

► Imbalanced innovation: European “free ride” in R&D has its limits

The European pharmaceutical industry faces a dilemma in controlling R&D costs.

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“At first glance, Europe seems to be in an enviable position in the pharmaceuticals market, where per capita spending on pharmaceuticals is 60% less than in the U.S.—a gap that has roughly doubled since 1992, when European governments spent approximately 30% less per capita than the U.S.,” according to Bain & Company. This trend has translated into major savings for European pharmaceutical companies and for consumers, and has resulted in many European leaders thinking the lower per capita spending is good for their respective countries. However, at second glance, this trend may not bode well for Europe in the future. A new study, *Addressing the Innovation Divide*, by Bain & Company finds that the decline in R&D spending by Europe’s pharmaceutical companies is affecting European innovation. It’s what Bain analysts have dubbed “imbalanced innovation.”

According to the consulting firm’s study, “The once-balanced scales holding the gold of pharmaceutical innovation have tipped precariously toward the U.S. and away from Europe.” In the decade that ended in 2002, U.S. R&D investment nearly tripled to \$26 billion, far outpacing that in Europe, which less than doubled, to \$21 billion, Bain reports. If current trends continue, U.S. innovation spending will be twice that of Europe by 2012. The main reason behind the trend is that pharmaceutical innovation has basically “followed the money.”

European and U.S. companies each held about a one-third share of the world drug market in 1990. Today, Europe’s share is down to 18%, while that of the U.S. has jumped to 62%. Bain says the shift in innovation is due in part to higher prices and utilization. But it also has followed other factors that drew the profit pool: government and capital support of R&D and new drug

company formations; the broad synergy between American scientists in industry and universities; and R&D suppliers that encourage corporate investments. “R&D suppliers being mainly the equipment and technology suppliers that provide pharmaceutical companies with basic chemistry and diagnostic equipment and tools,” says Paul Rosenberg, Bain vice president and co-author of the study.

While European leaders are content with their spending, U.S. government and business leaders are waging a contentious debate, arguing that because of this R&D imbalance, Europe is getting a “free ride” on U.S. labcoat-tails where pharmaceutical R&D efforts are concerned, the Bain consultants report. The complaint being made is that American insurers and consumers unfairly pay the lion’s share of innovation costs through higher drug prices while European consumers enjoy the fruits of U.S. labor with 25–35% lower drug costs. The Bain study notes, however, that the conventional wisdom suggesting Europe profits while the U.S. pays is of concern. “Europe has to realize the free ride is not free,” Rosenberg says.

High cost of Europe’s “free ride”

European governments are largely responsible for the cost differences with the U.S., stemming from various marketplace interventions, including fixed reimbursement prices in France; set reference prices in Germany; and profit limits in the U.K. While governmental actions have helped decrease per capita spending on pharma-

ceuticals, they have also created unwanted side effects. Bain’s research shows that the social and economic costs to Europe, in the form of delayed access to drugs, poorer health outcomes, decreased investment in research capabilities, and a drain placed on high-value pharmaceutical jobs, undermine the “free ride” approach.

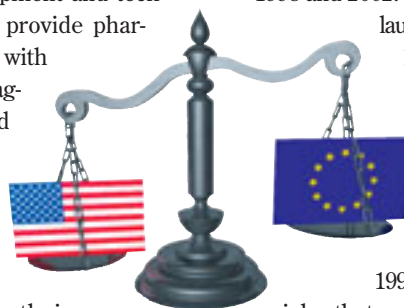
For example, the report states, “Eighty-one new molecular entities (NMEs) were launched in Europe between 1993 and 1997, yet only 44 NMEs were launched between 1998 and 2002. However, 48 NMEs were

launched in the U.S. between 1993 and 1997, with 85 NMEs launched between 1998 and 2002.”

The U.S. also created 42% more “high-value-added” pharmaceutical jobs than Europe from 1990 to 2001. “Meaning those jobs that are relatively high salary, \$50K to \$250K, and primarily focused in science R&D,” Rosenberg explains. The report also points out the discrepancy in growth in R&D spending: Although both U.S. and European drug R&D expenditures were about \$10 billion in 1992, U.S. spending grew by 11% per year to 2002 versus just 8% for European companies.

Snapshot of Europe

Bain focused its study on Germany to get a snapshot of Europe. The consultants estimate that while Germany receives an annual benefit of \$19 billion from lower drug spending, it is offset by \$22 billion in costs. If German spending had kept pace with that in the U.S., Germany would have gained wages from high-value-added jobs, billions of dollars in taxes on those wages and on corporate centers, and nearly \$4 billion in job-creation benefits from related growth in supplier and service industries. “Corporate centers are distinct from R&D centers,” Rosenberg explains. “Corporate centers are the headquarter facilities and general-function offices that would be created in conjunction with R&D location and relocation; for example, a number of other



jobs in human resources, accounting, administration, and so on, would be created, which would add to the wealth associated with the creation of the R&D jobs themselves.” Most critically, Bain estimates Germany lost nearly \$5 billion from poorer health outcomes driven by lowered access to the most innovative drugs.

Although the U.S., Europe, and Japan are the key pharmaceutical markets, accounting for nearly 80% of global sales, Bain only looked at Europe. “There may very well be imbalances with other industrialized nations such as Japan,” Rosenberg says. “However, the study focused on comparisons with industrialized nations with at least comparable levels of GDP [gross domestic product] per capita.”

The “free-rider model”

The Bain study indicates that while Europeans have embraced the “free-rider model,” four industry trends are converging to push this model into unsustainability. Along with decreasing access to innovative drugs, these trends include the shift in research spending to the U.S. and an associated brain drain of industry scientists and managers from Europe; the growing gap in per capita drug spending between the U.S. and Europe; and the shift to the U.S. for drug development and clinical trials, which has caused the preponderance of new drugs to be launched in the U.S.

For example, the Swiss drug company Novartis decided in 2002 to center its global research discovery efforts in Cambridge, MA. Its Novartis Institutes for BioMedical Research (NIBR), opened in March 2003, focuses on research in oncology, infectious diseases, diabetes, and cardiovascular disease. “We still have a major research presence in Europe, including Vienna, the U.K., and headquarters in Basel,” says Jeff Lockwood, director of external and government relations for NIBR.

Speaking in May 2002 about the company’s plans for the Cambridge site, Novartis CEO Daniel Vasella expressed how better pricing coupled with a better product-approval climate influenced the decision. Vasella also said, “Cambridge was a logical location for the Novartis research center because it is more and more difficult to attract and retain scientific

talent, so we have to go where the talent is.” Lockwood confirms Vasella’s expectations. “We have been happy with the quality of candidates for jobs at the Cambridge site. We did have some transfers but, for the most part, we are hiring in the area and recruiting nationally and internationally.”

Meanwhile, pharmaceutical producers



PHOTO: NOVARTIS
Novartis decided to move its R&D headquarters to the new Novartis Institutes for BioMedical Research in Cambridge, MA.

Merck and Pfizer made their own plans for cutting R&D in Germany. Merck, in late 2003, said it had abandoned plans to build a research center in Munich. And, like Novartis, Merck is building a major R&D operation in the Boston area. Pfizer, now the world’s largest pharmaceutical company, consolidated its 150-person German R&D operations, as a result of the \$57 billion Pharmacia acquisition, with its main European R&D base in the U.K.

Merck’s and Pfizer’s moves were reportedly in response to Germany’s *Agenda 2010*, health care reforms that could cut into profits. A provision in the proposed health care reform increases the rebate companies have to pay insurers from 6% to 16%. The government is also proposing price caps for patented medicines to cut more than \$1 billion from its health care budget.

In the midst of these revelations came the *Third European Report on Science & Technology Indicators*, published in 2003 by the European Commission. The EC report was prepared at the request of the European Union’s Council of Ministers following a 2000 meeting, which spotlighted competitiveness. Among the report’s more negative findings is that Europe, despite being the largest producer of scientific papers, is challenged in its ability to exploit and com-

mercialize science.

Among the positive points mentioned is the strength of Europe as “the world’s biggest brain factory.” For example, in 2000, the 15-member European Union graduated 2.14 million individuals, of whom 26% were in science and technology, compared with 2.07 million graduates in the U.S. (17% with scientific and technical training) and just over 1.1 million graduates in Japan (21% with such training). However, the report found that an increasing number of Ph.D. students and postdocs complete their studies outside Europe. Additionally, in the second half of the past decade, 74% of European doctoral candidates remained in the U.S. after completing their studies, up from 64% in the previous 5 years.

Restoring the balance

In the EC report’s preface, Philippe Busquin, the EC’s commissioner for research, states some concerns of critical importance for Europe’s future. “Europe needs to invest more in research,” he points out, “particularly if it is to attain its objective of becoming the most competitive and dynamic knowledge-based economy in the world.” If the EU does not reach its target goal of spending 3% of GDP on research by 2010, the gap between Europe and the U.S. will be even more significant. Europe must also “exploit and commercialize science to boost growth, employment, and improve social conditions,” he adds.

Commenting more specifically on the health care area, the Bain consultants suggest that the European drug industry “can’t afford to rely on the current sporadic, individual actions of a few major drug firms. It needs a collaborative, far-thinking response to a big economic threat.” They recommend that Europe battle the loss of scientific expertise by instituting tax breaks for R&D expenditures and boosting government support for academic research with greater incentives for technology transfer from universities to the private sector.

“Europe’s ‘free ride’ is a myth,” Bain concludes. “The sooner that myth is exploded, the sooner governments and companies can begin working together to rebalance innovation and expand the benefits of a vibrant global pharmaceutical industry.” ■