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INTERNATIONAL INVESTMENT IN R&D CENTRES IN EUROPE FROM 2002 TO 2005: AN ANALYSIS BASED ON AFII DATA

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INTRODUCTION-EXECUTIVE SUMMARY

We are currently witnessing an upwards trend in the internationalisation of business R&D, which until now had largely remained concentrated in countries of origin[1]. This trend takes a variety of forms: agreements and alliances, selling and purchasing of licences, acquisition of foreign firms with high R&D potential, funding of work performed by foreign R&D centres, etc. It can also lead to enterprises directly setting up fully owned R&D centres abroad. It primarily concerns developed countries, and in particular Western Europe, which is where most of the world's R&D potential remains concentrated, even though there are signs that enterprises are starting to show a growing interest in Asia[2].

The setting-up of R&D centres abroad may itself take the form of either basic R&D laboratories, located in world-ranked centres of scientific excellence so that the enterprise can tap into the best resources, or the development and adaptation of products that will be introduced into the regional markets targeted by the enterprise. In the case of the most globalised enterprises, all these R&D activities will be co-ordinated through hierarchical and internationally integrated networks (Sachwald, 2005).

According to AFII databases, international investment in R&D in Europe averaged 135 projects and at least 6 000 jobs a year from 2002 to 2003[3]. North America is the main source of investment and accounts for 54.6% of the jobs created in Western Europe (36.7%), where the three main beneficiaries are German, French and UK firms. Lastly, Asian firms account for only a small proportion of new R&D jobs, despite the fairly longstanding presence of Japanese firms and vigorous growth in new countries or origin (India, etc.) in 2005.

The sectors accounting for the most new jobs created are pharmaceutics, electronic equipment, automobile-making, software, monitoring, and to a lesser extent electronic components and biotechnology.

Western Europe currently has the largest share of jobs (66.3%) and projects (84.8%). The main destinations are France, Germany, Ireland and the UK. However, the share accounted for by certain Eastern European countries (Czech Republic and Poland) rose sharply in 2005.

After describing the overall trends in the market, this paper will first address the structure of "demand" (country of origin and sectors) and secondly that of "supply' (destination countries).

[1] For recent data on this subject, see (UNCTAD, 2005), (Kalotay, 2005,), (Sheenan 2005).

[2] See in particular (UNCTAD, 2005).

[3] Partial statistic representing approximately two thirds of the total.

MAJOR MARKET TRENDS

Overall analysis

According to AFII databases, international investment in R&D in Europe averaged 135 projects and at least 6 000 jobs a year between 2002 and 2005[4]. This represents only a tiny fraction of total international project flows in Europe: approximately 5.4% of the number of projects and 3.9% of the number of jobs created. The market was highly active in 2005 when twice as many jobs were created as in 2004, primarily due to increased investment from North America and to a lesser extent Asia (Table 1).

Tableau 1: International R&D projects in Europe 2002-2005 (%)

	2002	2003	2004	2005	Total
Number	120	126	111	181	**538**
Jobs (thousands)	6.0	4.2	4.7	10.8	**25.7**
Average size	105.6	72.4	90.5	106.7	**95.9**

Source: AFII

The size of individual projects is fairly small, averaging 96 new jobs created compared with 173 for all projects as a whole (highly skilled employees, often working in small teams). Over 60% of jobs were created for medium or small-sized projects (fewer than 250 jobs), whereas the contribution of large projects (500 jobs and above) is very limited (Tables 2 and 3).

Table 2: Breakdown of jobs created by size of project 2002-2005 (%)

Size / Function	1-25	26-50	51-100	100-250	250-500	501-1000	>1000	Total
Production	1.0	3.2	7.7	18.1	22.1	21.9	25.9	**100.0**
Waste treatment	15.1	18.1	66.8	0.0	0.0	0.0	0.0	**100.0**
Total Production	**1.0**	**3.2**	**7.8**	**18.1**	**22.0**	**21.9**	**25.9**	**100.0**
Commercial office	51.7	14.4	17.3	11.5	5.1	0.0	0.0	**100.0**
R&D centre	5.5	8.9	14.7	31.4	26.4	13.0	0.0	**100.0**
Call centres	0.5	2.5	9.1	18.6	44.4	21.8	3.1	**100.0**
Logistics	2.1	5.6	11.9	26.2	24.7	12.3	17.3	**100.0**
Supply of services	4.2	7.3	11.6	25.5	29.8	18.8	2.8	**100.0**
Administrative services. head office	4.7	7.3	14.0	21.9	27.4	19.3	5.4	**100.0**
Tertiary total	**4.7**	**6.4**	**12.2**	**24.1**	**29.8**	**16.4**	**6.5**	**100.0**
Total	**2.1**	**4.1**	**9.1**	**19.8**	**24.3**	**20.3**	**20.2**	**100.0**

Source: AFII

[4] Partial statistic representing about two thirds of the total.

Table 3: Breakdown of projects by project size according to function (%)

Function \ Size	1-25	26-50	51-100	101-250	251-500	501-1000	>1000	Total
Production	14.0	18.3	21.1	23.4	13.7	6.3	3.2	**100.0**
Waste treatment	46.7	20.0	33.3	0.0	0.0	0.0	0.0	**100.0**
Total Production	**14.3**	**18.3**	**21.1**	**23.2**	**13.6**	**6.3**	**3.1**	**100.0**
Commercial office	87.4	7.4	3.7	1.1	0.3	0.0	0.0	**100.0**
R&D centre	36.6	21.3	16.4	17.2	6.7	1.9	0.0	**100.0**
Call centres	6.7	13.5	24.2	23.6	25.3	6.2	0.6	**100.0**
Logistics	19.3	21.2	21.8	23.0	10.7	2.5	1.5	**100.0**
Supply of services	34.5	21.1	16.0	16.6	8.6	2.9	0.3	**100.0**
Administrative services. head office	35.7	20.9	18.4	13.4	8.3	2.9	0.4	**100.0**
Tertiary total	**39.9**	**17.7**	**15.9**	**15.0**	**8.7**	**2.4**	**0.5**	**100.0**
Total	**26.1**	**18.0**	**18.7**	**19.4**	**11.3**	**4.5**	**1.9**	**100.0**

Source: AFII

Market concentration

While the degree of market concentration is not low, it is nonetheless lower than that observed for other functions such as production or administrative services, in terms of both projects and investing enterprises (Table 4):

- Projects ranked in the top decile by size account for 43.3% of the total number of jobs created, a percentage slightly below that observed for production activities. Most job creation is spread between a large number of small or medium-sized projects.

- Enterprises ranked in the top decile in terms of the number of R&D jobs created account for 50.4% of jobs, compared with 60.3% for the production function. Only 14 enterprises carried out more than 3 investment projects in R&D in Europe during the period 2002-2005.

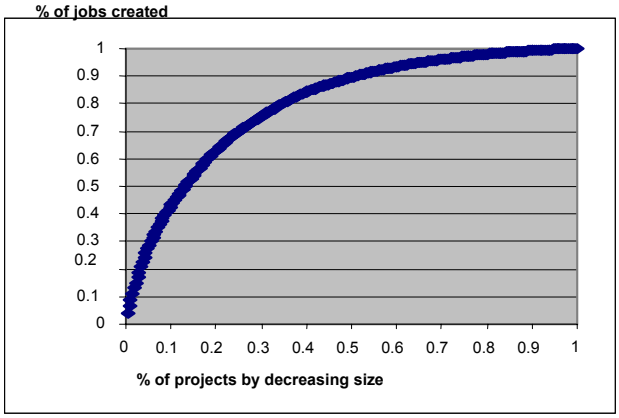
Table 4: Market concentration by projects and enterprise according to function 2002-2005

(% of jobs created)

Largest project or investor in terms of job creation / Function	Projects					Enterprise			
	1%	5%	10 %	20 %	50 %	1%	5 %	10 %	20 %
Commercial office	15.0	33.9	44.0	57.1	78.1	12.0	33.2	45.5	59.0
R&D centre	8.9	28.7	43.3	63.3	89.7	12.5	32.5	50.4	70.0
Call centres	5.7	20.5	32.7	52.2	84 .8	10.0	34.3	46.8	63.4
Logistics	14.8	33.6	45.4	62.2	88.2	17.0	43.7	55.5	69.7
Supply of services	9.3	29.7	47.3	67.0	90.9	12.9	36.7	53.1	72.2
Administrative services. head office	11.2	32.7	48.4	68.6	91.0	14.9	36.3	52.1	71.1
Production	11.9	34.0	49.0	65.8	89.5	16.4	47.4	60.3	73.8

Source: AFII

Figure 1: Lorenz curve of jobs created by decreasing size of projects



Source: AFII

However, in interpreting these figures account needs to be taken of the fact that the European "market" for R&D centres is relatively small in terms of the absolute number of both projects and investor enterprises. Consequently, apparently modest concentration indicators can obscure the fact that a small number of projects and enterprises in absolute terms account for a high proportion of jobs. For example, the first 25 top-ranked investors alone account for over 50% of the new jobs created (Table 5). Likewise, the 10 largest projects alone account for almost 25% of new jobs created.

Table 5: The main multinationals investing in foreign R&D in Europe 2002-2005

Company	Projects	Jobs	Cumulative Job total	Cumulative %
Siemens	15	1172	1172	4.6
Delphi	4	1064	2236	8.7
STMicroelectronics ; Philips ; Motorola	1	984	3220	12.5
General Electric	3	820	4040	15.7
Motorola	2	800	4840	18.8
IBM	8	715	5555	21.6
Abbott Laboratories	1	700	6255	24.3
Samsung Corporation ; Samsung	2	600	6855	26.7
Faurecia	1	550	7405	28.8
Inverness Medical Innovations	1	500	7905	30.8
General Motors	4	450	8355	32.5
Honeywell	3	450	8805	34.3
Janssen Pharmaceutica ; Johnson & Johnson	2	445	9250	36.0
Microsoft	6	440	9690	37.7
Robert Bosch GmbH	2	405	10095	39.3
Sun Microsystems	3	400	10495	40.8
Toyota Motor	2	400	10895	42.4
Volkswagen	1	370	11265	43.8
TRW Automotive	2	358	11623	45.2
Dow	1	350	11973	46.6
Tata Consultancy Services	2	350	12323	47.9
AstraZeneca	5	343	12666	49.3
Advanced Digital Broadcast	1	300	12966	50.4
Capgemini	1	300	13266	51.6
DaimlerChrysler	3	300	13566	52.8
GlaxoSmithKline Biologicals	1	300	13866	53.9
SAP	3	300	14166	55.1

Source: AFII

Analysis by type of project

A large majority of international R&D projects and job creations are linked to the creation of new sites. Expansions account for merely a limited percentage, including those in Eastern European countries (Table 6).

Table 6: Share of new site creations in the number of jobs created and R&D projects according to destination regions 2002-2005 (%)

Destination	Jobs	Projects
Other Eastern European countries	100.0	100.0
Central/Eastern Europe	69.8	81.5
Total for Eastern Europe	**70.5**	**85.4**
Benelux	49.2	77.8
Northern Europe	70.9	87.7
Southern Europe	82.4	93.9
France	77.4	65.0
British Isles	81.1	83.5
German-speaking countries	75.9	84.7
Total for Western Europe	**76.0**	**83.3**
Total	**74.1**	**83.6**

Source: AFII

DEMAND STRUCTURE: COUNTRIES OF ORIGIN AND INVESTMENT SECTORS

Analysis by region of origin

Projects primarily originate from North American and to a lesser extent Western European firms; the share of Asian investors, by contrast, is extremely small (Table 7). US firms alone account for 52% of new jobs created and 44.8% of investment projects. In 2005 they returned in strength after two years of relatively subdued activity.

The contribution of US firms in terms of R&D investment is far greater than that observed for all types of investment as a whole, in which the North American share amounts respectively to no more than 32% for projects and 25.6% for jobs created. There are two reasons for this strong US presence (and the symmetrically smaller presence of European firms) in R&D projects:

- With regard to basic research centres, multinationals committed to creating a global network will more naturally tend to favour setting up facilities on another continent (North America for European firms, Europe for North American firms). The reason firms adopt this approach is to exploit technological and scientific resources that complement those of the firm's main centre in its country of origin, while a new basic research centre in a neighbouring country (e.g. France for German firms) might simply lead to duplication.

- Development and adaptation centres are usually located close to the final market. A presence in Europe is therefore indispensable for North American firms. In contrast, some European firms can use existing development centres in their country of origin to resolve issues relating to the adaptation of products to markets in neighbouring countries (if required, given that the harmonisation of regulations and convergence of lifestyles and consumption within the EU are increasingly making such adaptation less necessary). As a result, there may be less interest for such firms in setting up development centres in other European countries.

Western Europe is ranked in second place among regions of origin, with three countries well ahead of the rest of the field: firms from Germany, France and the UK alone account for 24.5% of projects and 27% of jobs created. Growth in investment of European origin was slower in 2005 than in other regions, resulting in a levelling-off in its relative share compared with 2004.

While Asian investors remain marginal at world level, a surge in projects of Korean and above Indian origin can nonetheless be observed, in contrast with the relative stagnation in the Japanese effort.

Table 7: Breakdown of projects and job creation in the R&D sector by region of origin 2002-2005 (%)

	Jobs					Projects				
	2002	2003	2004	2005	Total	2002	2003	2004	2005	Total
NORTH AMERICA	**77.1**	**31.8**	**39.7**	**57.3**	**54.6**	**45.8**	**45.2**	**43.2**	**50.8**	**46.8**
United States	76.6	31.0	34.0	54.4	52.0	44.2	44.4	40.5	47.5	44.6
Canada	0.5	0.8	0.0	2.9	1.5	1.7	0.8	0.9	3.3	1.9
OTHER	**0.0**	**1.4**	**0.0**	**0.0**	**0.2**	**0.8**	**1.6**	**0.9**	**0.6**	**0.9**
Japan	**1.5**	**2.3**	**6.5**	**3.3**	**3.3**	**9.2**	**9.5**	**8.1**	**5.5**	**7.8**
Oceania	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**2.5**	**0.8**	**0.0**	**0.6**	**0.9**
Other Asian countries	**0.7**	**1.1**	**5.6**	**9.1**	**5.2**	**2.5**	**3.2**	**6.3**	**8.8**	**5.6**
Korea	0.0	0.0	4.2	5.6	3.1	0.8	0.0	1.8	2.2	1.3
India	0.0	0.3	1.3	3.5	1.7	0.8	0.8	2.7	2.8	1.9
China	0.0	0.7	0.1	0.1	0.2	0.0	1.6	1.8	2.8	1.7
ASIA	**2.2**	**3.5**	**12.1**	**12.5**	**8.5**	**14.2**	**13.5**	**14.4**	**14.9**	**14.3**
Benelux	**3.0**	**4.8**	**2.8**	**1.9**	**2.8**	**3.3**	**1.6**	**2.7**	**4.4**	**3.2**
Netherlands	0.5	4.8	2.8	1.3	1.9	1.7	0.8	2.7	2.8	2.0
Eastern Europe	**0.0**	**0.0**	**0.8**	**0.0**	**0.2**	**0.0**	**0.8**	**0.9**	**0.0**	**0.4**
Northern Europe	**3.9**	**0.5**	**6.8**	**0.6**	**2.5**	**4.2**	**1.6**	**4.5**	**2.8**	**3.2**
Sweden	0.0	0.0	6.6	0.6	1.5	0.8	0.8	3.6	1.7	1.7
Southern Europe	**0.8**	**0.0**	**1.1**	**0.6**	**0.7**	**4.2**	**3.2**	**1.8**	**1.7**	**2.6**
Italy	0.7	0.0	0.0	0.6	0.4	2.5	2.4	0.0	1.1	1.5
France	**3.7**	**18.3**	**1.9**	**10.8**	**8.7**	**7.5**	**7.1**	**7.2**	**7.2**	**7.2**
British Isles	**3.3**	**17.2**	**4.4**	**0.9**	**4.8**	**8.3**	**8.7**	**5.4**	**6.6**	**7.2**
United Kingdom	3.3	17.2	4.2	0.9	4.8	8.3	8.7	4.5	6.6	7.1
German-speaking countries	**6.1**	**22.6**	**30.4**	**15.3**	**17.1**	**11.7**	**16.7**	**18.9**	**11.0**	**14.1**
Germany	2.2	17.8	28.0	11.9	13.5	8.3	11.9	14.4	7.7	10.2
Austria	0.2	0.3	0.7	0.5	0.4	0.8	0.8	2.7	0.6	1.1
Switzerland	3.7	4.5	1.7	2.9	3.1	2.5	4.0	1.8	2.8	2.8
EUROPE	**20.8**	**63.4**	**48.2**	**30.2**	**36.7**	**39.2**	**39.7**	**41.4**	**33.7**	**37.9**
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AFII

Analysis by sector

Four high-innovation intensity sectors (software, automobile, pharmaceutics, electrical and electronic equipment) continue to concentrate most of their projects and employment (65.6% and 7.1% respectively, see Table 8), followed by the biotechnology and electronic component sectors. 2005 was marked by intense activity in the software, aeronautics and biotechnology sectors, and by the levelling-off in investment in electronic equipment, consumer electronics and above all pharmaceutics.

Table 8: Projects and jobs created by sector and by year 2002-2005 (%)

Year / Sector	Projects					Jobs				
	2002	**2003**	**2004**	**2005**	**Total**	**2002**	**2003**	**2004**	**2005**	**Total**
Agro-food. agriculture	2.5	2.4	2.7	4.4	**3.2**	2.2	1	3.4	4.3	**3.1**
Home furnishings	1.7	0.0	0.0	0.0	**0.4**	0.8	0	0	0	**0.2**
Biotechnology	3.3	3.2	5.4	6.1	**4.6**	0.7	0.4	0	5.1	**2.4**
Chemicals. plastics	5.0	5.6	7.2	1.7	**4.5**	8.5	2.9	1.8	0.1	**2.8**
Electronic components	4.2	7.9	9.0	9.4	**7.8**	1.2	4.5	8.2	7.5	**5.7**
Automobile	9.2	17.5	9.9	14.9	**13.2**	5	30.6	23.9	24.9	**21.0**
Consumer electronics	0.8	1.6	2.7	2.8	**2.0**	0	1.7	4.9	1	**1.6**
Energy. concession services	0.0	0.0	0.0	1.1	**0.4**	0	0	0	0	**0**
Electrical. electronic and IT equipment	30.0	19.8	14.4	11.0	**18.0**	31.6	14.4	10.7	8	**15.1**
Other basic industries	0.8	0.0	0.9	1.7	**0.9**	0	0	1.1	0	**0.2**
Machinery. mechanical equipment	0.8	2.4	5.4	1.7	**2.4**	0	3.1	4.2	0.5	**1.5**
Textiles. clothing	0.8	0.0	0.0	0.6	**0.4**	0	0	0	0.5	**0.2**
Other transportation equipment	1.7	1.6	0.0	5.0	**2.4**	0.8	9.5	0	4.5	**3.6**
Drugs. cosmetics	21.7	11.1	16.2	7.7	**13.4**	37.6	18.7	16	4.8	**16.8**
Metals. metalworking	0.8	0.0	0.0	1.1	**0.6**	1.5	0	0	0.1	**0.4**
Manufacturing	**83.3**	**73.0**	**73.9**	**69.1**	**74.2**	**89.9**	**86.7**	**74.1**	**61.3**	**74.5**
Software and IT services	11.7	22.2	22.5	25.4	**21.0**	9.1	10.7	25.9	37.2	**24.2**
Other business services	3.3	4.0	1.8	0.6	**2.2**	0.8	2.4	0	0.2	**0.7**
Other commercial and financial service	0.8	0.0	0.0	1.1	**0.6**	0.2	0	0	0.3	**0.2**
Telecom operators. internet	0.8	0.8	1.8	3.9	**2.0**	0	0.2	0	1	**0.4**
Services	**16.7**	**27.0**	**26.1**	**30.9**	**25.8**	**10.1**	**13.3**	**25.9**	**38.7**	**25.5**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100**	**100**	**100**	**100**	**100**

Source: AFII

Sectoral analysis of regions of origin

The share of North American investors is particularly high in the biotechnology, drugs and electrical and electronic equipment sectors; that of German investors in the automobile sector; and that of Asian investors (notably other Asian countries) in the software sector (see Tables 9 and 10).

Table 9: Sectoral breakdown of R&D jobs created in Europe by region of origin 2002-2005 (%)

Origin / Sector	**North America**	Other Asia	Japan	Oc.	**Asia**	**Other**	Ben.	East Eur.	North Eur.	South Eur.	France	Brit. Isles	Germ. count.	**Europe**	Total
Agro-food.. agric.	**35.1**	0.0	0.3	0.0	**0.3**	**0.0**	1.3	0.0	0.0	0.0	30.1	8.2	25.1	**64.6**	100.0
Household furn. goods	**0.0**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	100.0
Biotechnology	**94.3**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.8	4.9	0.0	**5.7**	100.0
Chemicals, plastics	**56.6**	0.0	2.8	0.0	**2.8**	**0.0**	15.2	0.0	10.3	0.0	0.0	15.2	0.0	**40.7**	100.0
Electrical components	**65.3**	0.7	0.7	0.7	**2.1**	**0.0**	12.0	0.0	0.0	0.0	0.0	2.4	18.3	**32.7**	100.0
Automobile	**44.3**	0.1	8.7	0.0	**8.8**	**0.0**	0.0	0.0	0.0	0.0	12.0	5.7	29.0	**46.8**	100.0
Consumer electronics	**8.6**	49.3	7.4	0.0	**56.7**	**10.1**	7.4	0.0	17.2	0.0	0.0	0.0	0.0	**24.6**	100.0
Energy, concession serv.	**NS**	NS	NS	NS	**NS**	**NS**	NS	NS	NS	NS	NS	NS	NS	**NS**	NS
Elec., electron. IT equip.	**64.1**	1.5	3.3	0.0	**4.8**	**0.4**	7.0	0.0	4.6	0.9	3.6	0.0	14.6	**30.6**	100.0
Mach., mech. equip.	**40.1**	0.0	28.0	0.0	**28.0**	**0.0**	0.0	0.0	4.0	0.0	0.0	0.0	28.0	**31.9**	100.0
Other transport equip.	**53.8**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	46.2	0.0	0.0	**46.2**	100.0
Drugs, cosmetics.	**66.5**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	5.1	1.7	5.3	14.6	6.7	**33.5**	100.0
Metals, metalworking	**0.0**	0.0	0.0	0.0	**0.0**	**0.0**	14.3	0.0	0.0	0.0	85.7	0.0	0.0	**100.0**	100.0
Textiles, clothing	**0.0**	0.0	0.0	0.0	**0.0**	**0.0**	100.0	0.0	0.0	0.0	0.0	0.0	0.0	**100.0**	100.0
Other basic industries	**0.0**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	100.0	0.0	0.0	0.0	**100.0**	100.0
Total Manufacturing	**55.6**	**1.4**	**4.0**	**0.1**	**5.5**	**0.3**	**3.4**	**0.0**	**2.9**	**0.8**	**9.3**	**6.2**	**15.9**	**38.6**	100.0
Other comm. fin. services	**76.7**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	23.3	0.0	0.0	0.0	**23.3**	100.0
Other business services	**5.3**	0.0	0.0	0.0	**0.0**	**0.0**	29.6	0.0	0.0	0.0	65.1	0.0	0.0	**94.7**	100.0
Software, IT services	**52.4**	16.4	1.3	0.0	**17.7**	**0.0**	0.0	0.6	1.4	0.0	5.6	0.6	21.6	**29.9**	100.0
Telecom, internet operators	**60.9**	30.4	0.0	0.0	**30.4**	**0.0**	0.0	0.0	0.0	0.0	0.0	8.7	0.0	**8.7**	100.0
Total Services	**51.5**	**16.1**	**1.2**	**0.0**	**17.3**	**0.0**	**0.8**	**0.6**	**1.3**	**0.2**	**7.0**	**0.8**	**20.6**	**31.2**	100.0
Total	**54.6**	**5.2**	**3.3**	**0.0**	**8.5**	**0.2**	**2.8**	**0.2**	**2.5**	**0.7**	**8.7**	**4.8**	**17.1**	**36.7**	100.0

Source: AFII

Table 10: Sectoral breakdown of R&D job creation by region of origin 2002-2005 (%)

Origin / Sector	**North America**	Other Asia	Japan	Oc.	**Asia**	**Other**	Ben.	East.. Eur	North. Eur.	South. Eur.	France	Brit. Isles	Germ count..	**Europe**	**Total**
Agro-food, agric.	**23.5**	0.0	5.9	0.0	**5.9**	**5.9**	11.8	0.0	5.9	0.0	11.8	23.5	11.8	**64.7**	**100.0**
Household furn., goods	**0.0**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**100.0**
Biotechnology	**48.0**	4.0	0.0	0.0	**4.0**	**0.0**	0.0	0.0	12.0	0.0	8.0	12.0	16.0	**48.0**	**100.0**
Chemicals, plastics	**29.2**	4.2	12.5	0.0	**16.7**	**4.2**	12.5	0.0	8.3	0.0	4.2	8.3	16.7	**50.0**	**100.0**
Electrical components	**59.5**	4.8	2.4	2.4	**9.5**	**0.0**	4.8	0.0	0.0	2.4	0.0	9.5	14.3	**31.0**	**100.0**
Automobile	**42.3**	7.0	15.5	0.0	**22.5**	**0.0**	1.4	0.0	0.0	4.2	2.8	4.2	22.5	**35.2**	**100.0**
Consumer electronics	**18.2**	18.2	27.3	0.0	**45.5**	**9.1**	18.2	0.0	9.1	0.0	0.0	0.0	0.0	**27.3**	**100.0**
Energy, concession services	**0.0**	50.0	0.0	0.0	**50.0**	**0.0**	0.0	0.0	0.0	50.0	0.0	0.0	0.0	**50.0**	**100.0**
Elec., electronic, IT equip.	**44.3**	6.2	13.4	0.0	**19.6**	**1.0**	3.1	0.0	3.1	2.1	7.2	1.0	18.6	**35.1**	**100.0**
Machinery, mech. equip.	**23.1**	0.0	30.8	0.0	**30.8**	**0.0**	0.0	0.0	15.4	7.7	0.0	7.7	15.4	**46.2**	**100.0**
Other transport equipment	**30.8**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	46.2	15.4	7.7	**69.2**	**100.0**
Drugs, cosmetics	**54.2**	0.0	2.8	0.0	**2.8**	**0.0**	0.0	0.0	4.2	4.2	6.9	16.7	11.1	**43.1**	**100.0**
Metals, metalworking	**0.0**	33.3	0.0	0.0	**33.3**	**0.0**	33.3	0.0	0.0	0.0	33.3	0.0	0.0	**66.7**	**100.0**
Textiles, clothing	**0.0**	0.0	0.0	50.0	**50.0**	**0.0**	50.0	0.0	0.0	0.0	0.0	0.0	0.0	**50.0**	**100.0**
Other basic industries	**60.0**	0.0	0.0	0.0	**0.0**	**20.0**	0.0	0.0	0.0	20.0	0.0	0.0	0.0	**20.0**	**100.0**
Total Manufacturing	**43.1**	**4.8**	**9.5**	**0.5**	**14.8**	**1.3**	**3.8**	**0.0**	**3.8**	**3.0**	**6.5**	**8.0**	**15.8**	**40.9**	**100.0**
Other comm. fin. services	**66.7**	0.0	0.0	0.0	**0.0**	**0.0**	0.0	0.0	0.0	33.3	0.0	0.0	0.0	**33.3**	**100.0**
Other business services	**33.3**	16.7	0.0	8.3	**25.0**	**0.0**	8.3	0.0	0.0	0.0	33.3	0.0	0.0	**41.7**	**100.0**
Software, IT services	**63.7**	6.2	3.5	0.9	**10.6**	**0.0**	0.9	1.8	1.8	0.9	7.1	2.7	10.6	**25.7**	**100.0**
Telecom, internet operators	**18.2**	18.2	0.0	9.1	**27.3**	**0.0**	0.0	0.0	0.0	0.0	9.1	36.4	9.1	**54.5**	**100.0**
Total Services	**57.6**	**7.9**	**2.9**	**2.2**	**12.9**	**0.0**	**1.4**	**1.4**	**1.4**	**1.4**	**9.4**	**5.0**	**9.4**	**29.5**	**100.0**
Total	**46.8**	**5.6**	**7.8**	**0.9**	**14.3**	**0.9**	**3.2**	**0.4**	**3.2**	**2.6**	**7.2**	**7.2**	**14.1**	**37.9**	**100.0**
Total (number)	**252.0**	30.0	42.0	5.0	77.0	5.0	17.0	2.0	17.0	14.0	39.0	39.0	76.0	**204.0**	**538.0**

Source: AFII

ANALYSIS OF SUPPLY: DESTINATION REGIONS

Overall trends

The largest share (66.3% of jobs created and 84.8% of projects, see Table 11) of Western European (British Isles and German-speaking countries in particular) countries continues to account for the greatest share, although Central and Eastern European countries now account for a significant and growing share.

The share of Eastern European countries grew between 2002 and 2005. The latter countries even managed to match Western European countries in 2005 in terms of the number of jobs created. The countries primarily responsible for this excellent performance are Poland and the Czech Republic (where there has been strong growth since 2002 despite a decline in 2005). This trend can be attributed to the low-cost skilled labour and growing markets in those countries, both of which encourage firms to locate development/adaptation centres there (see Boxes 1 and 2). It must also be viewed in the broader context of the growing economic strength of emerging host countries (notably Asia, see Annex 1) for the R&D activities of multinational firms.

By contrast, 2005 was a relatively poor year for Northern Europe, Benelux and France, whose share in the creation of new jobs declined dramatically.

Table 11: Projects and jobs by destination region 2002-2005 (%)

	Jobs	Projects
Other Eastern European countries	**0.7**	**3.2**
Romania	**0.2**	**1.5**
Central/Eastern European countries	**32.9**	**12.1**
Hungary	**6.8**	**4.3**
Poland	**13.3**	**3**
Czech Republic	**12.9**	**4.8**
TOTAL EASTERN EUROPEAN COUNTRIES	**33.6**	**15.3**
Benelux	**5.8**	**6.7**
Belgium	**5.1**	**4.8**
Netherlands	**0.6**	**1.5**
NORTHERN EUROPEAN COUNTRIES	**3.1**	**12.1**
Sweden	**2**	**6.3**
Finland	**0.3**	**1.5**
Denmark	**0.9**	**4.3**
SOUTHERN EUROPEAN COUNTRIES	**9.5**	**15.2**
Italy	**1.5**	**3**
Spain	**5.5**	**9.9**
Portugal	**2.5**	**1.9**
France	**9.6**	**11.2**
British Isles	**19.6**	**21.4**
Ireland	**9.3**	**6.3**
United Kingdom	**10.3**	**15.1**
German-speaking countries	**18.7**	**18.2**
Germany	**14.9**	**14.5**
Austria	**1.9**	**1.7**
Switzerland	**2**	**2**
TOTAL WESTERN EUROPE	**66.3**	**84.8**
TOTAL	**100**	**100**

Source: AFII

Box 1. Offshoring: Research centres too?

Last December, the Dutch manufacturer Philips confirmed the creation of a micro-electronics research centre in Colombelles near to Caen, and with it the creation of 100 jobs, a more than welcome investment in a sector where competition for innovation is fierce and an investment won in the face of stiff competition from a site in Hamburg, Germany. Following the example of distribution networks and factories, multinational firms too are now internationalising their R&D activities, a trend which was initiated some twenty years ago by major North American firms, followed a few years later by European firms, and which is currently accelerating. Basic research sites are now being located near to the best centres of scientific excellence and development centres are being located near to final markets: major electronics, pharmaceutical and automobile firms are currently setting up co-ordinated and hierarchical planet-wide networks to produce knowledge and technological expertise. They are also making territories compete against each other to host R&D activities, as they have done for many years with regard to their factories.

The market in question, while small in terms of job numbers, is crucial to local development. At least ten to twelve thousand or so R&D jobs have been created each year in Europe by multinational firms since 2002. While this is relatively few compared with the number of manufacturing jobs (almost ten times more), such jobs are of vital importance to developed countries which absolutely have to defend their leading position in high-technology activities in order to offset the impact of the relocation of traditional industries.

While France's position in this respect is not catastrophic, it is not particularly good either; indeed, many people feel it is actually getting worse. Between 2002 and 2005, France attracted about 10% of the R&D jobs created in Europe. While this performance was more than satisfactory, it does not rank France as a "heavyweight" in terms of technology, despite some success stories such as the decision by Motorola to locate its R&D centre in Crolles near to Grenoble in 2002. Above all, however, it is a performance that is now under threat and a recent report by Frédérique Sachwald for the Futuris forecasting programme even suggests that the attractiveness of France as a research location is in decline. The reasons for this are that French centres of scientific excellence have a lower profile at the international level than those of our neighbours in Northern Europe and, of course, the United States. Other reasons include the lack of co-operation between the public and private research sectors; and operating costs that are only moderately attractive. All of these factors handicap France as a host country for major basic research centres, i.e. those which are of greatest "strategic" interest in terms of innovation expertise.

This is even more true now as the competition in the market grows fiercer. In developed countries, basic research activities are currently concentrating around powerful "poles of excellence" such as the Munich region for biotechnology and Oxford for information technology. In emerging economies the number of product development and adaptation centres is rising. However, we are now seeing a new trend with the creation of a small number of basic R&D centres, attracted by the excellent quality and low cost of local researchers. The outcome of this has been a rapid increase in the number of researchers employed by the private sector. Over the past two years, for example, Eastern European countries have attracted over a quarter of the R&D jobs created by multinationals in Europe, compared with virtually none 5 years earlier, not to mention Ireland and Finland which in a few decades have the level of semi-developed economies to that of major technology poles in biotechnology and telecommunications respectively.

Is this a new form of offshoring? Not according to the DREE, which reports that the creation of R&D centres abroad by French firms has not been accompanied by the closure of centres in France. This has not been sufficient, however, to dispel fears that French and European R&D is being marginalised at the world level. Fears that would appear to be shared, in a variety of forms, by many other observers who all have their own solution to the problem: launching major structural programme supported by high levels of public aid, which according to the Beffa report led to the creation of the National Innovation Agency; or the strengthening of French poles of excellence, notably through the concentration of assets and better co-operation between the public and private sectors, which according to the Blanc report was responsible to the creation of "poles of competitiveness".

Box 2. Criteria for offshoring R&D centres

The quality of the labour force (researchers, technicians) is obviously a basic criterion according to all the surveys available (Sachwald, 2004, Harfi, 2004). However, a finer distinction needs to be drawn according to the type of activity concerned. For basic R&D, the main criteria will be access to poles of excellence of international standing, the quality of scientific researchers, potential for co-operation with public and university research. For development and adaptation centres, greater weight will be given to proximity to markets, overall operating costs and the availability of applied research personnel (engineers and technicians).

Analysis by destination sector and region

In terms of job creation, priority would seem to be given (see Tables 12 and 13) to: (1) automobile projects in German-speaking countries and Central and Eastern Europe; (2) pharmaceutics in Benelux countries and the British Isles; (3) software in Central, Eastern and Southern European countries (and also a large number of small projects in the British Isles); and (4) electrical and electronic equipment in France and the British Isles.

Tableau 12: Sectoral breakdown of projects by destination region 2002-2005 (%)

Destination Sector	Other East Eur. coun.	Central East. Eur.	**East Eur.**	Benelux	North. Eur. countries	South. Eur. countries	France	Brit. Isles	Germ. speaking countries.	**Europe**	**Total**
Agro-food, agric.	0.0	0.0	**0.0**	17.6	5.9	5.9	35.3	5.9	29.4	**100.0**	**100.0**
Household furn., goods	50.0	0.0	**50.0**	0.0	0.0	0.0	50.0	0.0	0.0	**50.0**	**100.0**
Biotechnology	8.0	8.0	**16.0**	16.0	8.0	12.0	4.0	32.0	12.0	**84.0**	**100.0**
Chemicals, plastics	4.2	0.0	**4.2**	8.3	8.3	25.0	20.8	16.7	16.7	**95.8**	**100.0**
Electrical components	7.1	2.4	**9.5**	2.4	14.3	2.4	23.8	21.4	26.2	**90.5**	**100.0**
Automobile	0.0	28.2	**28.2**	9.9	8.5	12.7	2.8	7.0	31.0	**71.8**	**100.0**
Consumer electronics	0.0	9.1	**9.1**	0.0	0.0	27.3	9.1	27.3	27.3	**90.9**	**100.0**
Energy, concession services	Ns	Ns	**Ns**	ns	Ns	Ns	ns	ns	ns	**ns**	**ns**
Elec., electronic, IT equip.	4.1	9.3	**13.4**	6.2	15.5	16.5	13.4	19.6	15.5	**86.6**	**100.0**
Machinery, mech. equipment	0.0	23.1	**23.1**	7.7	15.4	0.0	7.7	15.4	30.8	**76.9**	**100.0**
Other transport equipment	0.0	23.1	**23.1**	0.0	7.7	46.2	0.0	7.7	15.4	**76.9**	**100.0**
Drugs, cosmetics.	0.0	6.9	**6.9**	8.3	12.5	18.1	11.1	26.4	16.7	**93.1**	**100.0**
Metals, metalworking	0.0	0.0	**0.0**	0.0	33.3	33.3	33.3	0.0	0.0	**100.0**	**100.0**
Textiles, clothing	0.0	50.0	**50.0**	0.0	0.0	50.0	0.0	0.0	0.0	**50.0**	**100.0**
Other basic industries	0.0	0.0	**0.0**	0.0	20.0	0.0	20.0	40.0	20.0	**100.0**	**100.0**
Total Manufacturing	**2.8**	**11.3**	**14.0**	**7.5**	**11.5**	**15.0**	**12.8**	**18.3**	**20.8**	**86.0**	**100.0**
Other commercial and financial services	0.0	33.3	**33.3**	0.0	0.0	0.0	33.3	33.3	0.0	**66.7**	**100.0**
Other business services	0.0	8.3	**8.3**	0.0	25.0	16.7	16.7	33.3	0.0	**91.7**	**100.0**
Software, IT services	5.3	15.9	**21.2**	5.3	8.8	14.2	5.3	31.9	13.3	**78.8**	**100.0**
Telecom, internet operators	0.0	0.0	**0.0**	0.0	54.5	36.4	0.0	9.1	0.0	**100.0**	**100.0**
Total Services	**4.3**	**14.4**	**18.7**	**4.3**	**13.7**	**15.8**	**6.5**	**30.2**	**10.8**	**81.3**	**100.0**
Total	**3.2**	**12.1**	**15.2**	**6.7**	**12.1**	**15.2**	**11.2**	**21.4**	**18.2**	**84.8**	**100.0**

Source: AFII

Table 13: Employment by destination region and by sector 2002-2005 (%)

Destination Sector	Other East Eur. coun.	Central East. Eur.	**East Eur.**	Benelux	North. Eur. countries	South. Eur. countries	France	Brit. Isles.	Germ. speaking countries	**Europe**	**Total**
Agro-food, agric.	0.0	0.0	**0.0**	10.3	0.0	0.0	19.4	0.0	70.3	**100.0**	**100.0**
Household furn., goods	0.0	0.0	**0.0**	0.0	0.0	0.0	100.0	0.0	0.0	**100.0**	**100.0**
Biotechnology	0.0	0.8	**0.8**	0.8	4.9	0.0	2.5	91.0	0.0	**99.2**	**100.0**
Chemicals, plastics	10.3	0.0	**10.3**	0.0	13.8	0.0	4.1	22.1	49.7	**89.7**	**100.0**
. Electrical components	3.4	13.7	**17.1**	5.1	0.3	0.0	23.6	11.3	42.4	**82.9**	**100.0**
Automobile	0.0	58.2	**58.2**	8.2	2.7	4.1	0.6	0.7	25.4	**41.8**	**100.0**
Consumer electronics	0.0	7.4	**7.4**	0.0	0.0	0.0	49.3	18.7	24.6	**92.6**	**100.0**
Energy, concession services	ns	ns	**ns**	Ns	ns	ns	ns	ns	ns	**ns**	**ns**
Elec., electronic, IT equipment	1.3	12.6	**13.9**	3.4	2.8	10.2	29.1	25.1	15.5	**86.1**	**100.0**
Machinery, mech. equip.	0.0	40.1	**40.1**	0.0	0.0	0.0	4.0	28.0	28.0	**59.9**	**100.0**
Other transport equipment	0.0	64.5	**64.5**	0.0	5.4	19.4	0.0	10.8	0.0	**35.5**	**100.0**
Drugs, cosmetics	0.0	14.4	**14.4**	17.3	1.0	10.8	8.1	36.6	11.8	**85.6**	**100.0**
Metals, metalworking	0.0	0.0	**0.0**	0.0	0.0	85.7	14.3	0.0	0.0	**100.0**	**100.0**
Textiles, clothing	0.0	100.0	**100.0**	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	**100.0**
Other basic industries	0.0	0.0	**0.0**	0.0	0.0	0.0	100.0	0.0	0.0	**100.0**	**100.0**
Total Manufacturingr	**0.9**	**27.6**	**28.5**	**7.7**	**2.5**	**7.1**	**12.5**	**19.6**	**22.1**	**71.5**	**100.0**
Other comm. and fin. services	0.0	58.1	**58.1**	0.0	0.0	0.0	23.3	18.6	0.0	**41.9**	**100.0**
Other business services	0.0	0.0	**0.0**	0.0	23.7	0.0	29.6	46.7	0.0	**100.0**	**100.0**
Software, IT services	0.0	50.4	**50.4**	0.3	2.7	17.5	0.4	19.2	9.5	**49.6**	**100.0**
Telecom, internet operators	0.0	0.0	**0.0**	0.0	100.0	0.0	0.0	0.0	0.0	**100.0**	**100.0**
Total Services	**0.0**	**48.3**	**48.3**	**0.3**	**5.0**	**16.6**	**1.3**	**19.6**	**9.0**	**51.7**	**100.0**
Total	**0.7**	**32.9**	**33.6**	**5.8**	**3.1**	**9.5**	**9.6**	**19.6**	**18.7**	**66.4**	**100.0**

Source: AFII

Analysis by project size and destination region

The average size of projects is much higher in Eastern European countries than in Western European countries (Tables 14 and 15). This is primarily due to the large proportion of large projects in the so-called Central Eastern European countries. There are also a few large projects in German-speaking countries.

Table 14: Breakdown of projects by size and destination region 2002-2005 (%)

Projects	ND	1 to 25	26 to 50	51 to 100	101 to 250	251 to 500	501 to 1000	Total
Other Eastern European countries	5.2	0.0	3.5	2.3	0.0	0.0	0.0	**3.2**
Central/Eastern Europe	6.3	7.1	10.5	15.9	37.0	50.0	40.0	**12.1**
Eastern Europe	**11.5**	**7.1**	**14.0**	**18.2**	**37.0**	**50.0**	**40.0**	**15.3**
Benelux	8.1	4.1	1.8	9.1	6.5	11.1	0.0	**6.7**
Northern Europe	13.7	18.4	14.0	4.5	0.0	0.0	0.0	**12.1**
Southern Europe	20.0	9.2	12.3	15.9	6.5	11.1	0.0	**15.2**
France	8.5	23.5	12.3	6.8	6.5	0.0	20.0	**11.2**
British Isles	17.8	26.5	29.8	27.3	21.7	5.6	20.0	**21.4**
German-speaking countries	20.4	11.2	15.8	18.2	21.7	22.2	20.0	**18.2**
Western Europe	**88.5**	**92.9**	**86.0**	**77.8**	**63.0**	**50.0**	**60.0**	**84.7**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AFII

Table 15: Breakdown of jobs created by project size and destination region 2002-2005 (%)

Jobs	ND	1 to 25	26 to 50	51 to 100	101 to 250	251 to 500	501 to 1000	Total	Average size.
Other Eastern European count.	NS	0.0	4.4	2.0	0.0	0.0	0.0	0.7	58.3
Central/Eastern Europe	NS	9.5	10.6	15.2	37.7	49.1	33.4	32.9	176.1
Eastern Europe	**NS**	**9.5**	**15.0**	**17.2**	**37.7**	**49.1**	**33.4**	**33.6**	**169.2**
Benelux	NS	2.8	1.3	7.5	6.7	8.8	0.0	5.8	107.1
North Europe	NS	19.0	14.9	5.3	0.0	0.0	0.0	3.1	28.9
South Europe	NS	9.6	13.2	17.5	6.7	11.8	0.0	9.5	87.3
France	NS	25.6	13.5	6.9	6.9	0.0	29.3	9.6	66.9
British Isles	NS	25.3	27.8	26.9	22.6	7.4	20.9	19.6	75.2
German-speaking countries	NS	8.3	14.3	18.7	19.3	22.8	16.4	18.7	112.0
Western Europe	**NS**	**90.5**	**85.0**	**82.8**	**62.3**	**50.9**	**66.6**	**66.4**	**78.7**
Total	**NS**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**95.9**

Source: AFII

Analysis by region of origin and destination

In terms of job creation, North American investors prefer the British Isles, German investors the countries of Central and Eastern Europe, and French investors Southern European and German-speaking countries (Table 16).

The breakdown of projects reflects more or less the same configuration, apart from British investment in a large number of small projects in France and Southern Europe (Table 17).

Table 16: Breakdown of projects by destination region and by region of origin 2002-2005 (%)

Projects	**North Amer.**	**Other**	Other Asia	Japan	Ocean.	**Asia**	Benelux	East Europe	North. Europe	South Europe	France	Brit. Isles.	German speaking countries	**Europe**	**Total**
Other Eastern Eur. count.	**2,8**	**0,0**	0,0	2,4	0,0	**1,3**	5,9	0,0	5,9	0,0	2,6	2,6	6,6	**4,4**	**3,2**
Central/Eastern Europe	**14.3**	**0.0**	6.7	2.4	0.0	**3.9**	11.8	0.0	17.6	0.0	10.3	2.6	21.1	**12.7**	**12.1**
Eastern European countries	**17.1**	**0.0**	**6.7**	**4.8**	**0.0**	**5.2**	**17.7**	**0.0**	**23.5**	**0.0**	**12.9**	**5.2**	**27.7**	**17.1**	**15.3**
Benelux	**6.3**	**0.0**	3.3	14.3	0.0	**9.1**	5.9	0.0	5.9	0.0	12.8	5.1	5.3	**6.4**	**6.7**
North Europe	**12.7**	**0.0**	23.3	7.1	20.0	**14.3**	0.0	50.0	17.6	14.3	7.7	23.1	5.3	**10.8**	**12.1**
South Europe	**10.3**	**20.0**	10.0	14.3	20.0	**13.0**	5.9	0.0	5.9	28.6	28.2	20.5	26.3	**22.1**	**15.2**
France	**7.9**	**0.0**	10.0	14.3	0.0	**11.7**	35.3	50.0	17.6	35.7	0.0	15.4	13.2	**15.2**	**11.2**
British Isles	**29.0**	**60.0**	23.3	19.0	40.0	**22.1**	11.8	0.0	17.6	14.3	12.8	12.8	6.6	**10.8**	**21.4**
German-speaking countries	**16.7**	**20.0**	23.3	26.2	20.0	**24.7**	23.5	0.0	11.8	7.1	25.6	17.9	15.8	**17.6**	**18.2**
West Europe	**82.9**	**0.0**	**93.3**	**95.2**	**100.0**	**94.8**	**78.3**	**100.0**	**76.3**	**100.0**	**87.1**	**94.8**	**72.3**	**82.9**	**84.7**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AFII

Table 17: Breakdown of jobs created by destination region and region of origin 2002-2005 (%)

Jobs	**North America**	**Other**	Other Asia	Japan	Ocean	**Asia**	Benelux	East Europe	North Europe	South Europe	France	Brit. Brit.	Germ speaking count.	**Europe**	**Total**
Other Eastern Eur. count.	**0.0**	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	11.7	0.0	0.0	0.0	2.3	**1.9**	**0.7**
Central/Eastern Europe	**33.4**	**0.0**	45.0	3.5	0.0	**28.8**	9.9	0.0	37.3	0.0	15.8	13.8	52.6	**33.3**	**32.9**
Eastern Europe	**33.4**	**0.0**	**45.0**	**3.5**	**0.0**	**28.8**	**9.9**	**0.0**	**49.0**	**0.0**	**15.8**	**13.8**	**55.9**	**35.2**	**33.6**
Benelux	**4.6**	**0.0**	0.0	47.5	0.0	**18.4**	10.6	0.0	0.0	0.0	3.1	24.4	0.3	**4.8**	**5.8**
North Europe	**3.2**	**0.0**	4.6	5.4	0.0	**4.9**	0.0	100.0	1.2	0.0	1.8	11.4	0.5	**2.6**	**3.1**
South Europe	**4.9**	**0.0**	3.0	2.4	0.0	**2.7**	0.0	0.0	0.0	8.8	29.4	4.7	21.9	**18.0**	**9.5**
France	**8.8**	**0.0**	15.0	8.3	0.0	**12.3**	26.1	0.0	38.9	55.9	0.0	8.9	7.6	**10.3**	**9.6**
British Isles	**28.5**	**100.0**	0.7	19.1	0.0	**7.9**	14.1	0.0	0.0	35.3	8.5	24.6	3.7	**8.6**	**19.6**
German-speaking countr.	**16.7**	**0.0**	31.6	13.7	100.0	**25.0**	39.4	0.0	10.9	0.0	41.4	12.2	11.2	**20.4**	**18.7**
West Europe	**66.6**	**100.0**	**55.0**	**96.5**	**100.0**	**71.2**	**90.1**	**100.0**	**51.0**	**100.0**	**84.2**	**86.2**	**44.1**	**64.8**	**66.4**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AFII

CONCLUSION

We are currently witnessing strong growth in the share of the host country market for development centres, and even some basic R&D centres, accounted for by Eastern European countries. This phenomenon, as well as other trends (growing economic strength of Asia, further growth in North American dominance), illustrates the weakness of the lead held by Western European countries in terms of scientific, technological and innovative capacity. This development is of particular concern to France, whose share of the host country market for R&D projects has sharply declined over the past 4 years.

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ANNEX 1. INTERNATIONALISATION OF R&D BENEFITING ASIA

The 2005 edition of the UNCTAD World Investment Report once again sheds light on the spectacular progress achieved by Asian countries in attracting international investment (FDI). At the global level, the recovery in international FDI flows in 2004 after three years of decline has primarily benefited Asia where incoming flows grew by 45% to 137 billion dollars, almost half of which accounted for by China. This growth is in contrast to a new decline, for the third successive year, in FDI flows into Europe, despite the strong performance of Eastern European countries. As a result of this growth in Asia, the share of developing countries in FDI flows has risen back to the record level of 36% first achieved in 1997.

The report also reveals the speed at which Asian technology has caught up, boosted by the presence of a growing number of R&D centres set up by multinational firms. Over the past fifteen or so years, these firms, which alone account for half of world R&D effort, have started to internationalise their R&D activity in order to adapt their products to local markets, capture skills and innovative capacities and reduce research costs. This trend has been facilitated by the growing fragmentation of innovative processes. As a result, while in 1993 enterprises performed only 10% of their R&D effort abroad, by 2002 this share had risen to 16%. Foreign multinationals are therefore playing play a growing role in the global R&D effort of host countries; in Ireland, Singapore and Hungary, for example, they now account for over half of all private R&D expenditure.

While this trend still remains mainly limited to countries within the OECD area, it is increasingly benefiting a number of developing Asian countries – primarily China and India – and Eastern European countries. The share of foreign R&D expenditure by US firms accounted for by Asia rose from 3% in 1994 to 10% in 2002, while that accounted for by Europe fell from 69.6% to 58.8%. The trend also appears to be accelerating: between 2002 and 2004, according to UNCTAD, half of the international R&D projects in the world were located in developing countries. And it also looks set to continue in that a survey by the same Organisation ranks China and India alongside the United States as the preferred destinations for R&D investments by multinationals over the next few years.

These Asian laboratories are not used solely for product adaptation, as was the case up to only a few years ago. Increasingly, they are genuine research centres, tasked with designing innovations for the world market. Motorola's R&D centres in China, as well as the centres set up by Microsoft and General Electric in India and by Toyota in Thailand, are all part of the "hard core" of the global innovation network of these firms. Pharmaceutical laboratories such as Pfizer, Eli Lily and Astra Zeneca carry out a growing share of their clinical testing work in India. 30% of all new integrated circuits are now designed in South-East Asia. It has to be said that this region offers attractive conditions: rapidly growing markets; a local environment that is favourable to innovation as a result of close collaboration between the research and business sectors; and slightly better protection of intellectual property than used to be the case in the past. Above all, it offers abundant numbers of young skilled researchers who are both creative and relatively inexpensive to hire: China, India and Russia currently account for a third of the total number of science and technology students in the world. It is only natural that multinational firms, faced with a shortage of young researchers in their countries of origin (particularly in Europe) and seeking ways to reduce their R&D costs, are showing a growing interest in such destinations.

All of these factors have induced a phenomenon of accelerated catch-up in host countries. The share of world R&D expenditure accounted for by India and China rose from 2% to 6% between 1991 and 2002.

Developing countries and Eastern European countries accounted for 17% of the foreign patent applications received by the US Patent Office in 2001-2003, compared with merely 7% in 1991-1993. While this trend can potentially be of benefit to the whole of humanity, inasmuch as it allows more benefit to be derived from worldwide innovation potential, it is also fuelling fears in developed countries of a new form of offshoring. In this respect, our country is not particularly in a particularly good position. Between 1995 and 2002, France fell from 12th to 16th place in the world innovation index calculated by UNCTAD, just below Taiwan. Furthermore, France only ranks 7th as the preferred destination for R&D investment by multinationals, well behind China and India, in what is clearly a downwards trend that makes it even more urgent to implement more activistic innovation support policies.

ANNEX 2. MAIN R&D CENTRE INVESTMENT PROJECTS 2002-2005

Year	Company	Jobs	Country of origin	Dest. country	Operation	Description	Sector
2002	STMicroelectronics ; Philips ; Motorola	984	United States	France	Creation	STMicroelectronics, Philips and Motorola sign an unprecedented agreement on R&D, creating 1 200 jobs in Crolles	Electrical, electronic, IT equipment
2002	Abbott Laboratories	700	United States	Ireland	Creation	The pharmaceutical firm Abbott Laboratories will create 700 new jobs in Ireland	Drugs, cosmetics
2005	Samsung Corporation	600	Korea	Poland	Expansion	Samsung will create 600 new jobs in its R&D centre in Warsaw	Software and IT services
2003	Faurecia	550	France	Germany	Creation	Faurecia opens a new R&D centre in Germany, creating 550 jobs.	Automobile
2002	General Electric	520	United States	Hungary	Creation	The US group US GE will set up a medical research centre in Hungary	Drugs, cosmetics
2004	Siemens	500	Germany	Portugal	Creation	The German group Siemens opens a research laboratory in Alfragide, in Portugal	Software and IT services
2005	Inverness Medical Innovations	500	United States	UK	Creation	The US group US Inverness will set up an R&D centre in Stirling, Scotland	Biotechnology
2005	Delphi Corp.	500	United States	Poland	Creation	The US group Delphi plans to open a technology centre in Kracow	Automobile
2005	Motoraola inc .	500	United States	Germany	Expansion	The US firm Motorola opened a second site near to Munich, Germany	Electronic components
2005	IBM corp.	500	United States	Poland	Creation	The US group IBM intends to set up an R&D centre in Kracow, Poland	Software and IT services
2003	Honeywell	400	United States	Czech Rep.	Creation	The US group Honeywell will open an R&D centre in the Czech Republic	Other transport equipment
2005	Sun Microsystems Inc.	400	United States	Czech Rep.	Creation	The US firm Sun Microsystems will build an R&D centre in Prague, Czech Republic	Software and IT services
2005	Volkswagen AG	370	Germany	Czech Rep..	Expansion	Skoda Auto (Volkswagen group) intends to expand its development centre in Mlada Boleslav	Automobile
2002	Dow	350	United States	Switzerland	Creation	The US chemicals group Dow will set up its European research centre near to Zurich	Chemicals, plastics
2005	Tata Consultancy Services	350	India	Germany	Creation	The Indian firm Tata Consultancy Services is expanding in Germany, creating 350 jobs	Software and IT services.
2005	General Motors Corp.	350	United States	Germany	Creation	The US firm General Motors intends to build a design centre in Rüsselsheim	Automobile
2003	GlaxoSmithKline Biologicals	300	UK	Belgium	Expansion	The UK group GlaxoSmithKline Biologicals is recruiting 300 young graduates in Belgium	Drugs, cosmetics
2004	Janssen Pharmaceutica ; Johnson & Johnson	300	United States	Belgium	Creation	Janssen Pharmaceutica is opening a new research centre in Belgium, creating 300 jobs	Drugs, cosmetics
2005	SAP AG	300	Germany	Hungary	Creation	The German firm SAP is setting up an R&D centre in Budapest, Hungary, creating 300 jobs	Software and IT services.
2005	Capgemini S.A.	300	France	Spain	Creation	The French firm Capgemini is setting up a software development centre in Asturias	Software and IT services
2005	Motorola inc.	300	United States	Poland	Expansion	The US firm Motorola is expanding its development centre in Kracow	Software and IT services
2005	Advanced Digital Broadcast	300	Switzerland	Poland	Expansion	The Swiss group ADB will invest in its R&D centre in Zielona Gora	Electrical, electronic, IT equipment
2005	Delphi Corp	264	United States	Poland	Expansion	The US group Delphi will expand its R&D centre in Kracow	Automobile

Source: AFII