mainly based upon the organic growth in Mexico.

Strong Performance in Australia and Expansion in the Growing Japanese Market

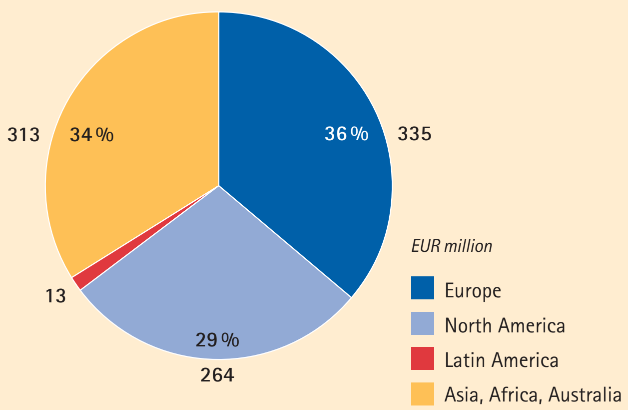
Sales in the region **Asia, Africa, and Australia** increased 7.4 % to EUR 313 million. This was mainly due to the continued outstanding performance of our Australian subsidiary Alphapharm, which is the leading supplier of quality generic drugs and is one of the top five pharmaceutical companies on that continent.

In line with our declared strategic aims for long-term growth, priority has been given to strengthening our position in the Japanese market. The purchase of Mohan Medicine Research Institute in Tokyo, which will become effective in the first quarter 2002, will enhance our already significant presence with Merck Hoei. The purchase complements our product range in Japan especially in the area of injections and infusions. It will double its field sales force, increase production capacity and give us the ability to develop more products locally. We expect the combined company to become the third largest generic company in this market, with considerable potential for growth as the generic prescribing rate increases from the present rate of only 7 %.

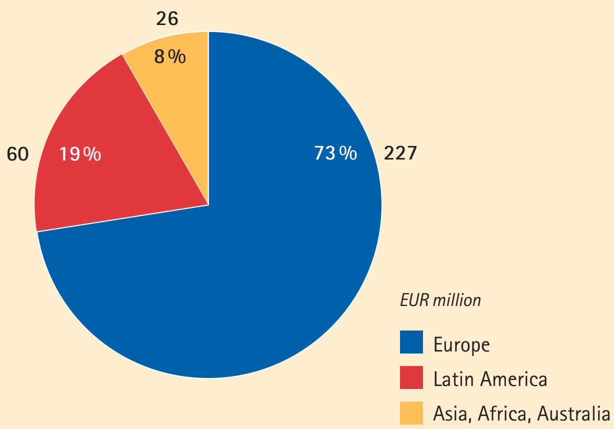
Promising Prospects for Generics in 2002

With the growing trend towards the use of generic products to help control spiraling health care costs, the worldwide market is anticipated to grow by up to 15 % annually. A significant number of major brands are due to lose their patents by 2003, which will fuel growth in this sector. Our Generics division will continue to extend its portfolio of products through internal and collaborative development in order to offer the widest possible range of generic equivalents to the major brands in all therapeutic categories. With up to 20 new chemical entity launches planned in 2002, and increasing entry into areas of more technically challenging formulations adding value to our range, we expect continuing strong growth in the future.

Generics – Sales by Region



Consumer Health Care – Sales by Region



Consumer Health Care

Foundation of a New Company

The **Consumer Health Care** division achieved an increase in sales of 6.7% to EUR 314 million, mainly due to good sales growth in Europe. These sales contributed 9% of Merck's total **Pharmaceuticals** sales.

Sales in **Europe** rose 6.0% to EUR 227 million, with growth of 3.8% and 1.7%, respectively, in France and Germany, two of our three most important markets. Business development was particularly notable in Ireland (+11%), while in Great Britain, our second largest market, sales declined (-2.8%). With sales increasing 3.6% to EUR 60 million, our business in **Latin America** continued to be strong. In the region **Asia, Africa, and Australia**, we recorded gratifying sales growth of 23% to EUR 26 million. We achieved 25% of our global sales with vitamins and minerals, 14% with remedies for coughs and colds, 24% with natural products from marine and plant sources, and 37% with other products.

www.merck.de/ConsumerHealthCare

Merck is one of the medium-sized pharmaceutical companies in the self-medication business worldwide and a major supplier in certain market segments. Our major companies are Seven Seas in Great Britain, Merck Médication Familiale (formerly Monot) in France, and Merck Selbstmedikation (formerly Merck Produkte) in Germany. In 2001, Monot was elected “Pharmaceutical Company of the Year 2000” by a panel of 1,000 French pharmacies.

Strong brands among the vitamin and mineral preparations are Cebion®, Multibionta®, Haliborange®, Sangobion®, and Bion®3. This first probiotic multivitamin was awarded a “Special Commendation for Innovation” by the journal *OTC News* in 2001. Sales of Femibion® multivitamins, for use before and during pregnancy, continue to rise with the introduction of a new iodine-containing formulation. Remedies for colds include Nasivin® and Ilvico®. Médiflor® is number one among medicinal teas in France. Umbrella brands include Kytta and Höfels, which represent well-known herbals. Seven Seas, a main supplier of fish oil and vitamin products, successfully launched NeutraTaste®, the first truly taste-free cod liver oil capsules, in Great Britain in 2001.

Innovation award for Bion®3

We continue to invest in our development facilities, with three sites in Lyon, France, Hull, Great Britain, and Darmstadt, Germany. Besides substantiating the efficacy of our preparations with clinical studies, we are developing new product concepts and plan to establish them as independent brands. In November 2001, we formed Merck Consumer Health Care Holding GmbH, Darmstadt, to provide the independent organizational basis for further expansion of this business.

Susana de Luna gives advice to her customer Fernando Quintela in the beautiful old pharmacy "Maria del Mar Sanchis" in Barcelona, Spain. With their expert knowledge of drugs and health care products, pharmacists are invaluable partners for Merck.

Specialty Chemicals

Akio Osabe checks a glass plate that meets the high standards required for use in a liquid crystal display. He works at our R&D center in Atsugi, Japan.

The **Specialty Chemicals** business sector consists of four divisions which supply high-tech products: liquid crystals for displays, electronic chemicals for chip manufacture, effect pigments and specialty chemicals for the technical industry, as well as active ingredients and chemicals for the cosmetic, pharmaceutical and food industries. Sales rose 2.7% to EUR 1,132 million. The operating result decreased 24% to EUR 165 million. The Specialty Chemicals business sector contributed 15% of the Merck Group's total sales and 19% of the total operating result.

Serving Innovation-Driven Industries

Liquid Crystals

LCD Monitors Gaining Market Share

Merck is the global market leader for the liquid crystals (LCs) used in high-quality displays of LC monitors, notebooks, mobile phones, and many other applications. After two boom years with growth rates of 70–80% each, we experienced a slowdown in 2001 with a decline in sales of 1.0% to EUR 276 million. Although the year started with good growth, the markets for liquid crystal displays (LCDs) stagnated for notebook and telecommunication applications. Strong growth, however, was reported for flat LCD monitors, which are gaining market share. Lower prices for new TFT (Thin Film Transistor) LCDs opened new market opportunities for us.

www.merck.de/LiquidCrystals

Since high-volume LCD production has moved to Taiwan and Korea, we have invested in a new technical center south of Seoul to optimize our service for our increasingly important customers in Korea. Progress was also made at our production facilities for liquid crystal components in Germany, which will allow us to triple production. The investments of our customers indicate that demand will strongly increase starting in the second half of 2002 or at the beginning of 2003. The crisis in the telecommunications market impacted our sales of STN (Super Twisted Nematic) liquid crystal mixtures and of ITO (Indium Tin Oxide) glass. To secure a position in the emerging color LCD market we acquired important technical know-how and invested in a new coating line for ITO on color filters, which went into operation at the end of 2001.

Electronic Chemicals

Significant Growth in Europe

Merck supplies the semiconductor industry with a complete set of process chemicals and various services including supply systems. Our main markets are in Europe and Asia. Sales in this division rose 5.9% to EUR 203 million. While strongly positioned in Europe, we achieved more than 60% of sales in Asia and thus moved our headquarters to Tokyo in 2001. With capacities expanded, we see further growth opportunities in this region and in other areas of the electronics industry.

www.merck.de/ElectronicChemicals

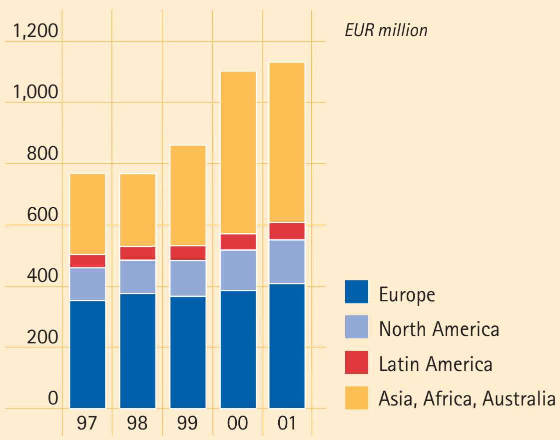
Specialty Chemicals – Key Figures

EUR million	*2001*	*2000*	*Change in %*
Sales	**1,132**	1,102	2.7
Operating result	**165**	217	–24
Return on sales	**14.6%**	19.7%	
EBIT	**109**	102	7.3

Sales by Division

EUR million	*2001*	*2000*	*Change in %*	*Share in %*
Liquid Crystals	**276**	279	–1.0	24
Electronic Chemicals	**203**	192	5.9	18
Pigments/Techn. Industries	**299**	295	1.5	27
Cosmetics, Health, Nutrition	**352**	337	4.6	31

Specialty Chemicals – Regional Sales Development



Pigments/Technical Industries

High Demand for Innovative Effect Pigments

www.merck.de/pigments

Sales in this division increased 1.5% to EUR 299 million. Double-digit growth to EUR 82 million was recorded in North America, whereas sales in Europe, totaling EUR 119 million, and in Asia, totaling EUR 73 million, reached last year's levels.

All production facilities running at full capacity

Sales of industrial pigments increased, especially for high-value applications. In close cooperation with leading design and trendsetting associations and end users we developed new application segments. A leading car manufacturer started to offer the first color version with the new high-tech multicolor Colorstream® pigments. All mica-based pigment production facilities at our three sites – Gernsheim, Germany, Savannah, Georgia, United States, and Onahama, Japan – were running at full capacity throughout the year 2001. Production in our new Gernsheim plant started in mid-2001, with innovative technological solutions for all major process steps. Our innovative strengths in developing new pigment effects will further expand our leading market position.

A well-balanced mix of strategic innovation projects, supported by a strong innovation management system, allows the division to generate an interesting pipeline of new effect categories that will expand our leading market position. We are the leading company for vapor deposition chemicals in optical applications (Patinal®). With new applications of materials in optical communication technologies and in video projection systems the business grew by 3.8%. With the first pilot plant for high-temperature superconductor precursor powders in Gernsheim we can serve leading customers for applications in high-power cables and electric devices. Merck Liphatech achieved growth of 17%, expanding its U.S. market position in agricultural products with new formulations.

Cosmetics, Health, Nutrition

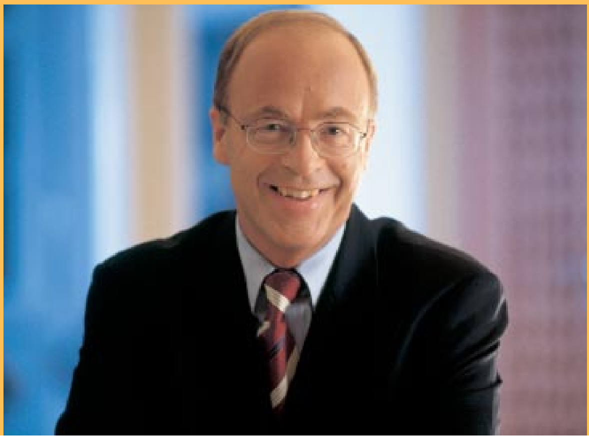
Double-Digit Growth in Cosmetic Pigments

www.merck.de/cosmetics

www.merck.de/CustomerSynthesis

Sales in this division rose 4.6% to EUR 352 million. **Cosmetics** achieved above-average growth, with cosmetic pigments showing an especially strong growth rate of 20%. In 2001, Merck acquired exclusive worldwide distribution rights for a new micro-encapsulation technology that entraps sunscreen chemicals and allows novel combinations of our cosmetic ingredients in one product. **Cosmetics** will be shifted to the **Pigments** division. In the **Health** business field we supply the pharmaceutical industry with raw materials and offer the synthesis of active ingredients. Sales rose 5.0% to EUR 141 million. The Nutrition business field, which offers nutritional supplements for the health food market, saw a decline of 3.8% to EUR 64 million.

Our Japanese researchers developed Xirallic® glittery, crystalline effect pigments. For their work they received the Merck Innovation Award 1999.



Thomas Schreckenbach,
Head of the new Chemicals business sector

Innovations in Chemicals for High-Tech Applications in Research, Industry, and Daily Live

Following a record year with a return on sales (ROS) of 19.7% in 2000, Merck's Chemicals business suffered less than many others from the difficult economic environment in 2001. This is due primarily to the focus of our business on attractive and less cyclical niche markets in which we enjoy leading positions. As of January 1, 2002, core activities were combined to form the new business sector Chemicals (see p. 9). Chemicals remain an integral part of the Merck Group's business strategy to secure our growth and profitability. We established targets to be able to finance our growth from the business' own cash flow as a medium-term goal.

The refocusing of our Chemicals business will further increase market orientation with greater emphasis on higher grade and higher margin products. At the same time new synergies in process management as well as in research and development can be realized. The balance between businesses which are more affected by macroindustrial cycles and those which are more stable will give us strategic flexibility. With many new fields of growth identified, the Chemicals businesses will grow above market average by better meeting our customers' expectations.

The new Life Science Products division is structured according to the needs of the research-driven pharmaceutical, biotechnological, and agricultural industries. It fully reflects the process chain of the life sciences industry and serves the full range of products and services. Being the global market leader with laboratory reagents we have been growing above average for years. Our brand and the characteristic Merck bottles can be found in almost all laboratories worldwide. The business with high-purity chemicals was complemented by test kits, food analytics, microbiology, and chromatographic columns to form the new Analytics and Reagents division. Based on this integrated product offering, the new division takes on the position of a systems provider for laboratory and production. Our business with HPLC instruments for chromatography was transferred to VWR International.

The Liquid Crystals division with its innovative products for flat panel displays in mobile phones, computer monitors, and TVs will continue to be a core business. The Electronic Chemicals division remains unchanged. The portfolio of the Pigments division, where we are among the world market leaders in color effects for the automotive, plastics, and printing industries (Iriodin®, Colorstream®, Xirallic®), was combined with cosmetic pigments and active ingredients for the global cosmetics industry. As production, logistics, order processing, and product management are now coordinated on a global level, we expect to generate substantial synergies. The Cosmetics, Health, Nutrition division was discontinued. We are considering strategic options for the remaining Nutrition business.

In spite of the difficult economic environment for the chemical industry in the near future, the strategic reorientation of our Chemicals business will lead to sustainable growth. It will help to further extend the very good market positions that have already been achieved worldwide by many of our businesses. It is our intention to proceed with our innovation-oriented portfolio management to secure and enhance our leadership in chemicals for high-value solutions.

Our cutting-edge capabilities in the application of physical-technical innovations have made us a preferred supplier for many industries. Tomohiro Kobari and Yasuyoshi Namiki work in our R&D laboratory for liquid crystals in Atsugi, Japan.

Laboratory Products

Mobile Reflectoquant® tests developed by Dieter Tanzer's team provide valuable data on the spot: Merck's innovation for winemakers like Hans-Jürgen Weber won the Gold Medal of the German Winemakers' Association.

The **Laboratory Products** business sector comprises the businesses of our **Laboratory Reagents** and **Scientific Laboratory Products** divisions. Sales increased 4.7 % to EUR 565 million. Included in this figure are also intragroup sales with optimized distribution opportunities through the newly formed VWR International, which rose 16 % to EUR 221 million. At the same time we transferred significant business in Spain, Portugal, and Italy to VWR International. Excluding intragroup sales, **Laboratory Products** contributed 5 % of the Merck Group's total sales. The operating result increased 28 % to EUR 39 million; the share of the Merck Group's total operating result was 4 %.

On Course for Improved Profitability

Laboratory Reagents

Gaining Market Share with Superior Quality

We are recognized as the world market leader in analytical reagents. Sales increased 5.2% to EUR 321 million, the forth time in series above the market average growth. The major product lines, solvents and acids, saw double-digit growth rates in a market growing 2–3% each year. Our leading position with a wide variety of packaging materials including total chemical supply systems was expanded on the basis of superior customer orientation in product development, highest quality standards, and state-of-the-art production facilities and analytics.

www.chemdat.de
www.merck.de/reagents
www.merck.de/analytics

Growth was driven mainly by North and Latin America, with a 13 % rise in sales. In Germany sales increased 5.2%, in Great Britain 9.0%; organic growth in Europe was 6.5%. In Asia sales rose 18%. The integration of additional businesses following the formation of the new business sector **Chemicals** will complement our range of products in the new division **Analytics & Reagents**.

Scientific Laboratory Products

Innovations for the Life Sciences

Sales in this division rose 4.1% to EUR 244 million. We achieved double-digit growth with our bioprocessing, microbiology, and life science reagents. In the latter market segment we were the fastest growing company, selling our products for biomedical research in over 50 countries. Key elements of our success are more than 1,000 new products added to our portfolio in 2001. The market launch of the new Chromolith® line, our prize-winning innovation (Merck Innovation Award, Pittcon Gold Award, R+D 100 Award) in chromatographic separation, was even more successful than expected.

www.merck.de/ LifeScienceProducts

In North America sales rose 20%. While sales of EUR 109 million reached the previous year's level in Europe overall, we saw double-digit sales growth in Germany and Great Britain. In Asia we recorded a decline in sales of 5.3 %, while in Latin America sales rose 3.6%. The business was transferred to the new division **Life Science Products**, structured according to the needs of the research-driven pharmaceutical and agricultural industries.

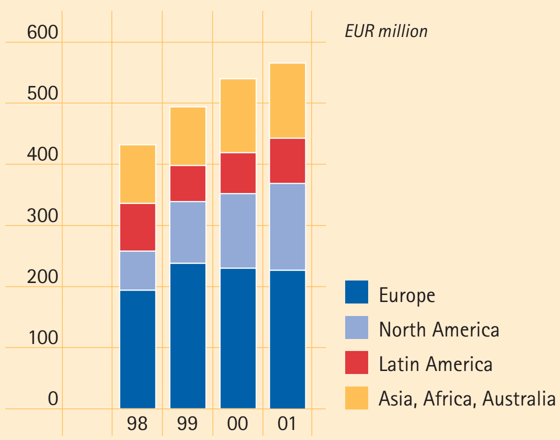
Laboratory Products – Key Figures

EUR million	*2001*	*2000*	*Change in %*
Sales	**565**	540	4.7
Operating result	**39**	30	28
Return on sales	**6.9%**	5.6%	
EBIT	**19**	29	–32

Sales by Division

EUR million	*2001*	*2000*	*Change in %*	*Share in %*
Laboratory Reagents	**321**	305	5.2	57
Scientific Laboratory Products	**244**	235	4.1	43

Laboratory Products – Regional Sales Development



Laboratory Distribution

Handling our customers' orders by friendly and competent employees is the key to our success in the Laboratory Distribution business. Customer contact representative Corrie Rose works at VWR Integrated Business Services in Bridgeport, New Jersey.

With its laboratory chemicals, equipment, instruments, and consumables along with a comprehensive service offering, Merck is the world's leading full-service provider in the laboratory distribution business. In 17 countries more than 6,000 employees of the newly formed company VWR International, Inc. strive hard to deliver excellent service to our more than 250,000 customers worldwide. **Laboratory Distribution** sales rose 16 % to EUR 2,754 million. The operating result increased 107 % to EUR 92 million. This business sector, comprising the two divisions **Merck Eurolab** in Europe and **VWR** in North America, contributed 36 % of the Merck Group's total sales and 10 % of the total operating result. Overall e-business sales were 35 % higher than in 2000.

Excellence in the Science of Supply

Merck Eurolab

Double-Digit Growth in Europe

The business of the Merck Eurolab division is identical to that of the Merck Eurolab Group, headquartered in Zaventem, Belgium. The regional companies, operating in 15 European countries, increased sales 15% to EUR 843 million in 2001, contributing 31% to total Laboratory Distribution sales.

We recorded gratifying sales growth in all of our major markets. Our laboratory supply businesses were particularly successful in Germany and France, our two largest markets. As a full-solution service provider, **Merck Eurolab** meets the needs of more than 125,000 laboratory customers throughout Europe. We represent around 3,000 manufacturers and have more than 40,000 products ready to deliver; our illustrated catalogs are also available on CD-ROM. Our employees ensure customer-friendly service when selecting and delivering all the items of our laboratory range, from reliable supplies of chemicals and consumables through to high-quality laboratory instruments and equipment. We are committed to efficiently managing the entire process chain – from purchasing at the supplier's through to arrival of the laboratory products at the customer's location. Additional services include recycling concepts (Retrologistics®), technical and safety data sheets, and a chemical-technical hotline.

www.vwr.com

With more than 100,000 products available online, **Merck Eurolab** offers innovative e-business solutions to enable cost-efficient and rapid processing of customers' inquiries and orders. In Germany, for example, our sales over the Internet increased dramatically: Within one year more than 1,000 customers switched to e-business channels. For key customers, **Merck Eurolab** has developed highly sophisticated business-to-business (b2b) solutions, with the option of internal budgeting and order authorization for decentralized purchasing.

To underscore the role of Merck's laboratory distribution business as the leading supplier for people engaged in science worldwide, the Merck Eurolab companies will operate under the name VWR International, Inc. commencing January 1, 2002. This unified identity of our North American and European operations will further strengthen our position as a single global organization and help to even further improve the services we offer our customers.

Merck Eurolab to be renamed in 2002

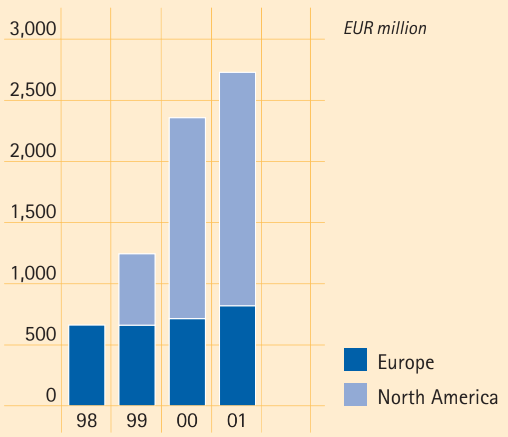
Laboratory Distribution – Key Figures

EUR million	2001	2000	Change in %
Sales	**2,754**	2,374	16
Operating result	**92**	44	107
Return on sales	**3.3%**	1.9%	
EBIT	**91**	24	274

Sales by Division

EUR million	2001	2000	Change in %	Share in %
VWR	**1,911**	1,643	16	69
Merck Eurolab	**843**	731	15	31

Laboratory Distribution – Regional Sales Development



VWR

Further Progress in E-Business Solutions

Sales by the VWR division, which are identical to those of our subsidiary VWR International, Inc. in North America, increased 16% to EUR 1,911 million in 2001. With around 3,000 employees in the United States and Canada, this division contributed 69% to total Laboratory Distribution sales.

Formerly operating under the name VWR Scientific Products, the division has been a wholly owned subsidiary of the Merck Group since 1999. West Chester, near Philadelphia, became the headquarters of VWR International. Over 125,000 customers in the pharmaceutical and chemical industries, the microelectronics segment as well as universities receive reliable service for their production or their laboratory research. The supply of major global customers with laboratory chemicals, consumables, and equipment has developed particularly well. The increasingly important control laboratories – for example in the food industry – also purchase their equipment and chemicals used for quality assurance from VWR. More than 10% of sales are generated in the science education business.

www.vwr.com

The cooperation with our European distribution organization Merck Eurolab Group, both with regard to laboratory supplies for global companies and to purchasing from leading global suppliers, has been further intensified. In North America, a high degree of automation and computerized order processing guarantee error-free, rapid dispatch from five large service centers. An additional 50 regional facilities enable just-in-time deliveries to their point of use. By applying "Process Excellence" principles we have been able to lower costs, achieve the highest stock availability rate in the industry, and sustain an accuracy level of 99.8%. Our customer fulfillment center in Bridgeport, New Jersey, was the first VWR location to achieve ISO 9002 certification.

E-commerce with true "one-stop shopping" is an important business channel for VWR. Sales over the Internet increased 66% compared to last year. We offer new features such as expanded order history, enhanced chemical searching, parametric searching, and more robust approval routing. We are able to seamlessly link our tailored b2b solutions to standard purchasing platforms and customers' enterprise resource planning systems: More than 25 b2b integrations were completed in the United States in 2001. VWR achieved "Ariba Ready" certification from the e-commerce provider Ariba and was also recognized as preferred "SAP Markets Open Content Network Partner" in 2001. Our efforts were honored by two industry awards for our website – the "Best of the Web Safety Award" (*Compliance Magazine*) and a "Silver Award" (*Catalog Age* magazine).

Two top industry awards for VWR International's website

Merck's global Laboratory Distribution business offers more than 350,000 products, representing 3,000 of the world's finest manufacturers. Derek Young works at VWR International's warehouse in Bridgeport, New Jersey.

Walter W. Zywottek,
Chairman and Chief Executive Officer of
VWR International, Inc., West Chester, Pennsylvania

Customer Focus Founded on Process Excellence

Following the combination of Merck Eurolab and VWR Scientific Products into VWR International, Inc. on January 1, 2001, we have successfully completed our first year as a truly global organization. Now operating in 17 countries and focusing on the transatlantic opportunities, VWR International reached very significant milestones in 2001. We expanded our market share with a sales growth of 16% and doubled the operating result. As the natural progression of our customers' purchasing groups, we are adding significant value by providing a wide range of laboratory products as well as customer-specific services. Almost all our businesses expanded very well, especially the Science Education business.

While the past year was a period of sound growth, it was also characterized by organizational changes to create a single global company from two regional market leaders. This task was very demanding, but at the same time the benefits of building a new corporation were significant. We learned to combine the strengths, best practices, and many different cultures of both VWR Scientific Products and Merck Eurolab. We have formed an effective distribution system that offers seamless worldwide services. This is a benefit for our customers and makes us the preferred channel for our vendors.

We can now concentrate on our vision to be the most successful distributor for people engaged in science. To achieve this goal, we are committed to delivering excellence in the distribution of scientific supplies. VWR International is more than just the distributor for the manufacturers we work with. Offering added value by combining customer focus with excellent operating processes – this is our strategy and the goal for every one of our more than 6,000 employees.

We continue to improve our service structure with significant investments in Europe and North America. We are expanding distribution centers and implementing new IT solutions. We also offer our customers and vendors attractive choices in the wide range of e-commerce. However, while state-of-the-art technology is a must, personalized customer relations at the local level are our competitive advantage.

Beginning January 1, 2002, the Merck Eurolab companies have been changing their names to VWR International, Inc. This unified identity not only adds strength to our operations but is also another demonstration of the commitment of the Merck Group to take its distribution business public. Last year's achievements and our undisputed position as the market leader in life science laboratory products distribution today make us confident in saying that we are well prepared for further success and future growth.

Generating annual sales of EUR 2.8 billion, VWR International, West Chester, Pennsylvania, is the global leader in life science laboratory distribution.

The Merck Share

Weathering the Storm

The year 2001 was a disappointing year for the German stock market, with both the DAX and the MDAX falling sharply since the middle of the year. Under the circumstances, our share price held up well. Unfortunately, we missed the upturn towards the end of the year.

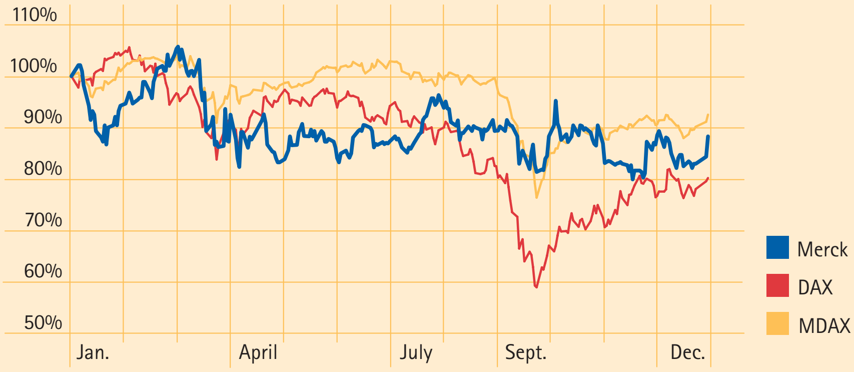
Having appreciated more than 50% in the year 2000, the Merck share lost some of its momentum in the first half of 2001, underperforming the market through most of the period. We did, however, avoid the slide in the second half. This was aided by a flow of good news as well as the absence of bad news such as profit warnings. We believe uncertainties related to the expected generic competition for our blockbuster, the antidiabetic drug Glucophage®, took the dynamics out of the stock, which did not participate in the recovery of stock markets around the world. In the end, the share price fell 13.7% year-on-year, which was in line with the U.S. market (–13.4%), but better than the German market (–14.7%) as well as other important markets whose losses were between –17.2% (Great Britain) and –23.4% (Japan).

The ratio of U.S. shareholders increased further and stands at nearly a quarter of the traded shares (March 2001, see shareholder structure on p. 39). Two thirds of our free-float shareholders are institutional investors. We are convinced that some are still hesitant because of the limited liquidity of our stock. Earnings per share for fiscal year 2001 were EUR 3.66 after tax and minority interest compared with EUR 1.44 in the previous year. In line with our policy of steadily increasing dividends, EUR 0.95 will be proposed at our Annual General Meeting on March 22, 2002.

Share Data[1]	2001	2000
Earnings after tax and minority interest per share in EUR[2]	3.66	1.44
Dividend in EUR	0.95	0.90
Price/earnings (Dec. 28/Dec. 30)	11.34	32.62
High for the year in EUR	49.70	50.00
Low for the year in EUR	37.55	26.30
Year-end closing price in EUR (Dec. 28/Dec. 30)	41.49	47.00
Market capitalization in millions of EUR (Dec. 28/Dec. 30)	7,136	8,084
Theoretical number[3] of shares in millions (Dec. 28/Dec. 30)	172	172
Actual number of shares in millions	45	45

1) All figures relate to the closing price in XETRA trading on the Frankfurt Stock Exchange
2) Net profit after minority interest divided by the theoretical number of shares
3) The calculation of the theoretical number of shares is based on the fact that the general partner's equity capital is not represented by shares. Because the share capital of EUR 117 million is divided into 45 million shares, the corresponding calculation for the general partner's capital of EUR 330.2 million leads to 127 million theoretical shares.

The Merck Share Compared to DAX/MDAX in 2001



Merck KGaA went public in 1995. Shareholders hold 26.2% of the total capital, while the Merck family continues to hold 73.8% through E. Merck as general partner.

Management Report

Best Year Ever in the Company's History

The consolidated sales of the Merck Group rose 12% to EUR 7,528 million in 2001. This growth in sales – virtually all organic – was essentially achieved in the Pharmaceuticals and Laboratory Distribution business sectors. The operating result climbed 18 % to EUR 877 million. Earnings before interest and tax (EBIT) rose 72 % to EUR 1,286 million, with free cash flow amounting to EUR 664 million. We have yet again expanded our expenditures for securing our future: Investments in R&D totaled EUR 577 million (+5.7 %), while spending on property, plant and equipment reached EUR 470 million (+10.2 %); expenses for acquisitions amounted to EUR 74 million.

From fiscal year 2001 on, the consolidated financial statements of the Merck Group contained in this Annual Report will be prepared with Merck KGaA as the parent company rather than E. Merck. E. Merck is the general partner of Merck KGaA without management authority. The differences to the previous presentation can be disregarded in the consolidated income statement. In the balance sheet, these differences result in particular in a lower equity ratio. All figures for the previous year were adjusted accordingly.

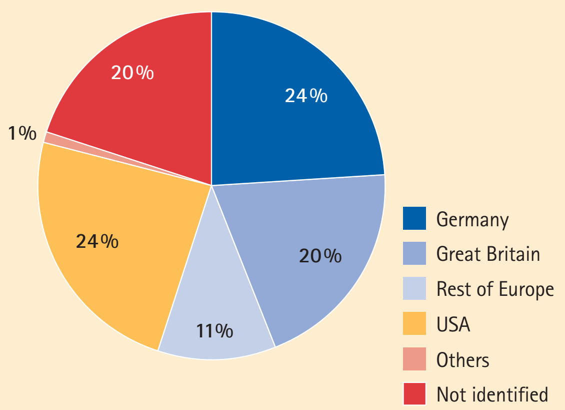
The Macroeconomic Environment

The cooling down of the global economy in the first half of the year was accelerated by the terrorist attacks of September 11, and spread from the United States to more and more countries around the world. The severe loss of confidence among investors and consumers, as well as the downswing in the IT sector, led to a further deterioration of an already difficult economic situation. Sales and earnings expectations of companies also worsened considerably in many countries as a consequence of the tightening of fiscal policy and also as a result of the dampening effect of high oil prices. Europe still achieved slight economic growth in the fourth quarter, while the United States – after ten years of uninterrupted growth – slid into economic recession. In connection with the equally weak economic situation in Japan, this resulted in a low exchange rate of the euro against the dollar and yen, an aspect that benefited European export. The euro area achieved only slight economic growth of around 2 % in 2001. With an increase in its GNP of less than 1 %, the German economy depressed the European average, while the unemployment rate remained virtually unchanged at 9.6 %, and the investment rate fell compared with the previous year. The upward trend in the Asian-Pacific region slowed, though Latin America was able to achieve moderate economic growth despite the lower growth rates in Mexico and Brazil and the crisis in Argentina.

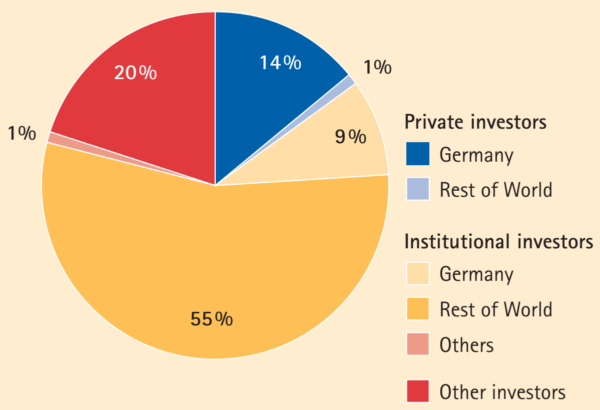
Market Conditions in the German Pharmaceuticals and Chemicals Industry

In 2001, the German chemical industry suffered a drop in production output to a level below that of the previous year. The slight growth in sales was due solely to higher producer prices. The ever-stronger down-

Shareholder Structure by Country



Shareholder Structure by Investor



swing in the industry affected all business sectors with the exception of pharmaceutical and agrochemical production. Chemical products account for a market share of around 10% of all goods sold worldwide. Germany is the second largest export nation in the world, on a par with the United States for chemical exports; pharmaceutical products account for around half of these. Since the German chemical industry generates about two thirds of its sales abroad – one half thereof in Europe – it is strongly affected by the weak global economic situation. The number of people employed by the industry decreased, though only slightly, due to the decrease in production.

Successful Business Development of the Merck Group

Our business development during 2001 – with a sales growth of 12% – was highly encouraging. Global sales amounted to EUR 7,528 million, which represents a year-on-year increase of EUR 788 million. The sales increases in all four quarters were essentially boosted by high organic growth, which at 12% was nearly double that of the previous year. Currency effects, acquisitions, and disposals had no influence, since positive and negative effects balanced out at zero.

Components of Growth	Quarter 1	Quarter 2	Quarter 3	Quarter 4	2001
Sales growth (year-on-year) in %					
Organic	9.9	13.2	15.7	8.0	11.7
Currency effects	1.6	2.6	–1.5	–2.1	0.1
Acquisitions	0.7	0.4	–0.2	–1.3	–0.1
Total	**12.3**	**16.3**	**14.0**	**4.6**	**11.7**

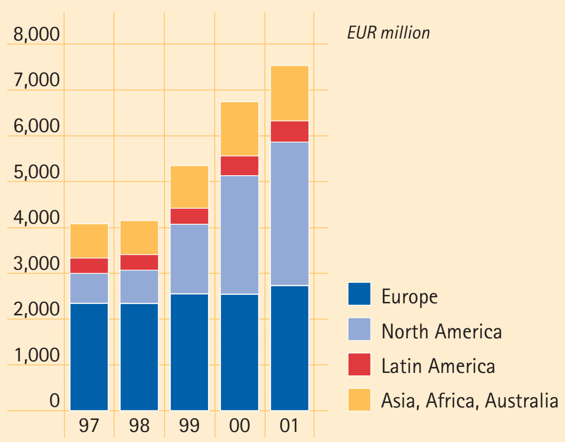
Greatest Regional Growth in North America

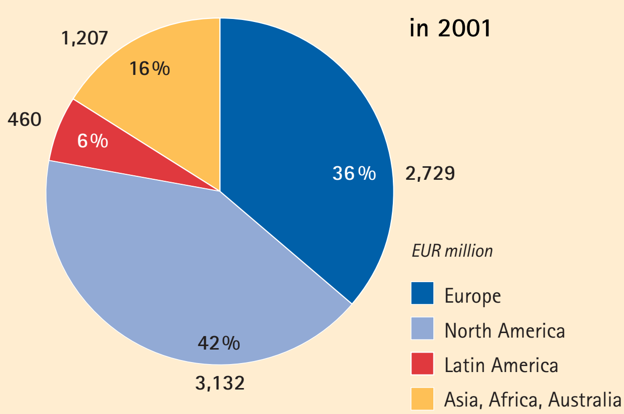
With an increase in sales of 21%, **North America** is not only our largest sales region, but also our most important growth market. Sales of EUR 3,132 million – generated primarily by the Pharmaceuticals and the Laboratory Distribution business sectors – represent 42% of total Merck Group sales.

Sales by Region	2001	2000	Change		Share
	EUR million	*EUR million*	*EUR million*	*in %*	*in %*
Europe	2,729	2,553	176	6.9	36.3
North America	3,132	2,585	547	21.1	41.6
Latin America	460	432	28	6.5	6.1
Asia, Africa, Australia	1,207	1,170	37	3.2	16.0
Total	**7,528**	**6,740**	**788**	**11.7**	**100.0**

Europe is the second most important market for the Merck Group. At EUR 2,729 million, sales increased by 6.9% year-on-year. Sales in the euro area rose 5.9% to EUR 2,508 million. Sales in Germany increased 2.3%

Sales by Region





to EUR 722 million. Europe's share of sales decreased from 38% in the previous year to 36% in 2001; five years ago, Europe accounted for nearly two thirds of total sales.

Sales in **Latin America** rose 6.5% to EUR 460 million, which corresponds to a share of 6% of total Group sales. In Mexico, our largest market in the region, we made particularly good progress, achieving sales growth of 9%, above all with pharmaceutical products. In **Asia, Africa and Australia**, we increased sales 3.2% to EUR 1,207 million.

Strong Organic Growth in Pharmaceuticals and Laboratory Distribution

Sales generated by **Pharmaceuticals** rose 14% to EUR 3,323 million, and thus account for 44% of total Group sales. Climbing 14% to EUR 2,084 million, the Ethicals division made the strongest contribution to this sales growth, with the decisive role being played by the Glucophage® family of antidiabetics and the Concor® family of cardiovascular drugs. We have selected the pharmaceutical company Forest Laboratories, Inc. as our sales partner for our antialcoholic agent acamprosate in the United States. Sales in our Generics division increased 19% to EUR 925 million, although we divested our interest in the U.S. generics manufacturer Pharmaceutical Resources, Inc. in September and no longer consolidate its sales since then. Sales by the Consumer Health Care division rose 6.7% to EUR 314 million.

Organic Growth	Quarter 1	Quarter 2	Quarter 3	Quarter 4	2001
compared with previous year's quarters in %					
Pharmaceuticals	9.4	17.3	25.2	10.0	15.5
Specialty Chemicals	10.8	5.4	3.1	-2.2	4.0
Laboratory Products	9.1	6.6	5.7	8.8	7.5
Laboratory Distribution	10.2	13.8	11.3	9.6	11.2
Merck Group	**9.9**	**13.2**	**15.7**	**8.0**	**11.7**

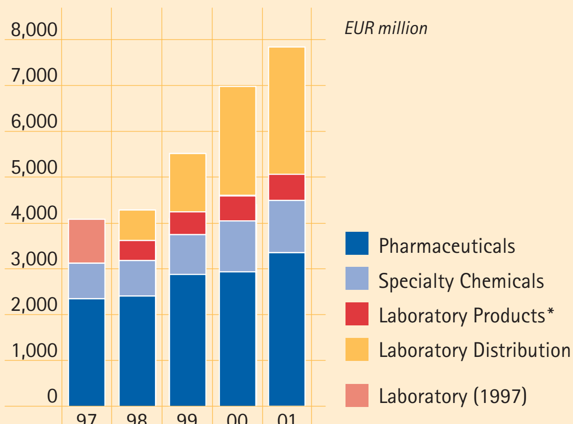
Specialty Chemicals recorded sales totaling EUR 1,132 million. Its share of total Group sales was 15%. Therefore, despite the weak economy in Asia, sales in this business sector remained on the high level that we had reached in the years 1999 and 2000 due to enormous growth rates, particularly in the Liquid Crystals division.

Laboratory Products recorded a growth in sales of 4.7% to EUR 565 million. The Laboratory Reagents division increased its sales with classical laboratory chemicals by 5.2%; the Scientific Laboratory Products division added a further 1,800 new products to its portfolio and achieved a sales growth of 4.1%.

Laboratory Distribution recorded a rise in sales to EUR 2,754 million, increasing its growth steadily from one quarter of the year to the next. Its share of total Group sales was 36% at year-end. In spite of the weak U.S. economy, the U.S. division of the holding company VWR International achieved sales growth of 16%, while growth in the European companies of this business sector was 15%.

Further information on the individual business sectors is provided in the respective sections starting on page 18.

Sales by Business Sector



*including intragroup sales

Outstanding Earnings – Substantial Increase in Return on Sales in Virtually All Business Sectors

The operating result of **Pharmaceuticals** amounted to EUR 581 million, up 28% on the previous year. The outstanding success of our ethical products allowed us to continue our above-average investments in R&D and the expansion of our U.S. subsidiary, EMD Pharmaceuticals. Return on sales (ROS) increased from 15.6% to 17.5%, while return on capital employed (ROCE) amounted to 20.4%, thus exceeding our ambitious target of 20% for the first time in spite of our substantial investments for the future.

At EUR 165 million, **Specialty Chemicals** was unable to repeat its excellent operating result from the previous year, which had risen 186%. In addition to the economy-related decline in sales experienced by the high-tech industries, write-downs on inventories also impacted the result. Return on sales (ROS) decreased from 19.7% to 14.6% and is therefore only slightly below our long-term target of 15%.

Laboratory Products increased its operating result by 28% to EUR 39 million. This development was due primarily to a growing share of new products as well as the opening up of new high-tech markets in Japan and the United States. Return on sales (ROS) rose accordingly from 5.6% to 6.9%.

Key Figures of the Business Sectors	ROS	ROCE
in %		
Pharmaceuticals	17.5	20.4
Specialty Chemicals	14.6	11.3
Laboratory Products	6.9	6.1
Laboratory Distribution	3.3	5.9
Merck Group	**11.6**	**13.5**

ROS = Return on sales · ROCE = Return on capital employed

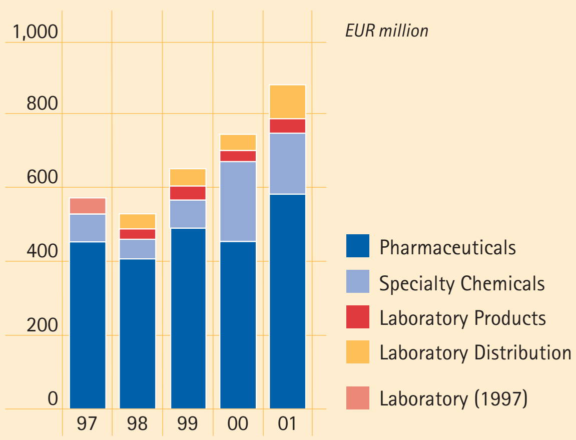
The operating result of **Laboratory Distribution** (VWR International) amounted to EUR 92 million, representing an increase of 107%. The result has increased year-on-year now in five consecutive quarters. Restructuring costs and substantial investments in a common infrastructure, an integrated logistics concept, and a standardized information system in 2000 resulted in an increase in return on sales (ROS) from 1.9% to 3.3%.

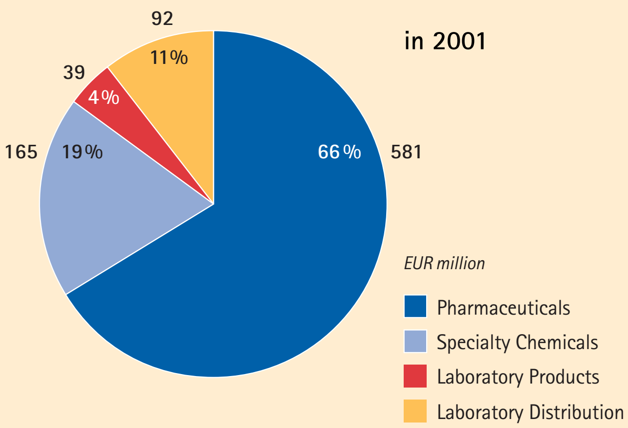
Operating Result and EBIT at Record Levels

The operating result of the Merck Group overall was EUR 877 million, 18% higher than in the previous year. Any effects from currency translation and acquisitions were negligible, meaning that this growth rate reflects the actual excellent development of our business.

In the year under review, pretax proceeds of EUR 351 million from the divestiture of our interest in Pharmaceutical Resources were posted as an exceptional item after the operating result. An additional exceptional item from the disposal of ImClone shares is also recognized here. These items are offset against allocations to

Operating Result by Business Sector





provisions for litigation risks, environmental measures and closures, leaving net earnings from exceptional items of EUR 410 million. Thus, earnings before interest and tax (EBIT) increased 72%, amounting to EUR 1,286 million. EBITDA (EBIT before depreciation and amortization) was 43% above the corresponding figure for the previous year.

Result of the Merck Group	Operating Result	Exceptional Items	EBIT	EBITDA
EUR million				
Pharmaceuticals	581	485	1,067	1,269
Specialty Chemicals	165	-55	109	198
Laboratory Products	39	-19	19	57
Laboratory Distribution	92	-1	91	170
Merck Group	**877**	**410**	**1,286**	**1,694**

The financial result (net expenditure) dropped slightly, primarily due to the lower exchange-rate losses compared to the previous year. Interest expenses contained in this item were nearly identical to those in the previous year. Profit before tax was EUR 1,078 million. Due to the exceptional income from the disposal of our interest in Pharmaceutical Resources, Inc., income tax rose considerably and totaled EUR 423 million. Without this effect, the tax rate would have been 46.6%. Profit after tax was EUR 655 million. Excluding exceptional items, it was 17% higher than in the previous year.

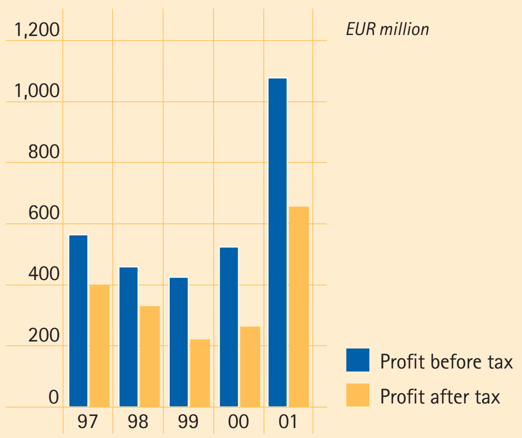
Effect of Exceptionals	2001		2000	
EUR million		*Before exceptional items*		*Before exceptional items*
Profit before tax	1,078	669	524	523
Income tax	-423	-312	-262	-217
Profit after tax	655	357	262	306
Tax rate	**39.3%**	**46.6%**	**50.0%**	**41.5%**

The Executive Board will propose to the Annual General Meeting the payment of a dividend of EUR 0.95 per share from these earnings, 5.6% more than in the previous year.

Good Financial Position and High Free Cash Flow

As shown in the cash flow statement contained in the consolidated financial statements, the net cash flow from our operating activities declined 6% to EUR 562 million. Free cash flow resulting from net cash flow from investing activities was extremely high at EUR 664 million, due primarily to net cash flow from the disposal of interests.

Profit before and after Tax



Improved Balance Sheet Structure and Equity Ratio

Total assets remained virtually at the same level as the previous year. The structure of assets also remained largely unchanged. On the liabilities side, however, the equity ratio rose significantly and is now 28%. The proportion of total assets reflecting financial obligations dropped accordingly. The decisive factors behind this development were the excellent earnings situation in 2001, as well as the profit from the disposal of interests posted as an exceptional item. The gearing ratio of net equity to net financial obligations (financial obligations less cash and cash equivalents) improved considerably and is now 1 : 0.98.

Further details on the financial position and the balance sheet are provided in the consolidated financial statements and the relevant explanatory notes starting on page 49.

Slight Increase in Number of Employees

A total of 34,294 employees worldwide made 2001 the most successful year ever in the 333-year history of the company. The increase of 2.3% compared to the previous year is due to substantial recruitment in some companies of the Group – in particular in Europe and Asia – as well as to the consolidation of a number of small companies. Since the increase in staff costs was lower than the increase in sales, the staff-cost ratio dropped to 23%.

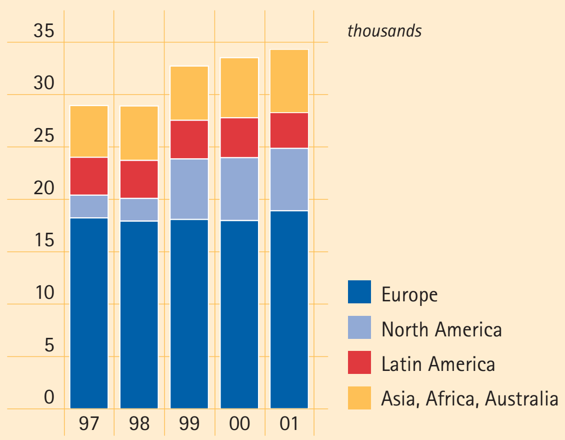
Substantial Investments in Property, Plant and Equipment

We invested a total of EUR 470 million in property, plant and equipment, an increase of EUR 43 million or 10% compared to the previous year. In relation to sales, this represents an investment ratio of 6.2%. The **regional breakdown** shows that the focus was – as in the previous year – mainly on Germany, France, the United States, and Southeast Asia.

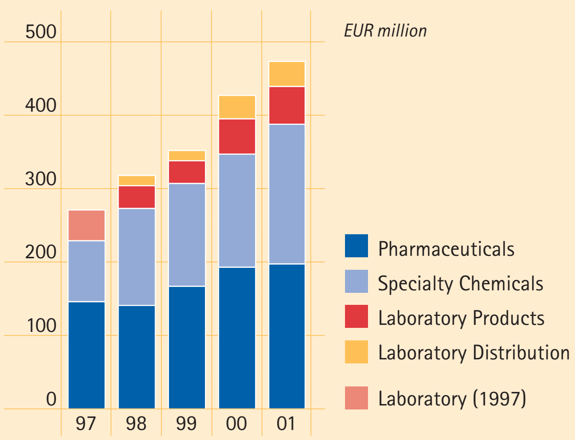
Pharmaceuticals invested a total of EUR 196 million worldwide. The new production facility for solid pharmaceuticals in Darmstadt, which began its operations in 2000, was expanded by 70% in order to increase its capacity. Due to the strong demand for our antidiabetic products, we also expanded the facilities at our French locations in Calais, Meyzieu, and Semoy. At EMD Lexigen in Boston, United States, we continued to invest in the construction of our new R&D center, as well as in pilot plants for protein production. Merck Generics invested in new production facilities in Ireland and Australia.

Specialty Chemicals and **Laboratory Products** invested a total of EUR 240 million. An investment in the Darmstadt and Gernsheim sites – totaling EUR 250 million over several years – is currently being used to expand the synthesis capacities for the production of liquid crystals (LCs). In addition to expanding LC mixture facilities in Korea, Merck Display Technologies in Taiwan also increased its capacities for coating special glass for LC displays by 50%. In order to cope with the rising demand for our effect pigments, we expanded our manufacturing plants in Gernsheim (Germany), Savannah (United States), and Onahama (Japan). In Darmstadt, we put into operation a new facility for packaging and labeling solids and salts, and we invested in a production plant for the new Chromolith® separation columns, while a new technical pilot plant for customized synthesis started up in Switzerland.

Number of Employees as of Dec. 31



Investment in Property, Plant and Equipment



Research and Development Running at High Level

Our expenditure for research and development, which has been quite substantial for a number of years, increased 5.7 % to EUR 577 million in the year under review. The research-spending ratio, based on sales less the Laboratory Distribution business, remained constant at 12 %. Approximately one half of research funding was spent in Germany, home in particular to the infrastructure for full clinical development, as well as many other research, drug-regulatory and patent departments necessary for pharmaceutical development. Other major competence centers are located in Lyon and Chilly-Mazarin (France), Aberdeen (Great Britain), Barcelona (Spain), and Lexington (United States). The most important chemical research locations are Southampton (Great Britain), San Diego (United States), and Onahama and Atsugi (Japan).

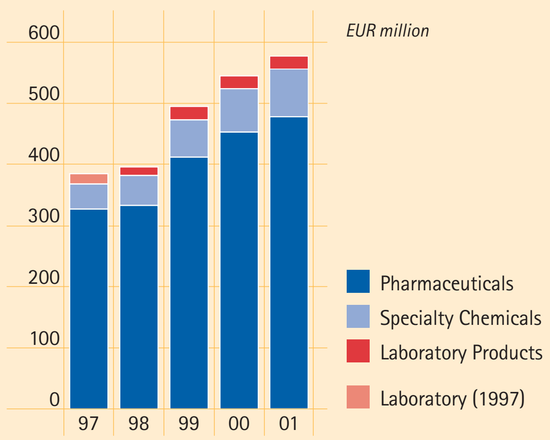
With a total of EUR 478 million, some 83 % of all research expenditure was allocated to **Pharmaceuticals**, as in the previous year. Spending on research in relation to sales amounted to 14 % in this business sector as a whole. At EUR 406 million, the research-spending ratio in relation to sales was 20 % in the Ethicals division, which is particularly research-intensive. Our commitment to R&D - which is comparatively strong for this sector of industry - was focused mainly on driving forward our eight oncology projects which are currently in various phases of clinical trial, since there is a high medical demand for our innovative substances in the field of cancer therapy. Cetuximab (C225), licensed from ImClone Systems, Inc., New York, showed first promising results from clinical phase II trials. Large-scale clinical phase III studies are currently being planned or conducted. Merck holds global rights for this highly promising antibody, excluding North America. Based on our own clinical studies and approval by the European agency EMEA, we expect cetuximab to be launched in several European countries in 2003. Merck also holds global rights, excluding North America, for another highly promising antibody, the biological cancer vaccine mitumomab (BEC2), which is already in clinical phase III development. We have concluded an agreement with the biotech company Biomira, Inc., Edmonton, Canada, for close cooperation in the further development and marketing of two vaccines: Theratope® to treat metastasizing breast cancer, and BLP25 against lung cancer.

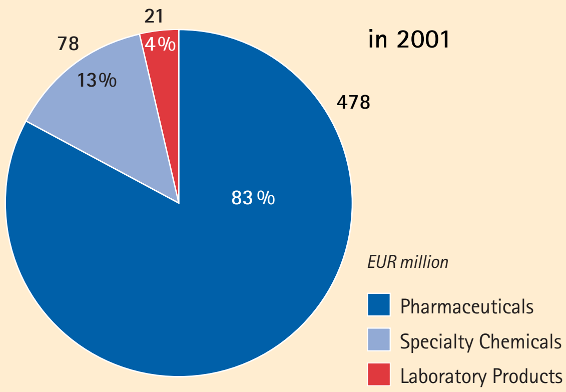
In the indication of metabolic disorders, which is one of the Merck Group's strong therapeutic areas, a U.S. study revealed that prophylactic treatment with Glucophage® reduces the risk of developing type 2 diabetes by almost one third. Three other agents for the treatment of this metabolic disease are currently undergoing clinical phase II trials.

In the cardiovascular research area we are concentrating our efforts on novel therapeutic approaches and the prevention of acute and chronic cardiac diseases. Our beta-blocker Concor®COR is already available on the market for the new indication of chronic heart failure. The most recent results for nicorandil suggest that there are new therapeutic approaches that deserve further investigation for the treatment of angina pectoris.

In the area of central nervous system research, we are currently working on promising drugs for treating depression, Parkinson's disease, and pain. We signed a global license agreement with GlaxoSmithKline. for the development and marketing of a substance from our own CNS research laboratories, an antidepressant

Research and Development by Business Sector





with a novel mechanism of action that is currently in phase II clinical development. Before the end of 2002, we hope to have concluded three out of a total of five studies in the area of hormone replacement therapy along with their submissions for marketing approval.

We increased our R&D expenditure in the **Specialty Chemicals** business sector by 9.0% to EUR 78 million. The greatest share of this was allocated to research in the Pigments division at our locations in Darmstadt, Gernsheim, and Onahama (Japan). These research efforts focus on novel color and luster effects for attractive pigments, and a number of promising projects for the Technical Industries business. These include vapor-deposition chemicals and new materials for high-temperature superconductors. In the core business Liquid Crystals, we are constantly orienting ourselves to the changing demands made on our mixtures for use in displays for notebooks, monitors, projection systems, and television sets. Our R&D activities extend as far as color filters and glasses, and are carried out at several centers around the globe.

At EUR 21 million, our R&D expenditure in the **Laboratory Products** business sector remained virtually unchanged. In San Diego, the Scientific Laboratory Products division developed several hundred new biochemical reagents for use in protein purification in life sciences research, for example. We also expanded our chromatography range for the successfully launched Chromolith® columns, as well as the number of our analytical rapid test kits.

Further information on research and development is provided in the section entitled “Innovation” starting on page 12.

State-of-the-Art Purchasing

The organizational procedures for global strategic purchasing of essential goods and services in the Merck Group have now been concluded. At EUR 420 million, the volume involved is equivalent to over one fifth of the Group’s purchasing operations excluding Laboratory Distribution. The plan is being implemented in six global and 16 regional projects and has so far resulted in cost savings of approximately EUR 40 million. Other projects are currently being prepared in four ongoing studies. An annual contribution to the operating result of EUR 37 million is expected through the dynamic development of regional coverage and innovative purchasing strategies.

Expansion of Environmental Protection and Safety Measures

The environmental protection and safety targets that have been set and achieved as part of internal audits have led to a reduction of ongoing costs, as well as the potential for future improvement in terms of sustainable development. Details on the successful implementation of our global guidelines are published in our Responsible Care® report. Aspects deserving particular mention in 2001 are the certification of business operations at the Darmstadt and Gernsheim locations according to the environmental standard ISO 14001, as well as our contribution toward cutting CO_2 emissions, made possible by the implementation of a new heating power plant that reduces emissions by almost one half.

Risks and Successful Risk Management

Risk management system with an early warning system We further expanded our risk management system by continually integrating operational and strategic planning aspects. We also worked on our early warning system. All risks and risk control measures are accessible to the “risk owners” by way of a database. The risk management system is described on our corporate intranet. Our auditing department checks individual risks with regard to the extent of damage they could cause and the probability of their occurrence. In-depth discussions were held with the “risk owners” in 2001. The Executive Board is kept informed about major risks and deals with them accordingly.

Business and production risks For any research-intensive company, especially in pharmaceuticals, there is the general risk that, due to the results of preclinical and clinical trials, research projects will have to be discontinued before the expected return can be generated. We have an effective project management and controlling system in place to cope with these risks. We perceive a specific risk in the further development of our antidiabetic Glucophage® due to the generic competition on the U.S. market since the end of January 2002.

Optimized protection against damage risks This includes the risk of fire, explosion, and environmental damage, as well as risks arising from attacks on plants or systems. We have checked and continued to improve our safety and security systems in particular at our Darmstadt location, in order to keep unauthorized access to our operating areas to an absolute minimum. As far as possible, we have concluded appropriate insurance policies to protect ourselves against damage and we have developed contingency plans that are regularly checked.

Secured financial risks Derivative financial instruments are used exclusively to protect Merck against currency and interest risks. These measures are explained in detail in the notes to the consolidated financial statements.

Legal risks with no significant impact Legal disputes involving different parts of the Merck Group are currently in process. Due to the imponderables always associated with lawsuits, the outcome of the individual cases cannot be predicted with any degree of certainty. This applies especially to risks associated with the vitamin antitrust proceedings. However, due to the special provisions we have set up for these, and based on our current state of knowledge, we are able to state that none of these proceedings will have a material adverse effect on the Group's economic situation.

Overall risk limited Due to the positive development of the operating result combined with the cash-flow situation, the continued existence of the Merck Group is not currently at risk, nor are there any identifiable risks that threaten its existence.

Outlook with an Unaccustomed Sense of Uncertainty

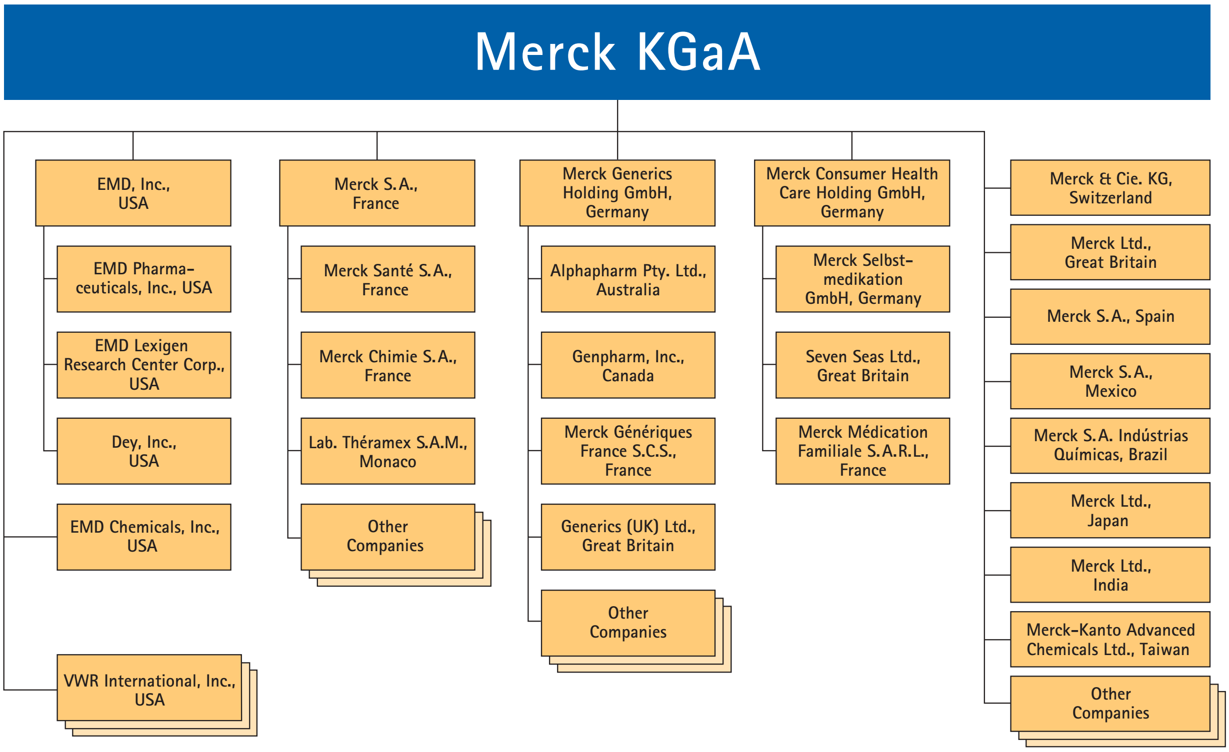
The extreme uncertainty of the current global situation makes it difficult to predict the future. Barring the possibility of a crisis, however, the International Monetary Fund regards the prospects for the global economy in 2002 as positive. The majority of economic research institutes are predicting an invigoration of the economy in the first half of the year and global growth of about 3.5%. This would be about one percentage point higher than the level for 2001. At the same time, a certain degree of recovery is anticipated for the U.S. and European economies. With the exception of Japan, Asia, too, is expected to enjoy a higher growth rate.

The outlook for the German economy in 2002 is less optimistic. Current forecasts predict real growth of GNP of between 0.5% and 0.75%, accompanied by an inflation rate of 1.5%. Against this backdrop, we expect moderate business prospects for most divisions of the Merck Group in 2002. For the Group as a whole, the effects of generic competition in the U.S. market for Glucophage® since January 2002 cannot be compensated short-term, especially in terms of profit. We are encouraged by the strategic orientation of our businesses, the motivation of our employees, and our strong organic growth in 2001. Our future investments will continue to focus on cancer therapy and on the expansion of liquid crystal production. We will continue to finance our activities from the cash flow of the business sectors.

Besides the impact of generic competition for Glucophage®, we do not anticipate any new business risks.
As a consequence of our new structure in the two business sectors Pharmaceuticals and Chemicals and the global responsibility of the individual divisions for their own business operations, we will adapt the legal structures and the business structures of the Merck Group to each other wherever possible and whenever necessary. Very little will change regarding the future structure of our Group.

The continuous improvement in the sales and operating result of our Laboratory Distribution lead us to anticipate that the envisaged IPO of VWR International is on track. Following the concentration of our Chemicals business on innovative growth markets, this business sector should be less dependent on macroeconomics and, despite a modest sales growth, should be able to improve its profitability.

In Pharmaceuticals, we expect that sales of Generics and Consumer Health Care will increase significantly. In Ethicals, the recently strong sales growth will flatten out. A decrease in sales due to the generic competition for Glucophage® in the United States will be partly offset by other products and in other regions. The impact on the operating result cannot be compensated in the short term. Nevertheless, we will continue to invest in research and development. In the interest of thousands of cancer patients, we feel obliged to closely pursue a speedy market launch of urgently needed drugs emerging from our oncology research.



This simplified structure shows only the major companies of the Merck Group. Altogether 276 companies belong to the Merck Group. Of these, 192 run business operations in a total of 55 countries.

Merck KGaA Management as of Dec. 31, 2001

Executive Board

Prof. Dr. Bernhard Scheuble, *Chairman*

Dr. Michael Römer, *Vice Chairman*

Dr. Michael Becker

Matthew W. Emmens*

Prof. Dr. Thomas Schreckenbach

Dr. Jan Sombroek

**Nominated as Member of the Executive Board, subject to approval of an amendment of the Articles of Incorporation by the Annual General Meeting 2002.*

Supervisory Board

Dr. Heinrich Hornef, *Chairman*

Flavio Battisti**, *Vice Chairman*

Jon Baumhauer

Klaus Brauer**

Prof. Dr. Christoph Clemm

Claudia Flauaus**

Michael Fletterich**

Dr. Reinhart Freudenberg

Dr. Michael Kasper**

Dr. Arend Oetker

Hans Schönhals**

Peter Zühlsdorff

*** Employee representative*

Merck Group
Consolidated Financial Statements
as of December 31, 2001

Balance Sheet

Assets

EUR million	Note	Dec. 31, 2001	Dec. 31, 2000
Noncurrent assets			
Intangible assets	(1)	2,036.2	2,052.4
Property, plant and equipment	(2)	2,151.4	1,967.9
Long-term investments	(3)	638.7	790.5
		4,826.3	**4,810.8**
Current assets			
Inventories	(4)	1,269.5	1,204.9
Trade accounts receivable	(5)	1,157.8	1,161.3
Other receivables and other assets	(6)	366.3	421.6
Cash and cash equivalents	(7)	464.2	502.5
		3,257.8	**3,290.3**
Deferred tax assets	(8)	**171.3**	**134.3**
		8,255.4	**8,235.4**

Equity and liabilities

EUR million	Note	Dec. 31, 2001	Dec. 31, 2000
Net equity	(9)		
Equity capital		447.2	447.2
Reserves		1,848.5	1,423.9
		2,295.7	1,871.1
Minority interest		40.8	75.7
		2,336.5	**1,946.8**
Provisions			
Provisions for pensions and other post-employment benefits	(10)	934.2	905.6
Other provisions	(11)	657.4	604.4
		1,591.6	**1,510.0**
Current liabilities	(12)		
Financial obligations	(13)	2,759.3	3,313.3
Trade accounts payable	(14)	525.2	477.6
Other liabilities	(15)	900.7	895.5
		4,185.2	**4,686.4**
Deferred tax liabilities	(16)	**142.1**	**92.2**
		8,255.4	**8,235.4**

Income Statement

EUR million	*Note*	*2001*	*2000*
Sales	(17)	**7,528.4**	**6,740.4**
Cost of sales	(18)	–3,682.1	–3,332.6
Gross margin		**3,846.3**	**3,407.8**
Marketing and selling expenses	(19)	–1,778.9	–1,587.2
Administration expenses	(20)	–515.5	–509.6
Other operating income and expenses	(21)	–163.6	–71.0
Research and development	(22)	–577.3	–546.0
Patent and license revenues	(23)	169.3	155.5
Investment result	(24)	10.9	10.7
Amortization of goodwill	(25)	–114.6	–114.1
Operating result		**876.6**	**746.1**
Exceptional items	(26)	409.6	0.8
Earnings before interest and tax (EBIT)		**1,286.2**	**746.9**
Financial result	(27)	–208.0	–223.2
Profit before tax		**1,078.2**	**523.7**
Income tax	(28)	–423.2	–261.9
Profit after tax		**655.0**	**261.8**
Minority interest	(29)	–25.8	–14.6
Net profit after minority interest		**629.2**	**247.2**

Segment Reporting

– Notes to Segment Reporting are given on page 73 –

EUR million	Pharma-ceuticals 2001	2000	Change in %	Specialty Chemicals 2001	2000	Change in %	Laboratory Products 2001	2000	Change in %
External sales	3,322.7	2,914.0	14.0	1,131.5	1,102.3	2.7	565.4	540.0	4.7
Operating result	581.1	454.5	27.9	164.8	216.9	-24.0	38.9	30.4	27.9
Exceptional items	485.3	137.6	252.7	-55.4	-114.9	-	-19.6	-1.9	-
Earnings before interest and tax (EBIT)	1,066.5	592.0	80.1	109.4	102.0	7.3	19.3	28.6	-32.4
Operating assets	2,858.0	2,839.8	0.6	1,537.9	1,383.8	11.1	638.2	646.9	-1.3
Trade accounts payable	244.9	200.7	22.0	68.2	69.4	-1.7	25.8	31.0	-16.6
Investments in property, plant and equipment	195.8	193.2	1.3	189.3	153.7	23.2	50.8	47.6	6.8
Free cash flow	639.0	334.0	91.3	-72.8	-28.6	-	29.6	-10.4	-
Research and development	478.5	453.0	5.6	77.7	71.3	9.0	20.7	21.3	-2.9
Number of employees	17,805	17,138	3.9	6,216	6,167	0.8	4,215	4,294	-1.8

EUR million	Germany 2001	2000	Change in %	France 2001	2000	Change in %	Rest of Europe*) 2001	2000	Change in %	North America 2001	2000	Change in %
External sales by customer location	722.5	706.4	2.3	738.4	675.8	9.3	1,268.6	1,170.8	8.3	3,131.7	2,585.5	21.1
External sales by company location	901.7	896.0	0.6	1,280.1	1,026.3	24.7	1,159.3	1,089.2	6.4	2,688.2	2,320.6	15.8
Intragroup sales with other regions	627.3	556.5	12.7	101.6	86.7	17.2	122.8	129.6	-5.3	47.3	43.9	7.6
Operating result	-31.3	10.8	-	489.8	312.8	56.6	116.6	155.0	-24.8	109.7	73.0	50.3
Exceptional items	98.2	-268.2	-	-	-6.1	-	-	306.4	-	311.4	-13.3	-
Earnings before interest and tax (EBIT)	67.0	-256.6	-	489.8	309.3	58.4	116.5	464.2	-74.9	421.1	59.7	-
Operating assets	1,996.6	1,823.4	9.5	722.1	779.4	-7.3	1,055.4	1,047.0	0.8	1,790.7	1,862.9	-3.9
Investments in property, plant and equipment	207.1	173.1	19.6	33.5	68.9	-51.4	64.8	41.6	55.5	83.7	63.8	31.3
Research and development	274.4	278.5	-1.5	133.0	122.9	8.2	36.9	30.3	22.1	110.2	95.1	15.8
Number of employees	9,703	9,451	2.7	3,928	3,709	5.9	5,265	4,811	9.4	5,959	6,004	-0.7

*) The previous year's values were restated for the new country structure

Laboratory Distribution 2001	2000	Change in %	Intragroup sales 2001	2000	Change in %	Group 2001	2000	Change in %
2,753.5	2,374.0	16.0	-244.7	-189,9	–	7,528.4	6,740.4	11.7
91.8	44.3	107.0				876.6	746.1	17.5
-0.7	-20.0	–				409.6	0.8	–
91.1	24.3	274.4				1,286.2	746.9	72.2
1,537.6	1,567.9	-1.9				6,571.7	6,438.4	2.1
186.3	176.5	5.6				525.2	477.6	10.0
34.4	32.3	6.6				470.3	426.8	10.2
68.2	28.6	138.5				664.0	323.7	105.2
0.4	0.4	–				577.3	546.0	5.7
6,058	5,921	2.3				34,294	33,520	2.3

Latin America*) 2001	2000	Change in %	Asia*) 2001	2000	Change in %	Rest of World*) 2001	2000	Change in %	Group 2001	2000	Change in %
459.7	431.7	6.5	882.8	866.1	1.9	324.7	304.1	6.8	7,528.4	6,740.4	11.7
434.2	407.1	6.7	777.2	734.9	5.8	287.7	266.3	8.0	7,528.4	6,740.4	11.7
8.4	15.1	-44.5	24.5	45.4	-45.9	12.9	8.1	59.2	944.8	885.3	6.7
39.1	41.6	-6.1	117.6	127.9	-8.1	35.1	25.0	40.5	876.6	746.1	17.5
–	-29.1	–	–	1.3	–	–	9.8	–	409.6	0.8	–
39.1	12.5	212.7	117.6	129.2	-9.0	35.1	28.6	22.8	1,286.2	746.9	72.2
327.3	300.1	9.1	558.2	528.6	5.6	121.4	97.0	25.2	6,571.7	6,438.4	2.1
15.6	20.5	-23.9	51.5	51.5	-0.8	14.5	7.4	97.4	470.3	426.8	10.2
3.4	3.1	10.8	13.9	11.0	26.1	5.5	5.1	6.3	577.3	546.0	5.7
3,395	3,810	-10.9	4,918	4,644	5.9	1,126	1,091	3.2	34,294	33,520	2.3

Cash Flow Statement

EUR million	*Note*	*2001*	*2000*
Profit after tax		**655.0**	**261.8**
Depreciation and amortization (noncurrent assets)		408.1	437.3
Changes in inventories		-73.7	-84.5
Changes in receivables		-94.3	-153.6
Changes in long-term provisions		28.8	29.0
Changes in other provisions		56.1	148.4
Changes in other debt from operating activities		77.1	111.4
Gains/Losses on disposal of assets		-480.0	-330.7
Other non-cash income and expenses		-14.9	181.2
Net cash flows from operating activities	(30)	**562.2**	**600.3**
Purchase of intangible assets		-53.0	-44.4
Purchase of property, plant and equipment		-470.3	-426.8
Purchase of long-term investments/Changes in companies consolidated		-95.9	-89.4
Disposal of assets		721.0	284.1
Net cash flows from investing activities	(31)	**101.8**	**-276.6**
Free cash flow		**664.0**	**323.7**
Dividend payments		-50.4	-46.9
Profit transferred to E. Merck		-154.5	-178.0
Other changes in net equity		3.3	32.2
Changes in liabilities to E. Merck		56.5	34.0
Changes in financial obligations		-563.0	41.6
Changes in other debt from financing activities		-4.1	-99.2
Net cash flows from financing activities	(32)	**-712.1**	**-216.3**
Changes in cash and cash equivalents		**-48.1**	**107.3**
Changes in cash and cash equivalents due to currency translation		8.7	7.8
Changes in cash and cash equivalents due to changes in companies consolidated		1.0	-84.7
Cash and cash equivalents as of January 1		502.5	472.1
Cash and cash equivalents as of December 31	(33)	**464.2**	**502.5**

Statement of Changes in Noncurrent Assets

EUR million	*Intangible assets*	*Property, plant and equipment*	*Long-term investments*	*Total*
Accumulated acquisition cost as of Jan. 1, 2001	**2,587.7**	**3,800.5**	**814.1**	**7,202.3**
Currency translation	36.4	22.5	-3.1	55.8
Changes in companies consolidated	56.1	-56.4	-44.3	-44.6
Additions	53.0	470.3	119.9	643.1
Disposals	-44.5	-88.9	-196.2	-329.6
Transfers	0.8	-2.0	1.2	-
Accumulated acquisition cost as of Dec. 31, 2001	**2,689.4**	**4,146.0**	**691.6**	**7,527.0**
Accumulated depreciation, amortization, write-downs and fair value adjustments as of Jan. 1, 2001	**-535.3**	**-1,832.6**	**-23.6**	**-2,391.5**
Adjustments of fair values taken directly to equity due to the first-time application of IAS 39	-	-	97.0	97.0
Currency translation	-6.9	-9.8	0.2	-16.5
Changes in companies consolidated	8.5	31.9	-0.6	39.8
Depreciation, amortization and write-downs	-157.9	-235.7	-14.6	-408.1
Disposals	38.4	51.6	-137.2	-47.2
Write-ups	-	-	4.3	4.3
Fair value adjustments of financial instruments taken directly to equity	-	-	21.6	21.6
Accumulated depreciation, amortization, write-downs and fair value adjustments as of Dec. 31, 2001	**-653.2**	**-1,994.6**	**-52.9**	**-2,700.7**
Net carrying amount as of Dec. 31, 2001	**2,036.2**	**2,151.4**	**638.7**	**4,826.3**

Statement of Changes in Net Equity

– including minority interest –

EUR million	Equity Capital: General partner's equity Merck KGaA	Equity Capital: Subscribed capital Merck KGaA	Reserves: Capital reserves (share premium) Merck KGaA	Reserves: Retained earnings/ Net retained profits/Con-solidated items	Reserves: Recognition of financial instruments at fair value	Minority interest	Total
Balance as of Jan. 1, 2000	**330.2**	**117.0**	**1,407.0**	**-70.0**	**–**	**85.6**	**1,869.8**
Profit after tax	–	–	–	247.2	–	14.6	261.8
Dividend payments to shareholders of Merck KGaA	–	–	–	-38.2	–	–	-38.2
Dividend payments to other minority shareholders in the Merck Group	–	–	–	–	–	-8.6	-8.6
Profits transferred by Merck & Cie to E. Merck	–	–	–	-90.2	–	–	-90.2
Profits transferred by E. Merck to Merck KGaA	–	–	–	23.6	–	–	23.6
Profits transferred by Merck KGaA to E. Merck	–	–	–	-111.3	–	–	-111.3
Appropriation to retained earnings/ profit brought forward by E. Merck	–	–	–	31.2	–	–	31.2
Currency translation difference	–	–	–	25.0	–	–	25.0
Changes in companies consolidated/Other	–	–	–	-0.4	–	-15.9	-16.3
Balance as of Dec. 31, 2000	**330.2**	**117.0**	**1,407.0**	**16.9**	**–**	**75.7**	**1,946.8**
Balance as of Jan. 1, 2001	**330.2**	**117.0**	**1,407.0**	**16.9**	**–**	**75.7**	**1,946.8**
Profit after tax	–	–	–	629.2	–	25.8	655.0
Dividend payments to shareholders of Merck KGaA	–	–	–	-40.5	–	–	-40.5
Dividend payments to other minority shareholders in the Merck Group	–	–	–	–	–	-9.9	-9.9
Profits transferred by Merck & Cie to E. Merck	–	–	–	-71.5	–	–	-71.5
Profits transferred by E. Merck to Merck KGaA	–	–	–	13.3	–	–	13.3
Profits transferred by Merck KGaA to E. Merck	–	–	–	-329.6	–	–	-329.6
Appropriation to retained earnings/ profit brought forward by E. Merck	–	–	–	233.3	–	–	233.3
Currency translation difference	–	–	–	0.1	–	–	0.1
Adjustment from the fair market valuation of financial instruments taken directly to equity	–	–	–	–	-9.0	–	-9.0
Changes in companies consolidated/Other	–	–	–	-0.7	–	-50.8	-51.5
Balance as of Dec. 31, 2001	**330.2**	**117.0**	**1,407.0**	**450.5**	**-9.0**	**40.8**	**2,336.5**

Notes

Preliminary remarks

The accompanying consolidated financial statements have been prepared with Merck KGaA – which manages the operations of the Merck Group – as parent company. The consolidated financial statements contained in Annual Report 2000 were prepared with E. Merck, the general partner of Merck KGaA holding a 73.8% equity interest, as parent company. Therefore, the figures for previous years included in Annual Report 2001 are not directly comparable with those in Annual Report 2000. However, the quantitative differences in the income statement are immaterial. On the balance sheet there are changes to the capital structure in particular. In accordance with the regulations of the Publizitätsgesetz (German Law on Corporate Disclosure) consolidated financial statements including Merck KGaA and its subsidiaries are prepared for E. Merck as before, published in the Bundesanzeiger (Federal Gazette) and filed with the commercial register under the number HR A 3614.

Application of International Accounting Standards (IAS)

The consolidated financial statements of the Merck Group for 2001 – with Merck KGaA as parent company – have been prepared in accordance with consistent accounting policies using the International Accounting Standards (IAS, in future IFRS) published by the International Accounting Standards Board (IASB) applicable as of the balance sheet date. IAS 39 (rev. 2000) "Financial Instruments: Recognition and Measurement" was applied for the first time during the fiscal year. The effects of this change of policy were taken directly to equity as of January 1, 2001. As a result of this change, net equity (before tax) increased by EUR 84.2 million as of January 1, 2001. This was due to the fair market valuation of investments and securities (EUR 98.5 million) and offset by the recognition of derivative financial instruments at fair value (EUR -14.3 million).

The following differences as against the accounting and valuation policies of the Handelsgesetzbuch ("HGB" - German Commercial Code) apply to the Merck Group's consolidated financial statements:

- Monetary items in foreign currencies which are carried in the single-entity financial statements of the companies consolidated prepared in local currencies are valued at closing rates in accordance with IAS 21; the HGB requires application of the imparity principle for long-term receivables and liabilities.
- The concept of temporary differences for which deferred taxes must be recognized is interpreted more broadly under IAS than the HGB. In addition, IAS requires the recognition of deferred tax assets arising from tax loss carryforwards, in contrast to the HGB.
- Under IAS 39 (rev. 2000), financial instruments originated by the company and classified as available for sale must be carried at their fair value, whereas the HGB requires these to be carried at acquisition cost. IAS 39 (rev. 2000) also states that derivative financial instruments must be carried as an asset or a liability at their fair value. The HGB does not permit the recognition of derivatives.

Companies consolidated

Including the parent company, Merck KGaA, Darmstadt, 206 companies are fully consolidated in the financial statements of the Merck Group. A further 5 associates are included using the equity method. 63 companies that in the aggregate are of minor importance are not consolidated and are carried under long-term investments in the consolidated financial statements. During the current fiscal year, 9 companies were included in the consolidated financial statements for the first time; 12 companies were deconsolidated in 2001.

Merck Pharma S.p.A., Florence (formerly Molteni), which was acquired in December 2000 for EUR 20.2 million, has been fully consolidated since January 1, 2001. The equity interest was increased in November 2001 to now 80.2% (EUR 9.5 million); a further EUR 9.9 million was used in June 2001 to increase Merck Holding GmbH's equity interest in the already fully consolidated Merck Taiwan Ltd. (Specialty Chemicals and Laboratory Products business sectors) from 59% to 99%. At the beginning of September, we disposed of our 43% equity interest in the US generics manufacturer Pharmaceutical Resources Inc. for EUR 411 million. This brought the Merck Group a gain of EUR 351.2 million before tax and EUR 232.3 million after tax. The gain from this disposal relates to the Pharmaceuticals business sector and is disclosed in the income statement under exceptional items.

Overall, the changes in the companies consolidated due to acquisitions and disposals of companies had the following effects on the consolidated balance sheet:

EUR million	Acquisitions/ First-time consolidations	Disposals/ Deconsolidations
Intangible assets	27.6	–
Property, plant and equipment	0.1	–26.6
Long-term investments	–	–
Current assets	6.3	–129.9
Liabilities/Provisions	–4.3	–66.6

Including acquisitions that were only recorded ratably in the previous year's financial statements as well as intraperiod disposals, sales and earnings during the fiscal year were impacted by the following effects on the consolidated financial statements caused by changes in companies consolidated:

EUR million	Acquisitions/ First-time consolidations	Disposals/ Deconsolidations
Sales	37.2	–43.4
Operating result	–4.3	1.9

In November 2001, the Consumer Health Care (CHC) business of Merck KGaA was hived off to the newly formed Merck Selbstmedikation GmbH under the also newly formed Merck Consumer Health Care Holding GmbH. In addition, at some further European subsidiaries the Laboratory Distribution business was spun off and transferred to the Eurolab organization. Overall, this did not have any effect on the consolidated financial statements of the Merck Group.

Consolidation methods

The consolidated financial statements are based on the single-entity financial statements of the consolidated companies as of December 31, 2001, which were prepared using consistent accounting polices in accordance with IAS (in future IFRS), and audited and certified by independent auditors.

Capital consolidation used the purchase method in accordance with IAS 22 (Business Combinations). The carrying values at the time of acquisition were applied for subsidiaries consolidated for the first time in the year under review, on the basis of corresponding interim financial statements. Resulting differences are taken to assets and liabilities to the extent that the fair values differ from the values actually carried in the financial statements. Any remaining difference is taken to goodwill in the noncurrent assets and written down by regular straight-line amortization over the expected useful life in accordance with IAS 22.

Intragroup sales, expenses and income, as well as all receivables and payables between the consolidated companies, were eliminated. The carrying value of assets from intragroup deliveries carried under noncurrent assets and inventories was adjusted by eliminating any intragroup profits.

Currency translation

The functional currency concept applies to the translation of financial statements of consolidated companies prepared in foreign currencies. As the companies of the Merck Group conduct their business operations independently, they are treated as "foreign entities" as defined by IAS 21. This standard requires that assets and liabilities are translated at the closing rate, and income and expenses at the average rate for the year. Any resulting difference is not recognized in income and is taken to equity. If Group companies are deconsolidated, existing currency differences are reversed and recognized in income.

Foreign currency monetary items (cash and cash equivalents, receivables and payables) in the single-entity financial statements of the consolidated companies prepared in the local currency are translated at the closing rates in accordance with IAS 21. Hedged items are also valued at the closing rates in accordance with IAS 21. The resulting unrealized gains or losses are eliminated against offsetting amounts from the fair value recognition of derivatives. Non-monetary items denominated in foreign currencies are carried at their historical values. Exchange differences from the translation of monetary items are recognized in income.

The income statement contains exchange rate losses from foreign exchange transactions totaling EUR 18.9 million from financing activities primarily due to CHF loans (previous year: EUR 33.6 million exchange losses). These are reported in the financial result. Exchange gains from operating activities amounted to EUR 4.4 million (previous year: EUR 3.9 million exchange losses). These exchange differences are included in other operating expenses.

Notes to the Balance Sheet

(1) Intangible assets

EUR million	Acquired concessions, patents, licenses and similar rights	Goodwill	Advance payments	Total
Accumulated acquistion cost as of Jan. 1, 2001	**302.4**	**2,280.9**	**4.4**	**2,587.7**
Currency translation	-0.5	36.9	–	36.4
Changes in companies consolidated	0.6	55.4	0.1	56.1
Additions	43.6	3.9	5.4	53.0
Disposals	-44.1	–	-0.4	-44.5
Transfers	3.3	1.3	-3.8	0.8
Accumulated acquisition cost as of Dec. 31, 2001	**305.3**	**2,378.4**	**5.7**	**2,689.4**
Accumulated depreciation, amortization and write-downs as of Jan. 1, 2001	**-192.2**	**-343.1**	**–**	**-535.3**
Currency translation	-0.4	-6.5	–	-6.9
Changes in companies consolidated	–	8.5	–	8.5
Amortization and write-downs	-43.3	-114.6	–	-157.9
Disposals	37.5	0.9	–	38.4
Write-ups	–	–	–	–
Accumulated depreciation, amortization and write-downs as of Dec. 31, 2001	**-198.4**	**-454.8**	**–**	**-653.2**
Net carrying amount as of Dec. 31, 2001	**106.9**	**1,923.6**	**5.7**	**2,036.2**

Acquired intangible assets are carried at cost less regular straight-line amortization over their useful lives. The useful lives of acquired concessions, property rights, licenses, patents and software are between 3 and 15 years. Special write-downs are charged where required, and these are subsequently reversed if the original grounds for the write-down no longer apply. As a rule, goodwill is amortized over a 20-year period in accordance with IAS 22.

During the fiscal year, additional goodwill was generated by the first-time consolidation of Merck Pharma S.p.A., Florence, which was acquired at the end of 2000, as well as by subsequent purchase price obligations in accordance with contractual obligations for previous acquisitions in the Pharmaceuticals business sector and also by increased interests in Merck Pharma S.p.A., Italy, and Merck Taiwan Ltd. Due to sustained decreases in value, special write-downs amounting to EUR 5.3 million were made on no longer used marketing rights (Pharmaceuticals business sector). There were no special write-downs or reversals of earlier impairment losses during the fiscal year.

(2) Property, plant and equipment

EUR million	Land, land rights and buildings including buildings on third-party land	Plant and machinery	Other facilities, operating and office equipment	Construction in progress and advance payments to vendors and contractors	Total
Accumulated acquisition cost as of Jan. 1, 2001	**1,155.2**	**1,801.0**	**607.9**	**236.4**	**3,800.5**
Currency translation	6.9	12.0	2.0	1.6	22.5
Changes in companies consolidated	-23.9	-27.1	-2.1	-3.3	-56.4
Additions	58.9	130.6	76.1	204.7	470.3
Disposals	-12.7	-23.6	-33.6	-19.0	-88.9
Transfers	39.3	27.2	9.0	-77.5	-2.0
Accumulated acquisition cost as of Dec. 31, 2001	**1,223.7**	**1,920.1**	**659.3**	**342.9**	**4,146.0**
Accumulated depreciation, amortization and write-downs as of Jan. 1, 2001	**-407.4**	**-1,048.4**	**-368.5**	**-8.3**	**-1,832.6**
Currency translation	-1.3	-7.6	-0.9	–	-9.8
Changes in companies consolidated	8.8	21.3	1.8	–	31.9
Depreciation and write-downs	-37.9	-125.6	-70.4	-1.8	-235.7
Disposals	5.2	18.3	28.0	0.1	51.6
Transfers	-0.3	-0.8	–	1.1	–
Accumulated depreciation, amortization and write-downs as of Dec. 31, 2001	-432.9	-1,142.8	-410.0	-8.9	-1,994.6
Net carrying amount as of Dec. 31, 2001	**790.8**	**777.3**	**249.3**	**334.0**	**2,151.4**

Property, plant and equipment is carried at acquisition or manufacturing cost, less depreciation and write-downs. Subsequent acquisition costs are capitalized. The manufacturing cost of self-constructed property, plant and equipment is calculated on the basis of the directly attributable unit costs as well as an appropriate share of overheads, including depreciation and write-downs. Financing costs are not capitalized. In the case of acquisitions denominated in foreign currencies, subsequent exchange rate movements do not affect recognition of the asset at the original acquisition or manufacturing cost.

In accordance with IAS 20, acquisition or manufacturing costs are reduced by the amount of government grants or subsidies in those cases where such grants or subsidies have been paid for the acquisition or manufacture of assets (investment grants). Grants related to income that will no longer be offset by future expenses are taken to income. Total government grants and subsidies during the fiscal year amounted to EUR 4.0 million (previous year: EUR 6.4 million).

Property, plant and equipment is written down by straight-line depreciation over the useful life of the asset concerned. The depreciation period for buildings is 20 to 50 years; for technical equipment it is between 8 and 20 years, and 4 to 10 years for other facilities, operating and office equipment. Special write-downs are charged where required in accordance with IAS 36, and these are subsequently reversed if the original grounds for the write-down no longer apply. In the year under review, special write-downs in the amount of EUR 3.5 million (previous year: EUR 40.9 million) were charged on property, plant and equipment primarily in connection with the closure of individual production units (Specialty Chemicals business sector). In the year under review, there were no reversals of special write-downs charged in previous years.

Where assets are rented or leased and economic ownership lies with the respective Group company (finance leases), they are recognized as assets at the present value of the lease payments in accordance with IAS 17 (revised 1997) and written down over the useful life of the asset. The corresponding payment obligations from future lease payments are recorded as liabilities. The total value of capitalized leased assets amounts to EUR 19.5 million and the corresponding obligations amount to EUR 9.4 million (please refer to the explanatory notes to section (13) 'Financial obligations').

The capitalized leased assets are as follows:

EUR million	Dec. 31, 2001	Dec. 31, 2000
Capitalized leased land	3.0	2.3
Capitalized leased buildings	13.0	17.1
Capitalized leased facilities	1.1	0.8
Capitalized leased vehicles	2.3	2.0
Other capitalized leased property, plant and equipment	0.1	1.1
	19.5	**23.3**

(3) Long-term investments

	Investments in:			Other securities		Loans to:			
EUR million	associates	available-for-sale	other affiliates	available-for-sale	held-to-maturity	associates	other affiliates	other companies	Total
Accumulated acquisition cost as of Jan. 1, 2001	**156.8**	**–**	**105.6**	**13.5**	**–**	**–**	**0.2**	**538.0**	**814.1**
Currency translation	-4.4	–	0.6	0.1	–	–	–	0.6	-3.1
Changes in companies consolidated	1.0	–	-45.2	–	–	–	–	-0.1	-44.3
Additions	11.1	6.6	67.2	0.5	0.3	–	–	34.2	119.9
Disposals	-5.1	-22.3	-26.2	-1.2	-0.2	–	–	-141.2	-196.2
Transfers	-0.8	94.2	-86.6	-6.6	1.0	–	–	–	1.2
Accumulated acquisition cost as of Dec. 31, 2001	**158.6**	**78.5**	**15.4**	**6.3**	**1.1**	**–**	**0.2**	**431.5**	**691.6**
Accumulated depreciation, amortization, write-downs and fair value adjustments as of Jan. 1, 2001	**-12.3**	**–**	**-6.1**	**-4.8**	**–**	**–**	**–**	**-0.4**	**-23.6**
Adjustments of fair values taken directly to equity due to the first-time application of IAS 39	–	97.0	–	–	–	–	–	–	97.0
Currency translation	0.2	–	–	–	–	–	–	–	0.2
Changes in companies consolidated	-0.7	–	0.1	–	–	–	–	–	-0.6
Amortization and write-downs/discounts	-0.2	-4.6	-0.1	–	–	–	–	-9.7	-14.6
Disposals	–	-137.2	–	–	–	–	–	–	-137.2
Transfers	–	-1.8	1.3	0.5	–	–	–	–	–
Write-ups	4.3	–	–	–	–	–	–	–	4.3
Fair value adjustments of long-term investments taken directly to equity	–	21.6	–	–	–	–	–	–	21.6
Accumulated depreciation, amortization, write-downs and fair value adjustments as of Dec. 31, 2001	**-8.7**	**-25.0**	**-4.8**	**-4.3**	**–**	**–**	**–**	**-10.1**	**-52.9**
Net carrying amount as of Dec. 31, 2001	**149.9**	**53.5**	**10.6**	**2.0**	**1.1**	**–**	**0.2**	**421.4**	**638.7**

Long-term investments classified as available for sale are usually carried at fair value. As these mainly comprise shares in listed companies, the fair values correspond to the stock market values. Changes in fair value which are caused by the normal volatility of share prices are taken directly to equity. Permanent decreases in value are subjected to an impairment test in accordance with IAS 39. If the fair value cannot be reliably estimated, investments are valued at acquisition cost less write-downs if necessary. As of December 31, 2001, for this reason long-term investments were valued at cost with a carrying amount of EUR 7.6 million. For the same reason, the interests in subsidiaries disclosed under other investments, which are not consolidated as they are of minor importance, are valued at acquisition cost. Interests in associates are adjusted at equity unless they are of minor importance. All other long-term investments are carried at (amortized) acquisition cost less write-downs if necessary.

The increase in long-term investments during the fiscal year is primarily due to the initial recognition at fair value of investments classified as available for sale in accordance with IAS 39. Acquisitions made this year are also included in the additions (please refer to the section entitled "Companies consolidated"). Loans include the residual claim from the disposal of our shares in Bracco last year, which will be received in annual installments up to 2007. The decline during the fiscal year results from this year's repayment.

As of the balance sheet date, the following total gains from long-term investments classified as available-for-sale were taken directly to equity:

EUR million	*Available-for-sale investments*	*Available-for-sale securities*	*Total Dec. 31, 2001*
Fair values	53.5	2.0	55.5
Amortized acquisition cost	-31.9	-2.0	-33.9
Unrealized gains/losses	**21.6**	**0.0**	**21.6**

During the fiscal year, the Company disposed of the majority of its interest in ImClone Systems Inc. (carried as long-term investments as available for sale). The gains, previously taken directly to equity, were removed to the income statement at the time of the sale. The disposal resulted in capital gains of EUR 137.2 million (recorded under exceptional items). With the exception of classifications as part of the initial application of IAS 39 (recorded under transfers), no reclassifications of long-term investments were performed across the individual categories of financial instruments during the fiscal year.

In the period under review, EUR 4.3 million of the write-downs charged in the previous year in connection with the capital-like loan to the joint venture Ketogulonsäure (Specialty Chemicals business sector) was reversed as a result of payments received (recorded under exceptional items).

Liability risks or capital commitments in relation to joint ventures are of minor importance as of balance sheet date.

A statement of Merck KGaA's equity interests is filed with the commercial register of the Darmstadt Local Court under the number HR B6164. Major companies of the Merck Group as of December 31, 2001 are presented in the following table:

	Direct equity interest in %	*Sales [1] EUR million*	*Profit after tax [1] EUR million*	*Net equity [1] EUR million*	*Employees [1]*
Major companies of the Merck Group:					
Europe					
Merck KGaA, Darmstadt	Parent Company	1,229.1	125.5	2,236.8	8,518
Generics (UK) Ltd., Potters Bar	100.00	113.9	-9.5	23.3	457
Laboratoire Théramex S.A.M., Monaco	100.00	112.0	9.0	35.9	539
Lipha S.A., Lyon	100.00	724.7	319.6	441.1	1,649
Lipha Santé S.A.R.L., Lyon	100.00	233.9	-10.4	28.1	490
Merck AG, Zug and Darmstadt	100.00	-	27.5	331.4	7
Merck & Cie KG, Altdorf	99.84	105.0	74.6	47.6	74
Merck Gesellschaft mbH, Vienna	100.00	40.0	5.6	38.6	91
Merck Nederland B.V., Amsterdam	100.00	19.8	1.1	7.6	47
Merck N.V.-S.A., Overijse	100.00	43.5	1.2	11.0	104
Merck Pharma S.p.A., Florence	80.17	18.4	-1.9	0.9	142
Merck S.A., Fontenay s/Bois	99.99	73.2	7.2	34.7	111
Merck (Schweiz) AG, Dietikon	100.00	23.6	1.7	10.3	59
Merck Spain, Mollet del Vallès	100.00	130.6	13.2	74.7	770
Merck Specialty Chemicals Ltd., Rochester	100.00	25.4	0.5	3.4	120
Merck UK Group, Poole	100.00	40.6	16.7	266.5	236
Seven Seas Group, Hull	100.00	89.1	9.8	12.0	427
VWR Companies	100.00	878.2	5.3	123.3 [2]	2,860

	Direct equity interest in %	Sales [1] EUR million	Profit after tax [1] EUR million	Net equity [1] EUR million	Employees [1]
Major companies of the Merck Group continued:					
North America					
CN Biosciences, Inc., San Diego	100.00	74.9	-2.1	51.6	337
Dey, Inc., Napa	100.00	291.6	23.9	24.0	946
EMD Pharmaceuticals, Inc., Durham	100.00	-	-37.7	-56.6	117
EM Industries, Inc., Hawthorne	100.00	230.2	5.4	354.1	679
Genpharm, Inc., Etobicoke	100.00	151.8	16.9	53.4	489
VWR Group, West Chester	100.00	1,914.2	40.2	570.5	3,212
Latin America					
Merck Colombia S.A., Bogota	100.00	43.1	2.9	25.1	453
Merck-México S.A., Estado de México	100.00	145.0	8.9	70.4	868
Merck S.A. Indústrias Químicas, Rio de Janeiro	100.00	103.2	-8.5	29.3	1,035
Asia / Rest of World					
Alphapharm Pty. Ltd., Sydney	100.00	232.8	21.2	67.3	572
E. Merck (India) Ltd., Mumbai	51.00	80.2	10.5	38.6	1,571
Merck Hoei Ltd., Osaka	87.50	63.2	3.1	11.0	173
Merck Japan Ltd., Tokyo	100.00	329.7	27.8	90.8	327
Merck-Kanto Advanced Chem. Ltd., Taoyuam	79.00	107.0	20.1	48.0	188
Merck Marker (Pvt.) Ltd., Karachi	75.00	30.0	2.5	9.9	789
Merck Taiwan Ltd., Taipei	99.00	30.7	2.7	9.2	139
P.T. Merck Indonesia Tbk., Jakarta	74.00	24.5	6.2	13.8	458

1) Figures for the entire company unconsolidated, irrespective of the equity interest

2) Net equity of the holding company

(4) Inventories

EUR million	Dec. 31, 2001	Dec. 31, 2000
Raw materials and production supplies	228.0	240.0
Work in progress, finished goods and goods purchased for resale	1,040.0	957.2
Advance payments	1.5	7.7
	1,269.5	**1,204.9**

Inventories are carried at cost. In addition to directly attributable unit costs, manufacturing costs also include overheads attributable to the production process, including an appropriate share of depreciation charges on production facilities, in accordance with IAS 2. Financing costs are not recognized. The lower realizable net selling price (recoverable amount) is applied if required. Write-downs on inventories as of the balance sheet date amount to EUR 121.4 million; the carrying amount of inventories that have been written down amounts to EUR 299.3 million. Inventories with a value of EUR 0.2 million (previous year: EUR 4.1 million) served to secure liabilities as of the balance sheet date. There were no significant contracts to be accounted for in accordance with IAS 11 (Construction Contracts) as of the balance sheet date.

(5) Trade accounts receivable

EUR million	thereof due in less than 1 year	thereof due after more than 1 year	Total Dec. 31, 2001	thereof due in less than 1 year	thereof due after more than 1 year	Total Dec. 31, 2000
from associates	2.9	–	2.9	2.8	–	2.8
from other affiliates	1.1	–	1.1	1.5	–	1.5
from other companies	1,144.1	9.7	1,153.8	1,152.1	4.9	1,157.0
	1,148.1	**9.7**	**1,157.8**	**1,156.4**	**4.9**	**1,161.3**

Trade accounts receivable are carried at their principal amount. Unless they are covered by insurance policies, adequate write-downs are charged for default and transfer risks.

(6) Other receivables and other assets

EUR million	thereof due in less than 1 year	thereof due after more than 1 year	Total Dec. 31, 2001	thereof due in less than 1 year	thereof due after more than 1 year	Total Dec. 31, 2000
from associates	0.4	–	0.4	1.7	–	1.7
from other affiliates	12.5	–	12.5	24.7	–	24.7
Tax receivables	79.9	4.1	84.0	111.3	14.0	125.3
Derivative financial instruments	3.6	–	3.6	–	–	–
Receivables from related parties	13.0	–	13.0	9,0	–	9,0
Other receivables from other companies	77.3	2.2	79.5	122.0	7.3	129.3
Prepaid expenses	45.0	–	45.0	35.0	–	35.0
Other assets	128.3	–	128.3	96.6	–	96.6
	360.0	**6.3**	**366.3**	**400.3**	**21.3**	**421.6**

Other receivables and other assets are reported at par and carried at their principal amount, less adequate write-downs for any default or other risks. Other assets include, among other things, assets arising from the valuation of pension funds as well as interest deferrals.

(7) Cash and cash equivalents

EUR million	Dec. 31, 2001	Dec. 31, 2000
Cheques, cash and bank balances	387.0	421.8
Held-to-maturity securities	59.5	–
Available-for-sale securities	17.7	80.7
Total marketable securities	77.2	80.7
	464.2	**502.5**

Changes in cash and cash equivalents as defined by IAS 7 are presented in the attached cash flow statement.

Cash and bank balances are carried at their principal amount. Securities comprise marketable short-term securities. Held-to-maturity securities are valued at acquisition cost. Available-for-sale securities are carried at fair value, and changes associated with the normal volatility of fair values are recognized directly in net equity. During the fiscal year, net equity rose by EUR 4.5 million as a result of the recognition at fair value of available-for-sale securities. Thereof, EUR 1.5 million resulted from the initial application of IAS 39 as of January 1, 2001. There were no reclassifications from net equity to the income statement.

As of the balance sheet date, the following gains were taken directly to equity as a result of the recognition of available-for-sale securities at fair value:

EUR million	Dec. 31, 2001
Fair value	17.7
Amortized acquisition cost	-13.2
Unrealized gains/losses	**4.5**

During the fiscal year, there were no significant gains or losses on disposals of securities. Apart from classifications made in line with the initial application of IAS 39, no reclassifications of securities were performed across the individual categories during the fiscal year.

(8) Deferred tax assets

Deferred tax assets result from differences in the carrying amounts in the financial and tax accounts of Group companies as well as from consolidation measures, in so far as these differences reverse over time. Deferred tax assets are recognized in accordance with IAS 12 (rev. 2000). In accordance with the liability method, the tax rates that are applicable or enacted as of the balance sheet date are applied. Additional explanatory notes on deferred tax assets are contained in section (28) 'Income tax.'

(9) Net equity

A separate statement of changes in net equity is attached. The subscribed capital of Merck KGaA is composed of 45,000,000 no-par value shares. In addition to the reserves of Merck KGaA, the reserves contain the retained earnings of the consolidated subsidiaries and the effects of consolidation measures. The disclosure of minority interest is based on the stated equity of the subsidiaries concerned after any adjustment required to ensure compliance with the accounting and reporting policies of the Merck Group, as well as proportionate consolidation entries.

In addition to the dividend payments to the shareholders of Merck KGaA and to minority shareholders in subsidiary companies of the Merck Group, the appropriation of profits includes the transfer of profits from Merck & Cie KG to E. Merck in accordance with the company agreements and the reciprocal transfer of profits between E. Merck and Merck KGaA, also in accordance with the Articles of Incorporation. In accordance with capitalization, E. Merck participates in EUR 329.6 million (73.8%) of the profits of Merck KGaA, and Merck KGaA participates in EUR 13.3 million (26.2%) of the profits of E. Merck. Merck KGaA's profit from ordinary activities, on which the appropriation of its profits is based, amounts to EUR 446.4 million. E. Merck's result, on which the appropriation of its profits is based, amounts to EUR 50.8 million, and is composed of expenses totaling EUR 29.2 million and earnings of EUR 80.0 million (primarily investment income of Merck & Cie KG).

The following table presents changes in adjustments taken directly to equity due to the recognition of financial instruments at fair value in accordance with IAS 39.

EUR million	*Available-for-sale long-term investments*	*Available-for-sale marketable securities*	*Derivatitve financial instruments*	*Total*
Balance as of Jan. 1, 2001 by initial measurement under IAS 39	97.0	1.5	-14.3	84.2
Subsequent measurement	21.6	3.0	-0.3	24.3
Deferred taxes recognized in equity	15.8	-0.5	4.4	19.7
Reclassification to income statement	-137.2	-	-	-137.2
Balance as of Dec. 31, 2001	**-2.8**	**4.0**	**-10.2**	**-9.0**

In the current fiscal year, as a result of the disposal of interests in ImClone Systems Inc. (available for sale investment) EUR 137.2 million of gains previously taken directly to equity were removed to the income statement. There were no further reclassifications from net equity to the income statement or the balance sheet. Changes in companies consolidated this year include the reduction of minority interests in the amount of EUR 57.4 million from the sale of the Group's 43% interest in Pharmaceutical Resources Inc.

During the year under review and the previous year, the employees of Merck KGaA and its German subsidiaries were offered an opportunity to acquire employee shares, for which Merck KGaA granted a tax-free subsidy of DM 300. As of the balance sheet date, a total of 438,495 shares (previous year: 316,382 shares) had been issued to employees in accordance with the aforementioned terms.

As part of the seven-year stock option program for senior executives resolved by Merck KGaA's Annual General Meeting 2000, the creation of EUR 5,720,000 contingent capital for the issuing of stock rights was approved. The contingent capital is composed of 2,200,000 stock options, of which 737,250 were issued as of the balance sheet date. The exercise price (base price) is EUR 37.42. The stock rights issued are subject to a minimum vesting period of 2 years, so that no options were redeemed in the period under review and none of the stock rights expired. Stock rights may only be exercised after the minimum vesting period has expired, if the closing date price is at least 30% higher than the exercise price. The exercise price is the mean value of Merck's stocks in the Frankfurt Xetra trading system, commencing 30 days before the date of issue of the stock rights. The stock options have not been recognized in the income statement or the balance sheet in these financial statements.

(10) Provisions for pensions and other post-employment benefits

Depending on the legal, economic and fiscal circumstances prevailing in each country, different retirement benefit systems are provided for the employees of the Merck Group. As a rule, these systems are based on length of service and salary of the employees. Pension obligations in the Merck Group relate to both defined benefit and defined contribution plans.

In the Merck Group, defined benefit plans are funded and unfunded. The bulk of obligations from current pensions and accrued benefits for pensions payable in the future is covered by the (unfunded) provisions disclosed here, while the smaller portion is secured by funded benefit obligations. The provisions also contain other post-employment benefits, such as accrued future healthcare costs for pensioners (USA) and accrued severance payments. The obligations of our domestic German companies, which account for 86.7% of total pension provisions, are measured using the projected unit credit method in compliance with IAS 19 (revised 2000). Annual actuarial opinions are prepared for this purpose. The calculation is based on assumed trends for salary growth of 2.5% to 3.0%, for pension increases of 1.5%, for fluctuation of 2.0% as well as a discount rate of 6.0%. Actuarial gains and losses are recognized using the 10% corridor rule. In the case of our foreign companies, obligations covered by provisions for pensions are calculated using comparable procedures.

Defined benefit plans resulted in a total expense of EUR 76.1 million during the year under review (previous year: EUR 69.2 million), consisting of the following components:

	EUR million	2001	2000
	Current service cost	53.7	49.6
+	Past service cost	0.3	0.3
+	Interest component	46.0	44.0
–	Expected return on plan assets	-23.2	–23.4
+/–	Net amortized actuarial losses/gains	-0.7	–1.3
+/–	Effects of curtailments or settlements	-	–
=	**Total amounts recognized**	**76.1**	**69.2**

The actual return on plan assets amounted to EUR 19.4 million (previous year: EUR 17.3 million). In the consolidated balance sheet, obligations from defined benefit plans are recorded in 'Provisions for pensions and other post-employment benefits.' Where pension funds are overfunded, the corresponding assets are recorded in 'Other receivables and other assets.' The net value of these balance sheet items is derived as follows:

	EUR million	Dec. 31, 2001	Dec. 31, 2000
	Present value of unfunded benefit obligations	932.9	898.4
+	Present value of funded benefit obligations	261.0	241.4
=	Present value of benefit obligations	1,193.9	1,139.8
–	Fair value of plan assets	-268.9	–280.3
=	Present value of benefit obligations (after deduction of plan assets)	925.0	859.5
+/–	Net unrecognized actuarial gains/losses	-54.4	–2.4
+	Unrecognized past service cost	-0.5	–
=	**Net amounts recognized in balance sheet as of the reporting date**	**870.1**	**857.1**

During the period under review, the net amounts recognized in the balance sheet at Group level changed as follows:

	EUR million	2001	2000
	Net amounts recognized in balance sheet as of Jan. 1	857.1	850.3
+/–	Currency translation	-1.4	–1.3
+/–	Changes in companies consolidated	-0.4	–24.0
+	Total amounts recognized	76.1	69.2
–	Pension payments during the period	-42.1	–35.7
+/–	Transfers	-19.2	–1.4
=	**Net amounts recognized in balance sheet as of Dec. 31**	**870.1**	**857.1**

The cost of current contribution payments during the year under review for defined contribution plans that are funded exclusively by external funds amounted to EUR 8.0 million (previous year: EUR 6.1 million) Apart from the interest component, which is disclosed in the financial result, the relevant costs of defined benefit and defined contribution plans are contained in the operating result of the business sectors.

(11) Other provisions

EUR million	Provisions for tax obligations	Provisions for litigation costs	Obligations from staff costs	Provisions for commissions and rebates	Other provisions for pending invoices	Other provisions	Total
Balance as of Jan. 1, 2001	**168.4**	**46.7**	**192.9**	**18.6**	**36.5**	**141.3**	**604.4**
Currency translation	4.4	-1.0	1.1	0.3	-0.5	1.7	6.0
Utilization	-125.2	-13.4	-158.2	-12.6	-39.2	-118.4	-467.0
Release	-8.7	-2.8	-2.4	-3.6	-1.1	-6.3	-24.9
Additions	68.7	55.2	229.3	17.3	60.9	176.0	607.4
Changes in companies consolidated/Other	-58.7	0.3	-7.0	-1.2	2.1	-4.0	-68.5
Balance as of Dec. 31, 2001	**48.9**	**85.0**	**255.7**	**18.8**	**58.7**	**190.3**	**657.4**

In accordance with IAS 37, legal or de facto obligation provisions are reported in the balance sheet, if the net cash used for the payment of liabilities can be reliably estimated. The carrying value of provisions is based on the amounts used to cover future payment obligations, recognizable risks and uncertain obligations of the Group. Provisions are discounted, where required. Other provisions include uncertain obligations associated with environmental, restructuring and closure measures. Also included in other provisions are levies, contributions and fees, as well as expenses connected with legal advice.

(12) Current liabilities

The Merck Group's current liabilities are generally carried at their repayment amount. Any difference between the amount paid out and the amount recoverable at final maturity is amortized. Foreign currency liabilities are translated at their closing rates. Hedged items in foreign currencies are also valued at the closing rate in accordance with IAS 21.

The following liabilities were collateralized as of the balance sheet date:

	secured by real property liens		secured by other liens	
EUR million	Dec. 31, 2001	Dec. 31, 2000	Dec. 31, 2001	Dec. 31, 2000
Debt securities	–	–	–	–
Bank loans and overdrafts	27.5	60.1	18.3	14.7
Other liabilities	–	–	0.9	11.7
	27.5	**60.1**	**19.2**	**26.4**

(13) Financial obligations

EUR million	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2001	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2000
Debt securities	273.2	–	273.2	101.2	262.7	363.9
Commercial paper obligations	112.5	–	112.5	168.9	25.6	194.5
Bank loans and overdrafts	2,256.2	108.0	2,364.2	2,414.1	330.1	2,744.2
Liabilities from finance lease obligations	1.5	7.9	9.4	1.4	9.3	10.7
	2,643.4	**115.9**	**2,759.3**	**2,685.6**	**627.7**	**3,313.3**

Composition of debt securities:

EUR million	Dec. 31, 2001	Dec. 31, 2000
Merck AG, Zug/Switzerland 4.50% bond 1994/2001 (CHF 150 million)	–	98.5
Merck KGaA, Darmstadt 3.50% bond 1996/2002 (CHF 400 million)	273.2	262.7
Other debt securities	–	2.7
	273.2	**363.9**

(14) Trade accounts payable

EUR million	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2001	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2000
to associates	6.3	-	6.3	12.9	–	12.9
to other affiliates	2.7	-	2.7	2.2	–	2.2
to other companies	513.9	2.3	516.2	459.0	3.5	462.5
	522.9	**2.3**	**525.2**	**474.1**	**3.5**	**477.6**

(15) Other liabilities

EUR million	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2001	Remaining maturity less than 1 year	Remaining maturity more than 1 year	Total Dec. 31, 2000
to associates	2.2	-	2.2	6.0	–	6.0
to other affiliates	16.9	-	16.9	0.4	–	0.4
Advances received from customers	7.6	0.1	7.7	6.9	–	6.9
Payroll liabilities	66.1	0.6	66.7	57.5	1.6	59.1
Tax liabilities	144.2	-	144.2	120.2	–	120.2
Derivative financial instruments	4.4	-	4.4	-	-	-
Liabilities to general partner E. Merck	313.2	-	313.2	256,6	-	256,6
Loans received from third parties	17.9	62.7	80.6	34.9	56.1	91.0
Deferred income	136.4	-	136.4	181.0	–	181.0
Miscellaneous	127.4	1.0	128.4	172.8	1.5	174.3
	836.3	**64.4**	**900.7**	**836.3**	**59.2**	**895.5**

As of the balance sheet date, deferred income includes EUR 129.3 million relating to the payments made in 2000 by Bracco for licenses and contractual restraint of competition. These payments are deferred over a still remaining period of four years.

(16) Deferred tax liabilities

Deferred tax liabilities result from differences in the carrying amounts in the financial and tax accounts of Group companies as well as from consolidation measures, in so far as these differences reverse over time. Deferred tax liabilities are recognized in accordance with IAS 12 (rev. 2000). In accordance with the liability method, the tax rates that are applicable or enacted as of the balance sheet date are applied. Additional explanatory notes on deferred tax liabilities are contained in section (28) ‘Income tax’.

Notes to the Income Statement

(17) Sales

Sales are presented by business sector and region in the enclosed 'Segment Reporting' section. Sales also include revenue from services, but the volume involved is insignificant.

(18) Cost of sales

The cost of sales also includes the cost of goods purchased for resale. In accordance with IAS 2, the cost comprises overheads, including depreciation charges on production facilities, in addition to directly attributable costs, such as the cost of materials, staff and energy costs.

(19) Marketing and selling expenses

In addition to the cost of sales and marketing departments and of the field sales force, marketing and selling expenses include advertising, logistics and license costs. Suspense items for oncharged freight expenses amounting to EUR 40.4 million have been deducted from marketing and selling expenses (previous year: EUR 31.3 million). In addition, the balance from commissions paid amounting to EUR 32.9 million (previous year: EUR 17.9 million) and commission earnings amounting to EUR 22.9 million (previous year: EUR 14.0 million) are also included in this item.

(20) Administration expenses

Staff costs and material expenses of management and administration functions are disclosed under this item unless they have been charged to other cost centers as internal services.

(21) Other operating income and expenses

EUR million	*2001*	*2000*
Inventory adjustments	-86.9	-41.9
Exchange differences from operating activities	4.4	-3.9
Other operating expenses	-176.1	-155.3
Other operating income	95.0	130.1
	-163.6	**-71.0**

Other operating expenses include, among others, write-downs for receivables, as well as losses on the disposal of assets or special write-downs of noncurrent assets; this item also includes expenses arising from the formation of provisions, for example, for restructuring. Project costs which arise in connection with acquisition or IT projects, for example, are also recognized here. In addition, expenses related to pre-retirement agreements, as well as contributions and fees are included.

In addition to the reversal of provisions and income for other periods, other operating income also includes the proceeds from the disposal of marketing rights, drug-marketing approvals, dossiers and similar remunerations. Income from sundry business is also included. In the previous year, the settlement of insurance claims was recognized under other operating income.

(22) Research and development

The breakdown of research and development by business sectors and regions is disclosed under 'Segment Reporting'. In addition to the costs of research departments and process development, this item also includes the cost of purchased services and the cost of clinical trials. The costs of research and development are expensed in full in the period in which they are incurred. Development expenses in the Pharmaceuticals business sector cannot be capitalized since the high level of risk up to the time that pharmaceutical products are marketed means that the requirements of IAS 38 are not satisfied in full. Costs incurred after regulatory approval are insignificant. In the same way, the risks involved until products are marketed means that development expenses in the Specialty Chemicals business sector as well as in Laboratory Products and Laboratory Distribution cannot be capitalized. Refunds are eliminated against research costs for research and development of EUR 9.9 million (previous year: EUR 16.2 million).

(23) Patent and license revenues

The amounts reported as patent and license revenues relate principally to income for the pharmaceutical active substances metformin and bisoprolol as well as to licensing income from the license agreement with Bracco.

(24) Investment result

EUR million	*2001*	*2000*
Dividend income from associates	9.2	6.3
Other investment income	1.7	4.4
	10.9	**10.7**

(25) Amortization of goodwill

EUR million	*2001*	*2000*
Pharmaceuticals	-61.3	-62.8
Specialty Chemicals	-1.3	-1.0
Laboratory Products	-6.8	-6.4
Laboratory Distribution	-45.2	-43.9
	-114.6	**-114.1**

(26) Exceptional items

Exceptional items are composed as follows:

EUR million	*2001*	*2000*
Income from company divestitures	488.4	316.4
Provisions for litigation risks	-40.0	-42.2
Provisions for environmental risks	-28.1	-
Closures	-10.7	-51.6
Write-downs of tax claims (tax credit, France)	-	-155.4
Spin-off of Eurolab organization	-	-20.0
Infrastructure write-downs, Merck KGaA	-	-18.0
Write-downs of goodwill, Volpino, Argentina	-	-11.7
Miscellaneous	-	-16.7
	409.6	**0.8**

The income from divestitures mainly includes the earnings before taxes from the disposal of our 43% minority interest in Pharmaceutical Resources Inc., USA, in the amount of EUR 351.2 million. The earnings are composed as follows:

EUR million	2001
Revenues from the disposal	**411.2**
less commissions/carrying amounts of investments/deconsolidations	-60.0
Gain before tax (reported under exceptional items)	**351.2**

The gain on disposal is taxed at EUR 118.9 million. This produces a gain after taxes of EUR 232.3 million. In addition, the income from divestitures includes the earnings from the disposal of the Group's interest in ImClone Systems Inc., USA, in the amount of EUR 137.2 million. Measures for the reclamation of contaminated land at sites in the USA and waste-site and safeguarding measures in Darmstadt are included in provisions for environmental risks.

(27) Financial result

EUR million	2001	2000
Interest income from loans	6.0	3.6
Other interest and similar income	56.7	41.8
Interest and similar expenses	-200.1	–186.1
	–137.4	**–140.7**
Exchange differences from financing activities	-18.9	–33.6
Interest component of the addition to pension provisions and other provisions for staff costs/Miscellaneous	-51.7	–48.9
	–208.0	**–223.2**

(28) Income tax

EUR million	2001	2000
Taxes in the period under review on operating activities	-314.0	–233.2
Taxes in the period under review on exceptional items	-118.9	–55.6
Taxes for other periods	-1.2	–7.2
Deferred taxes on operating activities	3.9	23.3
Deferred taxes on exceptional items	7.0	10.8
	–423.2	**–261.9**
Tax rate	39%	50%
Tax rate before exceptional items	47%	42%

The tax expense consists of corporation and trade income taxes for the companies domiciled in Germany as well as comparable income taxes for foreign companies. Other than income taxes are contained in the other operating income and expenses. The deferred taxes relate to temporary differences between the carrying values in the companies' tax bases and the carrying values in the consolidated financial statements using the liability method. Changes in tax rates in individual countries had in total no material impact on deferred tax (previous year: deferred tax income of EUR 1.6 million).

The reconciliation between deferred tax assets and liabilities shown in the balance sheet and deferred taxes in the income statement is presented below:

EUR million	2001	2000
Change in deferred tax assets (balance sheet)	37.0	49.3
Change in deferred tax liabilities (balance sheet)	-49.9	–5.4
Deferred taxes credited/debited to equity	9.3	–1.0
Changes in companies consolidated/Currency translation	14.5	–8.8
Deferred taxes (income statement)	**10.9**	**34.1**

Income tax loss carryforwards at subsidiaries amount to EUR 223.5 million. In 2001, the income tax burden was reduced by EUR 3.5 million due to the utilization of tax loss carryforwards and tax credits. Deferred tax assets are recognized for tax loss carryforwards only if realization of the related tax benefit is probable. This resulted in total deferred tax assets of EUR 26.6 million (previous year: EUR 39.4 million). Deferred tax assets were not recognized for loss carryforwards amounting to EUR 87.3 million at subsidiaries, since future realization of the related tax benefits is currently not expected. The major part of these tax loss carryforwards either have no expiry date or can be carried forward for up to 20 years. Deferred tax assets amounting to EUR 144.7 million were carried for other deductible temporary differences.

In accordance with IAS 12.81, the current tax expense must be compared with the tax expense which would theoretically be incurred by applying the applicable tax rates to the disclosed consolidated profit before tax. In order to improve the informative value of the reconciliation, we have changed the presentation compared with the previous year's financial statements. Instead of applying a uniform tax rate applicable to all companies, the calculation now is based on the tax rates valid for the relevant legal forms of all German and foreign companies in their respective countries.

As the following reconciliation shows, the current tax expense in the Group in the year under review is EUR 48.8 million higher than the tax expense which would be incurred by merely using the tax rates applicable to the German and foreign Group companies:

EUR million	2001	2000
Consolidated profit before tax	**1,078.2**	**523.7**
Tax expense using the relevant tax rates applicable to all German and foreign companies	-374.4	-201,1
Theoretical tax rate	35%	38%
Tax effect by non-deductible amortization of goodwill	-28.9	-28,4
Tax effect by Group companies with a negative consolidated contribution	-25.1	-17,8
Taxes for other periods	-1.2	-7,2
Tax effect by non-deductible expenses and tax-free income/Miscellaneous	6.4	-7,4
Effective tax expense according to income statement	**-423.2**	**-261,9**
Effective tax rate	39%	50%

(29) Minority interest

Minority interest in net profit includes principally the minority interests in Merck Kanto Taiwan, the listed subsidiary Merck India, and Pharmaceutical Resources Inc., which was consolidated until the end of August 2001.

Notes to the Segment Reporting

The classification of asset and income figures as well as of other key figures by business sector or by region in accordance with IAS 14 (revised 1997) is presented in 'Segment Reporting.' Segmentation was performed in accordance with the internal reporting of the Merck Group. The operating segments of the business sectors are described in detail in the business sector sections in the Annual Report. Transfer prices for intragroup sales are agreed on an arm's-length basis. There were no substantial internal relations among the business sectors, with the exception of intragroup sales between the Laboratory Products and Laboratory Distribution business sectors being reported in the Segment Reporting. In the Segment Reporting, the USA and Canada are combined to form a single region 'North America,' as the two countries are managed as a single territory in the Merck Group's internal reporting.

Operating assets included in 'Segment Reporting' were as follows:

EUR million	Dec. 31, 2001	Dec. 31, 2000
Total assets of the Merck Group	8,255.4	8,235.4
Monetary assets (cash and cash equivalents, loans, securities)	-888.9	–1,049.2
Non-operating receivables from related parties and tax receivables	-269.6	–270.2
Trade accounts payable	-525.2	–477.6
Operating assets	**6,571.7**	**6,438.4**

Notes to the Cash Flow Statement

We define free cash flow as the total net cash flows from operating and investing activities. It is used as an internal control parameter for measuring the liquidity contributed by our business sectors.

(30) Net cash flows from operating activities

The continued high level of cash inflows is due primarily to the positive development of the operating result during the fiscal year. This contrasts with cash outflows as a result of a further increase in working capital. Net cash flows from operating activities include payments for taxes amounting to EUR 499.8 million (previous year: EUR 348.8 million) as well as interest expenses of EUR 181.7 million (previous year: EUR 169.4 million) and interest income of EUR 55.4 million (previous year: EUR 47.7 million). Under "Gains/Losses on disposal of assets", the gains generated primarily from the disposal of interests in Pharmaceutical Resources, Inc. in the amount of EUR 351.2 million and in ImClone Systems, Inc. in the amount of EUR 137.2 million have been deducted so as to maintain operating net cash flow. Instead, revenues from disposals are carried under net cash flows from investing activities.

(31) Net cash flows from investing activities

Expenses relating to the purchase of property, plant and equipment and acquisitions again resulted in substantial cash outflows in this fiscal year. Revenues from the disposal of assets include the proceeds from the sale of our shares in Pharmaceutical Resources, Inc. and ImClone Systems, Inc. These also comprise a repayment on the remaining purchase price receivable from Bracco amounting to EUR 102 million.

(32) Net cash flows from financing activities

Net cash flows from financing activities include the dividends paid by Merck KGaA to its shareholders totaling EUR 40.5 million and dividends paid to minority shareholders of subsidiaries (EUR 9.9 million). The transfer of profit from Merck & Cie to E. Merck in the amount of EUR 71.5 million and the reciprocal transfers between Merck KGaA and E. Merck in accordance with the Articles of Incorporation, in the amount of EUR 154.5 million, are also included. The reduction in financial obligations is, for the most part, due to the income from the disposal of shares in Pharmaceutical Resources, Inc. and ImClone Systems, Inc.

(33) Cash and cash equivalents

The composition of cash and cash equivalents is presented under 'Notes to the Balance Sheet'.

Other Disclosures

(34) Financial instruments

We use derivative financial instruments exclusively to hedge currency and interest rate positions, and thereby minimize currency risks and financing costs caused by exchange rate or interest rate fluctuations. The instruments used are marketable forward exchange contracts and interest rate swaps. The use of such derivatives contracts is governed by internal regulations, and derivative transactions are subject to continuous risk management procedures. Trading, settlement and control functions are strictly separated, and this separation is monitored by our internal audit department. Derivatives contracts are only concluded with prime-rated banks and are restricted to the hedging of our business operations and related financing transactions.

The following derivative financial positions were held as of the balance sheet date:

EUR million	*Nominal volume Dec. 31, 2001*	*Dec. 31, 2000*	*Fair value Dec. 31, 2001*	*Dec. 31, 2000*
Forward exchange contracts	100.5	217.8	-0.2	-11.8
Interest rate swaps	402.4	487.0	-0.6	-2.5
	502.9	**704.8**	**-0.8**	**-14.3**

The nominal volume is the aggregate of all buy and sell amounts relating to derivatives contracts. The fair values result from the valuation of open positions at market prices, ignoring any opposite movements in the value of the underlyings. They correspond to the income or expenses which would result if the derivatives contracts were closed out as of balance sheet date. The fair values are calculated on the basis of the figures provided by the respective banks.

Derivative financial instruments are recognized at fair values in the balance sheet under other receivables and other assets or under other liabilities. Gains and losses on the fair value of derivatives are usually recognized in the income statement. Under the conditions of hedge accounting according to IAS 39 the accounting is as follows: if the fair value is being hedged, the changes in the value of the derivative as well as the opposite movements in the value of the underlying transaction are recognized directly in the income statement. If (forecast) cash flows are being hedged, the gains and losses on the derivatives are recognized in equity until the hedged underlying transaction occurs. After accounting for the hedged items, the amounts so far recognized in equity are - depending on the type of hedging transaction - reclassified either to the accounted assets or liabilities or directly recognized in the income statement. Hedged items carried in the income statement are either recognized in the operating result or in the financial result if financial obligations are being hedged. This again depends on the type of hedging transaction performed.

The effects of the change in the recognition of derivative financial instruments in line with the initial application of IAS 39 were not recognized in income and led to a reduction in net equity of EUR 14.3 million. Ongoing hedge accounting relating to cash flow hedges according to IAS 39.158 did not result in any material change recognized directly in equity. Hedge accounting for fair value hedges has been applied for interest rate swaps with a nominal value of EUR 186.4 million and fair values of EUR 3.1 million.

The maturity structure of the hedging transactions (nominal volume) is as follows as of the balance sheet date:

EUR million	*Remaining maturity less than 1 year*	*Remaining maturity more than 1 year*	*Total Dec. 31, 2001*	*Remaining maturity less than 1 year*	*Remaining maturity more than 1 year*	*Total Dec. 31, 2000*
Forward exchange contracts	100.5	-	100.5	212.6	5.2	217.8
Interest rate swaps	393.7	8.7	402.4	9.4	477.6	487.0
	494.2	**8.7**	**502.9**	**222.0**	**482.8**	**704.8**

The forward exchange contracts that are entered into to reduce the exchange rate risk have a total nominal volume of EUR 100.5 million and primarily serve to hedge fluctuations in the exchange rate of USD and GBP to EUR. The majority of exchange rate hedging transactions relate to recognized underlyings. Forecast transactions are only hedged if the occurrence can be assumed to be highly probable. The occurrence of hedged items is expected within the next 12 months.

EUR million	*Nominal volume Dec. 31, 2001*	*Fair value Dec. 31, 2001*
Hedging of forecast transactions	27.7	-0.2
Hedging of recognized transactions	72.8	0.0
Total forward exchange contracts	**100.5**	**-0.2**

Interest rate swaps are used to hedge interest rate risks associated with financial obligations. Fixed-interest CHF bonds and a relatively small volume of yen financial obligations totaling EUR 186.4 million were swapped for floating rates. A further EUR 216.0 million of financial liabilities was changed from floating to fixed rates to hedge short-term interest rate risks. Overall, the interest rate structure of the Merck Group's assets and liabilities is presented in the following table. The financial obligations secured by interest rate swaps are recognized according to the effect of the swaps:

EUR million	*Fixed-rate*	*Floating-rate*	*Non-interest-bearing*	*Total Dec. 31, 2001*	*Fixed-rate*	*Floating-rate*	*Non-interest-bearing*	*Total Dec. 31, 2000*
Loans granted	421.6	-	-	421.6	537.9	-	-	537.9
Cash and cash equivalents	180.8	216.2	67.2	464.2	74.3	362.9	65.3	502.5
Other receivables/assets	13.0	25.7	327.6	366.3	34.9	8.4	378.3	421.6
Financial obligations	1,018.1	1,741.2	-	2,759.3	745.6	2,562.7	5.0	3,313.3
Other liabilities	88.9	333.5	478.3	900.7	85.6	272.6	537.3	895.5

The trade accounts receivable and payable not included in the table are for the most part non-interest-bearing.

A theoretical credit risk for the existing derivative instruments only applies to the amount of the positive fair values. As of the balance sheet date, these amount to EUR 0.5 million for forward exchange contracts (previous year: EUR 0.7 million) and to EUR 3.1 million for interest rate swaps (previous year: EUR 0.6 million). As the underlying contracts are only concluded with prime-rated banks, we do not believe that these financial instruments involve any actual credit risk. For financial instruments carried on the face of the balance sheet, the fair values correspond to the carrying values unless stated otherwise in the notes to the individual balance sheet items. Specific write-downs are charged to cover existing credit risks of financial instruments originated by the company. In addition, the broad-based business structure of the Merck Group means that there is no particular concentration of credit risks as regards either customers or specific countries.

(35) Contingent liabilities

EUR million	*Dec. 31, 2001*	*thereof subsidiaries*	*Dec. 31, 2000*	*thereof subsidiaries*
Issuance and endorsement of bills	-	-	1.9	–
Guarantees	1.8	-	4.3	2.8
Warranties	5.2	-	5.6	1.1
Other contingent liabilities	13.5	-	12.8	–

(36) Other financial obligations

EUR million	*Dec. 31, 2001*	*thereof subsidiaries*	*Dec. 31, 2000*	*thereof subsidiaries*
Orders for capital spending on property, plant and equipment	95.6	–	46.2	–
Future rental and operating lease payments	204.4	–	182.7	0.4
Future finance lease payments	11.5	–	13.0	–
Long-term purchase commitments	35.4	–	186.6	–
Other financial obligations	10.8	8.1	37.3	6.1
	357.7	**8.1**	**465.8**	**6.5**

Other financial commitments are carried at nominal value. Long-term purchase commitments relate principally to purchase contracts with a duration of between 1 and 4 years. Liabilities from rental and lease agreements are composed as follows:

EUR million	*Remaining maturity less than 1 year*	*Remaining maturity 1–5 years*	*Remaining maturity more than 5 years*	*Total Dec. 31, 2001*
Present value of future lease payments from finance leases	2.0	6.7	0.7	9.4
Interest component of finance leases	0.9	1.0	0.2	2.1
Future finance lease payments	**2.9**	**7.7**	**0.9**	**11.5**
Future operating lease payments	**17.0**	**62.2**	**9.9**	**89.1**

(37) Staff costs/Material costs

Staff costs are composed as follows:

EUR million	*2001*	*2000*
Wages and salaries	1,425.8	1,306.4
Compulsory social security contributions and special financial assistance	244.6	227.2
Pension expenses	86.5	75.6
	1,756.9	**1,609.2**

Material costs amounted to EUR 3,014 million (previous year: EUR 2,694 million).

(38) Related party disclosures

Related parties as defined by IAS 24 are the members of the Executive Board, members of the Merck family and the companies E. Merck, E. Merck Beteiligungen OHG and E. Merck Vermögens KG.

As of December 31, 2001, there were liabilities by Merck KGaA and Merck & Cie, Altdorf, of EUR 313.2 million to E. Merck (previous year: EUR 256.6 million liabilities). These result mainly from the profit transfers by Merck & Cie to E. Merck on the one hand, and the reciprocal profit transfers between Merck KGaA and E. Merck on the other. In addition, Merck KGaA was owed receivables by E. Merck Beteiligungen OHG in the amount of EUR 7.4 million (previous year: EUR 3.3 million receivables) and was owed receivables by E. Merck Vermögens KG in the amount of EUR 5.6 million (previous year: EUR 5.7 million receivables). In total, an average of EUR 172.3 million liabilities was owed to related parties in the fiscal year (previous year: EUR 88.1 million liabilities), which were subject to standard market interest rates. There were no further material transactions with related parties in 2001.

The remuneration of the Executive Board of Merck KGaA is borne by the general partner E. Merck and recorded in its income statement as an expense. In the fiscal year, this remuneration of the Executive Board of Merck KGaA including the additions to pension provisions amounted to EUR 8.9 million. As of balance sheet date, the members of the Executive Board of Merck KGaA hold 198,000 Merck KGaA stock options under the stock option program (see also the notes to section (9)). The number of options held remains unchanged from the previous year.

The members of the Executive Board are listed in the Appendix to the Notes.

The Executive Board of Merck KGaA

Darmstadt, January 25, 2002

B. Scheuble M. Römer

M. Becker Th. Schreckenbach J. Sombroek

Appendix to the Notes

Members of the Executive Board of Merck KGaA

Prof. Dr. Bernhard Scheuble
Seeheim-Jugenheim
Chairman

Dr. Michael Römer
Rodgau
Vice Chairman

Dr. Michael Becker
Darmstadt

Prof. Dr. Dr. h.c. Thomas Schreckenbach
Mühltal

Dr. Jan Sombroek
Darmstadt

Auditors' Report in Accordance with the International Standards on Auditing

"To Merck Kommanditgesellschaft auf Aktien:

We have audited the consolidated financial statements prepared by Merck Kommanditgesellschaft auf Aktien for the Merck Group comprising the balance sheet, income statement, statement of changes in net equity, cash flow statement and notes for the business year January 1 to December 31, 2001. The preparation and the content of these consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion, based on our audit, as to whether the consolidated financial statements comply with the International Accounting Standards (IAS).

We conducted our audit in accordance with German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW) and in accordance with 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 misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Group and the results of its operations and its cash flows for the business year in accordance with IAS. Our audit, which also extends to the group management report prepared by the Company's management for the business year from January 1 to December 31, 2001, has not led to any reservations. In our opinion on the whole the group management report provides a suitable understanding of the Group's position and suitably presents the risks of future development."

Mannheim, January 25, 2002

KPMG Deutsche Treuhand-Gesellschaft

Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft

Schmid
Wirtschaftsprüfer

Bayer
Wirtschaftsprüfer

Report of the Supervisory Board

During fiscal year 2001, the Executive Board provided the Supervisory Board with regular written and verbal reports on the business development of Merck KGaA and the Merck Group. In particular, the Supervisory Board was informed about the market and sales situation of the company against the background of the macroeconomic environment, about the financial position of the company and its subsidiaries, their earnings development and company planning. Important business policy matters were discussed in five joint meetings with the Executive Board.

The annual financial statements of Merck KGaA, the consolidated financial statements of the Merck Group and the management reports for Merck KGaA and the Merck Group, including the accounting, were audited by KPMG Deutsche Treuhand-Gesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft.

The auditors issued an unqualified audit certificate on the annual financial statements and management report for Merck KGaA in accordance with German Auditing Standards. The auditors issued the auditor's certificate, reproduced in the Annual Report of the Merck Group, in accordance with International Standards on Auditing as well as German Auditing Standards, for the consolidated financial statements prepared in accordance with International Accounting Standards. In addition, the auditors audited the calculation of Merck KGaA's participation in the profits of E. Merck in accordance with Art. 27 (3) of the Articles of Incorporation. The annual financial statements of Merck KGaA, the consolidated financial statements of the Merck Group, the management reports for Merck KGaA and the Merck Group and the proposal by the Executive Board for the appropriation of net retained profits were presented and distributed to the Supervisory Board, together with the audit reports of the auditors.

In accordance with Art. 14 (2) of the Articles of Incorporation, the Supervisory Board also examined the annual financial statements of Merck KGaA, the management report for Merck KGaA, the proposal for the appropriation of net retained profits and the auditor's report presented in accordance with Art. 27 (3) of the Articles of Incorporation. It also examined the consolidated financial statements of the Merck Group, the management report for the Merck Group, and took note of the auditor's report of KPMG Deutsche Treuhand-Gesellschaft Aktiengesellschaft Wirtschaftsprüfungsgesellschaft.

The discussion of the relevant item on the agenda at the Supervisory Board's meeting to discuss and approve the financial statements was also attended by the auditors signing the audit opinion on the annual financial statements of Merck KGaA as well as on the consolidated financial statements of the Merck Group, who reported on their audit. The Supervisory Board took note of and approved the results of the audit.

On completion of its examination, the Supervisory Board found no objections and thus approves the annual financial statements and management report for Merck KGaA, the consolidated financial statements of the Merck Group and the management report of the Merck Group, prepared by the Executive Board, as well as the report presented by the auditors in accordance with Art. 27 (3) of the Articles of Incorporation. It gives its consent to the proposal for the appropriation of net retained profits.

Darmstadt, February 13, 2002

The Supervisory Board of Merck KGaA

Dr. Heinrich Hornef
Chairman

Further information about Merck
can be found on the Internet at **www.merck.de**
and in the following brochures:

- Merck Transparent (in German, English, French, Spanish)
- Expedition to the Future – A Journey through Research at Merck
- Biotherapeutic Innovation in Oncology
- Liquid Crystals
- Responsible Care® in the Merck Group – Report 2000
- Responsible Care® at the Gernsheim Site – Report 2001 (in German only)
- Principles and Strategies for Safety, Health and Environment
- Environmental Planning at the Darmstadt Site – Responsible Care® in Dialogue (in German only)
- Containment of the Waste Dump at the Darmstadt Site (in German only)
- Safety and Health with Merck
- Spotlight on the Environment
- Corporate Citizenship in the Darmstadt Region (in German only)

If you have any queries or suggestions,
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