



Here or There? A Survey on the Factors in Multinational R&D Location – Report to the Government-University-Industry Research Roundtable (2006)

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A declining U.S. share of patents and scientific awards shows United States' long dominance of cutting-edge science and technology is under attack. Media coverage of corporate reliance on offshore research and development (R&D) has added to the public concern. To ensure that policy discussions regarding globalization of corporate R&D are informed by data rather than case studies or

anecdotes, the Government-University-Industry Research Roundtable (GUIRR) of the National Academies requested a survey to determine the factors behind R&D site location, with particular attention paid to the decision to locate in the home country versus other countries.

This report summarizes a survey of 200 multinational companies across 15 industries that were asked about recent and future R&D location decisions, and the factors influencing those decisions. The majority of the companies have home offices in the United States or Western Europe. Most are multinational, with almost 90 percent having some R&D facilities outside the home country. For about 20 percent of the companies, more than half of their technical employees in R&D are outside the home country.

Corporations are expanding their R&D overall. The survey confirms that China and India are primary targets of R&D expansion, but because of the overall expansion, this trend does not yet indicate a "hollowing out" of R&D in the United States. R&D location decisions are complex and driven by a variety of factors, including the potential for market growth, the quality of R&D personnel, the cost of research, and the opportunity for collaborating with universities.

Locating R&D in Countries with Emerging Economies

The survey shows that for companies locating R&D facilities in emerging countries, the factors driving this decision were, in order:

- 1) Growth potential of that country's market
- 2) Quality of the local R&D personnel.
- 3) (tie) Collaborations with local universities
- 3) (tie) Cost

The most surprising finding was that cost—a factor which had garnered the majority of the attention by the media—was only the third most important factor in siting decisions. In fact, cost was tied with the importance of collaborations with local universities, a factor that had been virtually absent in press accounts about offshoring. Intellectual property (IP) protection by

emerging countries was typically a significant negative factor in the decision to locate R&D facilities in emerging countries.

- Box 2 Factors in Selection of Site**
1. There are highly qualified R&D personnel in this country. (QualR&D)
 2. There are university faculty with special scientific or engineering expertise in this country. (UnivFac)
 3. We were offered tax breaks and/or direct government assistance. (TaxBreaks)
 4. In this country it is easy to negotiate ownership of intellectual property from research relationships. (Ownership)
 5. Exclusive of tax breaks and direct government assistance, the costs of R&D are low in this country. (Costs)
 6. The cultural and regulatory environment in this country is conducive to spinning off or spinning in new businesses. (Spin)
 7. It is easy to collaborate with universities in this country. (CollabUniv)
 8. There is good protection of intellectual property in this country. (IPProtect)
 9. There are few regulatory and/or research restrictions in this country. (FewRestrict)
 10. The R&D facility was established to support sales to foreign customers. (SupSales)
 11. This country has high growth potential. (Growth)
 12. The R&D facility was established to support production for export to other countries. (SupExport)
 13. The establishment of an R&D facility was a regulatory or legal prerequisite for access to the local market. (LegalReg)

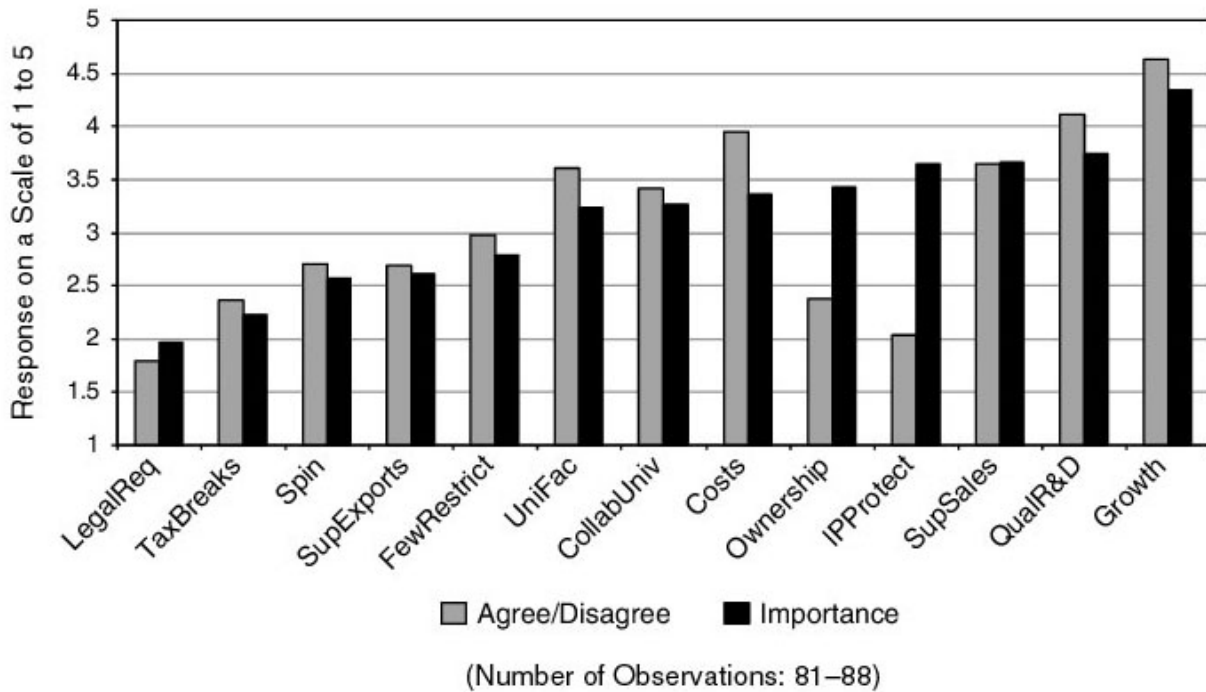


FIGURE 7 Factors in selecting a site in an emerging economy.

Respondents who had recently located, or were planning to locate, an R&D facility in an emerging economy were asked whether each factor represented a positive or negative attribute for that site (agree=positive). They were also asked which factors were important in their decision-making to choose that site (importance). Number of observations =81-88.

Locating R&D at Home or in a Country with a Developed Economy

When companies located R&D facilities either at home or in another developed economy, the most important attractors were:

- 1) (tie) Quality of R&D personnel
- 1) (tie) Quality of intellectual property protection.
- 3) Collaborations with local universities/ university faculty
- 4) Growth potential of the market/support of sales

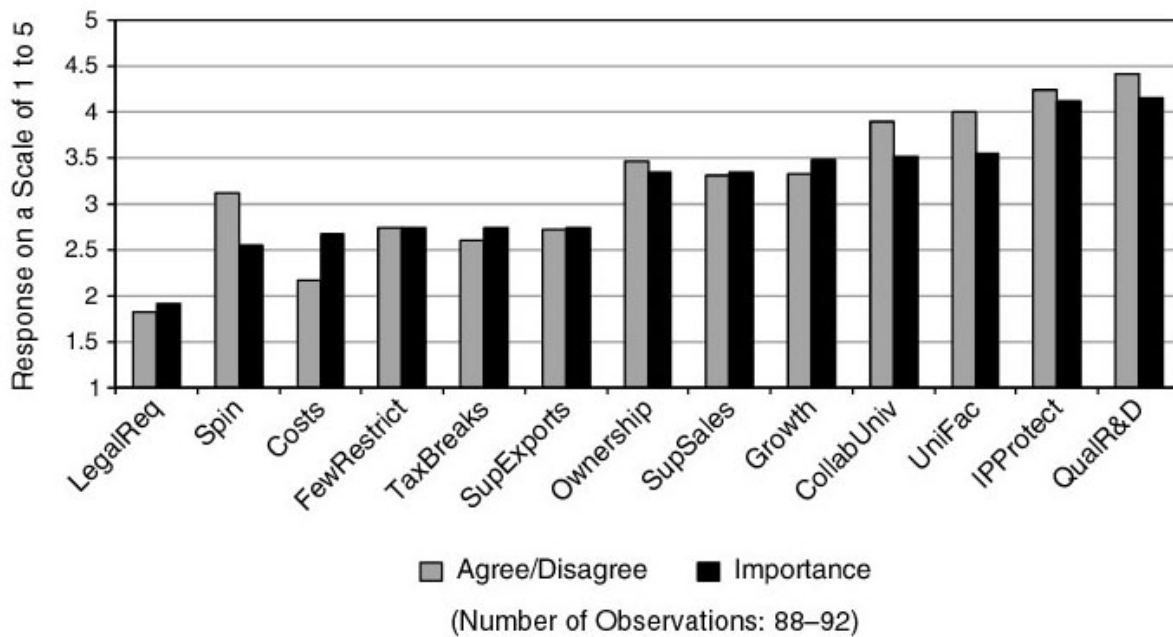


FIGURE 8 Factors in selecting a site outside the home country and in a developed economy.

Respondents who had recently located, or were planning to locate, an R&D facility outside the home country and in a developed economy were asked whether each factor represented a positive or negative attribute for that site (agree=positive). They were also asked which factors were important in their decision-making to choose that site (importance). Number of observations =81-88.

Reasons for R&D Site Location in Developed vs. Emerging Economies

A company’s decision regarding where to locate R&D is not about home versus another country; rather, it is about a developed country versus a developing country. Both emerging and developed economies are competing for corporate R&D facilities on the basis of the quality of their workforce and the quality/ease of interaction with local universities. Companies locate R&D facilities in emerging economies primarily because of the significant growth potential of emerging markets. On the other hand, developed economies offer superior intellectual property protection, which is the second most important factor in attracting companies to developed economies and the single most important deterrent with respect to locating R&D facilities in emerging economies. Costs, while they are a mild attractor for companies wishing to site R&D in an emerging economy, are not a deterrent in selecting a site in a developed economy. Additionally, the type of

research being done plays a role. Over 45 percent of the R&D in the home country or developed economy sites is for new science, whereas roughly 22 percent of the effort in emerging countries is for new science. Finally, over 75 percent of the respondents said the R&D facility under discussion was part of an expansion in R&D. Less than 30 percent of the sites were characterized as relocation. In addition, there was more relocation within the home country than toward other countries.

For More Information

Copies of *Here or There? A Survey on the Factors of Multinational R&D Location* are available from the National Academy Press (NAP); (800) 624-6242 or (202) 334-3313, or visit the NAP website at www.nap.edu. For inquiries about the Government University-Industry Research Roundtable (GUIRR), contact staff at (202) 334-1399, or visit the GUIRR website at www.nationalacademies.org/guiirr.