

Why the Germany and Much of the European Union is Losing its Pharmaceutical Industry

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The Paradox of the German Pharmaceutical Industry

- German firms essentially invented the pharmaceutical industry during the late 19th and early 20th centuries. That is when Bayer discovered aspirin and Merck became a dominant force.
- German firms lost ground during the Nazi era of the 1930s, World War II, and reconstruction of the 1940s.
- But German firms still had talent, energy, and tradition. The German pharmaceutical industry recovered after World War II. In 1982, Hoechst was the largest pharmaceutical manufacturer in the world.

- The German pharmaceutical industry today is a small player in the world market.
 - Bayer, Boehringer Ingelheim, and Schering AG, rank 17th, 18th, and 19th in worldwide sales.
- This is the paradox: Germany should be a world leader in pharmaceuticals, but it is a small player.

The European Pharmaceutical Industry

- Germany is not alone.
- The European pharmaceutical industry used to be known as the “world’s medicine chest.”

- But it has been declining relative to the U.S.
 - In 1988, American manufacturers accounted for 19 of the 50 best-selling drugs worldwide.
 - By 1998, American manufacturers sold 33 of the top 50 drugs.
 - In 2001, American firms sold 8 of the top 10 drugs worldwide, and another drug is from a joint venture between Takeda (Japan) and Abbott (U.S.).
 - Six of the 10 largest firms are American; none are German, although the French firm Aventis (which includes Hoechst) ranks number 6.

Top 11 Worldwide Pharma Firms

		Sales	R&D
	Nation	(US\$ bill.)	(US\$ bill.)
Pfizer	USA	26	5
GlaxoSmithKline	UK	25	4
Merck	USA	21	2
AstraZeneca	UK	16	3
Bristol-Myers Squibb	USA	16	2
Aventis	FRA	15	3
Johnson & Johnson	USA	15	1
Novartis	Switz.	15	2
Pharmacia	USA	12	2
Lilly	USA	12	2
Wyeth	USA	12	2

- European firms are moving much of their research and operations to the U.S.
 - Glaxo Smith-Kline moved its operational headquarters to the U.S. in 2000.
 - Novartis moved its research headquarters to Cambridge, Massachusetts.
 - Schering AG moved its therapeutics division to the U.S.
 - Organon relocated from the Netherlands to New Jersey

–Europe is falling behind in research expenditures:

- In 1990, European pharmaceutical firms outspent American firms in research and development by 8 billion Euros to 5 billion Euros.
- In 2000, U.S. firms outspent European firms by 24 billion Euros to 17 billion Euros.
- German firms spent only 3 billion Euros on research and development in 1999, even though the German economy is nearly one-fourth as large as the U.S. economy.
- European biotech firms raised \$US 7 billion in 2000
- American biotech firms raised\$US 33 billion in 2000

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Now Look at the German Automobile Industry

- German automobile industry also went through ups and downs in the 20th century
- The German automobile industry recovered strongly after World War II.
- Production tripled between 1957 and 1967
- Production increased from 3.5 million to 5 million between 1980 and 1992

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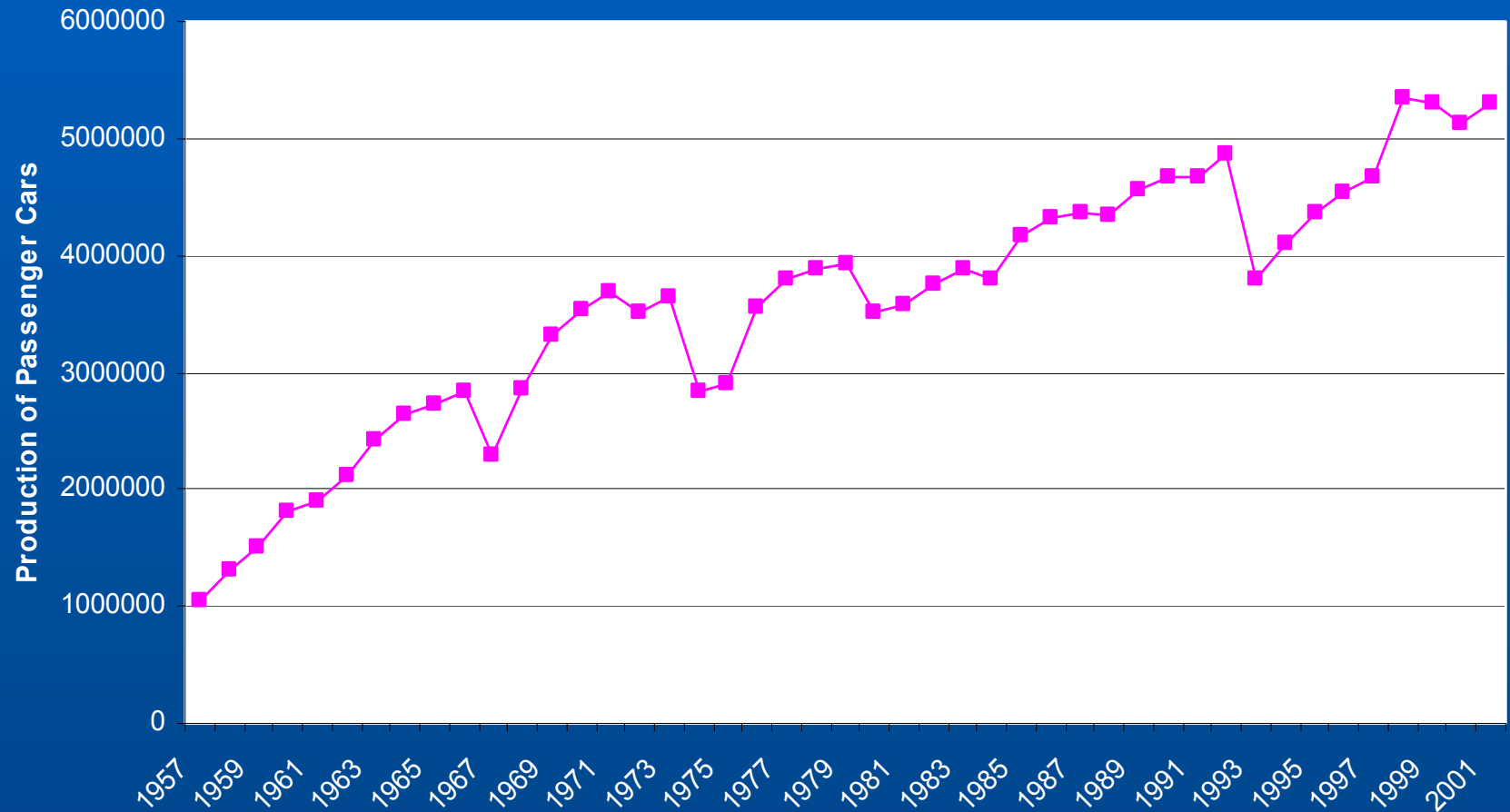
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- Production is now greater than it has ever been
- Almost half of that production is sold abroad.

Domestic Production of Passenger Cars in Germany - 1957-2001



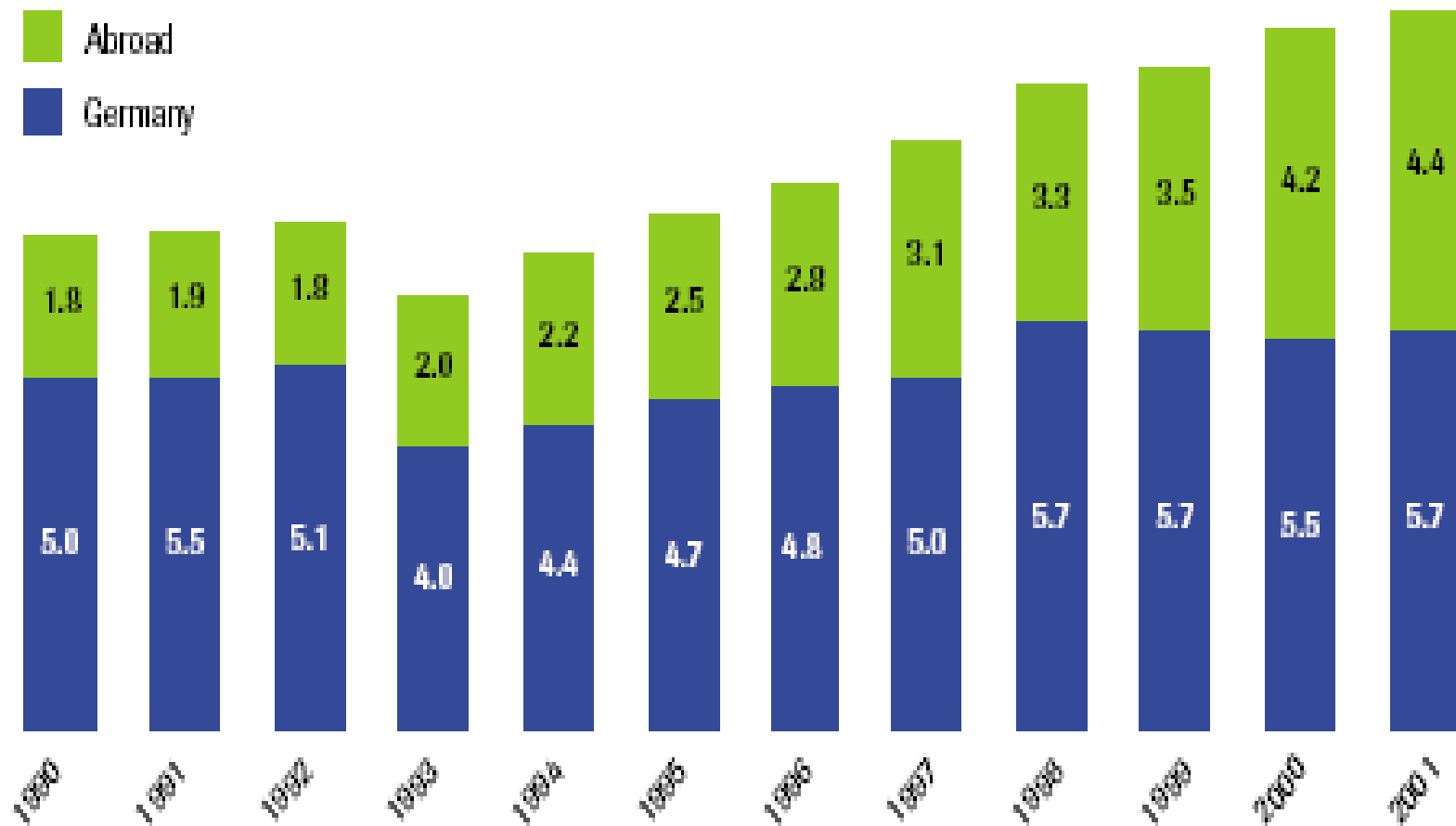
Source: Verband Der Automobilindustrie

Automotive production of German manufacturers in Germany and abroad

In million units

Abroad

Germany



Germany remains an important competitor around the world.

- Germany is not falling behind the U.S.: Daimler took control of Chrysler
- The automobile industry faced great technological challenges:
 - Computerization automobile engines and other parts
 - Robotics in manufacturing
 - Safety features: airbags, antilock brakes, etc.
 - New materials
- The industry adapted to these changes, and remained a leader
- The government did not have to facilitate these changes

Why Did Pharmaceuticals Fail Where Automobiles Succeeded?

- Why have Daimler and VW succeeded in world markets while the largest German pharmaceutical firm ranks 17th in worldwide sales?

Like automobiles, the pharmaceutical industry faced great technological challenges

- The application of advances in molecular biology required the reorganization of pharmaceutical research
- The application of computers and information technology to drug development
- The need for many new creative scientists

- Greater academic-industry collaboration --
including licensing agreements
- Larger, faster clinical trials
- Large amounts of capital for risky investments
- Startup biotechnology firms

–In all these areas, German
pharma fell behind (and so did
Europe) -- but automobiles did
not

–Why the difference?

Market Freedom

The pharmaceutical market is not as competitive as the automobile market

- Pharmaceutical marketing is tightly restricted in Germany and Europe
- Generic drug entry is slow
- Buyers do not compete vigorously to get better and cheaper new drugs
- No consumer sovereignty -- patients have little information about new drugs

The Economics of New Product Development in Automobiles and Pharmaceuticals

- Both are financially risky
- Both involve long timelines, large investments
- Both are subject to competition from other well-established firms
- Both are subject to the preferences of consumers (and doctors)

But look at the profit potential

- Automobiles: If new product development is successful, there are no artificial constraints on pricing or profit, which are determined by competition and consumer preferences.
- Pharmaceuticals: If new product development is successful, the developer must confront severe uncertainties over pricing and profits.

Reuters Health, Dec. 17, 2002

**“German Health Minister
Outlines New Controversial
Healthcare Savings Package”**

“... drug manufacturers must pay a rebate of 6% into the public health insurance system on the price all drugs that are not already regulated by a fixed price scheme.”

Pharmafocus, November 04, 2002

Parallel trade: is pharma fighting a losing battle?

“Meanwhile, in Europe’s biggest pharmaceutical market, Germany, there is more bad news for the industry. Newly introduced laws oblige pharmacists to ensure 10% of drugs they dispense are parallel imports, contributing to a doubling of the parallel imports market there in the last 12 months.”

What Is the E.U. Doing to Help?

- Task forces, benchmarking committees, government reports, industry reports, think tank reports, plans for public-private partnerships
- Reforms in university education system (very slow)
- But: Little if any improvement in pricing and reimbursement policies