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Monitoring industrial
research:

**The 2011 EU Industrial
R&D Investment
SCOREBOARD**

Joint Research Centre

Directorate-General for Research & Innovation



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IRMA activities aim to improve the understanding of industrial R&D and Innovation in the EU and to identify medium and long-term policy implications.

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More information on Industrial Research and Innovation (IRMA) is available at: <http://iri.jrc.ec.europa.eu/> and http://ec.europa.eu/invest-in-research/index_en.htm

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Summary

The 2011 “EU Industrial R&D Investment Scoreboard” (hereafter the *Scoreboard*) contains economic and financial data from the world’s top 1400 companies ranked by their investments in research and development (R&D). Each of these companies invested more than € 30 million in R&D in 2010; 400 were headquartered in the EU and 1000 were located elsewhere.

The data are drawn from the companies’ latest available accounts, i.e. statements for fiscal year 2010.¹

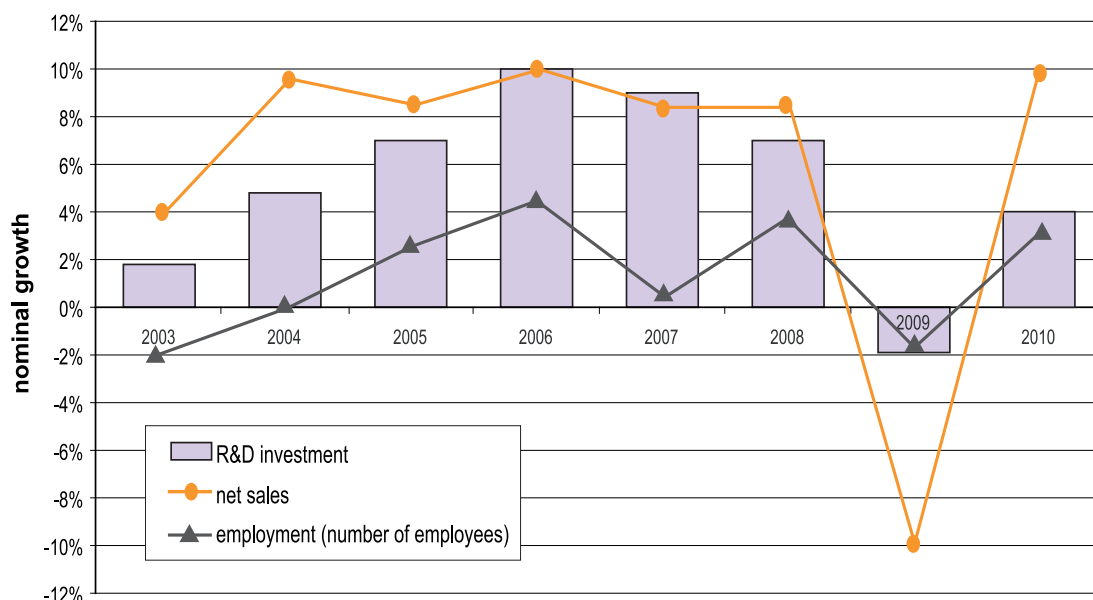
While last year’s *Scoreboard* companies’ figures reflected the major impact of the crisis that started in 2008, this year’s figures show significant signs of recovery although companies still have to deal with a challenging economic environment. The willingness of many of the top R&D investing firms to increase R&D investment underlines the role R&D plays in maintaining or enhancing competitiveness.

Key findings

Worldwide, R&D investments by the top R&D investing companies increased by 4 % in 2010, a robust upturn following the 1.9 % drop observed in 2009.

In 2010, the 1400 companies in the *Scoreboard* increased R&D investments by 4 % to € 456 bn. This represents a substantial turnaround following the previous 1.9 % drop during the recession in 2009. This upturn was accompanied by improved company performance in terms of net sales and employment (Figure S1).

Figure S1. One-year R&D investment, net sales and employment growth of the *Scoreboard* companies



Note: The different Scoreboards are not directly comparable because of changes in the sample composition.

Source: The EU Industrial R&D Investment Scoreboards (of 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011).

European Commission, JRC/DG RTD.

¹ However, due to differences in accounting practices, the sampling period for fiscal year 2010 includes a range of dates from 2009 to early 2011 for the individual company accounts. Concretely, this means that data on Japanese firms refers to an earlier period.

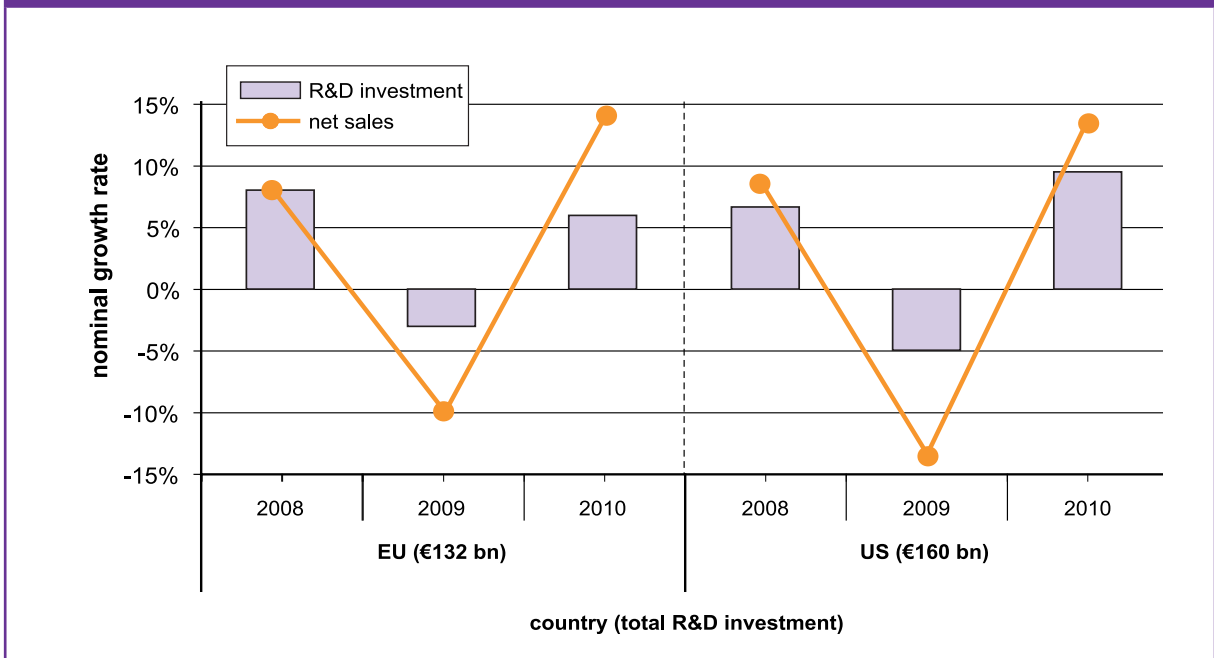
While R&D investments by EU and US companies were those most affected by the crisis in 2009 (downturns of 2.6 % in the EU and 5.1 % in the US), these companies are experiencing a strong recovery in 2010: 6.1 % and 10 % respectively.

The improved R&D investment performance of the US *Scoreboard* companies compared to the EU ones (Figure S2) is accompanied by net sales increases (13 % for both groups of firms) and improved profitability (14.4 % versus 10 % respectively).

Companies from the rest of the world, and certain Asian countries in particular, continue to show very strong increases in their R&D investment levels: 29.5 % for Chinese companies, 20.5 % for those in South Korea and 17.8 % for Taiwanese ones.

Japanese companies show a drop of 9.7 % in their R&D investments; however this figure mainly corresponds to an earlier accounting period than that used by their EU or US counterparts and is more indicative of the 2009 recession than of the 2010 recovery.²

Figure S2. Growth of R&D investment and net sales in the *Scoreboard*



Source: *The 2011 EU Industrial R&D Investment Scoreboard*.

European Commission, JRC/DG RTD.

² Because of Japanese companies' accounting practices, the figures taken from the available company reports for the elaboration of the *Scoreboard* correspond to the period March 2009-March 2010.

Two Pharmaceutical companies have climbed to the top of the ranking: Roche from Switzerland is in first place followed by Pfizer from the US. Volkswagen, ranked sixth in the world, is once again the largest R&D investor headquartered in the EU.

As observed in previous *Scoreboards*, Pharmaceutical companies continue to increase their presence in the top positions. Three US Pharmaceutical companies showed especially strong R&D growth in 2010: Merck (47 %), Abbott (35.7 %) and Pfizer (21.4 %). By contrast, the largest EU company in the sector (Sanofi-Aventis, France) dropped out of the top ten ranking this year and is now 14th.

Another tendency among the top 50 is high R&D investment growth by ICT companies: LG (39.5 %), Oracle (38.9 %), Google (32.3 %) and Samsung (24.9 %). However, some Automobile companies that were severely hit by last year's economic and financial crisis present remarkable R&D growth: Daimler (16.5 %), General Motors (14.7 %) and BMW (13.3 %).

The Pharmaceuticals & Biotechnology sector has strengthened its position as the largest sector for R&D, while the other two leading sectors (Technology Hardware & Equipment and Automobiles & Parts) are now recovering from last year's downturn.

Pharmaceuticals & Biotechnology, Technology Hardware & Equipment and Automobiles & Parts are the top three sectors, and they make up for more than half of R&D investment worldwide. This has hardly changed since the first *Scoreboard* was published in 2004.

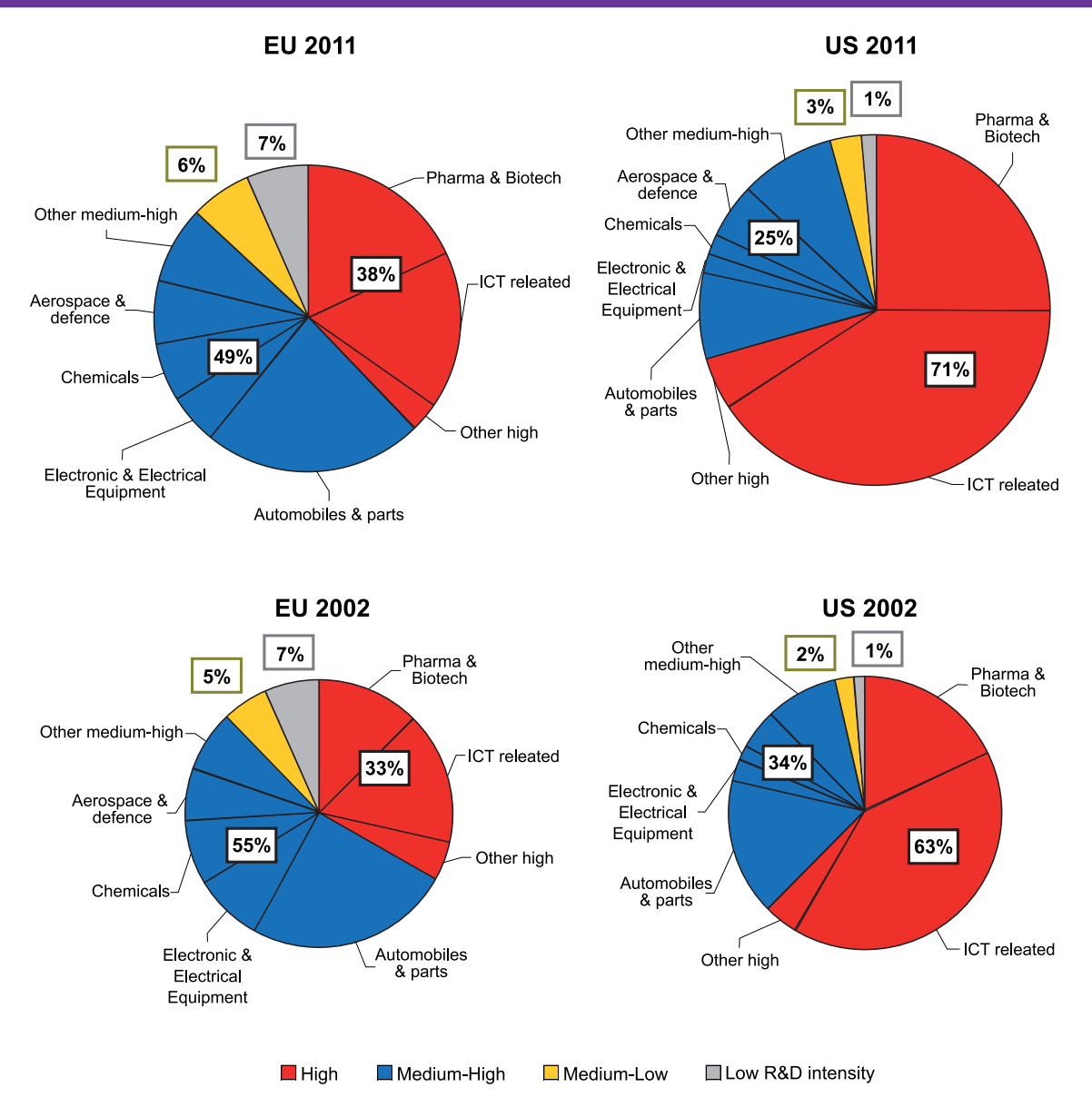
R&D investments by Pharmaceuticals & Biotechnology companies grew by 6.2 % in 2010, slightly more than in 2009. Technology Hardware & Equipment and Automobiles & Parts are recovering from the significant downturns observed in 2009 (from -6.4 % to 3.5 % and -11.6 % to 0 % respectively). Upswings in R&D investments were also observed for most other sectors, except for Chemicals and Fixed-line Telecommunications, as well as improved sales growth compared to 2009.

The tendency for EU companies to specialise in medium-high R&D intensity sectors and for US companies to specialise in high R&D intensity sectors has been reinforced during the past eight years.

As shown by a sub-sample of companies for which complete data since 2002 is available, most R&D undertaken by EU *Scoreboard* companies pertains to medium-high R&D intensity sectors, while US companies tend toward the high R&D intensity sectors (Figure S3). In both regions, the share of R&D from Pharmaceuticals & Biotechnology has increased considerably from 2002 to 2010 (from 12 % to 18 % in the EU and from 18 % to 25 % in the US). In addition, the share of the Automobiles & Parts sector in the US decreased from 16 % to 8 %, leading to a decrease in the medium-high R&D intensity share in that region. In contrast, the shares of the medium-high R&D intensity sectors of EU companies remained relatively stable.

This picture reveals the persistence of the EU-US R&D gap and the need to increase the presence of EU companies in high-tech sectors.

Figure S3. R&D investment of EU and US companies shares by sector group



For a sample of 489 EU and 361 US companies for which data is available for all years in the 2011, 2007 and 2006 Scoreboards adjusted to the 2011 Scoreboard exchange rates. The area of the pies approximately corresponds to the respective total R&D investment amount.

Sectors are split into four groups according to the R&D intensity of the sector worldwide:

High R&D intensity sectors (R&D intensity above 5%) include e.g. Pharmaceuticals & Biotechnology; Health Care Equipment & Services; Technology Hardware & Equipment; Software & Computer Services.

Medium-high R&D intensity sectors (between 2% and 5%) include e.g. Electronics & Electrical Equipment; Automobiles & Parts; Aerospace & Defence; Industrial Engineering & Machinery; Chemicals; Personal Goods; Household Goods; General Industrials; Support Services.

Medium-low R&D intensity sectors (between 1% and 2%) include e.g. Food Producers; Beverages; Travel & Leisure; Media; Oil Equipment; Electricity; Fixed line Telecommunications.

Low R&D intensity sectors (less than 1%) include e.g. Oil & Gas Producers; Industrial Metals; Construction & Materials; Food & Drug Retailers; Transportation; Mining; Tobacco; Multi-Utilities.

Source: The 2011 EU Industrial R&D Investment Scoreboard.

European Commission, JRC/DG RTD.

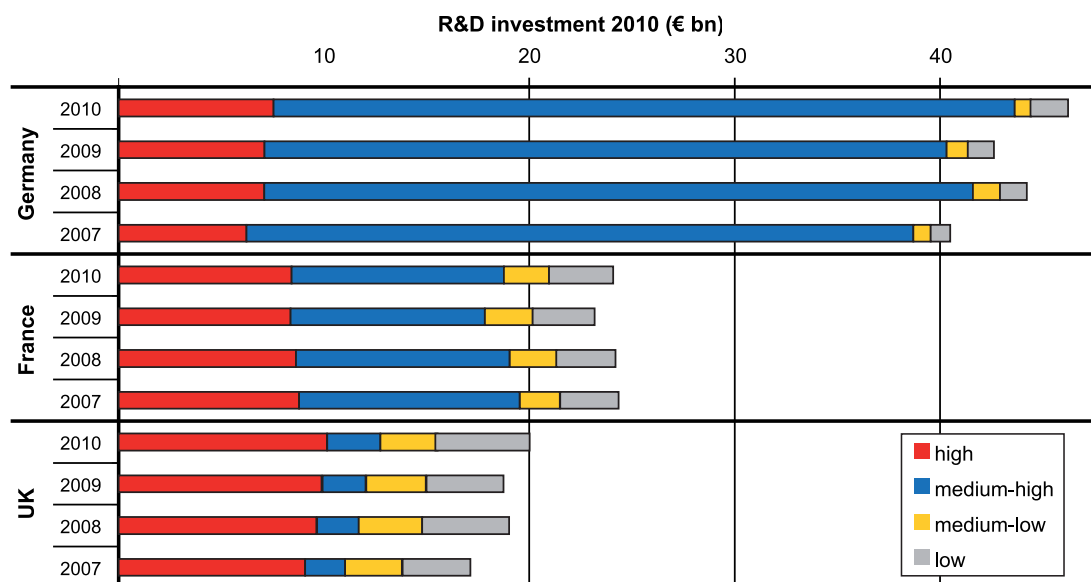
Differences in sector composition also lead to different R&D growth rates among the EU Member States. Within the EU, the highest contribution to growth comes from German companies and is mainly due to a few automobile companies.

An analysis of an extended sample of EU 1000 companies shows that more than two thirds of the R&D investment comes from companies located in the three largest Member States (Figure S4). Among these three, German companies showed the highest one-year growth (8.1 %), mostly due to a few automobiles companies (Daimler, Volkswagen and BMW). R&D investment growth of UK companies was 5.8 %, close to the EU average, compared to 3.8 % for French companies.

In the other Member States, a few large players account for sizeable shares of the R&D investment growth: Novo Nordisk (27.3 %) and Vestas (49.8 %) in Denmark and Banco Santander (56.3 %), Telefonica (16 %) and Amadeus (33.2 %) in Spain.

This reveals the importance of the corporate behaviour of a few large players for the country and sector mix.

Figure S4. R&D investment shares in Germany, France and the UK, by sector group



Split of sectors as in Figure S4.

Source: The 2011 EU Industrial R&D Investment Scoreboard.

European Commission, JRC/DG RTD.

Many of the companies in the *Scoreboard* qualify as “fast-growing”³, particularly those in the high R&D intensity sectors. At a time when the European Commission is developing a new Europe 2020 headline innovation indicator, it is of interest to present information on the sub-category of fast growing companies among the top R&D performing ones.

A relatively high number of fast-growing R&D performing companies have been identified within a sample of *Scoreboard* firms between 2002 and 2009.

3 According to the OECD definition: “High-growth enterprises, as measured by employment (or by turnover), are enterprises with average annualised growth in employees (or in turnover) greater than 20 % a year, over a three-year period, and with ten or more employees at the beginning of the observation period”.

Most of these companies are concentrated in three high R&D-intensity sectors and the majority of them are based in the US, particularly those showing rapid sales growth. This illustrates the considerable dynamism of high R&D-intensity sectors in the US as compared with the EU.

The analysis of an extended sample of 1000 EU companies shows that the number of fast-growing companies in high R&D-intensity sectors is relatively greater among larger companies (measured in terms of sales and employees). Fast-growing companies such as Tom-Tom (Netherlands) in the Electronic Equipment sector; Autonomy (UK) and Gameloft (France) in Software; and Morphosys (Germany) in Biotech, all deserve to be highlighted as success stories with good results in 2010.

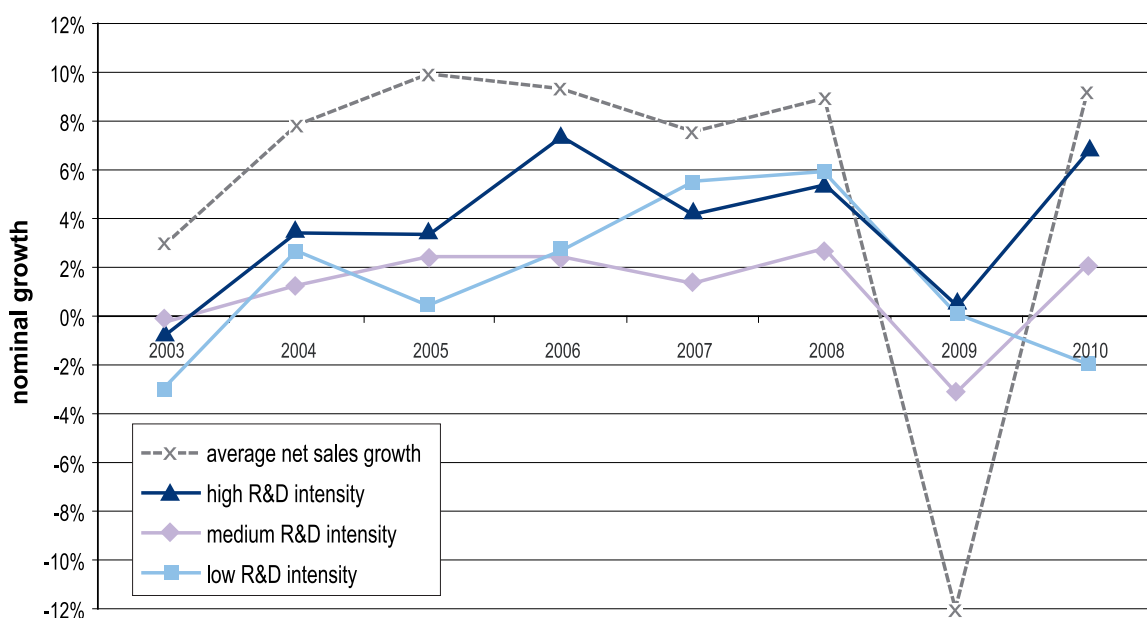
Employment by *Scoreboard* companies has also recovered and seems to be more resilient in high R&D-intensity sectors.

The 1400 companies in the *Scoreboard* employed more than 40 million people in 2010, a 3 % increase with respect to 2009. The employment figures from 2009 suffered a decrease of 1.2 % with respect to the previous year.

Over the past eight years, employment patterns observed in the *Scoreboard* companies are generally similar to those for R&D investment and net sales. A further analysis grouping industrial sectors according to R&D intensity shows that employment growth in high R&D-intensity sectors is generally stronger than in other sectors, and significantly less affected by the economic downturn (Figure S5). This suggests that the relationship between R&D and employment depends on companies' R&D intensity, which is consistent with an econometric analysis finding that R&D has a positive effect on employment that increases with the research intensity of companies.

The location of employment by the *Scoreboard* companies on a region-by-region basis cannot be analysed using available company data.

Figure S5. One-year employment growth of the *Scoreboard* companies per sector group



For a sample of 1000 (462 EU and 538 non-EU) companies for which data is available for all years in the 2011, 2007 and 2006 Scoreboards adjusted to the 2011 Scoreboard exchange rates. Split of sectors as in Figure 3 with the medium-high and medium-low R&D intensity sectors constituting the medium R&D intensity sectors.

Source: The EU Industrial R&D Investment Scoreboards (of 2006, 2007, and 2011).

European Commission, JRC/DG RTD.

1. Introduction

The 2011 *EU Industrial R&D Investment Scoreboard*⁴ (the *Scoreboard*) collected information on the 1000 EU companies⁵ and 1000 non-EU companies which invested the largest sums in R&D during the last reporting year. The *Scoreboard* includes data on R&D investment along with other economic and financial data from the last four financial years. For background information on the *Scoreboard* please see Annex 1.

The data for the *Scoreboard* are taken from companies' latest published accounts, interpreted as their 2010 fiscal year accounts (although due to different accounting practices, they also include accounts ending on a range of dates between late 2009 and early 2011). The approach for collecting data is explained in detail in Annex 3.

This report concentrates on the analysis of a sample of companies that invest comparable amounts in R&D. These are the world's top 1400 companies that invested more than € 30 million in R&D in 2010 (400 companies based in the EU and 1000 companies based elsewhere).

The main characteristics of the companies listed in the *Scoreboard* are summarised in Table 1. They constitute a sample of the largest 1400 companies that invested more than € 30 million in R&D. A more detailed description of the sample is found in Annex 2 and the complete dataset containing the 2000 companies is freely accessible online at <http://iri.jrc.ec.europa.eu/>.

Report structure

This report presents key figures on R&D and related parameters for the world's top R&D investors.

The main features of the 2011 *Scoreboard* and an overview of the most noteworthy changes that took place in 2010 regarding the industrial R&D landscape are described in chapter 2.

Chapter 3 examines the performance of individual companies among the largest R&D investors, and those undergoing significant R&D growth in particular.

Chapters 4 and 5 analyse main indicators from the company data aggregated by world regions and industrial sectors respectively, and includes comparisons between the group of 400 EU companies and their main non-EU competitor groups.

Chapter 6 presents an overview of the fast-growing companies⁶ identified in the *Scoreboard* over the past eight years, with a view to highlighting the key characteristics and drivers of dynamic companies of this type.

Lastly, Chapter 7 provides a short analysis of employment trends for the companies listed in the *Scoreboard* and results of empirical studies on the relationship between companies' R&D investment and employment.

4 The *EU Industrial R&D Investment Scoreboard* is published annually by the European Commission (JRC-IPTS/DG RTD) as part of its Industrial Research Monitoring and Analysis activity (IRMA). Company data were collected by Company Reporting Ltd.

5 The term 'EU company' refers to companies whose ultimate parent's registered office is located in an EU Member State. Likewise, 'non-EU company' refers to companies whose ultimate parent company is located outside the EU (see also the glossary and definitions in Annex 3 as well as the handling of parent companies and subsidiaries).

6 A company is classified as being a 'fast growing' if it achieves a 20 % minimum increase in either sales or employment during three consecutive years, according to a definition by OECD-EUROSTAT (2005).

Annex 1 provides background and methodological information about how the *Scoreboard* is prepared, while Annex 2 presents the main characteristics of the full dataset. The methodological approach, scope and limitations are described in Annex 3. Annex 4 provides a list of the fast-growing companies listed in the *Scoreboard* and Annex 5, the listing of the 1000 EU and 1000 non-EU companies ranked by their level of R&D investment.

The complete data set is freely accessible online at: <http://iri.jrc.ec.europa.eu/>.

The different rankings of the *Scoreboard* dataset in spreadsheet format are accessible at:

1. **EU dataset ranked by company:**
http://iri.jrc.es/research/docs/2011/vol_II_1.xls
2. **EU dataset ranked by Member State country:**
http://iri.jrc.es/research/docs/2011/vol_II_2.xls
3. **EU dataset ranked by industrial sector:**
http://iri.jrc.es/research/docs/2011/vol_II_3.xls
4. **Non-EU dataset ranked by company:**
http://iri.jrc.es/research/docs/2011/vol_II_5.xls
5. **Non-EU dataset ranked by country:**
http://iri.jrc.es/research/docs/2011/vol_II_6.xls
6. **Non-EU dataset ranked by industrial sector:**
http://iri.jrc.es/research/docs/2011/vol_II_7.xls

Table 1. Profile of the 2011 *Scoreboard* *

Sample of EU 400 companies, R&D threshold = €30.70m	
Companies by country	DE 101 (104); UK 79 (77); FR 58 (59); SE 24 (24); FI 14 (19); DK 24 (23); IT 23 (19); NL 21 (19); ES 14 (14); BE 12 (13); etc.
The 5 most numerous sectors	Pharmaceuticals & Biotechnology 43 (33); Industrial Engineering 36 (36); Software & Computer Services 29 (27); Automobiles & Parts 25 (27); Electronic & Electrical Equipment 23 (23)
Stock market	Listed companies 324 (321); Unlisted companies 76 (79)
Sample of non-EU 1000 companies, R&D threshold = €32.73m	
Companies by country	US 487 (504); Japan 267 (259); Taiwan 50 (45); Switzerland 40 (38); South Korea 25 (26); China 19 (21); India 18 (17); etc.
The 5 most numerous sectors	Technology Hardware & Equipment 209 (204); Pharmaceuticals & Biotechnology 103 (112); Software & Computer Services 91 (89); Electronic & Electrical Equipment 76 (84); Chemicals 66 (75)
Stock market	Listed companies 953 (955); Unlisted companies 47 (45)

* *Figures of last year's Scoreboard in brackets.*

Source: *The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.*

Methodological caveats

It is important to bear in mind the main methodological implications of the data presented in this report, particularly when using that data in comparative analyses. The full methodological explanation is found in Annex 3.

NOTE:

- A typical problem arises when comparing data from different currency areas. In fact, *Scoreboard* data are nominal and expressed in euros with all foreign currencies converted at the exchange rate of the year-end closing date (31.12.2010). The variation in the exchange rates from the previous year directly affects the ranking of companies, favouring those based in countries whose currency has appreciated with respect to the other currencies. In this reporting period, the main variation of exchange rates has been a depreciation of the Euro by 18 % and 15 % against the Japanese yen and the Swiss franc respectively. The main reference currency, the US dollar, has appreciated by 6 % with respect to the euro.

The growth rate of each of the indicators for companies operating in markets with different currencies is affected in a different manner. In fact, companies' consolidated accounts must include benefits and/or losses due to the appreciation and/or depreciation of their investments abroad. The result is an 'apparent' rate of growth for the given indicator that understates or overstates the actual rate of change. This year, for example, the R&D growth rate of euro area companies with R&D investments in the US and Japan is partly overstated because of the 'benefits' from their overseas investments resulting from the euro having depreciated against the US dollar (from \$ 1.43 to \$ 1.34) and the Japanese yen (from ¥ 133.6 to ¥ 108.8). Conversely, the R&D growth rate of US and Japanese companies is partly understated due to the 'losses' of their overseas investments in the euro area. This also happens within the EU. For example, the R&D growth rate of UK companies is partly understated because of the appreciation of the pound sterling against the euro (from £ 0.89 to £ 0.86).

- The different editions of the *Scoreboard* are not directly comparable because of the year-on-year change in the composition of the sample of companies, i.e. due to newcomers and leavers. Every *Scoreboard* comprises data from the previous four financial years, enabling analysis of three-year trends for the same sample of companies.
- In most cases, the companies' accounts do not include information on the location where R&D activities are actually performed. As a result, the approach taken in the *Scoreboard* is to attribute each company's total R&D investment to the country in which the company has its registered office. This should be borne in mind when interpreting the *Scoreboard's* country classification and analyses.
- Growth in R&D can either be organic, the outcome of acquisitions or a combination of the two. Consequently, mergers and acquisitions may at times be the underlying cause behind sudden changes in specific companies' R&D growth rates and/or positions in the rankings.
- Other important factors to take into account include differences in the countries' (or sectors') business cycles which may have a significant impact on companies' investment decisions, and the initial adoption or stricter application of the International Financial Reporting Standards (IFRS).⁷
- Due to differences in national accounting practices, some companies' results are available more promptly than others. Consequently, the *Scoreboard* dataset represents a heterogeneous set of timed data from the period between late 2009 and early 2011. In particular, results from most Japanese companies correspond to the period between March 2009 and March 2010, and therefore still reflect the overarching effects of the crisis. This should be taken into consideration when comparing companies' results from region to region.

⁷ As of 2005, the European Union requires all listed companies in the EU to prepare their consolidated financial statements according to IFRS (see: Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002R1606:EN:HTML>).



2. Overview

Companies' results in the past year were indicative of the significant effect had by the great recession/ financial crisis which began in 2008. This was because companies' R&D budgets for 2009 were set in late 2008 just after the collapse of Lehman Brothers, during a period of great global uncertainty.

In this edition, companies are showing noticeable signs of recovery, illustrated by a significant increase in R&D investment and double-digit increases in companies' sales, operating profits, and market valuation. One exception to this trend is the data from Japanese companies which, due to the information becoming available at a later date, still reflect the effects of the crisis. However, recent data from some of the largest Japanese companies indicate that recovery is also underway in Japanese firms.

However, companies have still to deal with a complex economic environment. In particular, two major economic issues create pressure for companies: national debt levels (which feed back into the banks and limit their lending to companies, thus affecting company expansion plans) and the low growth rates seen in developed economies which can limit the sales growth of many companies, particularly those selling more standard products.

In this context, the efforts made by many companies to increase R&D investment appear especially remarkable and emphasise the role R&D plays in enhancing companies' product ranges and thereby creating and maintaining competitive advantages. An R&D-based competitive advantage can yield higher added value and higher growth rates.

The analysis in this report concentrates on the main trends in companies' R&D activities and results. The focus is on the evolution of R&D investments across different regions and industries and comparing investments with such company parameters as net sales, profits, market capitalisation and capital expenditure.

The main changes observed in the indicators for the 1400 companies are as follows (see Table 2).

Following the slowdown of activities due to the economic crisis, this year's *Scoreboard* shows a rise in worldwide R&D investment. The 1400 *Scoreboard* companies invested € 456 billion in R&D, 4.0 % more than in 2009, contrasting with the 1.9 % decrease in the previous year.

The companies listed in this year's *Scoreboard* showed a much higher increase in net sales, 9.6 %, compared with a decrease of 10.1 % in 2009. Companies' recovery was much more pronounced in terms of operating profits, which increased by 46 % against a decrease of 21 % in the previous year.

A large number of companies achieved positive R&D growth in 2010. If we consider the top 100 companies, which account for 58 % of the R&D investment total, we observe that 68 companies increased their R&D investments (compared to 46 in 2009) and 70 companies increased their net sales (against 30 in 2009).

Companies' investment in fixed capital also recovered since the past year's downturn. It slightly decreased by 1.1%, compared with a 7.8 % reduction in 2009.

Companies' market value also improved with respect to the previous period. Between 13 August 2010 and 2 August 2011, the market capitalisation of companies increased by 15.9 %.

Table 2. Overall performance of companies in the 2011 *Scoreboard*

Factor	Top world-1400 R&D investors
R&D Investment, € bn	455.97
<i>One-year change, %</i>	4.0
<i>CAGR⁸ 3yr, %</i>	3.1
Net Sales, €bn	13894.18
<i>One-year change, %</i>	9,4
<i>CAGR 3yr, %</i>	-5.4
R&D intensity (R&D as % sales), %	3.3
Operating profits, € bn	1450.93
<i>One-year change, %</i>	46.7
<i>Profitability (profits as % sales), %</i>	10.4
Capex ⁹ , € bn	900.88
Capex / net sales, %	6.5
<i>One-year change, %</i>	-1.1
Market cap ¹⁰ , € bn	14001.79
<i>One-year change, %</i>	15.9

Note: Calculation of growth rates and ratios include only companies for which data are fully available.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

8 Compound annual growth rate.

9 Fixed capital investment

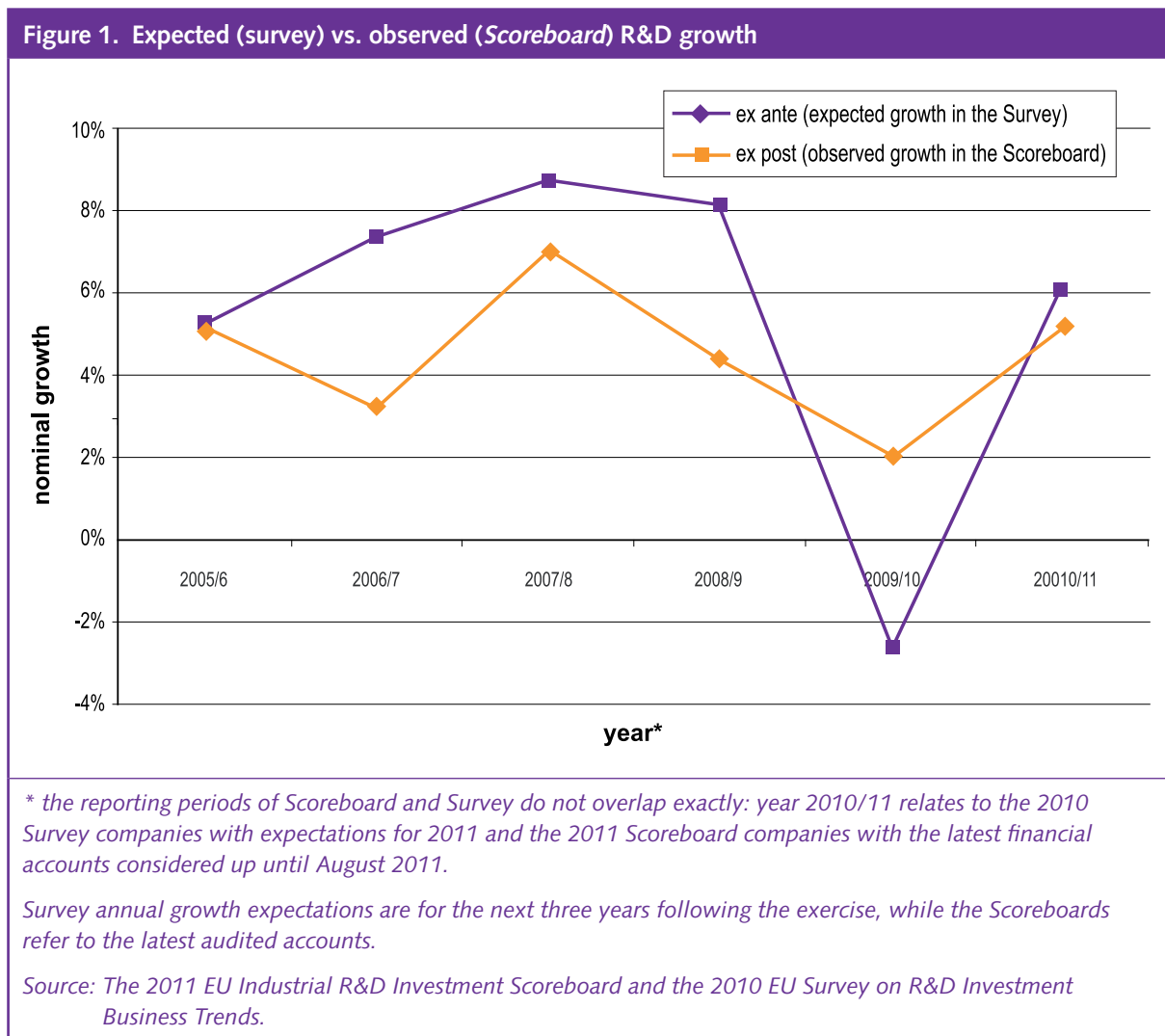
10 Value of the 1277 *Scoreboard* companies listed in the stock market (324 EU and 953 non-EU), collected in August each year, i.e. 2011 for this *Scoreboard*.

Survey on R&D investment by EU companies

The annual publication of the *Scoreboard* is complemented by a series of surveys on R&D Investment Business Trends¹¹ for companies based in the EU, regarding their ex-ante expectations for future R&D investments and qualitative statements about their R&D behaviour.

The R&D investment growth expectations collected from these surveys are compared to the development of R&D investment in Figure 1.

For most years, trend expectations from past surveys have been consistent with the actual trends observed later in the *Scoreboard*, and the trends anticipated in the survey since 2007 have been statistically significant.¹²



11 See <http://iri.jrc.ec.europa.eu/reports.htm>

12 Using two-sample t-tests with unequal variances between the trends for each of the four data points, the trends were statistically significant at least at the 98.6 % level.



3. Top R&D investing companies

This chapter describes the performance of individual companies, with a focus on the results of top R&D investors, highlighting those companies showing considerable changes in economic performance, particularly from an R&D viewpoint.

The worldwide ranking of the top 50 companies by R&D investment is presented in Figure 2. Table 4 shows changes in the top 50 companies' R&D ranking since the first *Scoreboard* was published in 2004 and highlights companies that underwent important ranking changes.

Key findings

- The top R&D investor is the Swiss company Roche, which was in 2nd place last year and has risen 17 places in the R&D ranking since 2004. Volkswagen in 6th place remains the leading EU firm in terms of R&D investments. Five of the other companies in the top-ten are from the US, plus one each from Japan, South Korea and Switzerland.
- The extent of the recovery of the top companies is illustrated by the performance of the top 100 companies, which account for 58 % of the R&D investment total. Of these 100 companies, 68 increased R&D investment (vs 46 in 2009), including 40 companies with double-digit R&D growth; 70 companies reported an increase in sales (vs 30 in 2009), including 45 companies with double-digit sales growth.
- The top 100 group includes 29 EU companies of which 22 have increased R&D and 71 non-EU companies of which 46 increased R&D. The companies showing the largest increase in R&D are a.o. China Railway Construction, China, (81.9 %), Banco Santander, Spain (56.3 %), Hon Hai Precision Industry, Taiwan (48.7 %) and Merck, USA (47.0 %); those showing the largest decrease in R&D are a.o. Takeda Pharmaceutical, Japan (-34.6 %), Motorola, US (-20.5 %), NEC, Japan (-20.4 %) and BT, UK (-19.9 %).

General trends

In the 2011 *Scoreboard* 96 companies have an R&D investment of more than € 1 bn each (28 from the EU), 50 with R&D exceeding € 2 bn (15 from the EU).

The top 10 companies invested each more than € 5 bn in R&D and account for 13.7 % of the total R&D investment by the 1400 *Scoreboard* companies, the same proportion as last year, and somewhat less than in 2004¹³ (16 %).

This year, the top R&D investor is the Swiss company Roche (€ 7.18 bn) which has risen 17 positions in the R&D ranking since 2004. The largest EU firm in terms of R&D investment is Volkswagen (€ 6.26 bn) in 6th position. There are five US companies in the top ten: Pfizer (€ 7.02 bn), Microsoft (€ 6.74 bn), Merck US (€ 6.40 bn), General Motors (€ 5.19 bn) and Johnson & Johnson (v 5.10 bn). The other companies in the top ten are Toyota (€ 6.67 bn) from Japan, Samsung (v 6.18 bn) from South Korea and Novartis (€ 6.02 bn) from Switzerland.

13 The 2004 *Scoreboard* contained fewer companies, however.

The top 50 companies invested € 193.71 billion, accounting for 42.5 % of the total R&D investment by the *Scoreboard* companies, compared to the 32.6 % share in 2004. The EU has 15 companies among the top 50 R&D investors, one company fewer than it had in the 2010 *Scoreboard* (Finmeccanica). The US has 18 companies, one fewer than it had last year (Motorola). Japan has 13 companies, one more than in last year's *Scoreboard* (Fujitsu).

Thirty-eight companies in the top 50 have shown positive R&D investment growth. Among them, 16 companies had double-digit R&D growth, and of these, 12 companies also showed double-digit growth in net sales.

Most of the top 50 companies showing the largest increases are in the pharmaceutical and ICT sectors: Merck US (47 %), Abbot (35.7 %), Pfizer (21.4 %), LG (39.5 %), Oracle (38.9 %), Google (32.3 %), Samsung (24.9 %). Some companies from the Automobiles sector also achieved remarkable results: Daimler (16.5 %), General Motors (14.7 %) and BMW (13.3 %).

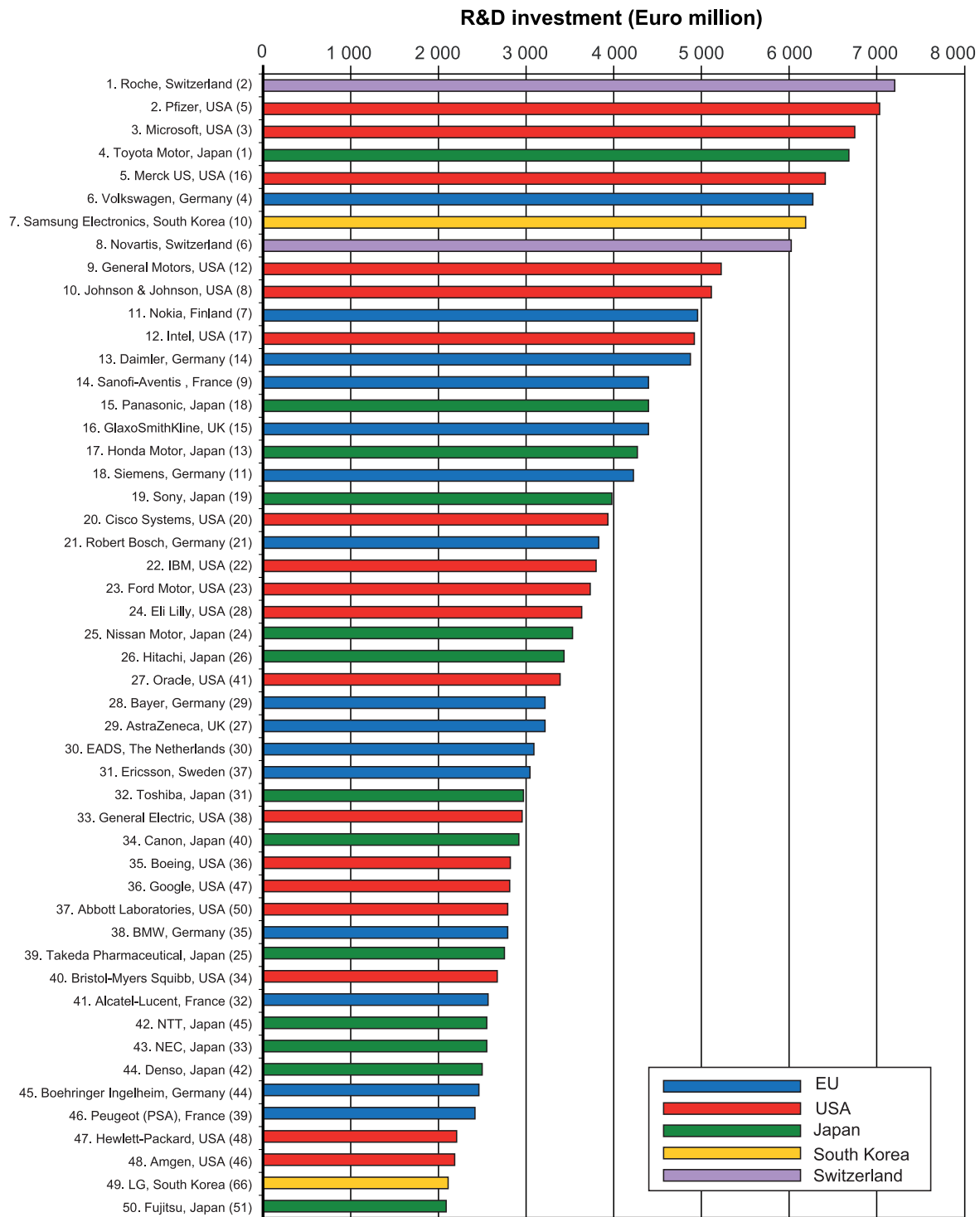
Other companies with an R&D investment of more than € 1 bn (apart from the top 50) have shown impressive R&D and net sales growth: China Railways Construction (81.9 %), Research In Motion, Canada (40 %), Amazon.com (36.4 %), Caterpillar (34.1 %) and Apple (26.9 %).

Eighteen companies in the top 50 have experienced a decrease in R&D investing. Among these, nine companies decreased R&D investments by more than 10 %. All of the companies that experienced a double-digit drop in R&D investing are from Japan, and they mainly represent the Pharmaceuticals, Automobiles & Parts and ICT sectors, e.g. Takeda Pharmaceutical (-34.6 %), NEC (-20.4 %), Toyota (-19.8 %), Honda (-17.7 %), Nissan (-15.4 %). Again, most of these decreases reflect the drop in R&D budgets in 2009.

The R&D intensity of companies in the top 50 has decreased slightly due to there being a higher rate of increase for net sales (4.8 %) than for R&D investment (3.1 %). The EU companies in the top 50 have a slightly higher average R&D intensity (7.6 %) than that of non-EU companies (7.0 %).

The EU companies in the top 50 are mainly from the Automobile & Parts (5), Pharmaceuticals (4) and ICT-related sectors (4), whereas the non-EU companies are mainly from IT-related sectors (17), Pharmaceuticals & Biotechnology (10), and Automobile & Parts sectors (6).

Figure 2. The world's top 50 companies by their total R&D investment in the 2011 Scoreboard



Note: The number in brackets after the names of the companies indicates the rankings in the past Scoreboard.

Source: The 2011 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

R&D changes driven by Mergers and Acquisitions (M&As)

The growth in R&D investment may either be organic or driven by M&As, or it may be a combination of the two. M&As (or demergers) may take place within or between regions/sectors and can significantly impact the ranking of companies in the *Scoreboard*. While acquisitions are not systematically captured in the *Scoreboard*, some examples that had a significant effect on companies in the top positions are provided below (additional information on other companies can be found in Annex 3).

Table 3. Merger & Acquisition activity involving *Scoreboard* companies.

EU/non-EU rank	Company which acquired (R&D investment 2010)	Company which was acquired (R&D investment 2009*)
2	Pfizer, USA (€7000mn)	Thiakis, UK (€5mn)
14	Cisco Systems, USA (€3900mn)	Tandberg, Norway (€8mn) and Starent Networks, USA (€36mn)
19	SAP, Germany (€1700mn)	Sybase, USA (€128mn)
23	Canon, Japan (€2900mn)	Oce, The Netherlands (€218mn)
25	Merck, Germany (€1400mn)	Millipore, USA (€79mn)
28	Vivendi, France (€1100mn)	Activision Blizzard, USA (€436mn)
28	Bristol-Myers Squibb, USA (€2700mn)	Zymogenetics, USA (€69mn)
32	Hewlett-Packard, USA (€2200mn)	3Com (€125mn), Palm (€124mn) and 3Par (€33mn), all from the USA
54	Shire, UK (500mn)	Movetis, The Netherlands (€9mn)
62	Honeywell, USA (€1100mn)	Sperian Protection, France (€13mn)
63	Sumitomo Chemical, Japan (€1100mn)	Sepracor, USA (€172mn)
64	Covidien, Ireland (€300mn)	Ev3, USA (€34mn)
79	Celgene, USA (€800mn)	Abraxis Biosciences, USA (€108mn)
93	Schlumberger, USA (€700mn)	Smith International, USA (€98mn)

*as stated in the 2010 *Scoreboard*.

Source: *The 2011 and 2010 EU Industrial R&D Investment Scoreboards*. European Commission, JRC/DG RTD.

Dynamics of top R&D companies

The composition of the *Scoreboard* changes every year because a significant number of companies enter and leave the *Scoreboard* ranking.

In this edition, the 1000 EU firms contain 100 new entries including 74 firms whose R&D investment has risen above the threshold and 26 newly identified firms. The 100 exits from the EU sample include 31 which left due to mergers, 47 firms whose R&D level dropped below the threshold and 22 companies dropped because the data were not available.

The non-EU sample features 93 new entries of which 73 are firms whose R&D investment has risen above the threshold 20 are new firms. The 93 exits from the non-EU sample include 31 which left due to mergers, 45 firms whose R&D level dropped below the threshold and 17 dropped due to data unavailability.

Evolution of the R&D rankings of the top 50 companies since the first *Scoreboard* (2004) is shown in Table 4, and the most important changes are highlighted. Several large mergers have been taken place since then, such as:

In 2004, Aventis's acquisition of Sanofi-Synthélabo.

In 2009, Roche's acquisition of Genentech, Pfizer's acquisition of Wyeth, Oracle's acquisition of Sun.

However, demergers, like Daimler's sale of Chrysler in 2007, also took place during that period.

In the EU group, four companies left the top 50 (Philips, Istituto Finanziario Industriale, Renault and BAE Systems) and one company joined the top 50 (Boehringer Ingelheim).

In the non-EU group, six companies left the top 50 (Matsushita Electric, Motorola, Nortel Networks, Wyeth, Delphi, Sun Microsystems) and nine companies joined the top 50 (Panasonic, Oracle, Boeing, Google, Abbott Laboratories, Takeda Pharmaceuticals, Denso, Hewlett-Packard and LG).

The EU companies that improved by at least 10 ranks are Boehringer Ingelheim (now ranked 45th) and Sanofi-Aventis (now 14th). The latter was created after 2004 and is an example of R&D growth driven by M&As.

There are 13 non-EU companies that gained more than 10 ranks. They include Roche (now 1st), Google (now 36th), Panasonic (now 15th), Oracle (now 27th) and LG (now 49th).

Companies which dropped ten or more ranks but remained within the top 50 are, among others, NTT (now 42nd), Hewlett-Packard (now 47th), Ford Motor (now 23rd), Siemens (now 18th), Ericsson (now 31st) and Fujitsu (now 50th).

Table 4. Ranking of the Scoreboard top 50 in the 2004 and 2011 Scoreboards.

Rank in 2011	Company	Rank change 2004-2011
1	Roche	up 17
2	Pfizer	0
3	Microsoft	up 10
4	Toyota Motor	up 1
5	Merck US	up 24
6	Volkswagen	up 2
7	Samsung Electronics	up 26
8	Novartis	up 12
9	General Motors	down 3
10	Johnson & Johnson	up 2
11	Nokia	down 1
12	Intel	up 2
13	Daimler	down 10
14	Sanofi-Aventis	up 41
15	Panasonic	up 132
16	GlaxoSmithKline	down 5
17	Honda Motor	down 1
18	Siemens	down 14
19	Sony	down 4
20	Cisco Systems	up 11
21	Robert Bosch	up 5
22	IBM	down 13
23	Ford Motor	down 22
24	Eli Lilly	up 17
25	Nissan Motor	up 9
26	Hitachi	down 2
27	Oracle	up 44
28	Bayer	up 4
29	AstraZeneca	down 4
30	EADS	up 5
31	Ericsson	down 14
32	Toshiba	down 2
33	General Electric	up 4
34	Canon	up 5
35	Boeing	up 22
36	Google	up > 1000
37	Abbott Laboratories	up 15
38	BMW	down 10
39	Takeda Pharmaceutical	up 33
40	Bristol-Myers Squibb	up 2
41	Alcatel-Lucent	up 6
42	NTT	down 21
43	NEC	down 3
44	Denso	up 8
45	Boehringer Ingelheim	up 17
46	Peugeot (PSA)	down 8
47	Hewlett-Packard	down 24
48	Amgen	up 8
49	LG	up 61
50	Fujitsu	down 14

Note : Companies in «blue» went up more than 30 ranks and companies in «red» lost more than 10 ranks.

Source: The EU Industrial R&D Investment Scoreboards 2011 and 2004. European Commission, JRC/DG RTD.

4. R&D distribution by region

This chapter compares the overall R&D performance of the *Scoreboard* companies according to the location of their registered offices in the main world regions and within the EU.

The last section of this chapter examines the performance of EU companies according to the location of their registered offices in different EU Member States. In this specific case, the full sample of 1000 EU companies is employed.

Key findings

- EU companies increased R&D investment and net sales by the significant figures of 6.1 % and 13.0 % respectively. The US companies reported similar increase in net sales (13.2 %) but a much higher increase in R&D (10.0 %).
- Companies outside of the EU, US and Japan (the OC group) continued to show the outstanding performance observed since 2005, increasing R&D and sales by 10.7 % and 21.8 % respectively. Switzerland remains the largest country for R&D in this group, primarily because of very large R&D investments made by its two major pharmaceuticals companies, Roche and Novartis. The largest increases in R&D investment were reported by companies based in China (29.6 %), India (20.5 %), South Korea (20.5 %) and Taiwan (17.8 %). Together, these four countries added 16 companies to this year's 1400 top-ranked R&D investors.
- Within the EU, companies based in Germany, the top R&D investor, increased R&D by 8.1 %, well above the EU1000 average (5.8 %). Countries whose companies significantly increased R&D investments are Spain (23.7 %) and Denmark (11.0 %). Much of the increase in Spanish R&D is due to the large increase by Banco Santander, part of which is associated with acquisitions and the need to integrate diverse information systems. Companies that showed negative R&D growth are from Ireland (-4.0 %), which suffered a major drop in GDP in 2009, and Finland (-0.9 %), mostly due to Nokia's having decreased R&D investing by 1.2 %.

General trends

The *Scoreboard's* 1400 companies are grouped into four main sets: the top 400 companies from the EU, 487 companies from the US (17 fewer than last year), 267 from Japan (8 more than last year) and 246 companies from other countries (9 more than last year). 'Other countries' (OC) includes companies from Taiwan, Switzerland, South Korea, China, India, Canada, Norway, Australia and an additional 15 countries.

Figure 3 and Table 5 summarise the companies' indicators aggregated by main world region. Table 6 shows the main indicators for countries included in the OC group.

The R&D investment and net sales growth rates for EU companies improved significantly in 2010, increasing by 6.1 % and 13.0 % respectively. The group of US companies stood out with 10.0 % R&D investment growth and a similar increase in net sales to EU companies (13.2 %).

Japanese companies experienced negative growth in their R&D investments and net sales, at -9.7 % and -10.1 % respectively. However, figures from Japanese companies correspond to an earlier sampling period (see '1. Introduction - Methodological caveats'). More recent data show signs of recovery for Japanese companies: the top 10 R&D investing companies, which account for 38 % of the Japanese group's total R&D investments, reported R&D and sales growth rates of 2.4 % and 4.4 % respectively.

The companies from outside the EU, US and Japan (OC) continued to show substantial growth rates for R&D investment (10.7 %) and net sales (21.8 %).

EU companies' share of total *Scoreboard* R&D investment dropped from 30.6 % to 29.0 %, whereas the share held by the US and other countries (OC) increased by 0.8 and 1.1 percentage points respectively. Japanese companies maintained a share of R&D investment similar to the previous year's.

Companies in the OC group continued to display the high R&D growth rate observed in past years. This is mainly the case for companies based in emerging markets such as China (29.6 %), India (20.5 %), South Korea (20.5 %) and Taiwan (17.8 %).

The sample of the world's top 100 companies (accounting for 58 % of the R&D investment total) contains 29 EU companies, 22 of which increased R&D investments; 35 US companies, 29 of which increased R&D investments.

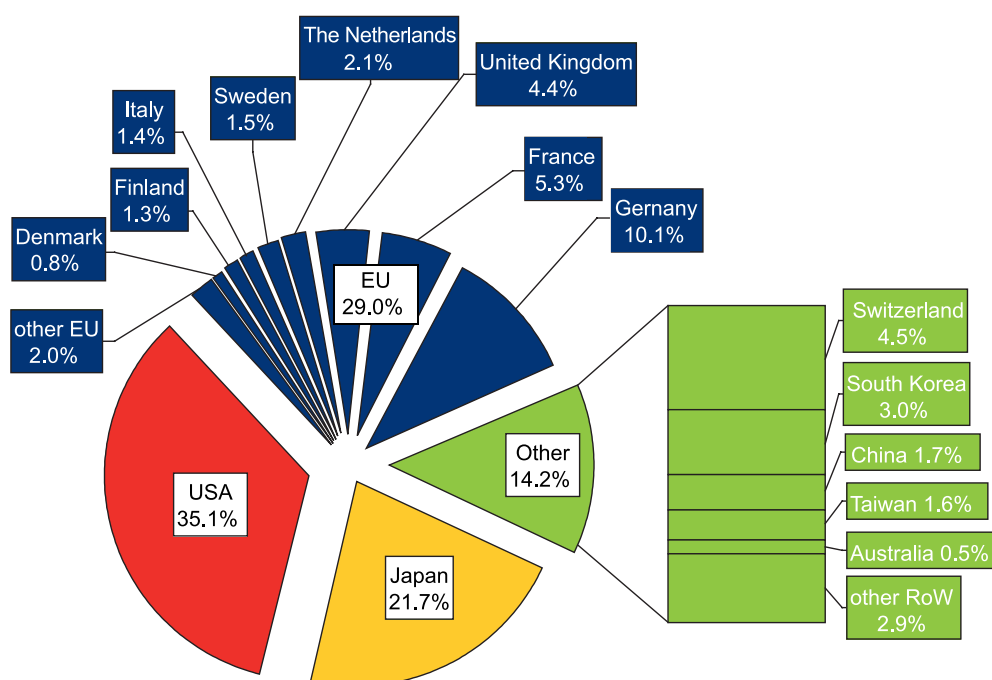
The R&D intensity of companies decreased in most regions due to net sales having increased more than R&D investments, except in Japan where R&D growth and net sales decreased at a similar pace.

Fixed capital expenditures increased in most regions, by 12.1 % in the US, by 2.9 % in the EU and by 5.7 % in the OC group. Japanese companies dropped their fixed capital expenditures significantly by 25.0 %.

Compared to the previous year, profitability (operating profits as percentage of net sales) improved considerably for EU companies (10.0 %), US (14.4 %), Japan (3.8 %, reflecting mostly the 2009 recession year data) and the OC group (12.7 %).

Market capitalisation continued to recover in 2010. The change observed from 13 August 2010 to 2 August 2011 was positive for OC companies (19.8 %), US companies (18.1 %), EU companies (12.1 %) and for Japanese companies (11.6 %).

Figure 3. R&D investment by the top 1400 companies, by main world regions (% of total €455.9bn)



Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 5. Overall performance of companies in the 2011 Scoreboard.

Factor	EU	USA	Japan	Other countries
No. of companies	400	487	267	246
R&D Investment, € bn	132.04	160.12	99.08	64.72
World R&D share, %	29.0	35.1	21.7	14.2
R&D growth 2009/2010, %	6.1	10.0	-9.7	10.7
CAGR 3yr, %	3.5	3.7	-2.1	10.5
Net Sales, € bn	5219.11	3391.3	2586.41	2697.36
Change from previous year, %	13.0	13.2	-10.1	21.8
CAGR 3yr, %	3.2	1.8	-4.7	-21.2
R&D intensity, %	2.5	4.7	3.8	2.4
Operating Profit, € bn	521.22	487.98	98.25	343.48
Change from previous year, %	46.1	39.1	162.0	40.7
Profitability ¹⁴	10.0	14.4	3.8	12.7
Capex, € bn	348.92	156.63	152.61	242.71
Capex intensity	6.7	4.6	5.9	9.0
Change from previous year, %	2.9	12.1	-25.0	5.7
Market Capitalisation, € bn	4233.52	5236.74	1505.52	3026.0
Change from previous year, %	12.1	18.1	11.6	19.8

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 6. R&D trends of companies based in the OC group.

Factor	Switzerland	South Korea	China	Taiwan	Total OC group
No. of companies	40	25	19	50	246
R&D Investment 2010	20670.6	13494.7	7631.8	7500	64722.0
Change from previous year, %	1.7	20.5	29.5	17.8	10.7
CAGR 3yr, %	4.7	12.9	41.2	15.8	10.5
World R&D share	4.5	3	1.7	1.6	14.2
R&D intensity, %	6.6	2.6	1.2	2.4	2.4

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Trends of companies in EU Member States

Within the group of 1000 EU companies, those based in the top 10 Member States account for 96.9 % of the total R&D investment in the EU, compared to 97.2 % last year (see Table 7).

Companies showing R&D growth rates above the EU1000 average (5.8 %) come from Spain (23.7 %), Denmark (11.0 %) and from Germany (8.1 %), the EU's top R&D investor. Most of the other companies that increased R&D investment but fell below the EU average are based in the Netherlands (3.6 %), and France (3.8 %). Companies from Ireland and Finland showed negative R&D investment growth at -4.0 % and -0.9 % respectively.

¹⁴ Operating profits as percentage of sales.

It is interesting to note that in many countries, the aggregate country indicators depend to a large extent on the figures generated by only a few firms. This is due either to the country having a low number of companies in the *Scoreboard* or to R&D investment being concentrated in a few large firms. For example:

- The R&D growth of Novo Nordisk (27.3 %) and Vestas (49.8 %), accounting for 40 % of the R&D investments made by Denmark-based companies, contributed more than 95 % to that country's R&D growth.
- Three companies contributed more than 90 % of Spain's R&D growth: Banco Santander (56.3 %), Telefonica (16.0 %) and Amadeus (33.2 %), accounting for 72 % of the R&D of companies based in Spain.
- In Germany as well, three companies from the automobile sector contributed about 50 % of Germany's R&D growth: Daimler (16.5 %), Volkswagen (8.1 %) and BMW (13.3 %), which account for 29 % of the R&D investments by companies based in Germany.

Table 7. R&D trends of companies based in the top 10 EU Member States*.

Country	No. of companies	R&D Share within EU	One year growth, %	CAGR 3 yr, %
Germany	206 (206)	34.1	8.1	4.5
France	125 (116)	18.0	3.8	-0.4
UK	244 (246)	15.8	5.8	5.4
The Netherlands	54 (52)	7.1	3.6	2.2
Sweden	74 (76)	5.5	5.8	3.9
Italy	54 (53)	4.9	5.7	7.5
Finland	52 (56)	4.5	-0.9	-1.9
Denmark	45 (46)	2.9	11.0	8.8
Spain	25 (27)	2.6	23.7	16.9
Ireland	17 (16)	1.5	-4.4	2.8
Total EU-10	896 (918)	96.9	6.1	3.6

* For the sample of 1000 EU companies. Figures of the 2010 *Scoreboard* in brackets.

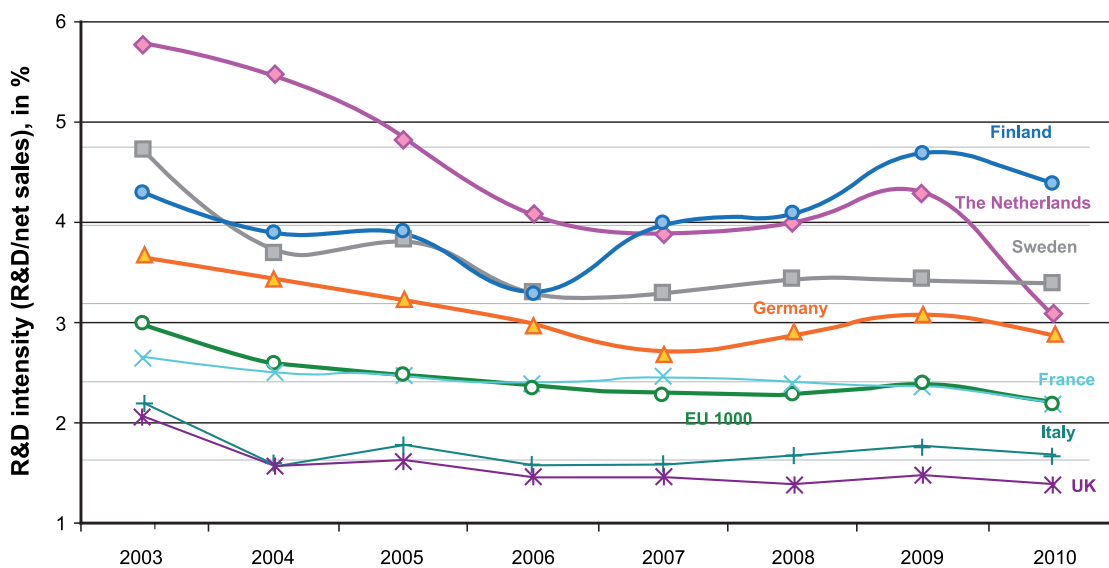
Source: *The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.*

In 2009, due to the effects of the crisis, the average R&D intensity of EU-1000 companies had increased because the fall in net sales greatly exceeded the drop in R&D investment. With the recovery, and with sales increasing more than R&D investment, the R&D intensity of EU companies returned to the decreasing R&D-intensity trend that had been observed since 2003 (see Figure 4). The rate of growth of net sales (11.8 %) for EU-1000 companies was more than twice the rate of R&D investment growth (5.8 %).

Lower R&D intensity compared to the past year can be observed in most countries, especially in the Netherlands and Finland due to the behaviour of few large R&D investing companies, i.e. Nokia in Finland and Philips, STMicroelectronics and ASML in the Netherlands. Companies from Denmark and Sweden kept their R&D intensity practically unchanged.

In the UK, there are several firms with considerable sales but a low R&D intensity (examples include Shell, BP, HSBC and four other banks, Tesco and three large mining companies) and this reduces the UK's overall R&D intensity.

Figure 4. Trends in R&D intensities for EU Scoreboard companies in selected Member States



Source: The EU Industrial R&D Investment Scoreboards (of 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011).
European Commission, JRC/DG RTD.



5. R&D distribution by industrial sector

This chapter presents the main R&D trends among *Scoreboard* companies aggregated by industrial sectors.¹⁵ It comprises the ranking of sectors by their level of R&D investment, R&D intensities, rates of R&D growth and the comparison of such trends across world regions.

This chapter also includes a comparative analysis of EU companies and their main counterparts in sectors of interest, selected based on their importance in terms of R&D and economic potential. This year's featured industries are Telecom Equipment, Electronic/Leisure Equipment and Alternative Energy.

Key findings

- The Pharmaceuticals & Biotechnology sector increased R&D investments by 6.2 %, strengthening its position as the sector investing the most in R&D. The other two top sectors, Technology Hardware & Equipment and Automobiles & Parts are recovering from the significant reductions observed in the past *Scoreboard* (from -6.4 % to 3.5 % and from -11.6 % to 0 % respectively).
- Most of the industrial sectors increased net sales more than they increased R&D investments including the top R&D sectors (Technology Hardware & Equipment, Automobiles & Parts and Pharmaceuticals & Biotechnology), except for sectors such as Aerospace & Defence, Leisure, General Industrials and Fixed Line Telecom.
- The distribution of R&D investments by *Scoreboard* companies over the past eight years shows that EU companies have become more specialised in the medium-high R&D intensity sectors and US companies, in the high R&D intensity sectors. These trends are related to the persistent innovation gap between the US and the EU.

5.1. General R&D trends

Figure 5 shows the R&D ranking of the main industrial sectors including the relative R&D share by main world region. The specialisation of the main world regions, represented by the share of sectors within each region's R&D investment total, is given in Figure 6.

These figures illustrate that R&D investment in the *Scoreboard* remains highly concentrated by sectors. Out of 37 industrial sectors, the top three — Pharmaceuticals & Biotechnology, Technology Hardware & Equipment and Automobiles & Parts — account for 50.8 % of the total R&D investment by the *Scoreboard* companies; the top six and top 15 sectors constitute, respectively, 70.0 % and 91.8 % of the total R&D investments in the *Scoreboard*. Some differences in the concentration of R&D by industrial sector have been observed over the years. From 2004 to 2010, the share of the top three sectors changed from 55.3 % to 50.8 % and that of the top 15 sectors from 94.0 % to 91.8 %.

Over the last year, the ranking of the top 15 sectors has changed: the Industrial Engineering sector took over the 8th position from the Leisure Goods sector (now 9th), and the Health Care Equipment & Services and Bank sectors both improved one rank (now in position 11th and 14th respectively).

¹⁵ According to the Industry Classification Benchmark (ICB) applied in the *Scoreboard*.

The sector with the largest investment in R&D remains the Pharmaceuticals & Biotechnology sector which increased its share of total R&D investment to 19.1 %. It is followed by the Technology Hardware & Equipment sector with a share of 16.6 % (down from 17.2 % last year) and the Automobiles & Parts sector with 15.0 %.

Over the last year, companies' shares of R&D investment in the top six sectors evolved as follows: EU companies increased their share in Automobiles & Parts, Software and Computer Services, Industrial Engineering and Aerospace & Defence and decreased their share in Pharmaceuticals & Biotechnology, Technology Hardware & Equipment and Chemicals. US companies slightly increased their share in Pharmaceuticals & Biotechnology and Automobiles & Parts and decreased their share in Technology Hardware & Equipment and Software & Computer Services somewhat. The Japanese companies increased their share in Pharmaceuticals & Biotechnology and Software & Computer Services and decreased their share in Technology Hardware & Equipment, Automobiles & Parts and Electronic & Electrical Equipment.

It is interesting to compare changes in R&D sector shares over a longer period. For example, over the past eight years, the R&D share of the Pharmaceuticals & Biotechnology companies in the EU increased from 12 % to 18 %, and from 18 % to 25 % in the US. Over the same period, the R&D share of the Automobiles & Parts companies remained constant in the EU at about 23 % whereas in the US it decreased from 16 % to 8 %.

As observed in previous *Scoreboards*, the R&D specialisation has remained rather static despite the economic crisis, reflecting the different industrial structures of the regions and differing greatly among the four groups of companies. EU companies' contributions to total *Scoreboard* R&D investment comprise 50.5 % by Aerospace & Defence, 43.7 % by Automobiles & Parts and 36.2 % by the Chemicals sectors; the US contributes 69.1 % of its total to Software & Computer Services, 49.6 % to Technology Hardware & Equipment and 44.7 % to Pharmaceuticals; Japan contributes 35.2 % to Chemicals and 34.5 % to Automobiles & Parts; and the OC companies contribute 38.7 % to the Electronic & Electrical Equipment sector.

The five most R&D-intensive sectors (Pharmaceuticals & Biotechnology, Technology Hardware & Equipment, Software & Computer Services, Leisure Goods and Health Care Equipment & Services), all with an average R&D intensity of more than 6 %, account for 68.6 % of the total R&D investments for the US, 45.3 % for the OC group, 39.4 % for Japan and 34.3 % for the EU companies.

R&D growth by industrial sector

The actual contribution of an industrial sector to a region's overall R&D growth depends on its rate of R&D change and the sector's share of the region's total R&D investments. Figures 5 and 6 show the shares held by the main industrial sectors and Table 8 shows the worldwide ranking by annual R&D growth rate for *Scoreboard* companies based in the EU, US and Japan.

The highest R&D sectoral increase worldwide is in the Banks¹⁶ sector (24.8 %). It should be noted that Banks are required to report R&D according to the International Financial Reporting Standards (IFRS) which are compulsory for EU-listed companies since 2005. Currently there are no US or Japanese banks reporting R&D likely due to the slow implementation of the IFRS in the US and Japan. The Banks sector is followed by Oil & Gas Producers (8.2 %), Industrial Engineering (6.5 %) and Pharmaceuticals & Biotechnology (6.3 %).

¹⁶ Banks report R&D according to the International Financial Reporting Standards (IFRS) which EU-listed companies have been required to apply since 2005. However, the US and Japan have been slow in implementing IFRS, and therefore no US or Japanese banks are currently listed in the *Scoreboard*.

US companies' R&D growth rates were higher than those of EU companies in most sectors with three exceptions: Oil & Gas Producers, Automobiles & Parts and Leisure Goods. This is the opposite of what was observed last year, when US companies decreased their R&D investments more than EU companies in most sectors.

Among the EU-based companies, the Banks sector shows the highest one-year growth rate (28.6 %), followed by Automobiles & Parts (10.7 %) and Software & Computer Services (9.5 %). Sectors showing the lowest one-year R&D growth rates are Fixed Line Telecommunications (-10.2 %) and Leisure Goods (-1.5 %). Among the US-based companies, the Fixed Line Telecommunications sector shows the highest one-year growth rate followed by Industrial Engineering (15.2 %) and Pharmaceuticals & Biotechnology (14.1 %). Sectors showing the lowest one-year R&D growth are Oil & Gas Producers (-4.1 %) and Leisure Goods (-1.6 %).

For Japanese companies, only Food Producers (4.1 %) and Fixed Line Telecommunications (3.7 %) sectors showed positive R&D investment growth. The poorest performances were shown by the Software and Computer Services (-15.7 %) and Automobiles & Parts (-15.5 %) sectors (reflecting the recession year).

Again, it is important to recall that in many countries and sectors, the aggregate indicators are highly dependent on the figures of only a few firms, owing either to having a small number of companies in the country/sector or to R&D investment being concentrated in a few large firms. For example:

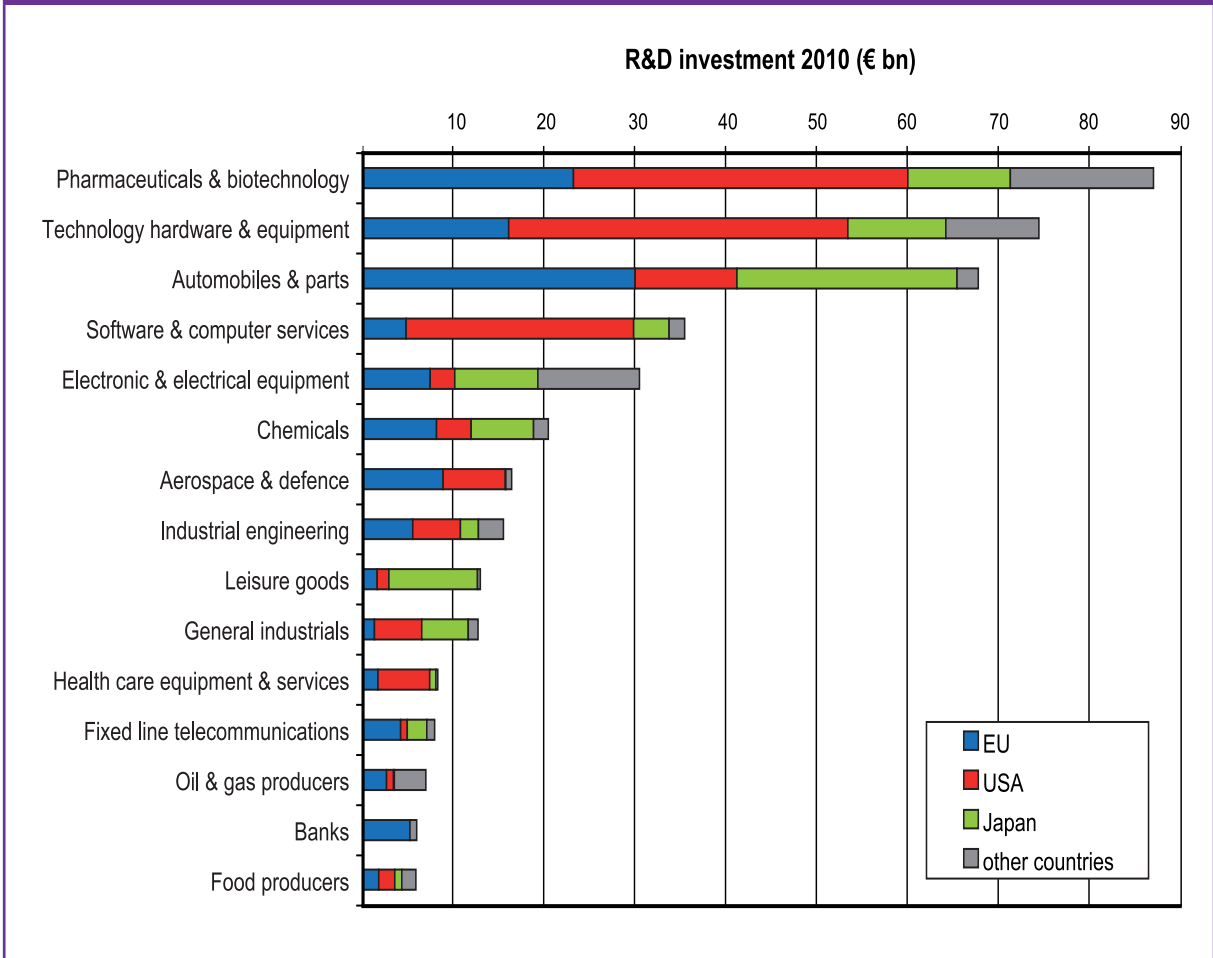
- The Fixed Line Telecommunications sector has only one firm from the US, AT&T. In the EU, R&D growth for this sector is determined to a large extent by R&D investments made by three firms accounting for 50 % of the R&D total: BT (-19 %), Deutsche Telecom (-39 %) and France Telecom (-2 %).
- The R&D growth rate of the Banks sector in the EU is determined to a large extent by the R&D figures from three banks that account for 55 % of the total R&D investments in that sector and region: Banco Santander (56 %), Royal Bank of Scotland (33 %) and HSBC (26 %).

Outside of the top 15 R&D investing industries, there was a 38.7 % increase in R&D investment in the Alternative Energy sector. This does not include investments in alternative energy made by major energy firms.

Other sectors with double-digit R&D growth included Food and Drug Retailers, General Retailers, Construction and Materials, Industrial Transportation and Media.

Sectors that reduced R&D investments were Mining, Forestry and Paper, Other Financials, Household Goods, Industrial Metals and Travel and Leisure.

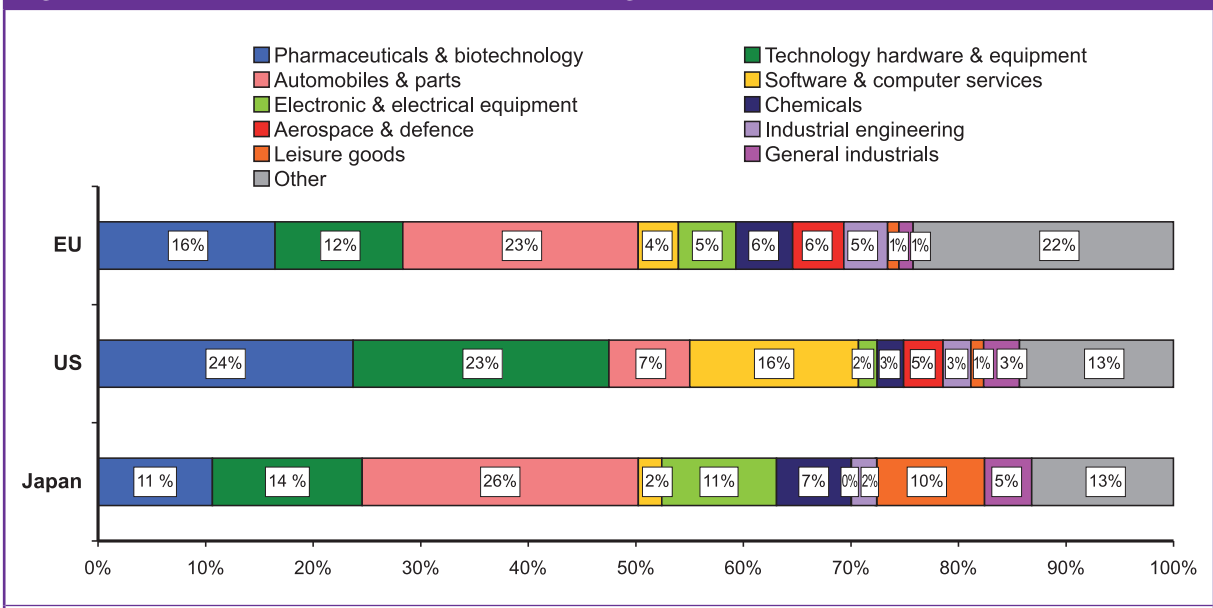
Figure 5. R&D ranking of industrial sectors and share of main world regions for the world's top 1400 companies



Ranked by total worldwide R&D investment of the sector.

Source: The 2011 EU Industrial R&D Investment Scoreboard European Commission, JRC/DG RTD.

Figure 6. R&D shares of sectors of the main world regions



Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 8. Ranking of top 15 industrial sectors by overall one-year R&D growth for the EU, US and Japanese companies in the 2011 Scoreboard.

Rank	Sector	Overall one-year R&D growth (%)	EU		US		Japan	
			R&D change (%)		R&D change (%)		R&D change (%)	
			1 year	3 years	1 year	3 years	1 year	3 years
1	Banks*	24.8	28.6	19.2				
2	Oil & gas producers	8.2	4.7	3.0	-4.1	4.8	-1.7	5.6
3	Industrial engineering	6.5	6.9	5.8	15.2	7.2	-12.5	-0.7
4	Pharmaceuticals & biotechnology	6.3	2.9	3.6	14.1	9.0	-5.2	9.4
5	Software & computer services	6.2	9.5	7.6	10.2	5.9	-15.7	-5.1
6	Electronic & electrical equipment	5.1	2.1	4.4	9.5	5.3	-13.6	-5.5
7	Aerospace & defence	4.4	3.5	1.6	5.3	0.5	-13.6	-7.1
8	Technology hardware & equipment	3.9	2.3	-2.2	7.2	1.3	-8.1	-3.2
9	Health care equipment & services	3.8	3.5	6.3	6.3	6.4	-8.5	2.9
10	General industrials	3.7	3.5	3.1	13.7	6.2	-5.5	-2.4
11	Food producers	1.9	4.9	3.9	11.1	9.0	4.1	6.9
12	Chemicals	1.3	0.6	2.1	10.0	4.7	-3.9	4.1
13	Automobiles & parts	-0.2	10.7	2.1	9.5	-9.2	-15.5	-5.3
14	Fixed line telecommunications	-4.2	-10.2	-1.2	36.4	10.9	3.7	0.7
15	Leisure goods	-5.2	-1.5	2.8	-1.6	-3.5	-7.4	-5.5
	Top 15 industries	3.7	5.4	2.8	10.0	3.6	-10.1	-2.4
	Rest of 22	7.4	12.6	11.5	9.5	5.3	-6.2	1.9
	All 37 industries	4.0	6.1	3.5	10.0	3.7	-9.7	-2.1

* Banks report R&D according to the International Financial Reporting Standards (IFRS) that EU listed companies are required to apply since 2005. However, the US and Japan have been slow in implementing IFRS.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Changes in indicators by region and sector groups

This section describes the trends in R&D investment, net sales, operating profits and capital expenditures examined based on an aggregation of the 37 industrial sectors into four categories: high, medium-high, medium-low and low R&D intensity (see Box 1).

Box 1. Grouping of industrial sectors according to R&D intensity (R&D as % of net sales)

High R&D intensity sectors (intensity above 5%) include e.g. Pharmaceuticals & Biotechnology; Health Care equipment & Services; Technology Hardware & Equipment; Software & Computer Services.

Medium-high R&D intensity sectors (between 2% and 5%) include e.g. Electronics & Electrical Equipment; Automobiles & Parts; Aerospace & Defence; Industrial Engineering & Machinery; Chemicals; Personal Goods; Household Goods; General Industrials; Support Services.

Medium-low R&D intensity sectors (between 1% and 2%) include e.g. Food Producers; Beverages; Travel & Leisure; Media; Oil Equipment; Electricity; Fixed Line Telecommunications.

Low R&D intensity sectors (less than 1%) include e.g. Oil & Gas Producers; Industrial Metals; Construction & Materials; Food & Drug Retailers; Transportation; Mining; Tobacco; Multi-Utilities.

R&D investment by the 1400 *Scoreboard* companies (€ 456 bn) can be divided into four groups as follows:

- High R&D intensity, 49.0 %,
- Medium-high R&D intensity, 38.5 %,
- Medium-low R&D intensity, 5.8 %,
- Low R&D intensity, 6.7 %.

As outlined below in Table 9, the worldwide and domestic distribution of R&D investment by the 1400 *Scoreboard* companies shows clear differences between the world regions, illustrating the weight of the region in the world and its specialisation respectively.

Companies based in the EU specialise in medium-high R&D intensive sectors (48 % of total R&D of the EU companies) and contribute 36.1 % of the total R&D investment for the sector group.

Those based in the US specialise in high R&D intensive sectors (68.6 % of total R&D of the US companies) and contribute 46.1 % of the total R&D investment for the sector group.

Japanese companies specialise in medium-high R&D intensive sectors (50.5 %) while contributing 28.5 % of the total R&D investment of that sector group.

Table 9. World and domestic R&D distribution of the 1400 Scoreboard companies by sector groups for the main regions.

Sector	High		Medium-high		Medium-low		Low	
	Share, %		Share, %		Share, %		Share, %	
Region	world	domestic	world	domestic	world	domestic	world	domestic
EU	20.3	34.3	36.1	48.0	35.2	7.0	46.1	10.7
US	49.1	68.6	22.8	25.0	31.7	5.2	6.8	1.3
Japan	17.5	39.4	28.5	50.5	19.3	5.1	16.1	5.0
OC	13.1	45.3	12.7	34.4	13.8	5.6	31.0	14.7

Note : Sector groups as defined in Box 1.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD

R&D growth

The R&D growth of EU companies was above the EU average (6.1 %) in low and medium-high R&D-intensive sectors (17.6 % and 6.7 % respectively) and below average in the high (3.2 %) and medium-low (0.9 %) sectors. For US firms, R&D growth was above the US average (10 %) in the medium-low (18.5 %) and the high (10.1 %) R&D-intensive sectors. Based on the data referring to an earlier period, Japanese companies had negative R&D growth in all sectors except in medium-low R&D-intensive sectors (1.0 %). Companies in the OC group showed an impressive R&D growth rate (above the average, 10.7 %) in medium-high (19 %) and low (17.9 %) sectors.

Net sales growth

EU companies showed a net sales growth above the EU average (13 %) in medium-high (18.0 %) and low (13.6 %) sectors. For US companies, sales increased well above the average (13.2 %) in low (19.2 %) and high (16.5 %) sectors. Based on the data referring to an earlier period, Japanese companies had negative sales growth in all sectors, especially in low (-15.3 %) sectors. For companies in the OC group, sales grew substantially in low (29.9 %) and medium-high (21.2 %) sectors.

Growth of operating profits

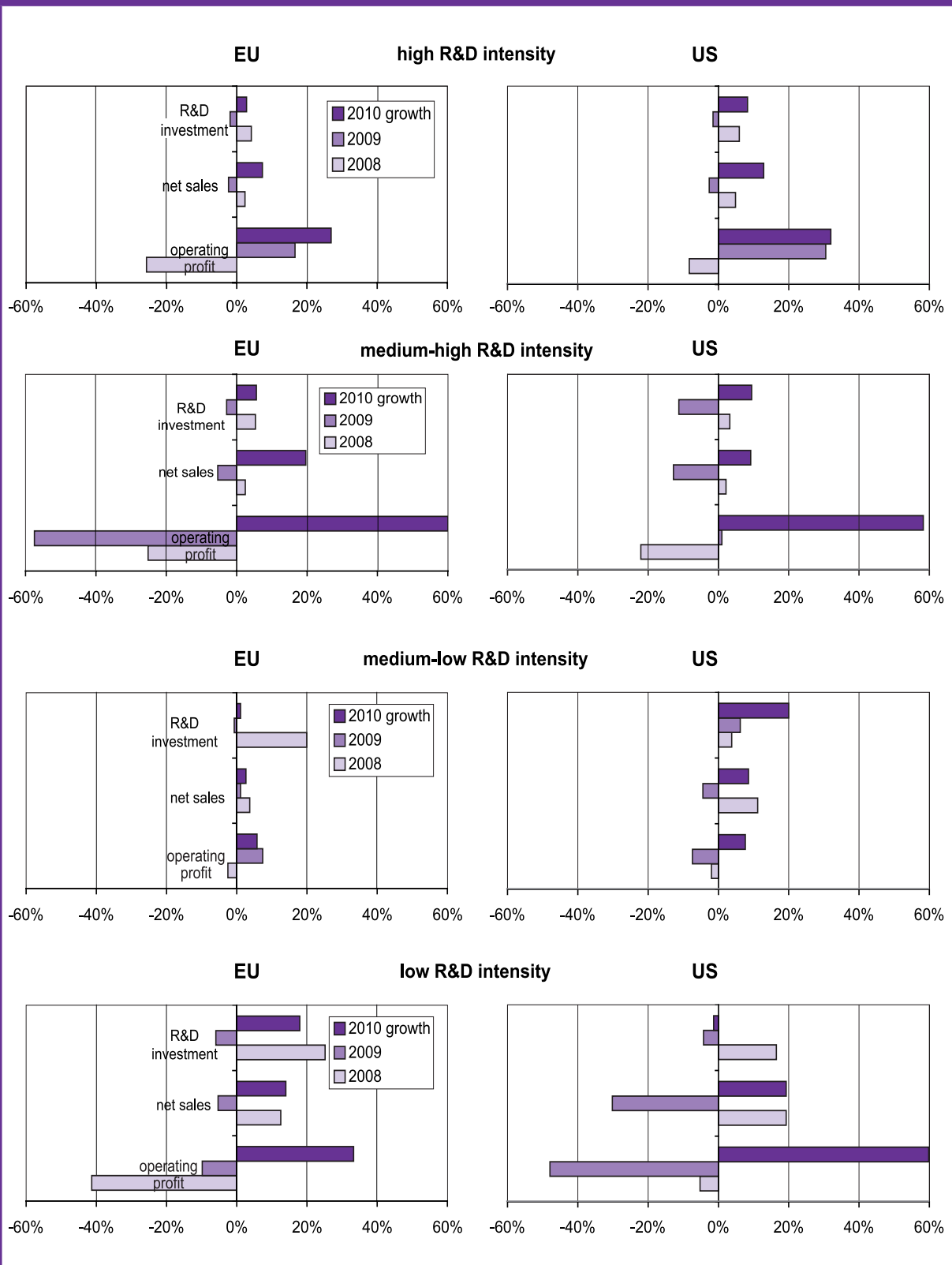
Companies showed a remarkable recovery in terms of profits across all regions and sectors (following the strong losses reported last year). The medium-high R&D-intensive sector presents the best results for most regions, well above the respective region averages, that is, 214.5 % for the EU companies and 627.4 % for the Japanese ones. The high R&D-intensive sector is the second best in terms of operating profits and above the average for Japanese companies. Medium-low R&D-intensive companies showed growth in operating profits well below the average in each region.

Capital expenditures growth

EU companies showed positive growth of capital expenditures above the EU average in high, medium-high and medium-low R&D intensive sectors and a decrease in low R&D-intensive ones (-1.1 %). For US companies, capital expenditures increased strongly in high (21.5 %) and medium-low (18.0 %) sectors. Based on the data referring to an earlier period, Japanese companies had negative capital expenditures growth in all sectors, especially in medium-high (-31.7 %) and high (-28.7 %) sectors. For companies in the OC group, capital expenditures grew significantly in high (59.9 %) and medium-high (39.2 %) sectors.

Figure 7 shows the last three years' growth rates for R&D, net sales and operating profits by sector groups to specifically compare the EU with the US.

Figure 7. Annual growth rates of main indicators by R&D intensity for the EU and the US companies



Sector groups as in figure S3 of the Summary. For companies with data available for the whole period.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

R&D intensity by sector

Worldwide R&D intensity in the main industrial sectors for the 1400 *Scoreboard* companies grouped by main region is presented in Table 10.

Most of the industrial sectors decreased their R&D intensity as sales increased more than R&D investment in 2010. The exceptions were Aerospace & Defence, Fixed Line Telecommunications and Oil & Gas Producers sectors in which R&D intensity remains practically unchanged.

Five sectors have an R&D intensity of more than 6.0 %: Pharmaceuticals & Biotechnology, IT sectors (Software & Computer Services and Technology Hardware & Equipment), Leisure Goods and Health Care Equipment & Services. The sector with the lowest R&D intensity is Oil & Gas Producers (0.4 %), and it is characterised by very high turnover which masks high R&D investment in absolute terms.

Among the top 15 sectors, the R&D intensity of EU companies is higher than that of the US and Japan in 6 sectors including Technology Hardware & Equipment, Automobiles & Parts and Industrial Engineering. Japanese companies show higher R&D intensity than the EU and the US in such sectors as Pharmaceuticals & Biotechnology, Electronic & Electrical Equipment and Chemicals. The R&D intensity of US companies is higher than that of EU and Japanese companies in Leisure Goods and Health Care Equipment & Services.

As observed in previous *Scoreboards*, the overall lower average R&D intensity for EU companies is due to their having a sizeable share of low R&D-intensive sectors with large sales and a smaller proportion of companies in high-intensity sectors compared to a similar group of non-EU companies. Conversely, the high average R&D intensity of the US companies is due to their considerable weight in high R&D-intensive sectors (see Figures 3 and 4).

Table 10. Ranking of industrial sectors by overall R&D intensity for the EU, US and Japanese companies in the 2011 Scoreboard.

Rank	Sector	Overall sector R&D intensity, %	EU sector R&D intensity, %	US sector R&D intensity, %	Japan sector R&D intensity, %
1	Pharmaceuticals & Biotechnology	15.3	14.1	15.5	17.3
2	Software & Computer Services	9.6	10.6	10.5	5.8
3	Technology Hardware & Equipment	7.8	12.9	8.4	6.1
4	Leisure goods	6.2	6.4	8.4	5.9
5	Health care equipment & services	6.1	4.1	7.2	6.6
6	Electronic & electrical equipment	4.2	4.9	4.9	5.1
7	Automobiles & parts	4.1	4.7	3.8	4.3
8	Aerospace & defence	4.0	5.7	3.1	6.4
9	Chemicals	3.1	2.7	2.8	4.3
10	Industrial engineering	3.0	3.4	3.1	3.0
11	General industrials	2.4	2.8	2.9	2.6
12	Fixed line telecommunications	1.7	1.5	1.1	2.7
13	Food producers	1.7	1.9	1.4	2.3
14	Banks	1.5	1.4	n.a.	n.a.
15	Oil & gas producers	0.4	0.3	0.2	0.4
	Top 15 sectors	4.0	3.5	5.1	4.8
	Rest of 22 sectors	1.1	0.7	2.2	1.2
	Grand Total	3.3	2.5	4.7	3.8

Source: *The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.*

5.2. Sector focus: Telecom Equipment, Electronic Equipment and Alternative Energy

As in last year's edition, the sectoral analysis includes an analysis of the performance of EU companies and their main counterparts in specific selected sectors. These sectors are selected on the basis of their importance in terms of level, intensity and dynamics of R&D and their potential to create growth and jobs. Whereas in the last Scoreboard the Semiconductors, Software and Biotechnology sectors were addressed, this year's focus is on Telecom Equipment, Electronic Equipment/Leisure and Alternative Energy.

It is important to note that many firms operate in a variety of sectors but are allocated to only one for purposes of sector groupings. For example, the Telecom Equipment sub-sector comprises very different companies, e.g. companies dealing with handsets and/or infrastructure but does not include major players such as Apple and Samsung which are classified in different sub-sectors (Computer Hardware and Electronic Equipment respectively).

Telecom Equipment

This analysis looks at company data from the Telecom Equipment sub-sector (part of the Technology Hardware & Equipment sector).

Figure 8 shows the top 20 companies in the Telecom Equipment sector ranked by R&D investment and Table 11 summarises the main sector indicators for the EU, the US and all other countries.

The top 20 companies account for 91.7 % of the total R&D investment of the sector. The EU and US companies together account for 83 % of the total R&D. In the top 20 companies, there are 11 from the US and 4 from the EU.

The number of companies is three times higher in the US than in the EU but the average size in terms of number of employees is about four times larger in the EU sample than in the US. EU companies are also three times larger on average than the US ones in terms of R&D investment and net sales.

In terms of R&D investment growth over the last year, EU companies outperform the US ones (4.4 % vs. 2.2 %). Over the last three years, however, US companies have had a higher annual growth rate than EU ones (1.4 % vs -1.2 %). The rest of the companies in the Telecom Equipment sector show a higher annual R&D growth rate over one and three years (10.6 % and 4.5 % respectively).

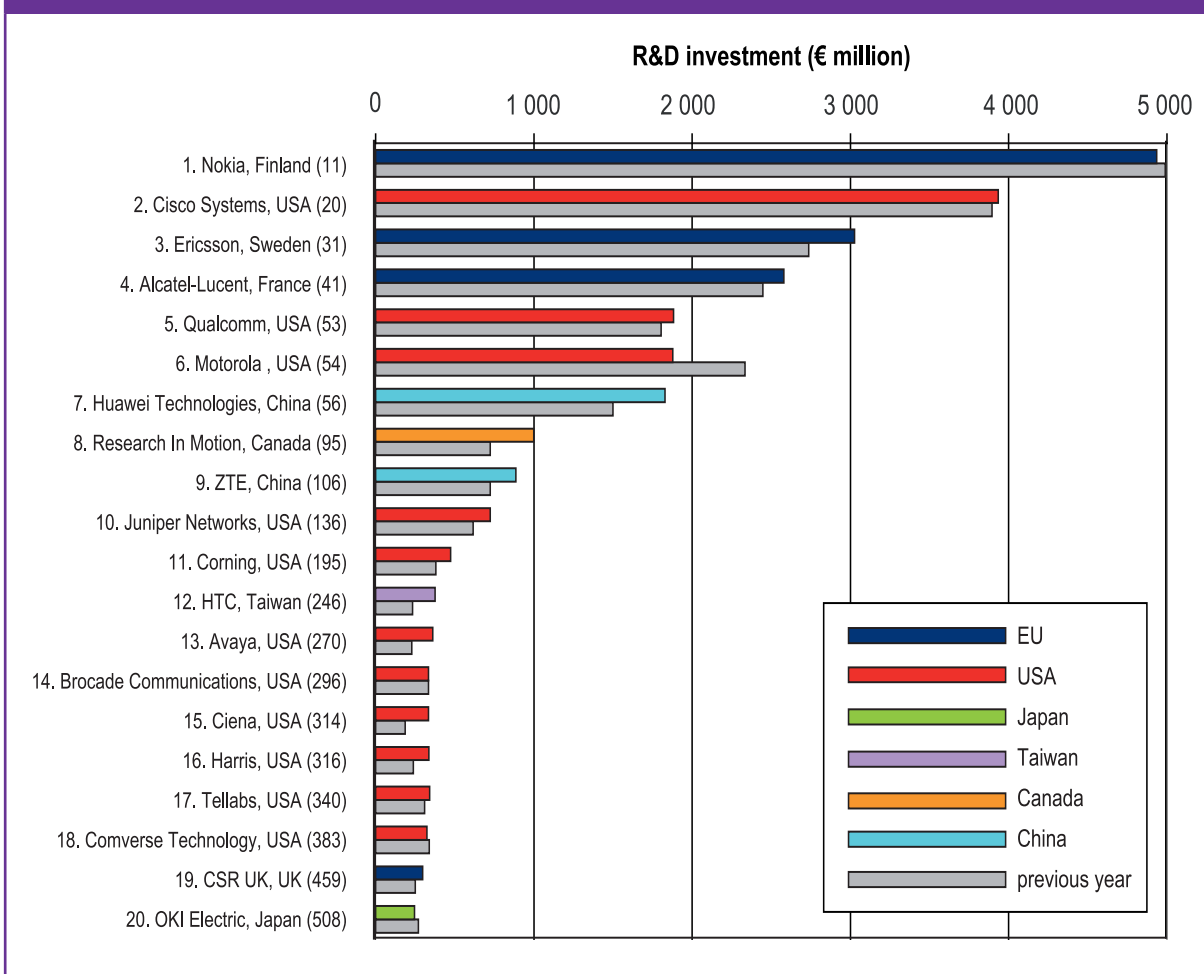
In terms of sales growth, US companies performed better than EU ones over one and three years (10.2 % and -0.3 % vs. 3.2 % and -3.0 % respectively). The rest of companies in the sector performed better, at 16.6 % and 9.1 %.

The average R&D intensity of EU and US companies is similar (about 13 %) but higher than the rest of the companies in the sector (7.7 %).

US companies show higher capital expenditure intensity (3.7 %) than EU ones (1.8 %) and other companies (3.0 %).

The profitability of US companies (17.4 %) is significantly higher than that of EU ones (4.5 %) and other companies (10.0 %).

Figure 8. Ranking of the top 20 R&D companies in the telecommunications equipment sector by their total R&D investment



The number in brackets after the names of the companies indicates the position in the general Scoreboard ranking. Sector groups as in figure S3 of the Summary. For companies with data available for the whole period.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 11. Overall performance of Scoreboard companies in the Telecommunications equipment sector for the EU, the US and other countries*.

Factor	EU	USA	Other countries
No. of companies	10	34	16
Employees	313117	277722	275979
R&D Investment, € m	11057.1	11688.2	4690.5
Change from previous year, %	4.4	2.2	10.6
CAGR 3yr, %	-1.7	1.4	4.5
Net Sales, € m	84934.2	87333.0	61213.8
Change from previous year, %	3.2	10.2	16.6
CAGR 3yr, %	-3.0	-0.3	9.1
R&D intensity, %	13.0	13.4	7.7
Capex intensity, %	1.8	3.7	3.0
Profitability, %	4.5	17.4	10.0

* Includes one Japanese company.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Electronic equipment / Leisure

This specific analysis includes company data from the Electronic Equipment sub-sector (part of the Electric and Electronic Equipment sector), the Electronic Office Equipment sub-sector (part of the Technology Hardware & Equipment sector) and the Leisure sector. Table 12 summarises the main indicators of the Electronic Equipment sector for the EU, the US and Japan. Figure 9 shows the top 20 companies in the Electronic Equipment sector ranked by R&D investment.

The top 20 companies account for 77 % of the total R&D investment for the sector. Together, EU, US and Japanese companies account for 72.5 % of the total R&D (Japanese companies alone account for 53.7 % of the total). The top 20 list is largely dominated by Japan with 12 companies, followed by the US with 4 companies, and the EU, Taiwan and South Korea with one company each.

The Japanese companies dominate this sector in terms of the number of companies and average number of employees, R&D investment and net sales. The list contains 37 Japanese companies compared with only 28 from the US and 17 based in the EU. The average size of Japanese companies in terms of employees is double that of the US companies and nearly four times larger than those from the EU sample. In terms of R&D, Japanese companies are on average more than three times larger than the US and EU companies. In terms of average sales by company, Japanese companies are also three times larger than US ones and almost four times larger than EU ones.

In terms of R&D investment growth over one and three years, the EU companies (1.8 % and 3.7 %) outperform the Japanese ones (-9.3 % and -5.4 %) and did better than the US ones (2.5 % and -0.2 %) over the past three years.

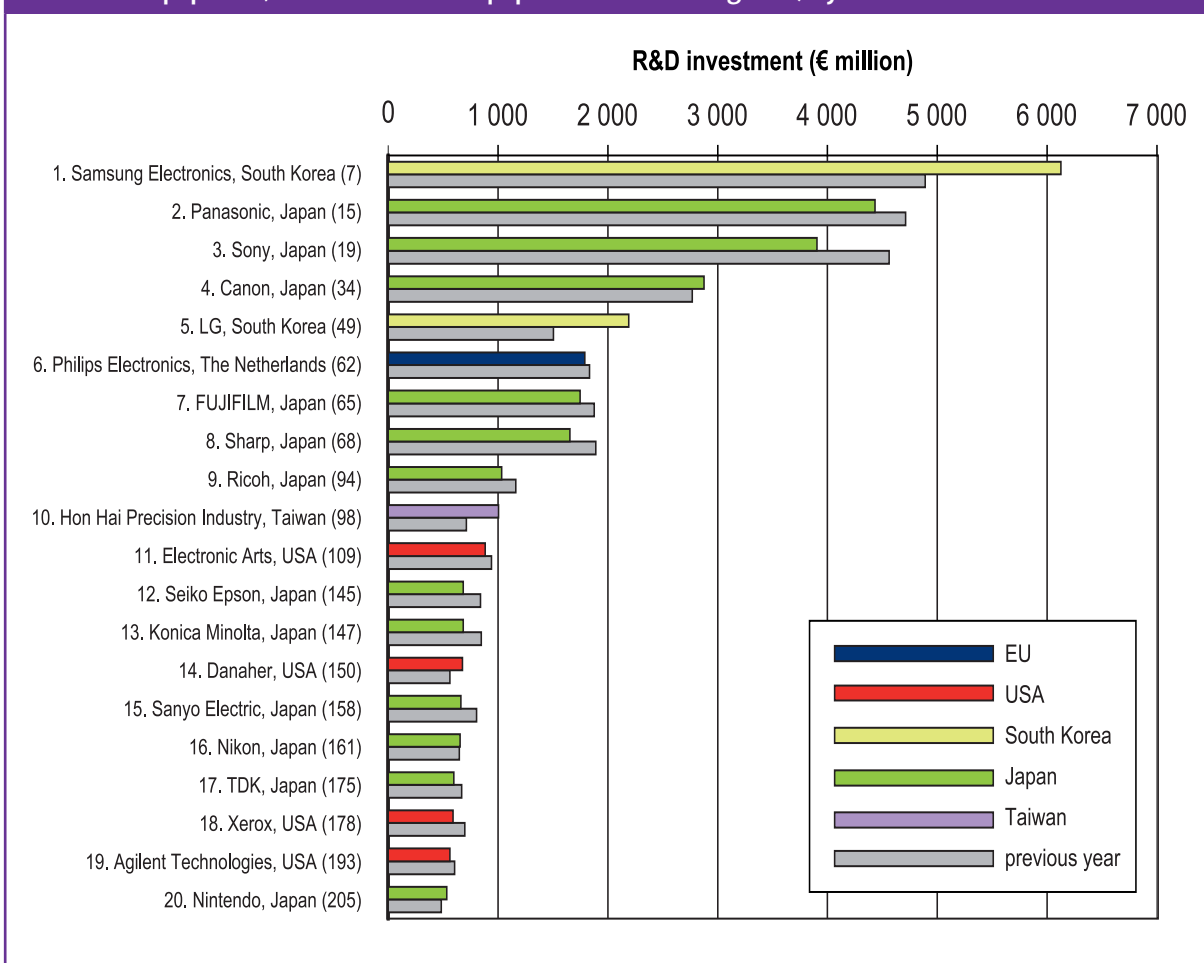
In terms of sales growth over one and three years, the US companies (14.8 % and 0.4 %) performed better than the EU ones (11.8 % and -0.2 %) and the Japanese ones (-5.6 % and -5.4 %).

The R&D intensity of the sector does not change much across regions. The average R&D intensity of the EU companies (6.6 %) is higher than that of Japanese companies (6.3 %) and US companies (5.6 %).

Japanese companies display a much higher capital expenditure intensity (4.7 %) than US ones (2.2 %) and almost twice that of EU ones (2.7 %).

The profitability of US companies (10.1 %) is slightly higher than that of EU ones (9.4 %) and four times higher than that of Japanese ones (2.6 %).

Figure 9. Ranking of the top 20 R&D companies in the electronic equipment/leisure sector (electronic equipment, electronic office equipment and leisure goods) by their total R&D investment *



The number in brackets after the names of the companies indicates the position in the general Scoreboard ranking. Sector groups as in figure S3 of the Summary. For companies with data available for the whole period.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 12. Overall performance of Scoreboard companies in the Electronic Equipment / Leisure sector for the EU, the US and Japan*.

Factor	EU	USA	Japan
No. of companies	17	28	37
Employees	198871	557630	1485163
R&D Investment, € m	2872.3	4923.7	22243.0
Change from previous year, %	1.8	2.5	-9.3
CAGR 3yr, %	3.7	-0.2	-5.4
Net Sales, € m	43432.5	87939.2	353237.0
Change from previous year, %	11.8	14.8	-5.6
CAGR 3yr, %	-0.2	0.4	-5.4
R&D intensity, %	6.6	5.6	6.3
Capex intensity, %	2.7	2.2	4.7
Profitability, %	9.4	10.1	2.6

* Includes the Electronic Equipment, Electronic Office Equipment and Leisure sectors.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Alternative energy

As observed in previous *Scoreboards*, R&D investments in the field of energy have been growing rapidly in the past years. This has to do specifically with the development of new energy technologies driven by energy security and environmental concerns.

Many companies from various sectors in the *Scoreboard* deal directly with new energy technologies (oil, gas and electricity companies), or indirectly (energy users such as transport-related sectors, general industrials and others such as the electronic equipment sector). This means that a number of large conglomerates which are major players in the renewable energy sector, such as General Electric, Siemens, Abengoa, Sharp and Samsung, are classified under other sectors and are not considered in this analysis.

Since 2008, the *Scoreboard* includes an Alternative Energy sector comprising companies fully devoted to technological developments in the field of renewable energy technology. This year's *Scoreboard* lists 15 companies in the Alternative Energy sector that continue to show impressive results (see Table 13). Twelve of the fifteen companies are based in the EU.

In 2010, these 15 companies invested € 817.2 million in R&D, showing annual R&D growth rates over one and three years of 29.4 % and 44.1 % respectively.

These companies had net sales of € 21 102.5 million and sales growth rates over one and three years of 23.1 % and 22.1 %

A recent JRC study of three alternative energy technologies –Photovoltaic solar (PV), Wind energy and Concentrated Solar Power (CSP)¹⁷– further deepens the analysis of this sub-sector by including worldwide company data, market supply and demand factors and the regulatory frameworks. The main conclusions of this study are as follows:

- R&D plays a key role for technology development in these industries, but it is not considered to be the main source of competitive advantage. R&D intensity (R&D investment as percentage of net sales) for these industries is within the range associated with medium R&D intensity sectors, i.e. 2 %–4 % (compared to 15 %–20 % in biotechnology or IT hardware industries). However, equipment manufacturing companies making certain components, e.g. those in the PV industry, invest about 10 % of their sales in R&D.
- In terms of R&D investment, the EU companies lead in CSP and wind energy and non-EU companies (USA and Asian) lead in PV. However, there is recent evidence of much stronger R&D activity in some non-EU countries, namely in China, South Korea, India, Japan and the US.
- Manufacturing PV, CSP and wind energy technology components accounts for a large share of the added value and jobs along the entire value chain. Moreover the location of manufacturing facilities depends mainly on the attractiveness of the countries and regions. Asia (excluding Japan) appears to be the most attractive region for manufacturing PV and wind energy components, whereas the EU is the most attractive location for R&D and pilot activities. The EU and the US are both attractive for CSP R&D and demonstration activities. In addition, the potential of these industries to generate employment in the EU is strongly affected by the local content or location requirements in non-EU countries.
- One of the EU's main policy challenges is to improve conditions in order to maintain a strong manufacturing base and related technological development in alternative energy industries to reap the full benefits in terms of added value and jobs.

¹⁷ Hernández, H. and Tübke, A. (2011) "Techno-economic analysis of key renewable energy technologies (PV, CSP and wind)", JRC Scientific and Technical Reports, 2011 (<http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=4600>)

Table 13. Ranking of companies in the Alternative Energy sector. Top 15 industrial sectors by overall one-year R&D growth for the EU, US and Japanese companies in the 2011 *Scoreboard*.

Company, country	R&D 2010, € m	R&D change (%)		Sales 2010, € m	Sales change(%)	
		1 year	3 years		1 year	3 years
Vestas Wind Systems, Denmark	358.0	49.8	44.4	6920.0	4.3	12.5
SMA Solar Technology, Germany	78.0	45.9	61.4	1920.1	105.5	80.3
First Solar, USA	70.7	21.3	84.4	1910.9	24.1	72.0
Renewable Energy, Norway	48.0	1.4	31.0	1781.4	51.7	27.9
centrotherm photovoltaics, Germany	42.4	49.3	79.3	624.2	22.6	55.4
Sunpower, USA	36.6	55.1	53.5	1662.5	46.3	42.2
LM Wind Power, Denmark	34.5	30.7	24.7	727.5	-6.4	7.9
Nordex, Germany	31.9	13.4	22.8	972.0	-17.8	9.2
Roth & Rau, Germany	29.7	89.0	156.4	285.4	44.2	25.0
Q-Cells, Germany	24.3	-1.6	12.2	1357.5	69.3	16.5
SolarWorld, Germany	17.1	68.1	33.8	1304.7	28.8	23.1
3w Power, Luxembourg	16.5	276.9		306.0	177.0	
Hansen Transmissions International, Belgium	12.9	-13.6	8.9	455.2	-14.5	2.6
PV Crystalox Solar, UK	10.9	33.1	30.4	252.6	6.4	-6.3
Solon, Germany	5.8	52.6	14.2	622.6	75.7	7.4
Total Alternative Energy sector	817.2	39.4	44.1	21102.5	23.1	22.1

Source: *The 2011 EU Industrial R&D Investment Scoreboard*. European Commission, JRC/DG RTD.

6. Fast growing* companies in the Scoreboard

This chapter presents an analysis of *Scoreboard* companies that, at any moment in time during the period 2002-2009, have qualified as “fast-growing” according to the OECD definition: three consecutive years with a minimum annual increase of 20 % for either sales or employment. These companies are identified by industrial sector and country, and their main characteristics are compared with their counterparts in their respective industrial sectors.

Key findings

- A relatively high number of companies showing fast-growth in terms of sales or employment are found in three high R&D-intensity sectors and a large percentage of them are based in the US, especially those showing fast growth in terms of sales. This illustrates the high dynamism of high R&D-intensity sectors in the US as compared with the EU.
- An analysis of the recent performance of this category of Scoreboard firms illustrates the importance of considering not only the speed of growth of a specific company but also the sustainability of that growth over time.
- EU-based companies in the biotech and software sectors that have increased sales or employment, are fewer and smaller in size than US ones. Moreover, EU companies appear to be more R&D-intensive and show lower profitability than US ones.
- The analysis of the sample of a larger set of 1000 EU companies shows that the number of firms in that category, which are in high R&D-intensive sectors, is relatively higher among larger companies (measured in terms of sales and employees).

6.1. Fast-growing companies in the policy spotlight

One of the major issues on the new research and innovation European agenda concerns firms which are “fast-growing innovative enterprises”. The share of these companies in Member States’ economies has been proposed as a new headline indicator to measure innovation, as a complement to the R&D intensity indicator and its associated target of 3 % of GDP. The need to improve framework conditions and access to capital in order to remove obstacles to the growth of Member States’ innovative companies was explicitly mentioned in the European Annual Growth Survey which presented the course of action for overcoming the crisis and progressing towards the Europe 2020 objectives.

Fast-growing companies are important sources of economic growth and employment, and therefore contribute directly to the economic recovery. Moreover, fast-growing companies in knowledge-intensive activities are important in accelerating the industrial structural change that the European economy requires.

The present chapter has not the ambition to propose a definition of fast-growing innovative enterprises. The analysis is limited to R&D performing firms and based on a sample. It only describes some characteristics of the firms that have increased sales or employment at a certain moment during the period 2002-2009. The information available does not allow to draw at this stage conclusions as regards the external factors that influence their capacity to grow.

* According to the definition of high growth by EUROSTAT-OECD, a company is classified as being ‘fast growing’ if it achieves during any period of three consecutive years a minimum annual increase of 20 % for either sales or employment

6.2 Empirical evidence drawn from the Scoreboard sample

The identification of companies that qualify as fast-growing has been done using a sample of *Scoreboard* companies for which observations exist for the 2002–2009 period. According to the definition of high growth by EUROSTAT-OECD¹⁸, a company is classified as being ‘fast growing’ if it achieves during any period of three consecutive years a minimum annual increase of 20 % for either sales or employment.¹⁹ The results of the identification exercise using this definition of fast-growth is presented in Table 14 below and the list of this group of firms is shown in Annex 4.

This evidence shows that companies in the *Scoreboard* sample that fall into that category, are mainly concentrated in three sectors, all of which are classified as high R&D-intensive (i.e. they invest more than 5 % of their sales in R&D), and all of them have a significant presence in the *Scoreboard* sample (share of more than 5 % by number of companies): Pharmaceuticals & Biotechnology, Software & Computer Services and Technology Hardware & Equipment. In these three sectors, the proportion of high-growth firms ranges between 10 % and 15 %. In most cases, rapid growth in terms of sales and of employment is coupled with high growth of R&D investments. Additional analysis of the characteristics of these companies in these sectors is presented below.

In contrast, among the other most highly represented sectors in the sample, the Electronic & Electrical Equipment and the Industrial Engineering sectors contained comparably few companies that have been identified as fast growing. This could be explained by the peculiar sample composition of these two *Scoreboard* sectors, which are composed of very large firms. Nevertheless, a few companies in both sectors are characterised by noteworthy R&D investment growth. The Automobiles & Parts sector includes few of these companies, and none of them are based in the EU or the US.

The companies in the Healthcare Equipment and Services sector appear to be particularly dynamic. The number of R&D performing companies that have qualified as fast-growing at a certain moment in time in the period 2002–2009 is relatively high (almost 20 % of all companies in the sector sample). Most of them in this sector are based in the US.

The US companies that have increased sales or employment have a very high R&D intensity, those from the EU still have a fairly high R&D intensity –although much less than that of US companies– and the other companies show lower R&D intensity.

A sub-sample of the R&D performing companies that in a certain moment of time during the period 2002–2009, showed fast-growth rates for sales and employees is shown in Table 15. These are the companies showing the highest average growth rates for sales and employment over this period (2002–2009), and that in addition experienced high rates of R&D growth²⁰. The latest performance indicators (2010 data) are shown for each company. Although most of these selected companies show relatively good performance, the picture is very heterogeneous. Some of them show negative compound annual growth of net sales (sales CAGR) over the last three years (2008–2010). The reasons behind this recent poor performance could be very diverse and linked to the general economic environment or to sectoral specificities. In any case, the example serves to illustrate the importance of considering not only the speed of growth of a specific company but also the sustainability of such growth over time.

It is also worth highlighting a number of successful EU-based companies appearing in this list: Tom-Tom (Netherlands), in the electronic equipment sector; Autonomy (UK) and Gameloft (France) in the software sector; and Morphosys (Germany) in the biotech sector.

18 EUROSTAT-OECD (2007): Eurostat-OECD Manual on Business Demography Statistics, p. 61. Also cited in OECD (2010), OECD Studies on SMEs and Entrepreneurship, High-Growth Enterprises, What Government can do to make a difference, p. 16.

19 Please note that this definition of “fast growing firms” may be adapted in the context on the development of the new Europe 2020 innovation headline indicator. In this exercise, no distinction is made between a firm’s internal and external growth, i.e. driven by mergers and acquisitions.

20 For the purpose of this analysis the criteria used to identify R&D high-growth firms mirrors the fast-growing definition for sales and employment : three consecutive years of minimum 20% annual growth.

Table 14. Number of R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009, by sector and by main region.

Industrial sector	Fast growing by Net sales			Fast growing by Employment		
	EU	US	Others	EU	US	Others
Technology Hardware & Equipment	3	7	10	1	10	4
Pharmaceuticals & Biotechnology	9	20	2	6	6	1
Software & Computer Services	4	10	4	3	10	2
Electronic & Electrical Equipment	1		7	2	2	1
Healthcare Equipment & Services		8	1		2	
Oil & Gas Producers		3	5			
Industrial Engineering		1	1			
Automobiles & Parts			2			
Leisure Goods			1		1	1
Alternative energy		1			1	
General Retailers		3				
Aerospace & Defence		1				
Banks						
General Industrials				1	1	1
Other Sectors	4	1	4	1	0	1
Total	21	55	37	14	33	11

Note: The panel consisted of companies investing more than €30m in R&D: EU-378, US-504 and other countries-497

* Number of companies classified according to the 'fast growing' criterion: three consecutive years of minimum 20% annual growth.

Source: The EU Industrial R&D Investment Scoreboards. European Commission, JRC/DG RTD.

Table 15. 2010 data for R&D performing firms qualifying as fast-growing* in terms of both net sales and employment at a certain moment during the period 2002-2009, and also showing high-growth# of R&D during that same period.

Company	Sector	Country	R&D, €m	R&D CAGR 3yr, %	Sales, €m	Sales CAGR 3yr, %	RD/sales, %	Profits/sales, %	Capex/sales, %	Employees	Capex, €m
Tencent	Internet	Cayman Islands	190,7	75,6	2222,4	72,6	8,6	48,7	7,3	10692	163,2
First Solar	Alternative energy	USA	70,7	84,4	1910,9	72,0	3,7	29,3	23,0	6100	439,0
Velti	Software	UK	5,8	18,4	86,7	63,4	6,7	-1,9	0,9	550	0,8
Research In Motion	Telecommunications equipment	Canada	1007,1	55,4	14839,0	49,1	6,8	23,3	5,2		774,5
Celgene	Biotechnology	USA	833,3	43,5	2702,7	37,1	30,8	27,0	2,7	4182	73,5
Alibaba.com	Internet	Cayman Islands	65,6	64,0	628,7	37,0	10,4	26,0	3,3	13674	20,7
Autonomy	Software	UK	114,3	30,3	648,8	36,3	17,6	36,1	2,6	1878	16,6
CSR China	Commercial vehicles & trucks	China	276,4	70,9	7229,9	33,6	3,8	5,7	7,6	80000	547,8
Nuance Communications	Software	USA	113,4	23,9	834,1	23,0	13,6	3,1	2,3	6100	19,4
Google	Internet	USA	2804,3	21,1	21856,4	20,9	12,8	35,4	13,7	24400	2995,1
Red Hat	Software	USA	127,7	15,9	677,8	20,2	18,8	16,2	3,6	3700	24,4
Actelion	Pharmaceuticals	Switzerland	387,3	18,4	1542,7	13,6	25,1	23,7	6,6	2441	102,0
Gameloft	Software	France	78,1	12,8	141,0	13,6	55,4	6,6	2,8	4558	4,0
Meda	Pharmaceuticals	Sweden	21,8	-6,2	1283,0	12,4	1,7	18,1	1,1	2593	14,1
MorphoSys	Biotechnology	Germany	53,0	40,6	87,0	12,0	60,9	11,3	2,7	435	2,3
F-Secure	Software	Finland	33,7	19,0	130,1	10,4	25,9	14,7	4,0	835	5,3
SanDisk	Semiconductors	USA	315,0	0,4	3598,0	7,4	8,8	29,4	2,2	3469	80,6
OmniVision Technologies	Semiconductors	USA	66,0	3,7	713,0	6,2	9,3	13,4	1,1	1465	7,7
eBay	General retailers	USA	821,1	14,7	6825,2	6,1	12,0	22,4	7,9	17700	539,6
Symantec	Software	USA	642,6	-1,3	4614,1	1,8	13,9	14,2	4,3	18600	199,8
Stada Arzneimittel	Pharmaceuticals	Germany	60,0	6,8	1627,0	1,2	3,7	10,0	1,9	8080	30,8
CSR UK	Telecommunications equipment	UK	149,2	12,4	596,8	-1,9	25,0	-0,7	1,0	1463	6,2
Yahoo!	Internet	USA	888,7	-0,1	4714,5	-3,2	18,9	12,6	11,3	13600	532,3
TomTom	Electronic equipment	The Netherlands	164,3	34,6	1521,1	-4,3	10,8	11,5	1,2	3288	18,3
Garmin	Leisure goods	Switzerland	206,7	20,3	2005,1	-5,4	10,3	24,0	1,2	8897	24,0
Wolfson Microelectronics	Semiconductors	UK	32,2	1,8	117,3	-12,1	27,4	-7,2	2,1	429	2,4
NicOx	Pharmaceuticals	France	27,7	-15,6	7,4	-28,9	373,5	-613,0	6,9	77	0,5
Option	Telecommunications equipment	Belgium	13,9	-23,2	57,7	-42,4	24,1	-56,7	0,1	231	0,1

* Number of companies classified according to the 'fast growing' criterion: three consecutive years of minimum 20% annual growth.

We have defined high-growth for this purpose as three consecutive years of minimum 20% annual growth.

Source: The EU Industrial R&D Investment Scoreboards: European Commission, JRC/DG RTD.

Table 16 compares the number of EU firms which are fast growing in either criteria (sales or employment) from the “comparable” sample (394 companies investing more than 29 million euros annually) with the number representing the rest of the EU sample (606 companies). In total, the absolute number of these companies is higher in the sample of 606 companies, containing companies that, in general, are smaller in terms of sales and employees). Proportionally, however, the difference is small (6.6 % of companies in the EU-606 sample versus 6 % in the EU-394 sample, based on sales growth criteria).

More interestingly, the proportion of these firms among the larger companies is higher in the more high-intensity sectors such as Pharmaceuticals & Biotechnology and Software & Computer Services. For a wide array of less R&D intensive sectors, these companies appear only among the smaller sample of companies. There are no fast-growing companies (whether determined by sales or employment) in the Banks, Chemicals, Commercial Vehicles & Trucks, Electricity or Media sectors.

The Alternative Energy and the Biotechnology sectors show a particularly high number of fast-growing companies in terms of employment within the EU-606 sample. This should be considered an encouraging sign, given the importance of these two sectors.

Table 16. Number of R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009, by sector and by main region, for two EU samples (EU-394 and EU606).

Sector	Fast growing [in terms of sales]*		Fast growing [in terms of employment]*	
	EU_394	EU_606	EU_394	EU_606
Aerospace & defence		3		2
Alternative energy		2		5
Automobiles & parts		1		
Banks				
Biotechnology	4	3	3	6
Chemicals				
Commercial vehicles & trucks				
Computer hardware	1			
Computer services	2	2	1	2
Construction & materials	1			1
Electrical components & equipment		1	1	
Electricity				
Electronic equipment	1	2	1	1
Gas, water & multi-utilities	1			
General industrials			1	
Healthcare equipment & services	1	3	1	1
Household goods & home		1		
Industrial machinery		1		1
Industrial metals & mining		1		
Life insurance		1		
Media				
Mining		1		
Nonlife insurance		1		1
Oil & gas producers		1		
Oil equipment, services & distribution		1		
Other financials		1		
Personal goods		1	1	
Pharmaceuticals	5	2	3	2
Semiconductors	1	2		1
Software	3	5	3	2
Support services	1	1		
Telecommunication equipment	2	2	1	2
Travel & leisure	1	1		
	24	40	16	27

* Number of companies classified according to the 'fast growing' criterion as defined above (in three consecutive years a minimum of 20% growth annually).

NOTE: The SB entry threshold for the non-EU sample in 2009 is 28.784 mill Euros R&D investment; accordingly 394 EU companies are comparable to this sample; 606 are below this threshold.

Source: The EU Industrial R&D Investment Scoreboards. European Commission, JRC/DG RTD.

6.3. Analysis of R&D performing fast-growing firms in Biotechnology and Software

This section examines the main trends in the indicators for two sub-sectors that account for a large number of the companies qualifying as fast-growing in terms of net sales or employment at a certain moment during the period 2002-2009: Biotechnology and Software. Data on EU-based companies are compared to those from their US counterparts and to the respective sub-sector average.

Biotechnology

The main indicators for the fast-growing companies identified in the Biotechnology sector are presented in Table 17 (companies located in the EU) and Table 18 (companies located in the US). The picture clearly confirms the predominance of the US companies in this sector and its strong dynamism. Of the 45 companies appearing in the latest *Scoreboard* sample, almost one-third (14) qualified as fast-growing according to the sales growth criterion. With the exception of two cases (Xoma, with 230 employees, and Inspire Pharmaceuticals, with 240 employees), all are large companies.

The EU sample of companies with the same characteristics is a good reflection of the fact that the category is significantly smaller, compared to its US counterpart, and so are its companies, both in terms of net sales and employees.

All companies in the US group show high R&D intensity rates (approximately 20 % and higher), in line with the sector average. For the group of EU companies, except in one case, companies show R&D intensities well above the sector average. In a limited number of cases in both groups, the amounts invested in R&D are well above net sales figures, reflecting this sector's significant time lag between research/development efforts and receiving returns from marketing the resulting new products. This is the case for Intercell, ranked 4th among EU biotech companies, which invested more than twice the value of its net sales in R&D. This is a good illustration of how crucial it is for these companies to have access to external financing sources.

The relative number of companies fulfilling these criteria (4 out of 12) is much higher among larger EU biotech R&D investors (i.e. those represented in the *Scoreboard* 1400 sample, most large companies) than among the smaller ones (3 out of 52 in the EU-1000 sample, most SMEs). This suggests that, in this sector, fast rate of increasing net sales or employment is not peculiar to smaller companies and that, on the contrary, companies that have reached a certain critical size manage to perform better. This evidence reinforces the importance of increasing the size of the EU biotech companies.

Table 17. 2010 data for R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009 in the Biotechnology sub-sector, based in the EU.

Company	R&D, €m	R&D CAGR 3yr, %	Sales, €m	Sales CAGR 3yr, %	RD/Net Sales, %	Profits/Sales, %	Capex/sales, %	Employees
Crucell	54.6	0.9	338.2	37.0	16.1	3.0	15.1	1188
MorphoSys	53.0	40.6	87.0	12.0	60.9	13.0	2.7	435
Genmab	48.0	-17.4	78.2	3.2	61.4	-46.9	1.7	229
Intercell	79.9	33.8	34.2	-10.6	233.5	-21.9	11.2	408
Average EU	68.5	11.7	434.0	10.9	15.8	13.2	8.9	1590

*Three consecutive years of minimum 20% annual growth.

Source: *The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.*

Table 18. 2010 data for R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009 in the Biotechnology sub-sector, based in the US.

Company	R&D, €m	R&D CAGR 3yr, %	Sales, €m	Sales CAGR 3yr, %	RD/Net Sales, %	Profits/Sales, %	Capex/sales, %	Employees
Alexion Pharmaceuticals	73.3	15.8	403.2	95.8	18.2	27.8	2.4	792
Seattle Genetics	109.1	31.2	80.1	68.6	136.2	-63.5	3.3	348
Regeneron Pharmaceuticals	107.6	3.4	342.2	54.3	31.4	-21.2	21.7	1395
Biomarin Pharmaceutical	109.3	42.8	280.5	45.7	39.0	-0.7	13.1	871
United Therapeutics	124.3	26.0	450.1	42.0	27.6	27.3	3.1	520
Celgene	833.3	43.5	2702.7	37.1	30.8	27.0	2.7	4182
Inspire Pharmaceuticals	33.5	-5.6	79.3	29.8	42.2	-32.7	4.2	240
Cubist Pharmaceuticals	117.7	22.8	474.4	29.3	24.8	27.5	2.7	638
Gilead Sciences	789.5	22.8	5925.6	23.4	13.3	49.8	0.8	4000
OSI Pharmaceuticals	113.2	-4.9	320.1	4.6	35.4	35.4	16.1	535
Genzyme	629.0	6.0	3381.1	6.0	18.6	-0.4	14.4	10100
Affymetrix	50.6	-4.2	231.6	-5.8	21.9	-3.0	2.5	918
Amylin Pharmaceuticals	114.5	-8.0	498.5	-5.0	23.0	-19.0		1400
XOMA	43.3	5.7	25.1	-26.4	172.6	-203.2	1.0	230
Average US	194.8	8.1	854.5	12.2	22.8	23.3	5.3	1817

*Three consecutive years of minimum 20% annual growth.

Source: *The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.*

Software

The main indicators for the R&D performing fast-growing companies, as defined for this chapter, identified in the Software sector are presented in Table 19 (companies located in the EU) and Table 20 (companies located in the US). The proportion of these firms in the Software sector is higher in the EU sub-sample (4 out of the 21 companies included in the worldwide sample of 1400) than in the US one (6 out of 48).

However the size of the EU Software companies concerned is, in most cases, considerably smaller than that of their US counterparts, reflecting the general panorama of a sector in which the R&D share of EU companies is almost nine times smaller than that of the US ones.

When compared with the larger sample of Software companies within the EU-1000 sample, fast-growing companies are more highly concentrated in the group of larger companies, with the case of the Biotechnology sector described above. Of the 15 SMEs in the EU-1000 sample, none qualify as fast-growing.

When examining the basic performance and R&D intensity indicators, fast-growing companies in both the US and EU samples are quite homogeneous. R&D growth rates are higher than the sector average, which is particularly true for US companies.

Gameloft, the largest EU company in terms of employees, presents the highest R&D intensity (it reinvests more than half of its net sales in R&D). Autonomy, the top R&D investor, has the largest net sales and very strong growth rates for R&D and sales over the last three years (more than 30 % annually).

Table 19. 2010 data for R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009 in the Software sub-sector, based in the EU.

Company	R&D, €m	R&D CAGR 3yr, %	Sales, €m	Sales CAGR 3yr, %	RD/Net Sales, %	Profits/Sales, %	Capex/sales, %	Employees
Autonomy	114.3	30.3	649	36.3	17.6	36.1	2.6	1878
Fidessa	30.7	8.6	306	24.8	10.0	14.2	2.6	1532
Gameloft	78.1	12.8	141	13.6	55.4	6.6	2.8	4558
SimCorp	43.0	9.1	185	4.9	23.2	19.0	1.4	1077
Average EU Software	189.8	7.0	1358.3	6.6	14.0	17.1	2.0	7338

*Three consecutive years of minimum 20% annual growth.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Table 20. 2010 data for R&D performing firms qualifying as fast-growing* in terms of net sales or employment at a certain moment during the period 2002-2009 in the Software sub-sector, based in the US.

Company	R&D, €m	R&D CAGR 3yr, %	Sales, € m	Sales CAGR 3yr, %	RD/Net Sales, %	Profits/Sales, %	Capex/sales, %	Employees
Salesforce.com	154.7	40.5	1235.0	30.3	12.5	5.5	5.5	5306
Blackboard	41.0	24.8	333.0	23.2	12.3	7.9	4.8	1780
NuanceComm.	113.4	23.9	834.0	23.0	13.6	3.1	2.3	6100
Red Hat	127.7	15.9	678.0	20.2	18.8	16.2	3.6	3700
ANSYS	66.3	16.3	433.0	14.6	15.3	37.8	2.5	1660
Symantec	642.6	-1.3	4614.0	1.8	13.9	14.2	4.3	18600
Average US software	416.1	6.3	2924.3	7.0	14.2	30.2	2.8	9485

*Three consecutive years of minimum 20% annual growth.

Source: The EU Industrial R&D Investment Scoreboards. European Commission, JRC/DG RTD.



7. R&D and employment

This chapter presents an analysis of employment trends among the *Scoreboard* companies. It describes the relationship between R&D and employment and includes the results of a study on the effects of R&D on employment using *Scoreboard* companies' data. It also presents overall employee growth rates as well as the distribution of employment by industrial sector and a comparison between employment and net sales and R&D trends.

Key findings

- The 1400 companies listed in the Scoreboard showed signs of recovery in 2010 where employment was concerned. They employed 41.19 million people, 3.0 % more than the previous year, compared to the decrease of 1.2 % recorded the year before. The distribution of employees by region was 17.09 million in EU-399 companies, 9.99 million in US-486 companies, 7.12 million in Japan-230 companies and 6.99 million in 162 companies from other countries.
- Employment trends observed in the Scoreboard over the past eight years are generally similar to those for R&D investment and net sales. Employment growth in high R&D-intensity sectors appears to be stronger than in other sectors, and it also seems to be less affected by the recent economic downturn.
- An econometric analysis of the link between R&D and employment based on Scoreboard data found that the impact of doubling R&D investment would increase labour demand by 15 % to 20 % in high R&D-intensity sectors, and by 8 % to 15 % in low R&D-intensity sectors.

Relationship between R&D and employment

R&D's contribution to employment is an important policy issue: on the one hand, R&D is recognised as a leading factor for competitiveness; on the other hand, the public is always concerned about technological unemployment, especially when the pace of technical change increases.

How can R&D create employment? The most obvious way lies in the fact that, on average, two-thirds of R&D expenditures are represented by the cost of employing researchers. However, this is merely an accounting effect, and it is probably negligible given the size of researcher employment compared to total employment. Most of the effect stems from innovation generated by R&D.

New products based on innovative knowledge will either open up new markets, or, if introduced into production as processes, will allow for reductions to costs (and final prices), thereby enlarging the existing markets.

Since this effect passes through innovation, and since such an output cannot be measured (all the proxies are likely to be very biased) it is better to try to capture it indirectly by establishing a relationship between innovation input and output and incorporating that relationship into the estimate.

The path from research to new products and/or new processes may be complex. For example, it is quite unlikely that doubling the investment will double the output, since some of the factors (e.g. skilled workers) may become scarcer and effectiveness may depend on firm characteristics, e.g. on the size, if there are fixed costs. It goes without saying that time lags must be accounted for.

Unfortunately this is not enough. Although company-level data are necessary for running checks considering the high level of heterogeneity, we must consider that company growth does not necessarily equal employment creation. A firm can grow at the expense of its less efficient competitors and capture their market shares. This indirect effect is one of the many spillover effects related to the accumulation of new knowledge.

Using a flexible formulation that accounts for many of these complications, a recent study by Bogliacino²¹ based on a set of data from earlier *Scoreboards* estimated the impact of R&D on employment in the form of elasticity, i.e. the percentage of change on labour demand induced by a one per cent increase in R&D investment. This increase in labour demand will translate into more employment *ceteris paribus*, i.e. it will also depend on the dynamics of wages (and therefore ultimately depend on institutional factors, bargaining power and the supply of proper skills).

The results of Bogliacino's econometric analysis show that the elasticity is not constant with sales. The interesting finding is that it increases with the research intensity of companies as shown below:

- with a research intensity of 1 %, doubling R&D investment will increase labour demand by between 8 % and 15 %;
- with a research intensity of 5 %, doubling R&D investment will increase labour demand by 15 % to 20 %.

Employment trends

In 2010, the *Scoreboard* companies employed 41.19 million people: 17.09 million in EU-399 companies; 9.99 million in US-486 companies; 7.12 million in Japan-230 companies and 6.99 million by OC-162 companies.

The number of employees of these 1400 companies increased by 3.0 % in 2010, while they had decreased by 1.2 % the year before. These employment figures appear less 'elastic' than the rates of growth of R&D and net sales, both of which increased more in 2010 (4.0 % and 9.4 % respectively) but which had also decreased more in 2009 (-1.9 % and -10.1 % respectively).

Table 21 shows the ranking of industrial sectors in terms of the total number of employees, together with the annual growth rates, the average R&D investment/employee ratio and the operating profits/employee ratio.

Trends of employment for *Scoreboard* companies²² over the past eight years are shown in Figure 10 in which annual growth rates of employment are indicated for industrial sectors grouped into high, medium and low R&D-intensity categories.

The sector with the largest number of employees in the *Scoreboard* is Automobiles & Parts. The importance of this sector is highlighted by the fact that it is also the second largest sector by net sales and the third largest by R&D investment (the top R&D investor in the EU companies group). Most of the sectors accounting for a large percentage of R&D investment are also listed among the top sectors in terms of number of employees.

The R&D/employee ratio ranges from € 56 288 in the Pharmaceuticals & Biotechnology sector to €858 in the Food and Drug Retailers sector. Most R&D intensive sectors show high average R&D/employee ratio.

21 Bogliacino, F., (2010) "Innovation and Employment: A firm level analysis with European R&D Scoreboard data". IPTS Working Papers on Corporate R&D and Innovation (<http://iri.jrc.es/papers.htm>).

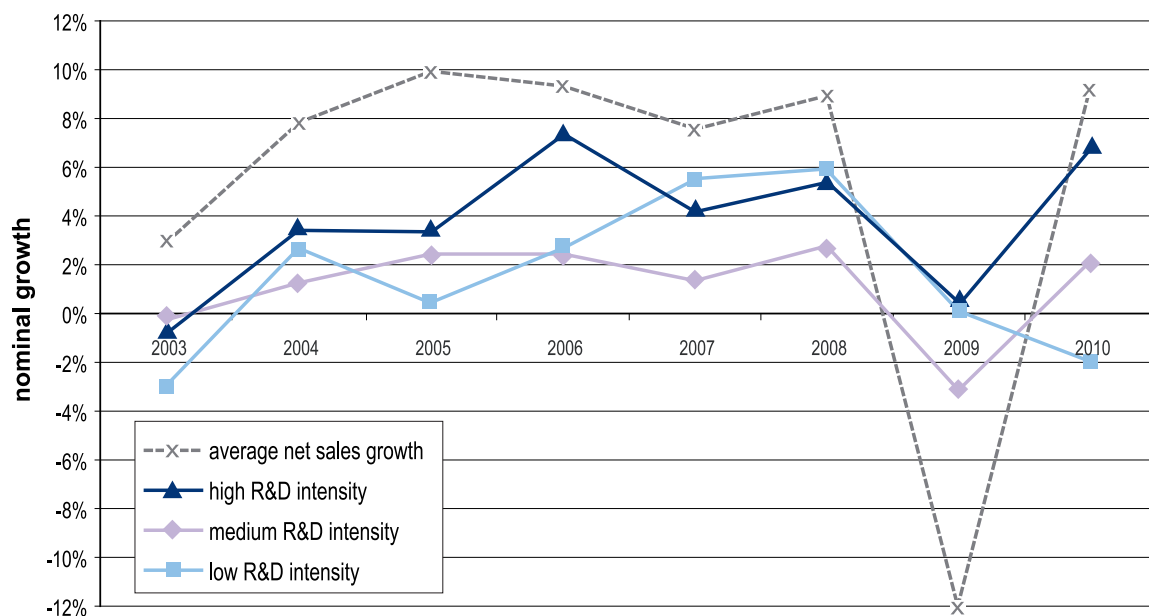
22 For a sample of 1000 (462 EU and 538 non-EU) companies for which data is available for all years in the 2011, 2007 and 2006 *Scoreboards* adjusted to the 2011 *Scoreboard* exchange rates .

Over the last year, the sectors with the highest increases in employment were Technology Hardware & Equipment (8.8 %), Software & Computer Services (6.5 %) and Electric & Electronic Equipment (5.5 %). In contrast, employment performance by Banks (-2.5 %), Fixed Line Telecommunications (-1.5 %) and Chemicals (-0.2 %) fell. Over the last three years, with the exception of the Fixed Line Telecommunications sector, all industries showed positive annual growth rates for employment.

The profits/employee ratio ranges from € 116 489 in the Oil & Gas Producers sector to € 8846 in the Food and Drug Retailers sector. Among the big R&D investing sectors, there are big differences in terms of profits/employee ratio, e.g. € 73720 in Pharmaceuticals & Biotechnology versus € 20114 in Automobiles & Parts.

The employment trends for the sectors with high, medium and low R&D intensity over the past eight years show different behaviours. The employment growth in high R&D-intensive sectors appears to be more positive and, in particular, less affected by the economic downturn (see Figure 10). This may suggest that the relationship between R&D and employment depends on the R&D intensity of companies, as reported by the econometric analysis discussed in the section above.

Figure 10. One-year employment growth of the Scoreboard companies per sector group



For a sample of 1000 (462 EU and 538 non-EU) companies for which data is available for all years in the 2011, 2007 and 2006 Scoreboards adjusted to the 2011 Scoreboard exchange rates.

Split of sectors as in Figure S4.

Source: The EU Industrial R&D Investment Scoreboards (of 2006, 2007, and 2011).

European Commission, JRC/DG RTD.

Table 21. Ranking of top 15 industrial sectors by employment and average growth rates of employment by sector in the 2011 Scoreboard.

Rank	Number of employees	Sector share (%)	1 year growth rate (%)	CAGR 3 years (%)	R&D/employ. (€/employee)	Profit/employ. (€/employee)
Automobiles & parts	4952975	12.0	4.1	0.8	13845	20114
Technology hardware & equip	3265675	7.9	8.8	5.8	23203	32292
Electronic & electrical equip.	2563204	6.2	5.5	2.6	12047	18125
Oil & gas producers	2211231	5.4	0.0	0.7	3567	116489
Industrial engineering	2071842	5.0	3.0	1.3	7601	21392
General industrials	2024491	4.9	3.3	-0.3	6751	25197
Fixed line telecom	1881173	4.6	-1.5	-0.7	4825	44171
Banks	1839420	4.5	-2.9	3.9	3540	41928
Soft. & computer services	1800669	4.4	6.5	3.4	20298	39987
Construction & materials	1689884	4.1	0.7	1.1	2881	11527
Aerospace & defence	1663350	4.0	0.1	0.5	9711	20306
Pharmaceuticals & biotechnology	1551030	3.8	4.0	3.5	56288	73720
Chemicals	1409067	3.4	-0.2	1.2	14324	40800
Food producers	1095001	2.7	4.7	1.2	5776	36575
Food & drug retailers	1026992	2.5	3.1	5.0	858	8846
Top 15 sectors	31046004	75.4	2.9	1.9	12896	35782
Rest of 22 sectors	10140940	24.6	3.4	2.0	5481	33531
Grand Total	41186944	100.0	3.0	1.9	11071	35228

Note: Calculation of growth rates include only companies for which data are fully available.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Annex 1 - Background information

The *Scoreboard* is part of the European Commission's monitoring activities to improve the understanding of trends in R&D investment by the private sector and the factors affecting it. It was created in response to the Commission's Research Investment Action Plan²³, which aims to help close the gap between the EU's R&D investment and that of other developed economies.

The annual publication of the *Scoreboard* is intended to raise awareness of the importance of R&D for businesses and to encourage firms to disclose information about their R&D investments and other intangible assets.

The data for the *Scoreboard* are taken from companies' publicly available audited accounts. As in more than 99 of cases these accounts do not include information on the place where R&D is actually performed, the company's whole R&D investment in the *Scoreboard* is attributed to the country in which it has its registered office²⁴. This should be borne in mind when interpreting the *Scoreboard's* country classifications and analyses.

The *Scoreboard's* approach is, therefore, fundamentally different²⁵ from that of statistical offices or the OECD when preparing Business Enterprise Expenditure on R&D (BERD) data, which are specific to a given territory. The *Scoreboard* data are primarily of interest to those concerned with benchmarking company commitments and performance (e.g. companies, investors and policymakers), while BERD data are primarily used by economists, governments and international organisations interested in the R&D performance of territorial units defined by political boundaries. The two approaches are therefore complementary. The methodological approach of the *Scoreboard*, its scope and limitations are further detailed in Annex 3 below.

23 "Investing in research: an action plan for Europe", COM(2003)266, http://europa.eu.int/eur-lex/en/com/cnc/2003/com2003_0226en02.pdf.

24 The registered office is the company address notified to the official company registry. It is normally the place where a company's books are kept.

25 The *Scoreboard* refers to all R&D financed by a company from its own funds, regardless of where the R&D is performed. BERD refers to all R&D activities performed by businesses within a particular sector and territory, regardless of the location of the business's headquarters, and regardless of the sources of finance. The sources of data also differ: the *Scoreboard* collects data from audited financial accounts and reports whereas BERD typically takes a stratified sample, covering all large companies and a representative sample of smaller companies. Additional differences concern the definition of R&D intensity (BERD uses the percentage of R&D in value added, while the *Scoreboard* considers the R&D/Sales ratio) and the sectoral classification (BERD uses NACE (the European statistical classification of economic sectors), while the *Scoreboard* uses the ICB (the International Classification Benchmark)).

Scope and target audience

The Scoreboard is a benchmarking tool which provides reliable up-to-date information on R&D investment and other economic and financial data, with a unique EU-focus. The 2000 companies listed in this year's Scoreboard account for about 80²⁶ of worldwide business enterprise expenditure on R&D (BERD). The data in the Scoreboard are published as a four-year time-series to allow further trend analyses to be carried out, for instance, to examine links between R&D and business performance.

The Scoreboard is aimed at three main audiences.

- Companies can use the Scoreboard to benchmark their R&D investments and so find where they stand in the EU and in the global industrial R&D landscape. This information could be of value in shaping business or R&D strategy.
- Investors and financial analysts can use the Scoreboard to assess investment opportunities and risks.
- Policy-makers, government and business organisations can use R&D investment information as an input to policy formulation or other R&D-related actions.

Furthermore, the Scoreboard dataset has been made freely accessible so as to encourage further economic and financial analyses and research by any interested parties.

²⁶ According to latest Eurostat statistics. However BERD and *Scoreboard* figures are not directly comparable.

Annex 2 . Description of the Scoreboard sample

The sample of the top 1000 EU companies

Table A2.1. Profile of the 1000 EU companies in the 2011 Scoreboard*.

Companies by country	UK 244 (246); DE 206 (206); FR 125 (116); SE 74 (76); IT 54 (53); NL 54 (52); FI 52 (56); DK 45 (46); BE 39 (40); etc.
The 10 most numerous sectors	Pharmaceuticals & Biotechnology 126 (131); Software & Computer Services 109 (100); Industrial Engineering 101 (95); Electronic & Electrical Equipment 65 (65); Technology Hardware & Equipment 548 (50); Chemicals 47 (49); Automobiles & Parts 43 (42); Construction & Materials 34 (35); Banks 33 (30); Food producers 33 (35).
100 (126)	Entries: R&D threshold €4.5 million (€4.37 m) – 74 companies with R&D above threshold – 26 companies added to the dataset
Entries & exits	Exits: – 31 leavers taken over by another company – 47 companies with R&D below threshold – 22 dropped from the dataset due to lack of data availability
Stock market	Listed companies 802 (793); Unlisted companies 198 (207)

* Figures of last year's Scoreboard in brackets.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

The sample of the top 1000 non-EU companies

Table A2.2. Profile of the 1000 non-EU companies in the 2011 Scoreboard*.

Companies by country	US 504 (531); Japan 259 (256); Taiwan 45 (41); Switzerland 38 (38); South Korea 26 (22); China 21 (15); India 17 (15); Canada 15 (18); etc.
The 10 most numerous sectors	Technology Hardware & Equipment 209 (204); Pharmaceuticals & Biotechnology 103 (112); Software & Computer Services 91 (89); Electronic & Electrical Equipment 76 (84); Chemicals 66 (75); Automobiles & Parts 65 (62); Industrial Engineering 65 (62); Health Care Equip. & Services 43 (42); General Industrials 31 (29); Aerospace & Defence 27 (25);
93 (90)	Entries: R&D threshold €32.73 million (€28.78m) – 73 companies with R&D above threshold – 20 new companies added to the dataset
Entries & exits	Exits: – 31 leavers taken over by another company – 45 companies with R&D below threshold – 17 dropped from the dataset due to lack of data availability
Stock market	Listed companies 953 (955); Unlisted companies 47 (45)

* Figures of last year's Scoreboard in brackets.

Source: The 2011 EU Industrial R&D Investment Scoreboard. European Commission, JRC/DG RTD.

Mergers and acquisitions involving Scoreboard companies

- Square Enix, Japan acquired Eidos, UK. Square Enix didn't disclose any R&D in its annual report and accounts.
- Kraft Foods, USA acquired Cadbury, UK. Kraft Foods discloses R&D and is ranked 143 in the non-EU sample.
- Clipper Wind Power, UK was acquired by United Technologies, USA. United Technologies discloses R&D and is ranked 54 in the non-EU group.
- Reckitt Benkiser, UK acquired SSL International, UK. Reckitt Benkiser discloses R&D and is ranked 142 in the EU group.
- Honeywell, USA acquired Sperian Protection, France. Honeywell discloses R&D and is ranked 62 in the non-EU group.
- BTG, UK acquired Biocompatibles International, UK. BTG discloses R&D and is ranked 358 in the EU group.
- FLIR Systems, USA acquired Raymarine, UK. FLIR Systems discloses R&D and is ranked 502 in the non-EU group.
- Mitsubishi Rayon, Japan acquired Lucite International, UK. Mitsubishi Rayon discloses R&D and is ranked 350 in the non-EU group.
- Shire, UK acquired Movetis, The Netherlands. Shire discloses R&D and is ranked 54 in the EU group.
- Travis Perkins, UK acquired the BSS Group, UK. Travis Perkins didn't disclose any R&D in its annual report and accounts.
- Emerson Electric, USA acquired Chloride Group, UK. Emerson Electric discloses R&D and is ranked 169 in the non-EU group.
- Proximagen, UK acquired Minster Pharmaceuticals, UK. Proximagen discloses R&D and is ranked 835 in the EU group.
- Unicom Systems, USA acquired Macro 4, UK. Unicom Systems did not provide annual reports and accounts before the cut-off date.
- Pfizer, USA acquired Thiakis, UK. Pfizer discloses R&D and is ranked 2 in the non-EU group.
- Deltek, USA acquired Maconomy, Denmark. Deltek discloses R&D and is ranked 889 in the non-EU group.
- TDK, Japan acquired EPCOS, Germany. TDK discloses R&D and is ranked 122 in the non-EU group.
- SSI Investments II, Ireland acquired SkillSoft, Ireland. SSI Investments II discloses R&D and is ranked 366 in the EU group.
- Deutsche Post, Germany acquired Deutsche Postbank, Germany. Deutsche Post discloses R&D and is ranked 188 in the EU group.
- Canon, Japan acquired Oce, The Netherlands. Canon discloses R&D and is ranked 23 in the non-EU group.
- Nikon, Japan acquired Metris (now Nikon Metrology), Belgium. Nikon discloses R&D and is ranked 113 in the non-EU group.
- Outotec, Finland acquired Larox, Finland. Outotec discloses R&D and is ranked 471 in the EU group.
- Invivo, France acquired Evialis, France. Invivo discloses R&D and is ranked 868 in the EU group.
- Software, Germany acquired IDS Scheer, Germany. Software discloses R&D and is ranked 205 in the EU group.
- Kyowa Hakko Kogyo, Japan merged with Kirin Pharma, Japan to create Kirin. Kirin discloses R&D and is ranked 117 in the non-EU group.
- Chi Mei Optoelectronics, Taiwan merged with Innolux Displays, Taiwan to create Chimei Innolux. Chimei Innolux discloses R&D and is ranked 241 in the non-EU group.
- Meiji Seika Kaisha, Japan merged with Meiji Dairies, Japan to create Meiji. Meiji discloses R&D and is ranked 264 in the non-EU group.

- GlobalFoundries, USA acquired Chartered Semiconductor Manufacturing, Singapore. GlobalFoundries did not provide annual reports and accounts before cut-off.
- Nippon Oil, Japan merged with Nippon Mining, Japan to create JX. JX didn't disclose any R&D in its annual report and accounts.
- Celgene, USA acquired Abraxis Biosciences, USA. Celgene discloses R&D and is ranked 79 in the non-EU group.
- TPO Displays, Taiwan merged with Innolux Displays, Taiwan to create Chimei Innolux. Chimei Innolux discloses R&D and is ranked 241 in the non-EU group.
- Bristol-Myers Squibb, USA acquired Zymogenetics, USA. Bristol-Myers Squibb discloses R&D and is ranked 28 in the non-EU group.
- Meiji Dairies, Japan merged with Meiji Seika Kaisha, Japan to create Meiji. Meiji discloses R&D and is ranked 264 in the non-EU group.
- Mahindra & Mahindra, acquired India Ssangyong Motor, South Korea. Mahindra & Mahindra discloses R&D and is ranked 383 in the non-EU group.
- Hewlett-Packard, USA acquired 3Par, USA. Hewlett-Packard discloses R&D and is ranked 32 in the non-EU group.
- Baker Hughes, USA acquired BJ Services, USA. Baker Hughes discloses R&D and is ranked 186 in the non-EU group.
- Valeant Pharmaceuticals, Canada acquired Biovail, Canada. Valeant Pharmaceuticals discloses R&D and is ranked 742 in the non-EU group.
- Agilent Technologies, USA acquired Varian, USA. Agilent Technologies discloses R&D and is ranked 137 in the non-EU group.
- SAP, Germany acquired Sybase, USA. SAP discloses R&D and is ranked 19 in the EU group.
- Merck, Germany acquired Millipore, USA. Merck discloses R&D and is ranked 25 in the EU group.
- Hewlett-Packard, USA acquired 3Com, USA. Hewlett-Packard discloses R&D and is ranked 32 in the non-EU group.
- Hewlett-Packard, USA acquired Palm, USA. Hewlett-Packard discloses R&D and is ranked 32 in the non-EU group.
- Althea Technologies, USA acquired Altus Pharmaceuticals, USA. Althea Technologies did not provide annual reports and accounts before cut-off.
- Cisco Systems, USA acquired Tandberg, Norway. Cisco Systems discloses R&D and is ranked 14 in the non-EU group.
- Cisco Systems, USA acquired Starent Networks, USA. Cisco Systems discloses R&D and is ranked 14 in the non-EU group.
- Covidien, Ireland acquired Ev3, USA. Covidien discloses R&D and is ranked 64 in the EU group.
- Schlumberger, USA acquired Smith International, USA. Schlumberger discloses R&D and is ranked 93 in the non-EU group.
- Microchip Technology, USA acquired Silicon Storage Technology, USA. Microchip Technology discloses R&D and is ranked 376 in the non-EU group.
- Symphony Technology, USA acquired MSC Software, USA. Symphony Technology did not provide annual reports and accounts before cut-off.
- Vivendi, France Activision acquired Blizzard, USA. Vivendi discloses R&D and is ranked 28 in the EU group.
- Sumitomo Chemical, Japan acquired Sepracor, USA. Sumitomo Chemical discloses R&D and is ranked 63 in the non-EU group.
- Mylan, USA acquired Matrix Laboratoires,. Mylan discloses R&D and is ranked 261 in the non-EU group.
- MSCI, USA acquired RiskMetrics, USA. MSCI discloses R&D and is ranked 706 in the non-EU group.
- Emerson Electric, USA acquired Avocent, USA. Emerson Electric discloses R&D and is ranked 169 in the non-EU group.



Annex 3. Methodological notes

The 2011 “EU Industrial R&D Investment Scoreboard” (*Scoreboard*) has been prepared on the basis of information gathered according to the standards set out below.

Scope of the EU Industrial R&D Investment Scoreboard

The *Scoreboard* has been prepared from companies’ annual reports and accounts received by an independent data provider up to and including 1 August 2011. To prepare the *Scoreboard*, a database of 10401 EU and non-EU companies’ accounts was screened.

In order to maximise completeness and avoid double counting, the consolidated group accounts of the ultimate parent company are used. Companies which are subsidiaries of any other company, such as Alliance & Leicester (UK), Ford Motor Company (UK) or IBM Deutschland (Germany) are not listed separately. Where consolidated group accounts of the ultimate parent company are not available, subsidiaries are included, e.g. Fluxys (Belgium).

For some companies whose accounts are expected close to the cut-off date, preliminary announcements are used, e.g. Misys (UK).

In case of a demerger, the full history of the continuing entity is included. The history of the demerged company can only go back as far as the date of the demerger to avoid double counting of figures, e.g. Covidien (Ireland).

In case of an acquisition or merger, pro forma figures for the year of acquisition are used along with pro-forma comparative figures if available, e.g. GDF-Suez (France).

The R&D investment included in the Scoreboard is the cash investment which is funded by the companies themselves. It excludes R&D undertaken under contract for customers such as governments or other companies. It also excludes the companies’ share of any associated company or joint venture R&D investment when disclosed. Where part or all of R&D costs have been capitalised, the additions to the appropriate intangible assets are included to calculate the cash investment and any amortisation eliminated.

The **first time adoption of IFRS**²⁷, for example by many listed European companies, gives rise to an information discontinuity because R&D is treated differently. R&D must now be disclosed. R&D capitalisation criteria under IFRS are stricter and, where the criteria are met, the amounts must be capitalised. In some pre-IFRS jurisdictions either one or both of these conditions did not apply. The following was implemented to minimise the impact of transition to IFRS:

- a) The previous year’s figures disclosed in the new IFRS accounts have been used in place of the previous year’s GAAP figures disclosed in the past annual report. The effect is that the discontinuity moves back by one year so that it impacts on the three year growth statistic but not the one year growth statistic.
- b) In most cases, comparative figures are not disclosed, so the previous years’ GAAP figures disclosed in the past annual report were examined to assess whether or not there appears to be a material component not disclosed. If the non disclosure appeared to be not material it was assumed to be zero and the R&D spending was calculated. If the non disclosure appeared to be material, the R&D spending

²⁷ Since 2005, the European Union requires all listed companies in the EU to prepare their consolidated financial statements according to IFRS (International Financial Reporting Standards, see: <http://www.iasb.org/>).

was treated as unknown and the result is reported as “not available (n/a)”. Companies with “n/a” results are excluded from the aggregate growth statistics.

Companies are allocated to the country of their registered office. In some cases this is different from the operational or R&D headquarters. This means that the results are independent of the actual location of the R&D activity. Examples are STMicroelectronics (the Netherlands with operational headquarter in Switzerland) or AstraZeneca (UK, with major R&D sites in Sweden, the UK and the US).

The data used for the *Scoreboard* are different from data provided by statistical offices, e.g. BERD data. The *Scoreboard* refers to all R&D financed by a particular company from its own funds, regardless of where that R&D activity is performed. BERD refers to all R&D activities performed by businesses within a particular sector and territory, regardless of the location of the business's headquarters, and regardless of the sources of finance.

Further, the *Scoreboard* collects data from audited financial accounts and reports. BERD typically takes a stratified sample, covering all large companies and a representative sample of smaller companies. Additional differences concern the definition of R&D intensity (BERD uses the percentage of value added, while the *Scoreboard* measures it as the R&D/Sales ratio) and the sectoral classification they use (BERD follows NACE, the European statistical classification of economic sectors, while the *Scoreboard* classifies companies' economic activities according to the ICB classification).

Sources

The database from which the *Scoreboard* is drawn consists of information extracted from the audited annual reports and accounts of companies, using rigorous financial reporting practice verification processes.

The companies are those which are identified as having an R&D activity and which either have their accounts publicly available for free (e.g. on the internet or upon request) or at low cost (e.g. at the company registry).

The market capitalisation data have been extracted from Reuters. These reflect the market capitalisation of each company at the close of trading on 2 August 2011.

The source documents, annual reports & accounts, are public domain documents and so the *Scoreboard* is capable of independent replication.

The database is supplemented by data feeds from third party commercial database houses such as Standard & Poor's and Jordan's. Other sources such as FTSE International, Bureau van Dijk's Orbis and Fame databases, Experian, Hemscoff and Thomson Reuters have also been used.

The database contains many times more companies than are listed in the *Scoreboard* to ensure that the top companies by R&D investment can be identified in each case.

The industry sectors are based on the ICB Industry Classification System.

Limitations

The approach used in preparing the *Scoreboard* has the following limitations:

1. Disclosure

The *Scoreboard* relies on disclosure of R&D investment in published annual reports and accounts. Therefore, companies which do not disclose figures for R&D investment or which disclose only figures which are not material enough are not included in the *Scoreboard*. There are few companies which disclose a significant R&D investment only as a percentage figure (often to only one significant figure), e.g. VINCI, France. These companies are not included in the *Scoreboard*.

Due to different national accounting standards and disclosure practice, companies of some countries are less likely than others to disclose R&D investment consistently.

Further, the facilities and possibility to acquire accounts differ considerably from country to country because the organisation of document registration varies between local and central registries as well as the information that can be obtained and the cost to acquire this data.

In some countries, R&D costs are very often integrated with other operational costs and can therefore not be identified separately. For example, companies from many Southern European countries or the new Member States are under-represented in the *Scoreboard*. On the other side, UK companies are over-represented in the *Scoreboard*. For listed companies, country representation will improve with IFRS adoption.

For many highly diversified companies, the R&D investment disclosed in their accounts relates only part of their activities, whereas sales, profit before tax and market capitalisation are in respect of all their activities. Unless such groups disclose their R&D investment additional to the other information in segmental analyses, it is not possible to relate the R&D more closely to the results of the individual activities which give rise to it. The impact of this is that some statistics for these groups, e.g. R&D as a percentage of sales, are possibly underestimated and so comparisons with non-diversified groups are limited.

The R&D investment disclosed in some companies' accounts follows the US practice of including engineering costs relating to product improvement, e.g. Ingersoll-Rand, Ireland. Where these engineering costs have been disclosed separately, they have been excluded from the *Scoreboard*. However, the incidence of non-disclosure is uncertain and the impact of this practice is a possible overstatement of some overseas R&D investment figures in comparison with the EU.

Where R&D income can be clearly identified as a result of customer contracts it is deducted from the R&D expense stated in the annual report, so that the R&D investment included in the *Scoreboard* excludes R&D undertaken under contract for customers such as governments or other companies. However, the disclosure practise differs and R&D income from customer contracts cannot always be clearly identified. This means a possible overstatement of some R&D investment figures in the *Scoreboard* for companies with directly R&D related income where this is not disclosed in the annual report.

As a result of these disclosure limitations, the *Scoreboard* cannot set out to capture systematically all companies with R&D activity. There is evidence to suggest that the distribution of R&D activity is highly skewed towards larger companies, with a "long tail" of smaller companies.

2. Measurement

In implementing the definition of R&D, companies exhibit variability arising from three principal sources:

- a) Natural variability arises from differing interpretations of the definition. Some companies view a process as an R&D process while other companies may view the same process as an engineering or other process.
- b) Data capture variability arises from differing information systems. Some companies have in place better systems than others for measuring the costs associated with R&D processes.
- c) Fiscal variability arises from fiscal incentives based on the treatment of costs.

3. Timing

The accounts of the companies included in the current year set are their latest published accounts and are intended to be their fiscal year 2010 accounts. Companies from most countries have discretion in the choice of accounting period end. As a result, the current year set of the 2011 *Scoreboard* can include accounts ending on a range of dates from late 2009 to early 2011. Furthermore, the accounts of some companies are publicly available more promptly than others.

Therefore, the current year set represents a heterogeneous set of timed data.

4. Availability

The accounts of companies which are not listed on any recognised stock exchange are significantly more difficult to capture. There is considerable variability between countries in relation to the existence of and, where they exist, the administrative procedures and costs associated with capturing accounts. This results in (i) the smaller private companies from the “long tail” being under represented and (ii) a smaller number of significant private enterprises, such as Servier (France) not being represented.

Interpretation

There are some fundamental aspects of the *Scoreboard* which affect their interpretation.

1. Funding vs. activity

The focus of the *Scoreboard* on R&D investment as reported in group accounts means that the results can be independent of the location of the R&D activity. The *Scoreboard* indicates the level of R&D funded by companies, not all of which is carried out in the country in which the company is registered. This enables inputs such as R&D and Capex investment to be related to outputs such as Sales, Profit, productivity ratios and market capitalisation.

The information in the *Scoreboard* differs therefore from other information such as the Business Enterprise R&D (BERD) data generated by the OECD, Eurostat and by National Statistics Offices.

The BERD data focus on R&D activity within the countries, independent of the source of funding and, at the national level, exclude R&D carried out by companies in other countries. In brief, the distinction can be seen as “funding vs. activity”.

2.Growth

At the aggregate level, the growth statistics reflect the growth of the set of companies in the current year set. Companies which may have existed in the base year but which are not represented in the current year set are not part of the *Scoreboard* (a company may continue to be represented in the current year set if it has been acquired by or merged with another).

These are therefore “successful efforts” aggregates rather than economic estimates of market aggregates.

3.Currency effects

All foreign currency amounts have been translated at the Euro exchange rates ruling at 31 December 2010 as shown in Table A2.1.

The exchange rate conversion also applies to the historical data. The result is that over time the *Scoreboard* reflects the domestic currency results of the companies rather than economic estimates of current purchasing parity results.

The original domestic currency data can be derived simply by reversing the translations at the rates above. Users can then apply their own preferred current purchasing parity transformation models.

Table A3.1. Euro exchange rates applied to Scoreboard data of companies based in different currency areas (as of 31 Dec 2010).

Country	As of 31 Dec 2009	As of 31 Dec 2010
Australia	\$ 1.60	\$ 1.3087
Canada	\$ 1.50	\$ 1.333
China	9.80 Renminbi	8.84 Renminbi
Czech Republic	26.41 Koruna	25.0889 Koruna
Croatia	7.30 Kuna	7.3819 Kuna
Denmark	7.44 Danish Kronor	7.4518 Danish Kronor
Hungary	270.24 Forint	278.3369 Forint
Iceland	169.33 Iceland Krona	179.60 Iceland Krona
India	66.77 Indian Rupee	59.9846 Indian Rupee
Israel	5.44 Shekel	4.75 Shekel
Japan	133.57 Yen	108.8013 Yen
Mexico	18.73 Mexican Peso	16.546 Mexican Peso
Norway	8.29 Norwegian Kronor	7.7974 Norwegian Kronor
Poland	4.11 Zloty	3.9634 Zloty
Russia	43.49 Rouble	40.9516 Rouble
South Korea	1670.77 Won	1522.4574 Won
Sweden	10.24 Swedish Kronor	9.0186 Swedish Kronor
Switzerland	1.48 Swiss Franc	1.2504 Swiss Franc
Turkey	2.15 New Lira	2.0646 New Lira
UK	£ 0.89	£ 0.8568
USA	\$ 1.43	\$ 1.3415
Taiwan	\$ 45.89	\$ 39.1131

Glossary of definitions

1. Research and Development (R&D) investment in the *Scoreboard* is the cash investment funded by the companies themselves. It excludes R&D undertaken under contract for customers such as governments or other companies. It also excludes the companies' share of any associated company or joint venture R&D investment. Being that disclosed in the annual report and accounts, it is subject to the accounting definitions of R&D. For example, a definition is set out in International Accounting Standard (IAS) 38 "Intangible assets" and is based on the OECD "Frascati" manual. **Research** is defined as original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Expenditure on research is recognised as an expense when it is incurred. **Development** is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use. Development costs are capitalised when they meet certain criteria and when it can be demonstrated that the asset will generate probable future economic benefits. Where part or all of R&D costs have been capitalised, the additions to the appropriate intangible assets are included to calculate the cash investment and any amortisation eliminated.

2. Net sales follow the usual accounting definition of sales, excluding sales taxes and shares of sales of joint ventures & associates. For banks, sales are defined as the "Total (operating) income" plus any insurance income. For insurance companies, sales are defined as "Gross premiums written" plus any banking income.

3. R&D intensity is the ratio between R&D investment and net sales of a given company or group of companies. At the aggregate level, R&D intensity is calculated only by those companies for which data exist for both R&D and net sales in the specified year. The calculation of R&D intensity in the *Scoreboard* is different from than in official statistics, e.g. BERD, where R&D intensity is based on value added instead of net sales.

4. Operating profit is calculated as profit (or loss) before taxation, plus net interest cost (or minus net interest income) minus government grants, less gains (or plus losses) arising from the sale/disposal of businesses or fixed assets.

5. One-year growth is simple growth over the previous year, expressed as a percentage: $1 \text{ yr growth} = 100 * ((C/B) - 1)$; where C = current year amount, and B = previous year amount. 1yr growth is calculated only if data exist for both the current and previous year. At the aggregate level, 1yr growth is calculated only by aggregating those companies for which data exist for both the current and previous year.

6. Three-year growth is the compound annual growth over the previous three years, expressed as a percentage: $3 \text{ yr growth} = 100 * (((C/B)^{(1/t)} - 1)$; where C = current year amount, B = base year amount (where base year = current year - 3), and t = number of time periods (= 3). 3yr growth is calculated only if data exist for the current and base years. At the aggregate level, 3yr growth is calculated only by aggregating those companies for which data exist for the current and base years.

7. Capital expenditure (Capex) is expenditure used by a company to acquire or upgrade physical assets such as equipment, property, industrial buildings. In accounts capital expenditure is added to an asset account (i.e. capitalised), thus increasing the asset's base. It is disclosed in accounts as additions to tangible fixed assets.

Some Japanese companies might include additions to other assets in the capital expenditures disclosed. This may lead to an overstatement of the capital expenditure.

8. Number of employees is the total consolidated average employees or year end employees if average not stated.

9. R&D per employee is the simple ratio of R&D investment over employees. At the aggregate level, R&D per employee and the other non-growth statistics are calculated only by aggregating those companies for which data exist for both the numerator and the denominator.

10. R&D employees is the number of employees engaged in R&D activities as stated in the annual report.

11. Market capitalisation is the share price multiplied by the number of shares issued at a given date. Market capitalisation data have been extracted from both the Financial Times London Share Service and Reuters 3000 Xtra. These reflect the market capitalisation of each company at the close of trading on 2 August 2011. The gross market capitalisation amount is used to take account of those companies for which not all the equity is available on the market.

12. Market Spread details sales by destination, distinguishing between Europe, North America (USA and Canada) and the Rest of the World. The definition of Europe is subject to the definitions adopted by the individual companies. In cases in which companies have defined a market spread area as EMEA (Europe, Middle East, Africa), this has been allocated to Europe. When a company has not clearly disclosed the turnover region North America but Americas, this has been allocated to North America.

13. Industry sectors are based on the ICB Industry Classification System. The level of disaggregation is generally the three-digit level unless indicated otherwise.



Annex 4. R&D performing fast growing companies*

Company	Country	Sector name 4-digit ICB	R&D investment 2010 (€ mn)	Net Sales 2010 (€ mn)	Net Sales CAGR 3 yrs (%)	R&D/Net Sales ratio %	Operating Profit 2010 (€ mn)
Alexion Pharmaceuticals	USA	Biotechnology	73.3	403.2	95.8	18.2	112.3
Tencent	Cayman Islands	Internet	190.7	2222.4	72.6	8.6	1081.5
First Solar	USA	Alternative energy	70.7	1910.9	72.0	3.7	559.9
Seattle Genetics	USA	Biotechnology	109.1	80.1	68.6	136.2	-50.8
Regeneron Pharmaceuticals	USA	Biotechnology	107.6	342.2	54.3	31.4	-72.7
Aixtron	Germany	Semiconductors	41.9	783.8	53.9	5.4	272.0
Tata Motors	India	Automobiles & parts	311.9	20527.5	51.2	1.5	2054.9
Research In Motion	Canada	Telecommunications equipment	1007.1	14839.0	49.1	6.8	3459.5
Biomarin Pharmaceutical	USA	Biotechnology	109.3	280.5	45.7	39	-1.8
United Therapeutics	USA	Biotechnology	124.3	450.1	42.0	27.6	122.7
Apple	USA	Computer hardware	1328.3	48619.8	39.5	2.7	13588.2
Celgene	USA	Biotechnology	833.3	2702.7	37.1	30.8	730.9
Crucell	The Netherlands	Biotechnology	54.6	338.2	37.0	16.1	34.3
Alibaba.com	Cayman Islands	Internet	65.6	628.7	37.0	10.4	163.6
Autonomy	UK	Software	114.3	648.8	36.3	17.6	234.5
Prithvi Information Solutions	India	Computer services	193.1	319.2	35.4	60.5	11.7
CSR China	China	Commercial vehicles & trucks	276.4	7229.9	33.6	3.8	408.7
Bruker	USA	Health care equipment & services	102.6	972.7	33.6	10.5	113.7
HTC	Taiwan	Telecommunications equipment	330.8	7127.1	33.1	4.6	1147.4
Intuitive Surgical	USA	Health care equipment & services	89.5	1053.3	33.0	8.5	413.9
Totvs	Brazil	Software	67.3	507.2	32.1	13.3	95.1
Amazon.com	USA	General retailers	1451.3	25496.3	32.1	5.7	1112.2
Hologic	USA	Health care equipment & services	77.8	1252.0	31.5	6.2	52.8
Atheros Communications	USA	Semiconductors	141.4	690.9	30.5	20.5	46.2
Salesforce.com	USA	Software	154.7	1235.3	30.3	12.5	68.2
Auxilium Pharmaceuticals	USA	Pharmaceuticals	35.8	157.6	30.2	22.7	-38.0
Cree	USA	Semiconductors	60.7	646.5	30.1	9.4	147.6
Inspire Pharmaceuticals	USA	Biotechnology	33.5	79.3	29.8	42.2	-25.9
Cubist Pharmaceuticals	USA	Biotechnology	117.7	474.4	29.3	24.8	130.6
Wistron	Taiwan	Computer hardware	252.7	15728.4	29.0	1.6	363.8
ZTE	China	Telecommunications equipment	896.9	7948.4	26.4	11.3	536.8
CNOOC	Hong Kong	Oil & gas producers	93.2	20707.3	26.4	0.5	8123.4
Synaptics	USA	Computer hardware	64.5	383.8	24.5	16.8	46.0
Hyundai Mobis	South Korea	Automobiles & parts	180.6	14544.9	24.4	1.2	2133.7
Gilead Sciences	USA	Biotechnology	789.5	5925.6	23.4	13.3	2953.5
Blackboard	USA	Software	41.0	333.4	23.2	12.3	26.4
Nuance Communications	USA	Software	113.4	834.1	23.0	13.6	26.2
Sun Pharmaceutical Industries	India	Pharmaceuticals	37.4	650.8	22.3	5.7	211.1
Ion Beam Applications	Belgium	Health care equipment & services	31.1	387.6	21.9	8	10.5
Broadcom	USA	Semiconductors	1313.7	5082.5	21.8	25.8	811.2

* Following the definition of high growth by EUROSTAT-OECD, R&D performing fast-growing companies in this Annex are those companies of the Scoreboard sample that, during any period (between 2002 and 2009) of three consecutive years experienced a minimum annual increase of 20 % for either sales or employment.

Company	Country	Sector name 4-digit ICB	R&D investment 2010 (€ mn)	Net Sales 2010 (€ mn)	Net Sales CAGR 3 yrs (%)	R&D/Net Sales ratio %	Operating Profit 2010 (€ mn)
Western Digital	USA	Computer hardware	455.5	7342.4	21.7	6.2	1136.8
Netflix	USA	General retailers	121.7	1612.1	21.5	7.6	206.9
Compal Electronics	Taiwan	Electronic equipment	252.0	22677.9	21.2	1.1	609.9
GDF SUEZ	France	Gas, water & multiutilities	222.0	84478.0	21.2	0.3	8922.0
Google	USA	Internet	2804.3	21856.4	20.9	12.8	7742.7
Hon Hai Precision Industry	Taiwan	Electronic equipment	991.8	76629.2	20.7	1.3	2251.9
Axis	Sweden	Computer hardware	44.5	325.2	20.6	13.7	48.5
PetroChina	China	Oil & gas producers	1339.4	165770.3	20.6	0.8	22178.8
Red Hat	USA	Software	127.7	677.8	20.2	18.8	109.5
CompuGROUP Medical	Germany	Computer services	37.4	312.4	20.1	12	32.8
Abengoa	Spain	General industrials	92.6	5566.1	20.1	1.7	521.6
Vectura	UK	Pharmaceuticals	44.0	50.1	19.4	87.9	-15.5
Brocade Communications	USA	Telecommunications equipment	264.1	1561.2	19.2	16.9	157.0
Betfair	UK	Travel & leisure	90.3	459.0	19.0	19.7	28.0
F5 Networks	USA	Telecommunications equipment	88.2	657.4	18.8	13.4	171.1
Qiagen	The Netherlands	Biotechnology	94.0	810.6	18.7	11.6	144.5
Ixia	USA	Computer services	54.0	206.3	16.7	26.2	4.0
China Petroleum & Chemicals	China	Oil & gas producers	546.9	216422.5	16.7	0.3	12475.9
Cephalon	USA	Pharmaceuticals	328.0	2095.4	16.6	15.7	534.9
Serco	UK	Support services	99.3	5049.7	15.5	2	282.6
Samsung Heavy Industries	South Korea	Construction & materials	103.4	8574.2	15.3	1.2	643.6
ResMed	USA	Health care equipment & services	56.1	814.3	15.1	6.9	178.6
ANSYS	USA	Software	66.3	432.5	14.6	15.3	163.5
Gameloft	France	Software	78.1	141.0	13.6	55.4	9.3
Actelion	Switzerland	Pharmaceuticals	387.3	1542.7	13.6	25.1	365.7
Juniper Networks	USA	Telecommunications equipment	684.2	3051.2	13.0	22.4	572.2
Inventec	Taiwan	Computer hardware	141.0	9642.7	12.9	1.5	118.4
Salix Pharmaceuticals	USA	Pharmaceuticals	54.7	251.2	12.6	21.8	-4.6
MediaTek	Taiwan	Semiconductors	596.0	2902.4	12.1	20.5	810.7
MorphoSys	Germany	Biotechnology	53.0	87.0	12.0	60.9	9.8
St Jude Medical	USA	Health care equipment & services	470.4	3849.9	11.0	12.2	946.1
Cochlear	Australia	Health care equipment & services	72.5	561.5	9.5	12.9	167.4
Weatherford International	Switzerland	Oil equipment, services & distribution	159.9	7618.8	9.3	2.1	542.8
Sigma Designs	USA	Semiconductors	57.6	213.9	9.1	26.9	5.8
MicroStrategy	USA	Software	39.3	338.9	9.0	11.6	39.1
Marvell Technology	Bermuda	Semiconductors	669.1	2692.4	7.7	24.9	671.8
Amphenol	USA	Electrical components & equipment	57.8	2649.3	7.6	2.2	521.3
SanDisk	USA	Semiconductors	315.0	3598.0	7.4	8.8	1057.5
SeaChange International	USA	Software	36.1	161.6	6.4	22.3	1.0
OmniVision Technologies	USA	Semiconductors	66.0	713.0	6.2	9.3	95.7
eBay	USA	General retailers	821.1	6825.2	6.1	12	1530.8
Genzyme	USA	Biotechnology	629.0	3381.1	6.0	18.6	-14.4
ADVA	Germany	Telecommunications equipment	50.2	291.7	5.1	17.2	8.2
SimCorp	Denmark	Software	43.0	185.4	4.9	23.2	35.2
OSI Pharmaceuticals	USA	Biotechnology	113.2	320.1	4.6	35.4	113.4
PUMA	Germany	Personal goods	35.3	2706.4	4.5	1.3	308.6
ConocoPhillips	USA	Oil & gas producers	171.4	141212.6	4.0	0.1	11210.3
L-3 Communications	USA	Aerospace & defence	50.7	11688.1	3.9	0.4	1304.5
Unit4	The Netherlands	Software	44.7	422.9	3.7	10.6	37.7
Theravance	USA	Pharmaceuticals	48.6	18.1	3.3	269.4	-58.4

Company	Country	Sector name 4-digit ICB	R&D investment 2010 (€ mn)	Net Sales 2010 (€ mn)	Net Sales CAGR 3 yrs (%)	R&D/Net Sales ratio %	Operating Profit 2010 (€ mn)
Genmab	Denmark	Biotechnology	48.0	78.2	3.2	61.4	-28.0
Techtronic Industries	Hong Kong	Electrical components & equipment	86.9	2530.3	2.1	3.4	128.3
Symantec	USA	Software	642.6	4614.1	1.8	13.9	654.5
Nanya Technology	Taiwan	Semiconductors	167.3	1457.3	1.6	11.5	-369.0
Onex	Canada	General industrials	173.3	18279.6	1.3	0.9	760.7
Stada Arzneimittel	Germany	Pharmaceuticals	60.0	1627.0	1.2	3.7	162.4
Exxon Mobil	USA	Oil & gas producers	754.4	275897.6	1.1	0.3	39669.6
Statoil	Norway	Oil & gas producers	262.3	67550.8	0.3	0.4	17599.3
Semiconductor Manufacturing Northgate Information Solutions	Cayman Islands	Semiconductors	130.4	1159.0	0.1	11.2	-64.1
UK	UK	Computer services	47.3	781.8	0.0	6	7.8
Onyx Pharmaceuticals	USA	Pharmaceuticals	138.5	241.9	0.0	57.2	-51.5
AU Optronics	Taiwan	Electronic equipment	164.2	11943.8	-0.9	1.4	253.8
CSR UK	UK	Telecommunications equipment	149.2	596.8	-1.9	25	-4.2
NIDEC	Japan	Electrical components & equipment	227.1	5404.9	-2.3	4.2	696.2
Chevron	USA	Oil & gas producers	392.1	147740.2	-2.5	0.3	23931.6
Molex	USA	Electronic equipment	114.8	2241.6	-2.7	5.1	102.1
Yahoo!	USA	Internet	888.7	4714.5	-3.2	18.9	592.5
Nitto Denko	Japan	Chemicals	191.9	5531.7	-4.0	3.5	527.8
Makita	Japan	Household goods & home construction	62.3	2259.4	-4.2	2.8	279.3
TomTom	The Netherlands	Electronic equipment	164.3	1521.1	-4.3	10.8	175.6
NVIDIA	USA	Semiconductors	632.7	2641.2	-4.7	24	188.5
Amylin Pharmaceuticals	USA	Biotechnology	114.5	498.5	-5.0	23	-94.6
Garmin	Switzerland	Leisure goods	206.7	2005.1	-5.4	10.3	480.3
Affymetrix	USA	Biotechnology	50.6	231.6	-5.8	21.9	-7.0
Plantronics	USA	Telecommunications equipment	47.1	509.6	-7.2	9.2	104.9
Acciona	Spain	Construction & materials	88.1	6263.0	-7.7	1.4	484.0
Investment Technology	USA	Other financials	65.3	425.5	-7.9	15.3	37.3
Sumitomo Metal Mining	Japan	Mining	43.6	6671.1	-9.1	0.7	790.3
Intercell	Austria	Biotechnology	79.9	34.2	-10.6	233.5	-254.5
THQ	USA	Leisure goods	59.2	495.9	-13.6	11.9	-101.1
VeriSign	USA	Software	57.7	692.7	-14.9	8.3	230.9
Silicon Image	USA	Semiconductors	41.2	142.6	-15.8	28.9	7.0
ASUSTeK Computer	Taiwan	Computer hardware	215.2	10988.7	-17.1	2	544.7
Terex	USA	Commercial vehicles & trucks	44.7	3411.0	-20.6	1.3	-76.9
XOMA	USA	Biotechnology	43.3	25.1	-26.4	172.6	-51.0
Mori Seiki	Japan	Industrial machinery	51.8	610.3	-27.2	8.5	-331.9
Plastic Logic	UK	Electrical components & equipment	49.0	0.0	-100.0		-63.9



Annex 5. List of EU1000 and non-EU1000 companies

The following tables provide the list of top R&D investors based in the EU and those based outside the EU, ranked by the level of R&D investment and including companies' net sales, R&D intensity and operating profits.

The full dataset of the 2011 EU industrial R&D investment *Scoreboard* is freely available in the JRC/IPTS website <http://iri.jrc.ec.europa.eu/>.

The data for the EU and the non-EU groups are presented in single tables comprising rankings by companies, industrial sectors and countries. Each listing includes the following company data of the latest four financial years:

- Company identification (name, country of registration, sector of declared activity according to ICB classifications).
- R&D investment
- Net Sales
- Capital expenditure
- Operating profit or loss
- Market capitalisation
- Total number of employees

Table A5.1 Ranking of the top 1000 EU companies by level of R&D investment

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
1	Volkswagen	Automobiles & parts (335)	Germany	6.258,00	8,1	126.875	4,9	7,1
2	Nokia	Telecommunications equipment (9578)	Finland	4.938,00	-1,2	42.446	11,6	4,5
3	Daimler	Automobiles & parts (335)	Germany	4.852,00	16,5	97.761	5,0	7,1
4	Sanofi-Aventis	Pharmaceuticals (4577)	France	4.390,00	-3,9	32.367	13,6	23,0
5	GlaxoSmithKline	Pharmaceuticals (4577)	UK	4.378,96	3,4	33.136	13,2	13,5
6	Siemens	Electrical components & equipment (2733)	Germany	4.241,00	-1,0	75.980	5,6	7,3
7	Robert Bosch	Automobiles & parts (335)	Germany	3.824,00	6,9	47.259	8,1	6,7
8	Bayer	Chemicals (135)	Germany	3.211,00	8,3	35.088	9,2	7,5
9	AstraZeneca	Pharmaceuticals (4577)	UK	3.204,55	-3,0	24.799	12,9	34,4
10	EADS	Aerospace & defence (271)	The Netherlands	3.084,00	7,2	45.752	6,7	2,5
11	Ericsson	Telecommunications equipment (9578)	Sweden	3.022,42	11,5	22.548	13,4	8,0
12	BMW	Automobiles & parts (335)	Germany	2.773,00	13,3	58.365	4,8	8,5
13	Alcatel-Lucent	Telecommunications equipment (9578)	France	2.559,00	5,1	15.785	16,2	-3,0
14	Boehringer Ingelheim	Pharmaceuticals (4577)	Germany	2.453,00	10,7	12.586	19,5	14,8
15	Peugeot (PSA)	Automobiles & parts (335)	France	2.402,00	3,8	56.061	4,3	3,2
16	Finmeccanica	Aerospace & defence (271)	Italy	1.967,00	2,1	16.991	11,6	6,6
17	Fiat	Automobiles & parts (335)	Italy	1.936,00	14,4	57.222	3,4	3,8
18	Volvo	Commercial vehicles & trucks (2753)	Sweden	1.799,06	4,7	29.356	6,1	6,6
19	SAP	Software (9537)	Germany	1.730,00	12,1	12.464	13,9	20,7
20	Renault	Automobiles & parts (335)	France	1.728,00	5,2	38.158	4,5	4,6
21	Philips Electronics	Leisure goods (374)	The Netherlands	1.697,00	-1,0	25.419	6,7	8,0
22	STMicroelectronics	Semiconductors (9576)	The Netherlands	1.627,99	-1,7	7.712	21,1	5,6
23	Continental	Automobiles & parts (335)	Germany	1.524,90	8,5	26.047	5,9	7,4
24	BASF	Chemicals (135)	Germany	1.507,00	6,9	63.873	2,4	12,6
25	Merck DE	Pharmaceuticals (4577)	Germany	1.397,10	3,9	8.929	15,6	11,3
26	Banco Santander	Banks (835)	Spain	1.338,49	56,3	42.067	3,2	27,7
27	Novo Nordisk	Pharmaceuticals (4577)	Denmark	1.272,31	27,3	8.156	15,6	31,1
28	Vivendi	Media (555)	France	1.111,00	27,1	28.878	3,8	17,6
29	BT	Fixed line telecommunications (653)	UK	961,69	-19,9	23.431	4,1	12,4
30	Unilever	Food producers (357)	UK	928,00	4,2	44.262	2,1	13,7
31	Porsche	Automobiles & parts (335)	Germany	924,00	24,4	46.349	2,0	17,7
32	Telefonica	Fixed line telecommunications (653)	Spain	901,00	16,0	60.737	1,5	20,3
33	Royal Bank of Scotland	Banks (835)	UK	865,99	32,7	38.866	2,2	0,1
34	France Telecom	Fixed line telecommunications (653)	France	845,00	-2,0	46.785	1,8	16,3
35	Royal Dutch Shell	Oil & gas producers (53)	UK	759,58	-9,4	274.355	0,3	8,7
36	HSBC	Banks (835)	UK	715,60	25,8	59.644	1,2	23,8
37	TOTAL	Oil & gas producers (53)	France	715,00	10,0	159.269	0,4	12,7
38	Schneider	Electrical components & equipment (2733)	France	705,00	4,4	19.580	3,6	13,6
39	ALSTOM	Industrial machinery (2757)	France	703,00	26,0	20.923	3,4	3,8
40	UCB	Pharmaceuticals (4577)	Belgium	701,00	4,0	3.218	21,8	4,8
41	Telecom Italia	Fixed line telecommunications (653)	Italy	698,00	-17,1	27.571	2,5	22,2
42	L'Oreal	Personal goods (376)	France	664,70	9,1	19.496	3,4	14,9
43	Thales	Aerospace & defence (271)	France	655,70	-1,2	13.125	5,0	-2,6
44	Seagate Technology	Computer hardware (9572)	Ireland	653,73	-8,0	8.494	7,7	15,2
45	ZF	Automobiles & parts (335)	Germany	621,00	2,5	12.907	4,8	5,0
46	Rolls-Royce	Aerospace & defence (271)	UK	590,55	7,4	12.937	4,6	10,2
47	BP	Oil & gas producers (53)	UK	581,43	32,9	221.469	0,3	-3,6
48	Valeo	Automobiles & parts (335)	France	557,00	10,1	9.632	5,8	6,0

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
49	Michelin	Automobiles & parts (335)	France	545,00	7,7	17.891	3,0	9,6
50	SAFRAN	Aerospace & defence (271)	France	540,00	-14,1	11.028	4,9	7,0
51	ASML	Semiconductors (9576)	The Netherlands	523,43	12,1	4.508	11,6	25,2
52	AREVA	Electricity (753)	France	520,00	14,5	11.112	4,7	-2,9
53	MAN	Commercial vehicles & trucks (2753)	Germany	513,00	18,5	14.675	3,5	8,7
54	Shire	Pharmaceuticals (4577)	UK	493,09	18,1	2.587	19,1	22,5
55	Electricite de France	Electricity (753)	France	486,00	11,0	72.481	0,7	6,0
56	Infineon Technologies	Semiconductors (9576)	Germany	478,00	-7,2	4.616	10,4	11,5
57	NXP Semiconductors	Semiconductors (9576)	The Netherlands	423,40	-26,0	3.545	11,9	6,0
58	DSM	Chemicals (135)	The Netherlands	410,00	4,3	9.050	4,5	8,9
59	Saint-Gobain	Construction & materials (235)	France	406,00	3,0	40.119	1,0	6,3
60	Henkel	Household goods & home construction (372)	Germany	393,00	-1,5	15.092	2,6	11,4
61	Lundbeck	Pharmaceuticals (4577)	Denmark	385,28	-5,0	1.981	19,4	23,0
62	Vestas Wind Systems	Alternative energy (58)	Denmark	358,00	49,8	6.920	5,2	4,5
63	Vodafone	Mobile telecommunications (657)	UK	334,96	-5,3	53.551	0,6	19,0
64	Covidien	Health care equipment & services (453)	Ireland	333,20	2,1	8.072	4,1	20,0
65	Danske Bank	Banks (835)	Denmark	332,00	2,3	9.811	3,4	7,9
66	Evonik Industries	General industrials (272)	Germany	331,00	11,8	16.267	2,0	10,5
67	Amadeus	Computer services (9533)	Spain	325,78	33,2	2.705	12,0	12,9
68	UBIsoft Entertainment	Software (9537)	France	323,24	-3,3	1.039	31,1	-13,0
69	Hella	Automobiles & parts (335)	Germany	322,80	-7,1	3.550	9,1	4,2
70	Dassault Systemes	Software (9537)	France	322,12	6,5	1.564	20,6	18,8
71	BAE Systems	Aerospace & defence (271)	UK	317,45	16,2	24.622	1,3	7,7
72	Deutsche Bank	Banks (835)	Germany	316,00	146,9	30.571	1,0	13,0
73	AKZO Nobel	Chemicals (135)	The Netherlands	314,00	-1,3	15.417	2,0	8,4
74	MAHLE	Automobiles & parts (335)	Germany	309,99	25,8	5.261	5,9	5,2
75	Accenture	Support services (279)	Ireland	286,02	-11,8	17.215	1,7	12,6
76	BSH Bosch und Siemens Hausgerate	Household goods & home construction (372)	Germany	286,00	5,5	9.073	3,2	7,9
77	Carl Zeiss	Health care equipment & services (453)	Germany	285,81	0,6	2.981	9,6	13,3
78	Tesco	Food & drug retailers (533)	UK	283,61	118,9	71.113	0,4	5,6
79	Sandvik	Industrial machinery (2757)	Sweden	275,54	3,0	9.165	3,0	13,3
80	Reed Elsevier	Media (555)	UK	268,43	28,5	7.067	3,8	18,1
81	Deutsche Telekom	Fixed line telecommunications (653)	Germany	262,00	-39,4	62.421	0,4	9,6
82	RWE	Gas, water & multiutilities (757)	Germany	261,00	22,0	50.722	0,5	13,4
83	Intesa Sanpaolo	Banks (835)	Italy	252,00	19,4	16.297	1,5	20,2
84	Diehl	General industrials (272)	Germany	251,50	4,5	2.725	9,2	5,5
85	ThyssenKrupp	Industrial metals & mining (175)	Germany	251,00	-13,4	42.621	0,6	2,6
86	Fresenius	Health care equipment & services (453)	Germany	244,00	1,7	15.972	1,5	15,1
87	ArcelorMittal	Industrial metals & mining (175)	Luxembourg	240,02	27,3	62.200	0,4	4,3
88	UniCredit	Banks (835)	Italy	233,28	63,8	25.632	0,9	7,8
89	Societe Generale	Banks (835)	France	231,00	-8,0	26.418	0,9	22,1
90	GDF SUEZ	Gas, water & multiutilities (757)	France	222,00	1,8	84.478	0,3	10,6
91	Eni	Oil & gas producers (53)	Italy	221,00	6,8	98.523	0,2	16,6
91	Rabobank	Banks (835)	The Netherlands	221,00	36,4	11.275	2,0	23,1
93	Electrolux	Household goods & home construction (372)	Sweden	220,99	0,1	11.790	1,9	4,8
94	Rheinmetall	Automobiles & parts (335)	Germany	214,00	8,1	3.989	5,4	6,6
95	Nycomed	Pharmaceuticals (4577)	Luxembourg	211,66	-13,8	3.111	6,8	-1,4
96	BAT	Tobacco (378)	UK	211,25	19,1	17.370	1,2	32,7
97	Behr	Automobiles & parts (335)	Germany	209,00	1,5	3.350	6,2	2,9

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Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
97	Danone	Food producers (357)	France	209,00	1,5	17.010	1,2	15,0
99	Vattenfall	Electricity (753)	Sweden	207,57	23,3	23.681	0,9	13,9
100	Ipsen	Pharmaceuticals (4577)	France	202,29	24,8	1.170	17,3	10,5
101	Portugal Telecom	Fixed line telecommunications (653)	Portugal	200,00	-6,1	6.335	3,2	12,4
102	Dassault Aviation	Aerospace & defence (271)	France	199,71	-4,2	4.187	4,8	10,3
103	Solvay	Chemicals (135)	Belgium	189,00	-66,6	7.108	2,7	4,1
104	Sage	Software (9537)	UK	185,45	-9,0	1.675	11,1	23,0
105	L'Air Liquide	Chemicals (135)	France	184,30	6,5	13.488	1,4	16,9
106	Indra Sistemas	Computer services (9533)	Spain	184,11	5,2	2.557	7,2	9,8
107	Ingersoll-Rand	Industrial machinery (2757)	Ireland	181,88	-5,2	10.544	1,7	7,8
108	Voith	General industrials (272)	Germany	180,94	1,7	5.198	3,5	6,5
109	Lloyds Banking	Banks (835)	UK	178,57	142,9	50.730	0,4	1,5
110	Knorr-Bremse	Industrial machinery (2757)	Germany	175,28	14,9	3.712	4,7	10,2
111	Invensys	Software (9537)	UK	175,06	15,4	2.901	6,0	9,7
112	Elan	Pharmaceuticals (4577)	Ireland	173,83	-10,0	628	27,7	-25,1
113	Legrand	Electrical components & equipment (2733)	France	173,50	1,1	3.891	4,5	19,5
114	Tognum	Industrial machinery (2757)	Germany	168,80	0,6	2.564	6,6	5,4
115	B Braun Melsungen	Health care equipment & services (453)	Germany	168,69	14,9	4.423	3,8	10,4
116	Atlas Copco	Industrial machinery (2757)	Sweden	166,77	-5,9	7.748	2,2	19,9
117	Wacker Chemie	Chemicals (135)	Germany	165,10	0,7	4.748	3,5	15,6
118	TomTom	Electronic equipment (2737)	The Netherlands	164,34	12,8	1.521	10,8	11,5
119	Commerzbank	Banks (835)	Germany	162,00	26,6	12.636	1,3	10,7
120	ARM	Semiconductors (9576)	UK	158,97	30,3	475	33,5	26,4
121	Agfa-Gevaert	Electronic equipment (2737)	Belgium	157,00	4,0	2.948	5,3	7,7
122	Kerry	Food producers (357)	Ireland	156,43	5,9	4.960	3,2	9,1
123	Novozymes	Biotechnology (4573)	Denmark	156,07	9,7	1.305	12,0	21,4
124	Freudenberg	General industrials (272)	Germany	155,10	4,5	5.481	2,8	8,6
125	Amdocs	Software (9537)	UK	154,93	-1,2	2.224	7,0	13,7
126	Spyker Cars	Automobiles & parts (335)	The Netherlands	154,26	999,9	823	18,7	-30,0
127	Lafarge	Construction & materials (235)	France	153,00	0,7	16.169	0,9	13,0
128	Maxingvest	General retailers (537)	Germany	152,00	2,0	9.595	1,6	9,5
129	NDS	Software (9537)	UK	151,64	0,1	703	21,6	23,0
130	Essilor International	Health care equipment & services (453)	France	150,88	-0,2	3.892	3,9	16,0
131	Pirelli	Automobiles & parts (335)	Italy	150,00	9,5	5.144	2,9	7,5
132	BioMerieux	Health care equipment & services (453)	France	149,20	4,3	1.357	11,0	20,0
132	CSR UK	Telecommunications equipment (9578)	UK	149,20	19,4	597	25,0	-0,7
134	RSA Insurance	Nonlife insurance (853)	UK	148,22	32,3	9.570	1,5	5,8
135	ING	Life insurance (857)	The Netherlands	148,00	12,1	54.573	0,3	8,2
136	Wartsila	Industrial machinery (2757)	Finland	147,00	-0,7	4.553	3,2	8,9
137	Chiesi Farmaceutici	Pharmaceuticals (4577)	Italy	146,00	10,9	1.015	14,4	15,6
138	Dragerwerk	Health care equipment & services (453)	Germany	145,63	7,8	2.177	6,7	9,3
139	Technicolor	Media (555)	France	145,00	-2,0	4.068	3,6	-4,6
140	Grundfos	Industrial machinery (2757)	Denmark	144,40	38,9	2.631	5,5	12,9
141	Danfoss	Industrial machinery (2757)	Denmark	141,44	-14,2	4.396	3,2	10,0
142	Reckitt Benckiser	Household goods & home construction (372)	UK	140,05	-1,6	9.865	1,4	25,2
143	MTU Aero Engines	Aerospace & defence (271)	Germany	139,80	20,2	2.707	5,2	9,8
143	ZF Lenksysteme	Automobiles & parts (335)	Germany	139,80	22,1	3.002	4,7	4,7
145	Zodiac Aerospace	Aerospace & defence (271)	France	139,57	1,7	2.150	6,5	10,8
146	Veolia Environnement	Gas, water & multiutilities (757)	France	139,40	-4,7	35.614	0,4	5,4
147	Rio Tinto	Mining (177)	UK	139,39	-3,1	42.173	0,3	34,4

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Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
148	Arkema	Chemicals (135)	France	139,00	2,2	5.905	2,4	8,6
149	British Sky Broadcasting	Media (555)	UK	138,89	12,3	6.900	2,0	23,2
150	Anheuser-Busch Inbev	Beverages (353)	Belgium	137,16	15,7	27.056	0,5	30,5
151	Hexagon	Industrial machinery (2757)	Sweden	137,05	8,6	1.563	8,8	10,2
152	GKN	Automobiles & parts (335)	UK	135,38	22,1	5.934	2,3	8,2
153	Umicore	Chemicals (135)	Belgium	134,91	-0,6	9.691	1,4	3,3
154	Merial	Biotechnology (4573)	UK	134,62	9,2	1.924	7,0	29,6
155	SKF	Industrial machinery (2757)	Sweden	134,61	-1,9	6.767	2,0	13,8
156	SAAB	Aerospace & defence (271)	Sweden	133,39	0,8	2.709	4,9	4,0
157	Pace	Telecommunications equipment (9578)	UK	133,17	59,1	1.553	8,6	5,5
158	Iberdrola	Electricity (753)	Spain	130,17	43,8	30.431	0,4	15,8
159	Trumpf	General industrials (272)	Germany	129,40	-16,4	1.340	9,7	-3,6
160	Gemalto	Electronic equipment (2737)	The Netherlands	126,72	21,2	1.956	6,5	8,5
161	Merz Pharma	Pharmaceuticals (4577)	Germany	123,69	5,6	673	18,4	22,0
162	Claas	Commercial vehicles & trucks (2753)	Germany	122,00	-1,9	2.475	4,9	3,7
163	Johnson Matthey	Chemicals (135)	UK	121,96	19,8	11.653	1,0	2,8
164	Heidelberger Druckmaschinen	Industrial machinery (2757)	Germany	121,49	0,6	2.629	4,6	-0,1
165	Giesecke & Devrient	Support services (279)	Germany	121,21	13,3	1.688	7,2	7,6
166	Burelle	Automobiles & parts (335)	France	119,62	62,5	3.251	3,7	6,2
167	Vilmorin	Food producers (357)	France	117,40	-4,7	1.064	11,0	7,3
168	Getinge	Health care equipment & services (453)	Sweden	117,09	-4,1	2.458	4,8	16,4
169	Bouygues	Construction & materials (235)	France	117,00	-20,4	31.225	0,4	6,5
170	Lanxess	Chemicals (135)	Germany	116,00	14,9	7.120	1,6	8,8
170	Metro	General retailers (537)	Germany	116,00	-38,0	67.258	0,2	2,9
172	Krones	Industrial machinery (2757)	Germany	114,29	17,3	2.173	5,3	3,1
173	Autonomy	Software (9537)	UK	114,27	24,1	649	17,6	36,1
174	McLaren	Travel & leisure (575)	UK	113,25	99,8	340	33,3	22,6
175	Smith & Nephew	Health care equipment & services (453)	UK	112,56	-2,6	2.953	3,8	23,6
176	Assa Abloy	Construction & materials (235)	Sweden	112,55	13,9	4.083	2,8	16,2
177	Cooper Industries	Electrical components & equipment (2733)	Ireland	111,59	6,1	3.776	3,0	11,4
178	Wm Morrison Supermarkets	Food & drug retailers (533)	UK	110,87	999,9	19.233	0,6	5,5
179	LyondellBasell Industries	Chemicals (135)	The Netherlands	110,69	2,4	30.954	0,4	8,0
180	DONG Energy	Oil & gas producers (53)	Denmark	110,18	-22,5	7.327	1,5	12,6
181	Benteler International	General industrials (272)	Austria	109,50	14,3	6.104	1,8	2,7
181	Danisco	Food producers (357)	Denmark	109,50	13,5	1.839	6,0	6,1
183	Warner Chilcott	Pharmaceuticals (4577)	Ireland	109,21	90,9	2.217	4,9	19,9
184	Symrise	Chemicals (135)	Germany	109,17	11,6	1.572	6,9	15,5
185	Smiths	General industrials (272)	UK	109,12	4,8	3.232	3,4	15,3
186	voestalpine	Industrial metals & mining (175)	Austria	109,00	0,2	10.954	1,0	9,1
187	Metso	Industrial machinery (2757)	Finland	105,00	-4,5	5.552	1,9	7,7
188	Deutsche Post	Industrial transportation (277)	Germany	103,00	17,0	51.481	0,2	4,2
189	Barclays	Banks (835)	UK	102,71	-66,7	37.585	0,3	18,6
190	adidas	Personal goods (376)	Germany	102,00	18,6	11.990	0,9	7,3
191	Wincor Nixdorf	Computer services (9533)	Germany	101,35	-1,8	2.239	4,5	7,2
192	PRADA	Personal goods (376)	Italy	100,91	1,2	2.047	4,9	20,4
193	Serco	Support services (279)	UK	99,32	32,1	5.050	2,0	5,6
194	Deutsche Borse	Other financials (877)	Germany	98,90	10,9	2.166	4,6	23,9
195	Eberspaecher	Automobiles & parts (335)	Germany	97,70	23,4	1.934	5,1	3,3
196	Gedeon Richter	Pharmaceuticals (4577)	Hungary	97,46	15,1	989	9,9	22,8

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197	Almirall	Pharmaceuticals (4577)	Spain	95,12	-28,7	882	10,8	14,6
198	Korber	General industrials (272)	Germany	94,00	10,6	1.677	5,6	8,4
198	Linde	Chemicals (135)	Germany	94,00	5,6	12.868	0,7	12,8
200	Qiagen	Biotechnology (4573)	The Netherlands	93,95	16,8	811	11,6	17,8
201	Abengoa	General industrials (272)	Spain	92,63	3,2	5.566	1,7	9,4
202	Schott	Construction & materials (235)	Germany	92,51	22,6	2.856	3,2	7,1
203	KWS SAAT	Food producers (357)	Germany	92,44	9,4	754	12,3	10,2
204	Husqvarna	Industrial machinery (2757)	Sweden	92,14	19,6	3.575	2,6	7,6
205	Software	Software (9537)	Germany	91,99	12,0	1.120	8,2	24,0
206	Old Mutual	Life insurance (857)	UK	91,03	290,0	23.025	0,4	6,1
207	Krka	Pharmaceuticals (4577)	Slovenia	90,92	3,0	1.010	9,0	21,0
208	Betfair	Travel & leisure (575)	UK	90,28	88,2	459	19,7	6,1
209	Ingenico	Electronic equipment (2737)	France	89,58	7,2	907	9,9	7,7
210	Enel	Electricity (753)	Italy	89,00	1,1	71.943	0,1	15,4
211	Misys	Software (9537)	UK	88,58	-26,9	551	16,1	10,9
212	Acciona	Construction & materials (235)	Spain	88,10	-4,4	6.263	1,4	7,7
213	Borealis	Chemicals (135)	Austria	88,00	0,0	6.269	1,4	7,0
213	E.ON	Gas, water & multiutilities (757)	Germany	88,00	8,6	94.426	0,1	7,7
215	DEUTZ	Industrial machinery (2757)	Germany	87,30	1,7	1.189	7,3	1,9
216	Rhodia	Chemicals (135)	France	87,00	14,5	5.226	1,7	11,5
217	Cobham	Aerospace & defence (271)	UK	86,48	-16,2	2.221	3,9	12,3
218	TeliaSonera	Fixed line telecommunications (653)	Sweden	83,94	-19,7	11.818	0,7	29,1
219	SNCF	Industrial transportation (277)	France	83,00	-2,4	30.635	0,3	2,4
220	ALTANA	Chemicals (135)	Germany	81,96	14,5	1.535	5,3	14,7
221	CGGVeritas	Oil equipment, services & distribution (57)	France	80,40	5,2	2.186	3,7	2,5
222	Intercell	Biotechnology (4573)	Austria	79,88	20,5	34	233,5	-743,8
223	Stora Enso	Forestry & paper (173)	Finland	79,80	4,6	10.297	0,8	9,8
224	SCA	Forestry & paper (173)	Sweden	79,61	-6,6	12.102	0,7	7,8
225	Bekaert	Industrial metals & mining (175)	Belgium	79,33	25,1	3.262	2,4	17,4
226	Orion Oyj	Pharmaceuticals (4577)	Finland	79,20	-9,1	850	9,3	29,4
227	ASM International	Semiconductors (9576)	The Netherlands	78,79	25,4	1.223	6,4	26,8
228	Meggitt	Aerospace & defence (271)	UK	78,78	2,3	1.356	5,8	18,9
229	Salzgitter	Industrial metals & mining (175)	Germany	78,40	-2,8	8.305	0,9	1,7
230	Gameloft	Software (9537)	France	78,13	25,4	141	55,4	6,6
231	Munich Re	Nonlife insurance (853)	Germany	78,00	143,8	51.624	0,2	6,0
232	SMA Solar Technology	Alternative energy (58)	Germany	77,99	45,9	1.920	4,1	26,9
233	William Demant	Health care equipment & services (453)	Denmark	76,10	5,6	925	8,2	20,7
234	LFB	Pharmaceuticals (4577)	France	75,95	14,1	376	20,2	-0,9
235	Sorin	Health care equipment & services (453)	Italy	75,04	14,3	746	10,1	7,9
236	Dexia	Banks (835)	Belgium	75,00	-11,8	5.305	1,4	17,4
237	LCH Clearnet	Other financials (877)	UK	74,84	-10,2	356	21,0	12,4
238	Leoni	Electrical components & equipment (2733)	Germany	73,83	11,6	2.956	2,5	4,2
239	Suez Environnement	Support services (279)	France	73,00	12,3	13.869	0,5	9,1
240	Spectris	Electrical components & equipment (2733)	UK	72,83	7,2	1.053	6,9	14,2
241	Barco	Electronic equipment (2737)	Belgium	72,14	17,9	897	8,0	4,8
242	Nexans	Electrical components & equipment (2733)	France	71,00	10,9	6.179	1,1	2,9
242	Repsol YPF	Oil & gas producers (53)	Spain	71,00	-5,3	53.663	0,1	8,6
244	Kone	Industrial machinery (2757)	Finland	70,90	14,4	4.987	1,4	14,2
245	Industria de Turbo Propulsores	Aerospace & defence (271)	Spain	69,87	39,7	479	14,6	6,3

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246	Recordati	Pharmaceuticals (4577)	Italy	68,84	-0,9	728	9,5	21,2
247	Alfa Laval	Industrial machinery (2757)	Sweden	68,19	-5,1	2.741	2,5	17,8
248	Groupe SEB	Household goods & home construction (372)	France	68,10	15,4	3.652	1,9	9,4
249	HeidelbergCement	Construction & materials (235)	Germany	67,60	6,3	11.762	0,6	9,3
250	Wustenrot & Württembergische	Nonlife insurance (853)	Germany	67,06	70,7	5.467	1,2	4,1
251	Belgacom	Fixed line telecommunications (653)	Belgium	67,00	26,4	6.552	1,0	18,0
252	GEA	Industrial machinery (2757)	Germany	66,60	1,5	4.418	1,5	5,2
253	Sick	Electronic equipment (2737)	Germany	66,51	3,4	749	8,9	8,9
254	Heraeus	Industrial metals & mining (175)	Germany	66,40	5,7	22.025	0,3	1,8
255	Vallourec	Industrial machinery (2757)	France	65,48	-0,4	4.491	1,5	15,2
256	Elster Group	Electronic equipment (2737)	Germany	65,22	11,6	1.311	5,0	10,2
257	IMMSI	Automobiles & parts (335)	Italy	62,90	-10,1	1.604	3,9	5,7
258	Komerční banka	Banks (835)	Czech Republic	61,62	735,7	1.302	4,7	49,1
259	GN Store Nord	Telecommunications equipment (9578)	Denmark	61,06	1,3	690	8,8	49,9
260	FrieslandCampina	Food producers (357)	The Netherlands	61,00	10,9	8.972	0,7	4,9
261	Elekta	Health care equipment & services (453)	Sweden	60,99	10,9	820	7,4	16,7
262	Stada Arzneimittel	Pharmaceuticals (4577)	Germany	60,01	2,3	1.627	3,7	10,0
263	Spirent Communications	Telecommunications equipment (9578)	UK	59,78	7,8	359	16,6	23,4
264	Sopra	Computer services (9533)	France	59,30	10,6	1.170	5,1	9,3
265	Bang & Olufsen	Leisure goods (374)	Denmark	58,74	-15,8	371	15,8	-1,9
266	Tomkins	General industrials (272)	UK	58,59	-15,2	3.116	1,9	0,5
267	Kontron	Computer hardware (9572)	Germany	58,03	14,8	509	11,4	-1,6
268	Caixa Geral de Depósitos	Banks (835)	Portugal	58,02	0,4	2.891	2,0	13,0
269	KBC	Banks (835)	Belgium	58,00	-23,7	8.378	0,7	26,5
270	LEGO	Leisure goods (374)	Denmark	57,57	25,8	2.149	2,7	31,1
271	Experian	Support services (279)	UK	57,40	71,1	3.160	1,8	21,2
272	Zeltia	Pharmaceuticals (4577)	Spain	57,35	5,9	154	37,4	-9,5
273	Trelleborg	General industrials (272)	Sweden	56,66	0,8	3.191	1,8	6,7
274	Technip	Oil equipment, services & distribution (57)	France	56,60	-3,2	6.082	0,9	9,8
275	Zumtobel	Electronic equipment (2737)	Austria	56,48	16,1	1.230	4,6	5,7
276	Prysmian	Electrical components & equipment (2733)	Italy	56,00	3,7	4.571	1,2	6,7
277	Amer Sports	Leisure goods (374)	Finland	55,80	10,7	1.740	3,2	5,1
278	Lottomatica	Travel & leisure (575)	Italy	54,80	-12,2	2.314	2,4	16,8
279	Crucell	Biotechnology (4573)	The Netherlands	54,60	4,9	338	16,1	10,1
280	KPN	Fixed line telecommunications (653)	The Netherlands	54,00	-31,6	13.324	0,4	23,7
281	Micro Focus International	Software (9537)	UK	53,90	72,8	322	16,7	24,4
282	Sud-Chemie	Chemicals (135)	Germany	53,60	11,2	1.225	4,4	11,2
283	MorphoSys	Biotechnology (4573)	Germany	52,96	51,3	87	60,9	11,3
284	Kaspersky Labs	Software (9537)	UK	52,64	90,8	344	15,3	16,4
285	Andritz	Industrial machinery (2757)	Austria	52,55	6,7	3.554	1,5	6,9
286	Standard Life	Life insurance (857)	UK	52,52	275,0	21.819	0,2	2,9
286	Williams Grand Prix	Travel & leisure (575)	UK	52,52	35,0	106	49,4	6,2
288	Imagination Technologies	Semiconductors (9576)	UK	52,17	26,4	114	45,6	16,6
289	BBC	Media (555)	UK	52,05	-11,0	5.511	0,9	-2,2
290	Norddeutsche Landesbank Girozentrale	Banks (835)	Germany	52,00	30,0	2.091	2,5	11,3
291	Swedish Orphan Biovitrum	Biotechnology (4573)	Sweden	51,70	-28,8	211	24,5	-8,3
292	Codemasters	Leisure goods (374)	UK	51,54	-25,4	144	35,9	-17,3
293	Coloplast	Health care equipment & services (453)	Denmark	50,86	4,4	1.280	4,0	20,8

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294	John Lewis	General retailers (537)	UK	50,77	41,2	8.592	0,6	3,2
295	Marks & Spencer	General retailers (537)	UK	50,30	-24,3	11.368	0,4	8,6
296	ADVA	Telecommunications equipment (9578)	Germany	50,17	21,4	292	17,2	2,8
297	Italtel	Telecommunications equipment (9578)	Italy	49,90	-14,1	422	11,8	1,1
298	Dyson James	Household goods & home construction (372)	UK	49,49	-13,7	898	5,5	24,6
299	Laird	Electrical components & equipment (2733)	UK	49,25	-1,4	662	7,4	-0,6
300	Telekom Austria	Fixed line telecommunications (653)	Austria	49,06	2,0	4.651	1,1	9,4
301	Plastic Logic	Electrical components & equipment (2733)	UK	48,97	48,2	0	4.897.100,0	-6.388.700,0
302	IMI	Industrial machinery (2757)	UK	48,90	7,2	2.230	2,2	16,5
303	Biotest	Pharmaceuticals (4577)	Germany	48,87	0,8	486	10,0	13,8
304	BHP Billiton	Mining (177)	UK	48,45	-58,3	39.357	0,1	37,7
305	NKT	Electrical components & equipment (2733)	Denmark	48,32	24,3	1.939	2,5	3,2
306	Genmab	Biotechnology (4573)	Denmark	47,96	-44,9	78	61,4	-35,8
307	Pearson	Media (555)	UK	47,85	17,1	6.955	0,7	13,7
308	Northgate Information Solutions	Computer services (9533)	UK	47,30	10,4	782	6,0	1,0
309	Cognis	Chemicals (135)	Germany	47,00	-16,1	2.584	1,8	7,5
309	CSM	Food producers (357)	The Netherlands	47,00	33,1	2.990	1,6	5,1
311	Arques Industries	Other financials (877)	Germany	46,91	-22,7	1.009	4,6	-5,5
312	Sophos	Software (9537)	UK	46,85	18,8	210	22,3	-13,1
313	ACS	Construction & materials (235)	Spain	46,77	16,8	15.921	0,3	8,3
314	Somfy	Electrical components & equipment (2733)	France	46,56	15,5	853	5,5	14,0
315	Ultra Electronics	Aerospace & defence (271)	UK	46,36	15,1	829	5,6	12,7
316	Tenaris	Oil equipment, services & distribution (57)	Luxembourg	46,07	-1,4	5.748	0,8	21,3
317	Christian Dior	Personal goods (376)	France	46,00	2,2	21.123	0,2	20,0
317	Koenig & Bauer	Industrial machinery (2757)	Germany	46,00	-1,5	1.179	3,9	1,1
319	Hugo Boss	Personal goods (376)	Germany	45,98	7,9	1.729	2,7	15,3
320	ErlingKlinger	Automobiles & parts (335)	Germany	45,75	24,0	796	5,7	14,4
321	Scottish and Southern Energy	Electricity (753)	UK	45,05	120,6	33.069	0,1	8,2
322	UPM-Kymmene	Forestry & paper (173)	Finland	45,00	-6,3	8.924	0,5	7,9
323	ALK-Abello	Pharmaceuticals (4577)	Denmark	44,96	11,7	287	15,7	9,0
324	Unit4	Software (9537)	The Netherlands	44,69	0,6	423	10,6	8,9
325	Gildemeister	Industrial machinery (2757)	Germany	44,64	0,7	1.377	3,2	3,1
326	Axis	Computer hardware (9572)	Sweden	44,54	8,6	325	13,7	14,9
327	Cookson	General industrials (272)	UK	44,47	9,8	2.971	1,5	8,7
328	Swedish Road Administration	Industrial transportation (277)	Sweden	44,42	23,9	1.406	3,2	-22,5
329	Neopost	Electronic office equipment (9574)	France	44,40	-7,1	966	4,6	25,8
330	Fincantieri	Commercial vehicles & trucks (2753)	Italy	44,37	-5,9	2.611	1,7	-5,3
331	Tieto	Computer services (9533)	Finland	44,20	-16,8	1.714	2,6	4,0
332	Eramet	Industrial metals & mining (175)	France	44,00	12,8	3.576	1,2	20,1
332	Vectura	Pharmaceuticals (4577)	UK	44,00	3,6	50	87,9	-31,0
334	Sartorius	Electronic equipment (2737)	Germany	43,86	2,2	659	6,7	10,6
335	Delhaize	Food & drug retailers (533)	Belgium	43,00	22,9	20.850	0,2	4,9
336	SimCorp	Software (9537)	Denmark	42,99	2,9	185	23,2	19,0
337	centrotherm photovoltaics	Alternative energy (58)	Germany	42,42	49,3	624	6,8	12,0
338	Terna	Electricity (753)	Italy	42,40	153,9	2.036	2,1	46,8

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339	Danieli	Industrial machinery (2757)	Italy	42,27	128,4	2.284	1,9	9,9
340	Egis Pharmaceuticals	Pharmaceuticals (4577)	Hungary	42,24	11,1	427	9,9	13,0
341	Aixtron	Semiconductors (9576)	Germany	41,94	44,3	784	5,4	34,7
342	Antisoma	Biotechnology (4573)	UK	41,43	-0,7	24	174,5	-110,6
342	JCB Service	Commercial vehicles & trucks (2753)	UK	41,43	2,6	1.582	2,6	3,3
344	SGL Carbon	Chemicals (135)	Germany	41,40	8,4	1.382	3,0	8,1
345	Dialog Semiconductor	Semiconductors (9576)	UK	41,27	28,0	221	18,7	15,1
346	Eniro	Media (555)	Sweden	41,25	4,5	591	7,0	-66,7
347	KSB	Industrial machinery (2757)	Germany	41,12	19,7	1.939	2,1	7,4
348	Neste Oil	Oil & gas producers (53)	Finland	41,00	10,8	11.892	0,3	2,6
349	Avio	Aerospace & defence (271)	Italy	40,61	6,9	1.753	2,3	8,8
350	Fagor Electrodomesticos	Household goods & home construction (372)	Spain	40,38	-41,9	1.396	2,9	1,3
351	Gamesa	Industrial machinery (2757)	Spain	40,37	-3,6	2.736	1,5	3,3
352	Octapharma Nordic	Pharmaceuticals (4577)	Sweden	40,35	4,8	749	5,4	5,9
353	Cegedim	Computer services (9533)	France	40,15	22,6	927	4,3	-0,7
354	Kemira	Chemicals (135)	Finland	39,20	-10,7	2.269	1,7	6,8
355	Novomatic	Travel & leisure (575)	Austria	37,90	1,9	1.184	3,2	18,2
356	FLSmidth	Industrial machinery (2757)	Denmark	37,71	-10,8	2.709	1,4	9,6
357	De'Longhi	Household goods & home construction (372)	Italy	37,70	12,2	1.600	2,4	9,2
358	BTG	Biotechnology (4573)	UK	37,46	18,9	130	28,8	-13,7
359	CompuGROUP Medical	Computer services (9533)	Germany	37,38	26,4	312	12,0	10,5
360	TDC	Fixed line telecommunications (653)	Denmark	37,17	99,3	4.730	0,8	13,5
361	Nemetschek	Software (9537)	Germany	36,70	9,3	150	24,5	18,3
362	NeuroSearch	Biotechnology (4573)	Denmark	36,55	-10,0	9	392,8	-475,4
363	Energias de Portugal	Electricity (753)	Portugal	36,53	17,8	14.171	0,3	14,7
364	Jungheinrich	Commercial vehicles & trucks (2753)	Germany	36,29	-6,3	1.816	2,0	5,3
365	Paul Hartmann	Health care equipment & services (453)	Germany	35,80	11,2	1.633	2,2	6,3
366	SSI Investments II	Software (9537)	Ireland	35,65	9,0	167	21,3	-55,5
367	Nexter	Aerospace & defence (271)	France	35,60	43,5	887	4,0	14,7
368	Logica	Computer services (9533)	UK	35,48	33,9	4.315	0,8	5,7
369	PUMA	Personal goods (376)	Germany	35,30	28,8	2.706	1,3	11,4
369	Sudzucker	Food producers (357)	Germany	35,30	5,4	6.161	0,6	8,4
371	Cargotec	Industrial machinery (2757)	Finland	35,20	-9,7	2.575	1,4	5,0
372	Lantmannen	Food producers (357)	Sweden	35,15	-0,3	3.990	0,9	2,2
373	Dako	Biotechnology (4573)	Denmark	35,14	16,9	257	13,7	15,2
374	Bank of Ireland	Banks (835)	Ireland	35,00	-15,3	5.864	0,6	22,0
374	Deutsche Bahn	Travel & leisure (575)	Germany	35,00	118,8	30.040	0,1	-9,5
376	Renishaw	Electronic equipment (2737)	UK	34,73	-1,6	212	16,4	14,8
377	LM Wind Power	Alternative energy (58)	Denmark	34,45	30,7	727	4,7	-47,4
377	Parrot	Telecommunications equipment (9578)	France	34,45	32,4	242	14,3	12,9
379	EnBW Energie Baden-Württemberg	Electricity (753)	Germany	34,30	-1,4	17.509	0,2	9,4
380	London Stock Exchange	Other financials (877)	UK	34,08	-3,6	719	4,7	45,9
381	Poste Italiane	Industrial transportation (277)	Italy	33,71	29,0	21.621	0,2	8,2
382	F-Secure	Software (9537)	Finland	33,68	19,1	130	25,9	14,6
383	Guerbet	Pharmaceuticals (4577)	France	33,57	12,5	353	9,5	0,7
384	Ahold	Food & drug retailers (533)	The Netherlands	33,00	266,7	29.530	0,1	4,7
384	Grammer	Automobiles & parts (335)	Germany	33,00	2,6	930	3,5	3,5
386	AVEVA	Software (9537)	UK	32,78	34,1	203	16,1	28,2
387	Akka Technologies	Support services (279)	France	32,71	-41,8	400	8,2	3,8

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388	CHR Hansen	Pharmaceuticals (4577)	Denmark	32,70	33,1	576	5,7	20,6
389	INEOS	Chemicals (135)	UK	32,20	-45,4	24.764	0,1	4,5
390	Wolfson Microelectronics	Semiconductors (9576)	UK	32,17	14,1	117	27,4	-7,2
391	Pharmathen	Pharmaceuticals (4577)	Greece	32,16	7,3	89	36,0	15,2
392	Expro International	Oil equipment, services & distribution (57)	UK	32,13	8,2	759	4,2	-14,6
393	Benetton	Personal goods (376)	Italy	32,00	0,0	2.053	1,6	8,4
394	Nordex	Alternative energy (58)	Germany	31,93	13,4	972	3,3	4,3
395	Boliden	Mining (177)	Sweden	31,60	31,3	4.071	0,8	15,4
396	Wilo	Industrial machinery (2757)	Germany	31,47	-5,3	1.021	3,1	10,9
397	AZ Electronic Materials	Chemicals (135)	Luxembourg	31,31	22,4	508	6,2	18,4
398	Ion Beam Applications	Health care equipment & services (453)	Belgium	31,07	4,5	388	8,0	2,7
399	Latecoere	Aerospace & defence (271)	France	31,00	-3,1	464	6,7	8,0
400	Vaisala	Electronic equipment (2737)	Finland	30,70	10,4	253	12,1	4,7
401	Fidessa	Software (9537)	UK	30,67	11,8	306	10,0	14,2
402	COFIDE	General industrials (272)	Italy	30,22	20,5	4.805	0,6	4,1
403	Charter International	Industrial machinery (2757)	UK	30,11	16,2	2.007	1,5	8,2
404	IMA Industria Macchine Automatiche	Industrial machinery (2757)	Italy	30,08	5,5	503	6,0	8,3
405	Fortum	Electricity (753)	Finland	30,00	0,0	6.296	0,5	28,0
406	Transgene	Biotechnology (4573)	France	29,99	51,3	6	531,0	-762,8
407	Halma	Electronic equipment (2737)	UK	29,98	20,2	605	5,0	19,2
408	ELMOS Semiconductor	Semiconductors (9576)	Germany	29,91	8,7	185	16,2	12,2
409	Hays	Support services (279)	UK	29,88	422,4	651	4,6	7,0
410	Homag	Industrial machinery (2757)	Germany	29,69	25,0	718	4,1	3,2
410	Roth & Rau	Alternative energy (58)	Germany	29,69	89,0	285	10,4	-9,7
412	Bavarian Nordic	Biotechnology (4573)	Denmark	29,53	12,8	42	70,1	-151,0
413	Atari	Software (9537)	France	29,50	-16,7	73	40,6	-5,5
414	Nationwide	Other financials (877)	UK	29,18	0,0	2.453	1,2	15,1
414	Tate & Lyle	Food producers (357)	UK	29,18	-3,8	3.863	0,8	8,8
416	CEGID	Software (9537)	France	28,88	0,3	250	11,6	11,7
417	Agennix	Biotechnology (4573)	Germany	28,56	325,1	0	18.667,3	-24.229,4
418	Austria Technologie & Systemtechnik	Electrical components & equipment (2733)	Austria	28,31	36,9	488	5,8	7,3
419	Cez	Electricity (753)	Czech Republic	28,26	30,1	7.926	0,4	32,9
420	Rockwool International	Construction & materials (235)	Denmark	28,18	-19,2	1.574	1,8	7,1
421	KUKA	Industrial machinery (2757)	Germany	28,05	-18,2	1.079	2,6	1,4
422	ICAP	Other financials (877)	UK	28,01	-51,0	2.032	1,4	15,2
423	WestLB	Banks (835)	Germany	28,00	-37,8	1.370	2,0	-9,7
424	Funkwerk	Mobile telecommunications (657)	Germany	27,86	-11,9	211	13,2	-7,9
425	Haldex	Automobiles & parts (335)	Sweden	27,72	-28,2	766	3,6	3,8
425	NicOx	Pharmaceuticals (4577)	France	27,72	-38,3	7	373,5	-613,0
427	NATS	Industrial transportation (277)	UK	27,43	38,2	881	3,1	15,0
428	Vossloh	Commercial vehicles & trucks (2753)	Germany	27,40	48,9	1.351	2,0	11,2
429	Micronic Mydata	Semiconductors (9576)	Sweden	27,39	40,6	143	19,2	5,6
430	Valio	Food producers (357)	Finland	27,30	51,7	1.822	1,5	3,2
431	Lifecycle Pharma	Biotechnology (4573)	Denmark	27,21	0,3	0	13.537,8	-18.161,2
432	Saft	Electrical components & equipment (2733)	France	27,20	23,6	591	4,6	10,6
433	Intralot	Travel & leisure (575)	Greece	27,12	-7,2	1.116	2,4	7,4
434	Rautaruukki	Industrial metals & mining (175)	Finland	27,00	-6,9	2.415	1,1	-0,7
435	Barilla	Food producers (357)	Italy	26,91	8,9	4.171	0,6	1,7
436	RBC Dexia Investor Services	Other financials (877)	UK	26,46	-40,9	778	3,4	14,9

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437	Wacker Neuson	Industrial machinery (2757)	Germany	26,42	5,9	758	3,5	4,9
438	Jenoptik	Industrial machinery (2757)	Germany	26,17	-4,8	511	5,1	3,7
439	Datalogic	Electronic equipment (2737)	Italy	25,97	3,7	393	6,6	8,9
440	Edwards Group	Industrial machinery (2757)	UK	25,91	5,2	753	3,4	11,8
441	Wendel	Other financials (877)	France	25,90	-61,2	5.491	0,5	17,4
442	Industrial and Financial Systems	Software (9537)	Sweden	25,84	8,4	285	9,1	8,6
443	BE Semiconductor Industries	Semiconductors (9576)	The Netherlands	25,81	11,0	351	7,3	14,2
444	Wittington Investments	Food producers (357)	UK	25,68	-4,3	11.970	0,2	8,1
445	Fuchs Petrolub	Chemicals (135)	Germany	25,10	13,1	1.459	1,7	17,1
446	Durr	Industrial machinery (2757)	Germany	25,07	5,8	1.261	2,0	2,7
447	Melexis	Semiconductors (9576)	Belgium	24,93	18,5	219	11,4	25,0
448	Auriga Industries	Chemicals (135)	Denmark	24,66	-24,5	752	3,3	3,7
448	Santaris Pharma	Biotechnology (4573)	Denmark	24,66	26,4	29	85,3	2,6
450	Kofax	Software (9537)	UK	24,63	16,6	255	9,6	4,5
451	Croda International	Chemicals (135)	UK	24,51	-0,5	1.224	2,0	18,9
451	Genus	Biotechnology (4573)	UK	24,51	11,1	333	7,4	17,6
451	Rexam	General industrials (272)	UK	24,51	-8,7	5.791	0,4	5,9
454	Loewe	Electronic equipment (2737)	Germany	24,48	7,2	307	8,0	-1,9
455	Q-Cells	Alternative energy (58)	Germany	24,30	-1,6	1.358	1,8	-1,2
456	Exact	Software (9537)	The Netherlands	24,22	8,3	228	10,6	18,0
457	Glen Electric	Household goods & home construction (372)	UK	24,18	-4,7	961	2,5	8,8
458	GfK	Support services (279)	Germany	24,09	10,5	1.294	1,9	10,9
459	Eppendorf	Health care equipment & services (453)	Germany	23,95	0,3	484	4,9	17,8
459	Soitec	Semiconductors (9576)	France	23,95	39,3	281	8,5	-8,2
461	Active Biotech	Biotechnology (4573)	Sweden	23,80	2,9	1	1.890,5	-2.016,5
462	austriamicrosystems	Semiconductors (9576)	Austria	23,47	17,5	209	11,2	9,3
463	ComArch	Computer services (9533)	Poland	23,42		192	12,2	3,2
464	Obrascon Huarte Lain	Construction & materials (235)	Spain	23,27	8,8	4.910	0,5	10,2
465	Hunter Douglas	Household goods & home construction (372)	The Netherlands	23,11	10,7	1.823	1,3	6,1
465	SkyePharma	Pharmaceuticals (4577)	UK	23,11	92,2	68	34,1	25,1
467	LKAB	Mining (177)	Sweden	23,06	-12,2	3.164	0,7	43,0
468	Auchan	General retailers (537)	France	23,00	666,7	42.492	0,1	3,0
469	Enrichment Technology	Industrial machinery (2757)	UK	22,82	9,0	232	9,8	-4,2
470	WET Automotive Systems	Automobiles & parts (335)	Germany	22,73	27,5	227	10,0	17,0
471	Miba	Automobiles & parts (335)	Austria	22,60	20,9	437	5,2	11,7
471	Outotec	Industrial machinery (2757)	Finland	22,60	26,3	970	2,3	4,1
473	Mühlbauer	Semiconductors (9576)	Germany	22,59	16,8	207	10,9	18,0
474	SBM Offshore	Oil equipment, services & distribution (57)	The Netherlands	22,53	-22,0	2.278	1,0	11,8
475	Force India Formula One	Travel & leisure (575)	UK	22,52	7,7	37	61,4	-125,6
476	Kapsch TrafficCom	Support services (279)	Austria	22,40	28,0	389	5,8	12,6
476	RHI	Industrial machinery (2757)	Austria	22,40	11,4	1.523	1,5	8,8
478	Posten Norden	Industrial transportation (277)	Sweden	22,18	-16,7	4.620	0,5	3,3
479	CS Communication & Systemes	Computer services (9533)	France	22,05	-13,7	193	11,4	-6,0
480	Accor	Travel & leisure (575)	France	22,00	-18,5	6.978	0,3	3,2
481	KTM Power Sports	Automobiles & parts (335)	Austria	21,96	-33,5	444	5,0	3,8
482	BIC	Household goods & home construction (372)	France	21,94	-9,4	1.832	1,2	16,3

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
483	Intec Telecom Systems	Computer services (9533)	UK	21,86	13,9	165	13,2	5,0
484	Meda	Pharmaceuticals (4577)	Sweden	21,84	-43,1	1.283	1,7	18,1
485	Anglo American	Mining (177)	UK	21,62	-14,7	20.842	0,1	33,9
486	Montupet	Automobiles & parts (335)	France	21,60	90,8	375	5,8	3,5
486	Teollisuuden Voima	Electricity (753)	Finland	21,60	1,9	363	6,0	43,5
488	Konecranes	Industrial machinery (2757)	Finland	21,10	-0,9	1.546	1,4	7,4
489	Nolato	Chemicals (135)	Sweden	21,07	13,8	374	5,6	7,4
489	SSAB	Industrial metals & mining (175)	Sweden	21,07	-5,0	4.422	0,5	2,5
491	888	Travel & leisure (575)	UK	21,04	-2,9	195	10,8	4,4
492	Metsaliitto	Forestry & paper (173)	Finland	21,00	-12,5	5.377	0,4	7,8
492	Outokumpu	Industrial metals & mining (175)	Finland	21,00	16,7	4.229	0,5	-2,7
494	Amarin	Biotechnology (4573)	UK	20,88	57,1	0	2.088.200,0	-18.644.700,0
495	James Hardie Industries	Construction & materials (235)	Ireland	20,87	3,3	870	2,4	8,7
496	Vacon	Electrical components & equipment (2733)	Finland	20,78	18,4	338	6,1	8,4
497	CMC Markets	Other financials (877)	UK	20,66	30,1	175	11,8	-9,1
498	Copenhagen Airports	Industrial transportation (277)	Denmark	20,60	90,9	435	4,7	46,3
499	Carraro	Automobiles & parts (335)	Italy	20,59	47,2	718	2,9	2,0
500	Manz Automation	Industrial machinery (2757)	Germany	20,56	69,4	181	11,3	-0,3
501	DiaSorin	Pharmaceuticals (4577)	Italy	20,47	29,6	405	5,1	36,0
501	Sword	Computer services (9533)	France	20,47	19,9	185	11,0	18,2
503	Ahlstrom	Chemicals (135)	Finland	20,30	-6,0	1.894	1,1	3,5
504	MGI Coutier	Automobiles & parts (335)	France	20,10	2,0	410	4,9	6,9
505	Same Deutz-Fahr	Commercial vehicles & trucks (2753)	Italy	19,97	-2,9	855	2,3	1,5
506	Premier Foods	Food producers (357)	UK	19,96	55,5	2.996	0,7	3,0
507	B&C Industrieholding	Other financials (877)	Austria	19,90	5,9	1.910	1,0	6,5
508	Orc Software	Software (9537)	Sweden	19,89	97,7	108	18,4	7,7
509	bwin Interactive Entertainment	Travel & leisure (575)	Austria	19,88	116,8	356	5,6	13,5
510	Psion	Computer hardware (9572)	UK	19,87	10,4	204	9,8	3,2
511	International Power	Electricity (753)	UK	19,84	88,9	3.903	0,5	19,6
512	Pharming	Biotechnology (4573)	The Netherlands	19,66	-13,4	1	3.431,6	-7.909,6
513	Wilex	Biotechnology (4573)	Germany	19,41	72,3	1	1.939,2	-2.338,2
514	Seco Tools	Industrial machinery (2757)	Sweden	19,18	-14,8	650	3,0	18,7
515	Vanderlande Industries	Industrial machinery (2757)	The Netherlands	19,07	23,2	566	3,4	5,8
516	GECI International	Aerospace & defence (271)	France	18,97	60,8	59	32,4	3,5
517	Actia	Electronic equipment (2737)	France	18,96	19,7	247	7,7	-0,2
518	Napp Pharmaceutical	Pharmaceuticals (4577)	UK	18,86	-0,9	296	6,4	15,2
519	National Grid	Gas, water & multiutilities (757)	UK	18,67	-15,8	16.740	0,1	26,7
520	Q-Med	Health care equipment & services (453)	Sweden	18,61	-27,4	151	12,3	18,5
521	De La Rue	Support services (279)	UK	18,56	30,3	541	3,4	17,5
521	Morgan Crucible	Electrical components & equipment (2733)	UK	18,56	14,4	1.187	1,6	9,1
523	Asseco Poland	Software (9537)	Poland	18,52	132,1	817	2,3	15,3
524	Schaltbau	Commercial vehicles & trucks (2753)	Germany	18,48	11,1	280	6,6	8,5
525	LISI	Industrial machinery (2757)	France	18,40	11,5	777	2,4	4,2
526	Sensata Technologies	Electronic equipment (2737)	The Netherlands	18,39	46,8	1.148	1,6	14,6
527	BAUER	Construction & materials (235)	Germany	18,31	0,5	1.132	1,6	7,6
528	Domino Printing Sciences	Electronic equipment (2737)	UK	18,20	33,7	350	5,2	17,6
529	Aliaxis	Construction & materials (235)	Belgium	18,06	9,4	2.123	0,9	6,2
530	Allied Irish Banks	Banks (835)	Ireland	18,00	-71,9	846	2,1	-1.371,6
530	Edenred	Support services (279)	France	18,00		885	2,0	16,8

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Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
532	Fives	Industrial machinery (2757)	France	17,99	15,1	1.049	1,7	4,5
533	IBS	Software (9537)	Sweden	17,95	-29,2	144	12,4	-15,0
534	Gothaer	Nonlife insurance (853)	Germany	17,90	1,7	4.124	0,4	2,6
535	Vetoquinol	Pharmaceuticals (4577)	France	17,82	7,8	282	6,3	10,2
536	Veritas	Automobiles & parts (335)	Germany	17,79	13,3	505	3,5	7,3
537	K+S	Chemicals (135)	Germany	17,70	-13,7	4.994	0,4	14,7
538	ESI	Software (9537)	France	17,62	24,5	84	20,9	7,1
539	Hikma Pharmaceuticals	Pharmaceuticals (4577)	UK	17,60	40,2	545	3,2	18,5
540	Balfour Beatty	Construction & materials (235)	UK	17,51	275,0	10.779	0,2	2,0
541	YIT	Construction & materials (235)	Finland	17,50	15,1	3.788	0,5	5,8
542	N Brown	General retailers (537)	UK	17,39	52,0	839	2,1	14,3
543	Eurand	Pharmaceuticals (4577)	The Netherlands	17,22	19,6	121	14,3	-3,8
544	SolarWorld	Alternative energy (58)	Germany	17,05	68,1	1.305	1,3	13,5
545	Weir	Industrial machinery (2757)	UK	17,04	50,5	1.908	0,9	17,8
546	TUI	Travel & leisure (575)	Germany	16,80	117,3	16.350	0,1	2,1
547	Symphogen	Biotechnology (4573)	Denmark	16,79	-26,9	6	303,7	-289,2
548	Urenco	Electricity (753)	UK	16,70	38,0	1.267	1,3	46,6
549	Promethean World	Computer hardware (9572)	UK	16,69	50,8	275	6,1	9,0
550	BRE Bank	Banks (835)	Poland	16,67	-25,3	788	2,1	27,9
551	Medivir	Pharmaceuticals (4577)	Sweden	16,56	25,9	6	260,8	-238,7
552	3w Power	Alternative energy (58)	Luxembourg	16,53	276,9	306	5,4	-41,4
553	Fimalac	Other financials (877)	France	16,50	8,6	609	2,7	19,8
554	Arup	Support services (279)	UK	16,37	11,3	1.038	1,6	1,2
555	G4S	Support services (279)	UK	16,34	-1,4	8.637	0,2	5,4
555	Sapura	Telecommunications equipment (9578)	UK	16,34	3,6	82	19,9	5,4
557	ThromboGenics	Biotechnology (4573)	Belgium	16,31	-38,5	6	264,1	-247,8
558	EVS Broadcast Equipment	Electronic equipment (2737)	Belgium	16,21	31,3	111	14,6	49,8
559	VocaLink	Support services (279)	UK	16,11	-53,8	193	8,3	2,1
560	Huhtamaki	General industrials (272)	Finland	16,10	-1,2	2.107	0,8	6,8
560	Uponor	Construction & materials (235)	Finland	16,10	3,9	749	2,1	6,6
562	Bloor	General industrials (272)	UK	16,07	6,7	737	2,2	5,0
563	Ballast Nedam	Construction & materials (235)	The Netherlands	16,00	60,0	1.359	1,2	1,3
563	Elektrobit	Electronic equipment (2737)	Finland	16,00	8,8	162	9,9	-11,6
563	Landesbank Berlin	Banks (835)	Germany	16,00	100,0	1.417	1,1	22,4
566	COR & FJA	Software (9537)	Germany	15,98	42,6	116	13,8	2,3
567	SDL	Software (9537)	UK	15,92	23,5	238	6,7	14,0
568	Renovo	Biotechnology (4573)	UK	15,88	-24,7	19	83,8	-60,2
569	Thrane & Thrane	Telecommunications equipment (9578)	Denmark	15,86	-15,2	147	10,8	17,8
570	4SC	Biotechnology (4573)	Germany	15,82	21,9	1	1.599,7	-2.082,6
571	Recticel	Chemicals (135)	Belgium	15,81	11,4	1.348	1,2	2,1
572	OMV	Oil & gas producers (53)	Austria	15,80	9,4	23.323	0,1	10,4
573	RM	Software (9537)	UK	15,76	-7,7	444	3,6	4,4
574	Archimedes Pharma	Pharmaceuticals (4577)	UK	15,69	-21,2	24	64,1	-99,5
574	Geox	Personal goods (376)	Italy	15,69	3,7	850	1,8	11,0
576	Demag Cranes	Industrial machinery (2757)	Germany	15,64	-16,0	931	1,7	5,4
577	Unibel	Food producers (357)	France	15,61	-11,3	2.418	0,6	8,3
578	Chemring	Aerospace & defence (271)	UK	15,52	44,6	697	2,2	18,1
578	QinetiQ	Aerospace & defence (271)	UK	15,52	68,4	1.987	0,8	3,2
578	Sportingbet	Travel & leisure (575)	UK	15,52	101,5	2.301	0,7	0,4
581	Palfinger	Industrial machinery (2757)	Austria	15,39	23,4	652	2,4	5,6
582	Telit Communications	Telecommunications equipment (9578)	UK	15,32	58,2	98	15,6	4,4

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Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
583	Nutreco	Food producers (357)	The Netherlands	15,30	8,5	4.940	0,3	3,7
584	Camelot	Travel & leisure (575)	UK	15,29	167,3	5.599	0,3	0,9
584	Oxford Instruments	Electronic equipment (2737)	UK	15,29	-19,6	247	6,2	4,8
586	Atlantia	Industrial transportation (277)	Italy	15,26	-28,1	4.528	0,3	40,3
587	Faiveley Transport	Commercial vehicles & trucks (2753)	France	15,20	2,3	876	1,7	13,5
588	Omega Pharma	Pharmaceuticals (4577)	Belgium	15,18	8,4	857	1,8	12,5
589	Diageo	Beverages (353)	UK	15,17	-23,5	11.414	0,1	26,5
590	Telekomunikacja Polska	Fixed line telecommunications (653)	Poland	15,14	-18,9	3.965	0,4	5,4
591	Heating Finance	Construction & materials (235)	UK	15,07	12,9	1.077	1,4	4,1
592	HSH Nordbank	Banks (835)	Germany	15,00	-11,8	1.537	1,0	1,1
593	Amsterdam Molecular Therapeutics	Biotechnology (4573)	The Netherlands	14,96	16,1	0	1.495.600,0	-2.051.700,0
594	MBDA	Aerospace & defence (271)	UK	14,94	40,7	842	1,8	4,4
595	Stork	Industrial machinery (2757)	The Netherlands	14,89	-45,0	1.669	0,9	5,2
596	Basware	Software (9537)	Finland	14,87	0,6	103	14,4	13,2
597	Groupe Gorge	Industrial machinery (2757)	France	14,78	195,3	211	7,0	4,5
598	Arla Foods	Food producers (357)	Denmark	14,76	746,0	6.580	0,2	3,5
598	Nykredit Realkredit	Banks (835)	Denmark	14,76	20,9	1.536	1,0	26,1
600	Tekla	Software (9537)	Finland	14,75	4,1	58	25,5	16,5
601	PSI	Software (9537)	Germany	14,74	28,7	159	9,3	5,2
602	Ablynx	Biotechnology (4573)	Belgium	14,71	36,8	29	50,4	-96,4
603	Anite	Computer services (9533)	UK	14,67	3,9	92	16,0	-2,3
604	Bioinvent International	Biotechnology (4573)	Sweden	14,62	-33,0	9	159,1	-154,3
605	Constantia Packaging	General industrials (272)	Austria	14,60	-0,2	1.704	0,9	8,2
606	Hoganas	Industrial metals & mining (175)	Sweden	14,53	23,6	740	2,0	16,6
606	Radiall	Telecommunications equipment (9578)	France	14,53	4,7	185	7,9	3,9
606	Swedbank	Banks (835)	Sweden	14,53	42,4	3.373	0,4	32,7
609	AGRANA	Food producers (357)	Austria	14,48	8,5	2.166	0,7	6,0
610	Lansforsakringar	Banks (835)	Sweden	14,44	28,5	817	1,8	7,3
611	Perstorp	Chemicals (135)	Sweden	14,42	-18,7	1.615	0,9	2,2
612	CAF	Commercial vehicles & trucks (2753)	Spain	14,36	16,1	1.576	0,9	9,4
612	Premier Farnell	Support services (279)	UK	14,36	39,8	1.156	1,2	11,3
614	Orexo	Pharmaceuticals (4577)	Sweden	14,31	-23,7	23	61,3	-38,8
615	OHB Technology	Aerospace & defence (271)	Germany	14,30	10,0	425	3,4	3,3
616	e2v Technologies	Electronic equipment (2737)	UK	14,20	6,3	267	5,3	12,9
617	Almac	Pharmaceuticals (4577)	UK	14,19	19,9	293	4,8	5,0
618	BG	Oil & gas producers (53)	UK	14,16	21,4	12.976	0,1	33,8
619	Leica Camera	Leisure goods (374)	Germany	14,11	-9,3	158	8,9	4,4
620	Singulus Technologies	Industrial machinery (2757)	Germany	14,10	-19,9	118	11,9	-67,3
621	DSV	Industrial transportation (277)	Denmark	14,09	-6,2	5.712	0,2	5,2
622	Unibet	Travel & leisure (575)	Malta	14,08	47,7	172	8,2	23,3
623	Karo Bio	Biotechnology (4573)	Sweden	14,06	2,9	0	1.406.000,0	-1.794.500,0
624	Trevi Finanziaria Industriale	Construction & materials (235)	Italy	14,02	31,4	912	1,5	9,3
625	TI Fluid Systems	Automobiles & parts (335)	UK	14,01	-30,2	1.878	0,7	3,9
626	KPMG Europe	Support services (279)	Germany	14,00	-54,8	4.065	0,3	12,6
627	Glanbia	Food producers (357)	Ireland	13,96	35,2	2.167	0,6	6,7
628	Manitou BF	Commercial vehicles & trucks (2753)	France	13,92	-20,1	838	1,7	0,3
629	Chicago Bridge & Iron Company	Industrial machinery (2757)	The Netherlands	13,89	16,1	2.715	0,5	8,3
629	Option	Telecommunications equipment (9578)	Belgium	13,89	-47,6	58	24,1	-56,7
629	SAES Getters	Electronic equipment (2737)	Italy	13,89	0,6	142	9,8	7,7

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632	Amper	Telecommunications equipment (9578)	Spain	13,76	9,3	262	5,3	-6,9
633	Strabag	Construction & materials (235)	Austria	13,60	171,9	12.382	0,1	2,2
634	NIBE Industrier	Industrial machinery (2757)	Sweden	13,58	24,6	722	1,9	12,2
635	Rational	Household goods & home construction (372)	Germany	13,52	29,9	350	3,9	30,2
636	Flamel Technologies	Biotechnology (4573)	France	13,51	6,5	28	48,9	-48,0
637	WMF	Household goods & home construction (372)	Germany	13,50	-1,3	902	1,5	6,6
638	SNPE	Chemicals (135)	France	13,40	11,7	543	2,5	-6,9
639	CeWe Color	General retailers (537)	Germany	13,37	10,3	447	3,0	6,2
640	Tornier	Health care equipment & services (453)	The Netherlands	13,34	-26,4	169	7,9	-6,5
641	Tessenderlo	Chemicals (135)	Belgium	13,30	-4,3	2.427	0,5	1,4
642	Comptel	Software (9537)	Finland	13,28	2,2	78	17,1	11,8
643	Prima Industrie	Industrial machinery (2757)	Italy	13,20	-0,9	250	5,3	0,7
644	Vitec	Industrial machinery (2757)	UK	13,19	-13,7	361	3,7	6,9
645	KMD	Computer services (9533)	Denmark	13,18	19,6	514	2,6	4,1
646	Tecnotree	Telecommunications equipment (9578)	Finland	13,14	-9,4	61	21,7	-13,3
647	Martin-Baker	Aerospace & defence (271)	UK	13,13	65,7	227	5,8	31,8
648	Carlsberg	Beverages (353)	Denmark	13,02	5,4	8.059	0,2	16,1
649	Finatis	Food & drug retailers (533)	France	13,00	44,4	29.785	0,0	3,3
649	Rallye	Food & drug retailers (533)	France	13,00	44,4	29.783	0,0	3,0
649	Tarkett	Construction & materials (235)	France	13,00	0,0	1.708	0,8	5,6
652	Channel Four Television	Media (555)	UK	12,96	82,0	1.091	1,2	5,6
652	Gewiss	Electrical components & equipment (2733)	Italy	12,96	-6,2	304	4,3	12,4
654	Ark Therapeutics	Biotechnology (4573)	UK	12,92	-28,9	4	360,5	-576,2
655	Hansen Transmissions International	Alternative energy (58)	Belgium	12,90	-13,6	455	2,8	-1,9
656	Centrica	Gas, water & multiutilities (757)	UK	12,84	-62,1	26.858	0,0	13,5
657	Nokian Tyres	Automobiles & parts (335)	Finland	12,70	5,8	1.058	1,2	20,8
658	MediGene	Biotechnology (4573)	Germany	12,69	-26,7	50	25,6	-46,0
659	Enea	Software (9537)	Sweden	12,68	-15,4	81	15,7	9,3
660	Xchanging	Support services (279)	UK	12,67	-34,9	911	1,4	-7,0
661	Nexus	Software (9537)	Germany	12,62	62,1	45	28,2	8,3
662	Severn Trent	Gas, water & multiutilities (757)	UK	12,61	-50,5	1.997	0,6	28,9
663	VTI Technologies	Electronic equipment (2737)	Finland	12,55	8,7	76	16,6	3,0
664	Dynaction	Chemicals (135)	France	12,51	19,2	159	7,9	0,0
665	Schouw	General industrials (272)	Denmark	12,40	-5,9	1.333	0,9	5,5
666	P&i Personal & Informatik	Software (9537)	Germany	12,39	6,3	69	17,9	22,3
667	LeasePlan	Other financials (877)	The Netherlands	12,32	-41,1	6.978	0,2	3,8
668	Collectis	Biotechnology (4573)	France	12,31	54,4	11	116,2	-165,0
669	Indesit	Household goods & home construction (372)	Italy	12,30	-43,1	2.879	0,4	6,2
670	Intrum Justitia	Other financials (877)	Sweden	12,22	-33,9	418	2,9	17,0
671	Oriflame Cosmetics	Personal goods (376)	Luxembourg	12,18	3,9	1.514	0,8	10,4
672	Cosmo Pharmaceuticals	Pharmaceuticals (4577)	Italy	12,15	28,1	32	37,9	14,9
673	Biotie Therapies	Biotechnology (4573)	Finland	12,10	-0,3	3	413,2	-707,7
674	Tipp24	Travel & leisure (575)	Germany	12,07	74,4	104	11,6	29,0
675	BEIG Topco	Food producers (357)	UK	12,00	-5,0	1.139	1,1	13,0
675	Franz Haniel & Cie	Food & drug retailers (533)	Germany	12,00	-20,0	27.432	0,0	3,1
677	Cohort	Aerospace & defence (271)	UK	11,95	19,8	76	15,7	4,3
678	Inmarsat	Mobile telecommunications (657)	UK	11,93	-31,9	873	1,4	39,3

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<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
679	Newron Pharmaceuticals	Biotechnology (4573)	Italy	11,89	-14,2	1	1.899,0	-3.485,6
680	Credito Agricola	Banks (835)	Portugal	11,87	3,3	577	2,1	11,1
681	Dynea	Chemicals (135)	Finland	11,80	15,7	708	1,7	2,6
682	Avanquest Software	Software (9537)	France	11,76	-1,7	88	13,3	5,2
682	Fugro	Oil equipment, services & distribution (57)	The Netherlands	11,76	49,9	2.280	0,5	15,3
684	Chroma Therapeutics	Biotechnology (4573)	UK	11,70	-0,5	0	5.598,6	-6.901,4
685	Dairy Crest	Food producers (357)	UK	11,67	28,2	1.873	0,6	5,9
686	Vernalis	Biotechnology (4573)	UK	11,58	-10,1	17	69,9	-102,0
687	R Stahl	Electrical components & equipment (2733)	Germany	11,52	11,7	223	5,2	8,7
688	Otto	General retailers (537)	Germany	11,41	-37,2	11.404	0,1	3,3
689	SAF-HOLLAND	Commercial vehicles & trucks (2753)	Luxembourg	11,36	20,0	631	1,8	4,9
690	Servier R&D	Biotechnology (4573)	UK	11,34	-61,3	16	73,1	14,6
691	EL EN	Electronic equipment (2737)	Italy	11,32	10,5	188	6,0	1,8
692	Ten Cate	General industrials (272)	The Netherlands	11,30	-13,7	985	1,1	7,2
693	Nedap	Electronic equipment (2737)	The Netherlands	11,21	9,4	134	8,4	7,2
694	Cardo	Construction & materials (235)	Sweden	11,20	7,4	884	1,3	10,5
694	IHC Merwede	Commercial vehicles & trucks (2753)	The Netherlands	11,20	10,9	1.008	1,1	12,3
696	Delcam	Software (9537)	UK	11,19	4,3	43	26,2	5,2
697	CNP	Other financials (877)	Belgium	11,10	5,2	15.382	0,1	2,7
697	Wirecard	Support services (279)	Germany	11,10	24,7	272	4,1	24,8
699	Bioton	Pharmaceuticals (4577)	Poland	11,09	-16,4	104	10,7	16,6
700	Yule Catto	Chemicals (135)	UK	11,06	-1,2	738	1,5	8,2
701	Mondi	Forestry & paper (173)	UK	11,00	37,5	6.228	0,2	7,5
701	Sequana	Forestry & paper (173)	France	11,00	-15,4	4.333	0,3	2,7
703	Svenska Handelsbanken	Banks (835)	Sweden	10,98	-17,5	3.655	0,3	45,5
704	Oasmia Pharmaceutical	Pharmaceuticals (4577)	Sweden	10,95	83,5	3	321,1	-48,7
705	Elia System Operator	Electricity (753)	Belgium	10,90	18,5	940	1,2	29,1
706	PV Crystalox Solar	Alternative energy (58)	UK	10,87	33,1	253	4,3	12,0
707	Novabase	Computer services (9533)	Portugal	10,85	19,2	236	4,6	6,7
708	Axis-Shield	Biotechnology (4573)	UK	10,83	24,3	119	9,1	6,9
709	A-Tec Industries	Industrial machinery (2757)	Austria	10,76	-43,8	2.457	0,4	-20,2
710	Senior	Aerospace & defence (271)	UK	10,74	10,8	662	1,6	10,9
711	Ceres Power	Electrical components & equipment (2733)	UK	10,65	70,3	1	1.160,9	-1.752,3
711	Swedish Match	Tobacco (378)	Sweden	10,65	0,0	1.509	0,7	26,4
713	TKH	Electrical components & equipment (2733)	The Netherlands	10,62	-24,0	885	1,2	6,7
714	Kendrion	Industrial machinery (2757)	The Netherlands	10,60	29,3	222	4,8	10,2
715	Marzotto	Personal goods (376)	Italy	10,58	-9,3	245	4,3	-12,9
716	SYGNIS Pharma	Biotechnology (4573)	Germany	10,55	65,0	0	4.950,7	-6.147,9
717	ISRA VISION	Industrial machinery (2757)	Germany	10,41	2,1	65	16,0	17,4
718	Spirax-Sarco Engineering	Industrial machinery (2757)	UK	10,40	11,1	688	1,5	21,0
719	Ricardo	Support services (279)	UK	10,39	-21,9	203	5,1	5,2
720	Royal Cosun	Food producers (357)	The Netherlands	10,30	32,1	1.766	0,6	8,9
721	Atria	Food producers (357)	Finland	10,29	9,6	1.301	0,8	1,0
722	Brembo	Automobiles & parts (335)	Italy	10,23	6,7	1.075	1,0	5,0
723	CNP Assurances	Life insurance (857)	France	10,20	131,8	44.996	0,0	2,9
724	Wavin	Construction & materials (235)	The Netherlands	10,19	16,5	1.231	0,8	3,2
725	freenet	Internet (9535)	Germany	10,18	1,9	3.355	0,3	4,0
726	Tikkurila	Chemicals (135)	Finland	10,16	8,5	589	1,7	10,3
727	Aldata Solution	Software (9537)	Finland	10,15	5,1	73	13,9	1,8

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728	Vislink	Telecommunications equipment (9578)	UK	10,14	-8,7	80	12,8	-25,9
729	Cobra Automotive Technologies	Automobiles & parts (335)	Italy	10,13	-10,5	105	9,6	-13,9
730	Prayon	Chemicals (135)	Belgium	10,10	-5,5	681	1,5	3,5
731	Topdanmark	Nonlife insurance (853)	Denmark	10,07	-53,4	1.618	0,6	12,5
732	Fiberweb	Support services (279)	UK	10,04	11,7	541	1,9	4,9
733	ABN AMRO Group	Banks (835)	The Netherlands	10,00		6.706	0,1	-4,0
734	Sodra	Forestry & paper (173)	Sweden	9,98	7,1	2.187	0,5	11,2
735	Oxagen	Biotechnology (4573)	UK	9,83	-2,9	0	982.500,0	-1.095.200,0
736	Oxford Nanopore Technologies	Biotechnology (4573)	UK	9,82	32,7	0	982.300,0	-1.404.400,0
737	Elisa	Mobile telecommunications (657)	Finland	9,80	-6,7	1.463	0,7	18,1
738	Innate Pharma	Biotechnology (4573)	France	9,72	-6,4	0	4.607,1	-8.434,6
739	Rosenbauer International	Commercial vehicles & trucks (2753)	Austria	9,70	5,4	596	1,6	8,6
740	HKScan	Food producers (357)	Finland	9,60	7,9	2.114	0,5	2,0
741	Lectra	Software (9537)	France	9,56	7,6	190	5,0	9,7
742	SABCA	Aerospace & defence (271)	Belgium	9,54	-24,9	135	7,1	14,4
743	IdaTech	Electrical components & equipment (2733)	UK	9,50	37,5	3	285,4	-531,9
743	Infovista	Software (9537)	France	9,50	-2,3	43	22,1	3,0
745	Cision	Support services (279)	Sweden	9,43	0,0	125	7,5	10,9
746	Carmat	Biotechnology (4573)	France	9,42	71,1	0	941.900,0	-773.200,0
747	Beijer Electronics	Electronic equipment (2737)	Sweden	9,41	11,7	137	6,9	9,2
747	Readsoft	Software (9537)	Sweden	9,41	-2,2	69	13,7	7,9
749	TopoTarget	Biotechnology (4573)	Denmark	9,39	-19,6	17	54,2	-131,7
750	elexis	Industrial machinery (2757)	Germany	9,37	41,7	137	6,9	2,6
751	Cast	Software (9537)	France	9,30	45,6	32	29,5	5,9
752	MAGIX	Software (9537)	Germany	9,16	-2,2	37	24,7	15,1
753	VKR	Construction & materials (235)	Denmark	9,13	11,5	2.253	0,4	11,8
754	Kesa Electricals	General retailers (537)	UK	9,10	-46,2	5.980	0,2	1,7
754	Linedata Services	Software (9537)	France	9,10	599,6	136	6,7	15,5
756	Munters	Industrial machinery (2757)	Sweden	9,09	-3,5	723	1,3	4,8
757	Glaston	Industrial machinery (2757)	Finland	9,08	3,3	149	6,1	-16,9
758	Opcon	Industrial machinery (2757)	Sweden	9,02	37,4	68	13,3	-1,3
759	Lufthansa	Travel & leisure (575)	Germany	9,00	28,6	27.324	0,0	4,1
759	Würth	General industrials (272)	Germany	9,00	83,7	8.633	0,1	4,6
761	Picanol	Industrial machinery (2757)	Belgium	8,99	-15,5	396	2,3	11,9
762	Diamyd Medical	Pharmaceuticals (4577)	Sweden	8,96	71,2	13	71,5	-2,6
763	Amino Technologies	Telecommunications equipment (9578)	UK	8,93	4,7	51	17,4	-2,0
764	Lafuma	Personal goods (376)	France	8,92	-2,1	245	3,6	0,1
765	Espirito Santo Financial	Banks (835)	Luxembourg	8,90	3,1	2.822	0,3	22,4
765	Head	Leisure goods (374)	The Netherlands	8,90	9,9	344	2,6	7,5
765	Maschinenfabrik Berthold Hermle	Industrial machinery (2757)	Germany	8,90	23,1	188	4,7	13,1
768	Interpump	Industrial machinery (2757)	Italy	8,87	17,2	425	2,1	12,9
769	Gefran	Electronic equipment (2737)	Italy	8,86	-2,3	129	6,9	11,6
769	Villeroy & Boch	Construction & materials (235)	Germany	8,86	-5,7	714	1,2	-7,2
771	Terma	Aerospace & defence (271)	Denmark	8,83	-51,8	190	4,6	6,3
772	Galapagos	Biotechnology (4573)	Belgium	8,81	346,8	122	7,2	-4,2
773	Tullett Prebon	Other financials (877)	UK	8,75	275,0	1.060	0,8	16,8
774	Beta Systems Software	Software (9537)	Germany	8,67	-35,7	59	14,6	-6,3
775	Gunnebo	General retailers (537)	Sweden	8,64	-2,5	708	1,2	3,0
776	BioAlliance Pharma	Pharmaceuticals (4577)	France	8,56	-4,9	23	38,0	5,0

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777	INDUS	General industrials (272)	Germany	8,55	-3,5	973	0,9	10,4
778	Fiskars	Household goods & home construction (372)	Finland	8,50	-4,5	716	1,2	15,6
779	Laboratorios Farmaceuticos Rovi	Pharmaceuticals (4577)	Spain	8,49	-11,6	159	5,3	8,0
780	Zealand Pharma	Biotechnology (4573)	Denmark	8,47	-1,1	12	72,3	-125,3
781	Schuler	Industrial machinery (2757)	Germany	8,44	21,3	650	1,3	2,1
782	JC Decaux	Media (555)	France	8,40	29,2	2.350	0,4	12,3
783	Aurubis	Industrial metals & mining (175)	Germany	8,38	25,7	9.865	0,1	4,8
784	RaySearch Laboratories	Health care equipment & services (453)	Sweden	8,37	35,0	13	64,1	33,9
785	Mouchel	Support services (279)	UK	8,35	-30,8	738	1,1	-0,6
786	Blinkx	Internet (9535)	UK	8,29	145,7	25	33,0	-26,6
786	Helios	Construction & materials (235)	Slovenia	8,29	13,4	301	2,8	0,8
788	Devro	Food producers (357)	UK	8,28	18,7	277	3,0	24,1
789	Ceske drahy	Industrial transportation (277)	Czech Republic	8,24	-16,5	1.043	0,8	-51,1
790	Itella	Industrial transportation (277)	Finland	8,20	-62,2	1.842	0,4	2,0
791	GW Pharmaceuticals	Pharmaceuticals (4577)	UK	8,19	3,1	36	22,9	14,7
791	Vantia	Pharmaceuticals (4577)	UK	8,19	88,5	0	819.200,0	-1.114.500,0
793	Analytik Jena	Health care equipment & services (453)	Germany	8,18	13,5	80	10,2	1,7
794	IL Sole 24 Ore	Media (555)	Italy	8,17	11,7	482	1,7	-10,3
795	Fagerhult	Electrical components & equipment (2733)	Sweden	8,15	22,5	278	2,9	5,5
796	Augusta Technologie	Electrical components & equipment (2733)	Germany	8,14	3,9	132	6,2	12,5
797	Tom Tailor	Personal goods (376)	Germany	8,11	12,7	348	2,3	2,0
798	Etex	Construction & materials (235)	Belgium	8,08	6,6	1.956	0,4	8,6
799	Neovacs	Biotechnology (4573)	France	8,06		0	806.000,0	-1.137.800,0
800	McBride	Household goods & home construction (372)	UK	8,05	4,5	948	0,8	4,3
801	LPKF Laser & Electronics	Electronic equipment (2737)	Germany	8,04	62,3	81	9,9	20,6
802	Bull	Computer hardware (9572)	France	8,00	-61,9	1.243	0,6	1,0
802	Talanx	Nonlife insurance (853)	Germany	8,00	-57,9	21.836	0,0	4,1
804	AB Science	Biotechnology (4573)	France	7,99	37,0	1	871,8	695,3
805	Hoft & Wessel	Electronic equipment (2737)	Germany	7,97	1,1	96	8,3	3,0
806	GERRY WEBER International	Personal goods (376)	Germany	7,96	2,9	622	1,3	13,4
807	Francotyp-Postalia	Industrial machinery (2757)	Germany	7,90	-11,2	147	5,4	3,7
808	Net Insight	Telecommunications equipment (9578)	Sweden	7,88	3,4	32	24,7	15,0
809	Alterian	Software (9537)	UK	7,87	21,6	43	18,2	-11,8
810	ProStrakan	Pharmaceuticals (4577)	UK	7,82	-44,2	117	6,7	5,7
810	Trinity Biotech	Health care equipment & services (453)	Ireland	7,82	-30,9	67	11,7	15,4
812	Bank Ochrony Srodowiska	Banks (835)	Poland	7,81	95,4	116	6,8	16,0
813	Kewill	Software (9537)	UK	7,76	-1,7	70	11,1	5,7
814	TiGenix	Biotechnology (4573)	Belgium	7,75	5,9	1	1.248,0	-2.967,5
815	Anoto	Computer hardware (9572)	Sweden	7,74	15,9	23	33,5	-36,0
816	Kedrion	Pharmaceuticals (4577)	Italy	7,72	-3,2	248	3,1	19,1
817	Norkom	Software (9537)	Ireland	7,69	-1,2	49	15,6	11,9
818	Adconion Media	Media (555)	UK	7,65	-21,7	106	7,2	-2,9
819	GFI Informatique	Computer services (9533)	France	7,62	2,5	672	1,1	2,6
820	Norbrook Laboratories	Pharmaceuticals (4577)	UK	7,61	-5,6	159	4,8	9,0
821	Mensch und Maschine Software	Software (9537)	Germany	7,56	27,1	196	3,9	1,2

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822	Sagentia	Support services (279)	UK	7,54	23,9	24	31,0	9,9
823	Net Entertainment NE	Software (9537)	Sweden	7,50	104,1	41	18,4	37,1
824	Snell	Electronic equipment (2737)	UK	7,47		57	13,1	-7,9
825	Fabasoft	Software (9537)	Austria	7,45	-0,3	21	35,3	-2,5
826	Engineering Ingegneria Informatica	Computer services (9533)	Italy	7,40	-53,2	738	1,0	7,9
827	Efore	Electronic equipment (2737)	Finland	7,34	12,2	70	10,5	-0,1
827	Gas Turbine Efficiency	Industrial machinery (2757)	UK	7,34	23,3	29	25,5	-35,5
829	Centrotec Sustainable	Chemicals (135)	Germany	7,28	2,5	480	1,5	8,2
829	NEOVIA Financial	Other financials (877)	UK	7,28	-39,8	46	15,9	-5,0
829	WYG	Support services (279)	UK	7,28	22,5	257	2,8	-11,3
832	Aalborg Industries	Industrial machinery (2757)	Denmark	7,25	115,1	371	2,0	15,7
833	Innovation	Software (9537)	UK	7,24	-28,5	189	3,8	-0,9
834	Jetter	Industrial machinery (2757)	Germany	7,23	3,0	34	21,5	0,1
835	Proximagen	Biotechnology (4573)	UK	7,17	118,0	1	598,1	-795,5
836	Veikkaus	Travel & leisure (575)	Finland	7,10	44,9	1.614	0,4	31,1
837	Hymer	Automobiles & parts (335)	Germany	7,09	-3,6	695	1,0	0,3
838	Cap Gemini	Computer services (9533)	France	7,00	16,7	8.697	0,1	5,6
838	FAES Farma	Biotechnology (4573)	Spain	7,00	-30,8	195	3,6	13,0
838	PricewaterhouseCoopers	Support services (279)	UK	7,00	-33,3	2.721	0,3	29,2
838	TT electronics	Electrical components & equipment (2733)	UK	7,00	-13,0	700	1,0	4,7
842	GlobeOp Financial Services	Other financials (877)	Luxembourg	6,99	22,2	141	5,0	22,9
842	Pfeiffer Vacuum Technology	Industrial machinery (2757)	Germany	6,99	-2,5	220	3,2	23,8
844	Hypoport	Other financials (877)	Germany	6,98	0,8	67	10,4	7,2
845	Wolford	Personal goods (376)	Austria	6,95	4,1	152	4,6	4,5
846	Elementis	Chemicals (135)	UK	6,86	-0,4	520	1,3	14,6
847	Randox Laboratories	Biotechnology (4573)	UK	6,85	17,7	74	9,3	4,4
848	Antonov	Automobiles & parts (335)	UK	6,81	113,4	0	2.285,9	-700,0
849	Silence Therapeutics	Biotechnology (4573)	UK	6,79	14,7	3	246,1	-366,0
850	STRATEC Biomedical Systems	Health care equipment & services (453)	Germany	6,78	30,7	102	6,6	17,1
851	Debenhams	General retailers (537)	UK	6,77	-7,9	2.474	0,3	8,6
851	United Biscuits	Food producers (357)	UK	6,77	13,7	1.479	0,5	13,7
853	Quantel	Electronic equipment (2737)	UK	6,76	-8,2	50	13,6	18,7
854	Genfit	Biotechnology (4573)	France	6,74	-8,4	4	179,2	-190,8
855	Netia	Fixed line telecommunications (653)	Poland	6,72	13,2	396	1,7	17,7
856	Arseus	Health care equipment & services (453)	Belgium	6,71	15,4	424	1,6	8,4
857	Hamburger Hafen und Logistik	Industrial transportation (277)	Germany	6,68	25,2	1.073	0,6	18,0
858	Fluxys	Oil equipment, services & distribution (57)	Belgium	6,66	-30,0	658	1,0	33,2
859	Ratos	Other financials (877)	Sweden	6,65	-24,1	3.099	0,2	5,5
860	Enigma Diagnostics	Biotechnology (4573)	UK	6,64	389,7	4	158,7	-368,9
861	Oxford Biomedica	Pharmaceuticals (4577)	UK	6,63	-51,8	13	51,0	-108,2
862	Epigenomics	Biotechnology (4573)	Germany	6,61	40,6	2	370,1	-659,3
862	Grifols	Pharmaceuticals (4577)	Spain	6,61	-18,8	991	0,7	21,0
864	Dechra Pharmaceuticals	Pharmaceuticals (4577)	UK	6,56	33,3	431	1,5	5,4
864	MEtabolic Explorer	Chemicals (135)	France	6,56	19,6	1	771,8	-685,2
866	Elica	Household goods & home construction (372)	Italy	6,55	13,5	368	1,8	2,6

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
867	Basler	Electrical components & equipment (2733)	Germany	6,51	23,3	51	12,7	12,4
868	InVivo	Food producers (357)	France	6,50		4.433	0,1	0,4
869	Forensic Science Service	Support services (279)	UK	6,49	3,0	132	4,9	-44,7
870	Frontier Silicon	Leisure goods (374)	UK	6,46	-7,2	26	24,8	-2,3
871	Northern Foods	Food producers (357)	UK	6,42	-31,2	1.140	0,6	2,7
872	Paion	Biotechnology (4573)	Germany	6,41	-22,4	4	143,2	-201,9
873	Kassbohrer Gelaendefahrzeug	Automobiles & parts (335)	Germany	6,40	675,8	198	3,2	6,4
873	Patria	Aerospace & defence (271)	Finland	6,40	-39,0	564	1,1	1,9
873	System C Healthcare	Computer services (9533)	UK	6,40	79,5	45	14,3	13,3
873	ZincOx Resources	Mining (177)	UK	6,40	72,9	2	284,8	-6.062,5
877	Taminco	Chemicals (135)	Belgium	6,37	4,8	715	0,9	14,1
878	NSC Groupe	Industrial machinery (2757)	France	6,35	-9,3	79	8,1	-10,0
879	UNIQA	Nonlife insurance (853)	Austria	6,34	-29,9	5.997	0,1	2,5
879	Vistaprint	Support services (279)	The Netherlands	6,34	20,3	499	1,3	11,5
881	Azkoyen	Industrial machinery (2757)	Spain	6,32	103,9	134	4,7	-9,0
882	IRIS	Software (9537)	Belgium	6,31	7,1	119	5,3	3,8
883	Brit Insurance Holdings	Nonlife insurance (853)	The Netherlands	6,30	-1,8	1.656	0,4	8,2
883	StatPro	Software (9537)	UK	6,30	40,9	39	16,3	17,6
885	TELES	Internet (9535)	Germany	6,28	-23,3	20	31,1	-35,3
886	MeVis Medical Solutions	Software (9537)	Germany	6,23	134,1	14	43,6	-42,4
887	Stena	Travel & leisure (575)	Sweden	6,21	12,0	2.942	0,2	13,2
888	BWT	Gas, water & multiutilities (757)	Austria	6,20	-4,6	461	1,3	6,7
889	Martin Dawes Systems	Computer services (9533)	UK	6,17	11,6	37	16,5	11,1
890	Hamworthy	Industrial machinery (2757)	UK	6,13	29,0	212	2,9	7,3
891	Evotec	Pharmaceuticals (4577)	Germany	6,12	-70,8	55	11,1	1,6
892	Systemair	Industrial machinery (2757)	Sweden	6,10	10,0	357	1,7	8,0
893	Dixons Retail	General retailers (537)	UK	6,07	-63,1	9.736	0,1	-2,2
893	Lombard Medical Technologies	Health care equipment & services (453)	UK	6,07	4,4	4	173,0	-290,8
895	ExonHit Therapeutics	Biotechnology (4573)	France	6,04	-27,5	8	74,8	-80,1
896	Global Graphics	Software (9537)	France	6,01	-3,3	10	62,6	-19,6
897	Aareal Bank	Banks (835)	Germany	6,00	-14,3	609	1,0	22,0
897	Ocado	Food & drug retailers (533)	UK	6,00	25,6	602	1,0	-1,1
897	Raisio	Food producers (357)	Finland	6,00	7,1	443	1,4	4,4
897	SNS REAAL	Other financials (877)	The Netherlands	6,00	-87,5	7.073	0,1	-3,8
901	MDxHealth	Biotechnology (4573)	Belgium	5,91	-36,4	2	300,1	-454,0
901	update software	Software (9537)	Austria	5,91	-6,0	28	21,4	-9,7
903	Torotrak	Automobiles & parts (335)	UK	5,90	-3,3	6	99,8	-71,1
904	Beazley	Nonlife insurance (853)	UK	5,89	-26,9	1.096	0,5	17,1
905	USU Software	Software (9537)	Germany	5,87	6,2	38	15,4	6,8
906	MITIE	Support services (279)	UK	5,84	-13,8	2.207	0,3	4,7
906	Velti	Software (9537)	UK	5,84	-62,3	87	6,7	-1,9
908	Generix	Support services (279)	France	5,82	-39,3	66	8,8	-8,5
909	Solon	Alternative energy (58)	Germany	5,81	52,6	623	0,9	-0,8
910	Pescanova	Food producers (357)	Spain	5,80	7,4	1.565	0,4	5,9
911	ATOSS Software	Software (9537)	Germany	5,76	5,3	29	19,7	23,3
911	Dialight	Electrical components & equipment (2733)	UK	5,76	6,5	116	5,0	11,3
913	Aerocrine	Health care equipment & services (453)	Sweden	5,75	-6,7	9	61,2	-100,3
913	Langley	Industrial machinery (2757)	UK	5,75	-10,5	400	1,4	15,3
915	Archos	Leisure goods (374)	France	5,73	-7,2	83	6,9	-1,8

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
915	Clarity Commerce Solutions	Software (9537)	UK	5,73	37,6	22	25,7	7,8
917	PKC	Electronic equipment (2737)	Finland	5,70	3,6	316	1,8	9,3
918	Affitech	Biotechnology (4573)	Denmark	5,68	48,0	0	1.770,7	-3.098,1
919	Microgen	Computer services (9533)	UK	5,66	-0,3	39	14,4	23,3
920	Sioen Industries	Personal goods (376)	Belgium	5,64	16,5	300	1,9	8,1
921	Mindscape	Leisure goods (374)	France	5,63	170,7	32	17,5	-48,1
922	Nanogate	Chemicals (135)	Germany	5,62	40,8	21	26,8	-2,7
923	RCS MediaGroup	Media (555)	Italy	5,50	0,0	2.255	0,2	3,1
924	Bond International Software	Software (9537)	UK	5,46	-6,3	38	14,4	-3,3
925	Schramm	Chemicals (135)	Germany	5,45	15,1	115	4,7	7,8
926	Manutan International	Support services (279)	France	5,43	-35,7	563	1,0	6,0
926	MOBOTIX	Electronic equipment (2737)	Germany	5,43	26,8	54	10,1	22,6
928	Uzin Utz	Construction & materials (235)	Germany	5,40	14,9	184	2,9	9,0
929	Frigoglass	Industrial machinery (2757)	Greece	5,39	29,0	457	1,2	10,8
930	Hogg Robinson	Support services (279)	UK	5,37	-9,8	418	1,3	10,7
931	InVision Software	Software (9537)	Germany	5,33	0,7	16	33,3	6,6
931	Oxford Catalysts	Chemicals (135)	UK	5,33	71,6	9	59,7	-107,3
933	Victrex	Chemicals (135)	UK	5,32	14,6	221	2,4	39,5
934	Ige+Xao	Software (9537)	France	5,30	0,0	21	24,9	16,0
934	Txt E-Solutions	Software (9537)	Italy	5,30	-18,7	53	10,1	1,4
936	CENIT AG Systemhaus	Computer services (9533)	Germany	5,27	10,7	93	5,7	4,2
937	Volker Wessels Stevin	Construction & materials (235)	The Netherlands	5,26	-6,7	4.250	0,1	2,3
938	W L Shareholding	Electrical components & equipment (2733)	UK	5,25	52,2	105	5,0	11,7
939	DADA	Internet (9535)	Italy	5,23	7,2	155	3,4	2,6
940	SABMiller	Beverages (353)	UK	5,22	75,0	14.467	0,0	20,5
941	First Derivatives	Computer services (9533)	UK	5,21	240,5	43	12,2	15,0
941	Investment AB Kinnevik	Other financials (877)	Sweden	5,21	0,0	953	0,5	160,0
943	Haulotte	Commercial vehicles & trucks (2753)	France	5,20	-11,1	250	2,1	-18,7
943	Jensen	Industrial machinery (2757)	Belgium	5,20	13,0	227	2,3	6,8
945	Deceuninck	Construction & materials (235)	Belgium	5,18	11,0	558	0,9	4,3
945	Ponsse	Commercial vehicles & trucks (2753)	Finland	5,18	9,0	262	2,0	8,1
947	Ipsogen	Health care equipment & services (453)	France	5,16	97,1	8	61,6	-53,7
948	Luxfer	Industrial machinery (2757)	UK	5,14	37,5	305	1,7	11,1
949	DekaBank Deutsche Girozentrale	Banks (835)	Germany	5,10	-10,5	1.688	0,3	50,3
950	Rotork	Industrial machinery (2757)	UK	5,04	21,4	444	1,1	25,7
951	Boiron	Pharmaceuticals (4577)	France	5,02	65,9	520	1,0	12,4
952	Intershop Communications	Software (9537)	Germany	5,00	-16,0	44	11,3	4,6
952	MVW Energie	Gas, water & multiutilities (757)	Germany	5,00	-16,7	3.359	0,1	9,3
952	Red Electrica De Espana	Electricity (753)	Spain	5,00	-28,6	1.397	0,4	46,5
952	TNT	Industrial transportation (277)	The Netherlands	5,00	-61,5	11.214	0,0	5,4
952	TUV SUD	General retailers (537)	Germany	5,00	-4,4	1.574	0,3	8,5
957	Indutrade	Electrical components & equipment (2733)	Sweden	4,99	12,5	748	0,7	9,1
958	AMG Advanced Metallurgical	Industrial metals & mining (175)	The Netherlands	4,97	-33,2	738	0,7	2,4
959	Astex Therapeutics	Biotechnology (4573)	UK	4,95	363,2	11	46,9	-80,7
959	Epsilon Net	Software (9537)	Greece	4,95	0,1	9	52,6	22,4

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				139,689.00	5.8	6,233,635	2.2	96
<i>number of companies for calculation</i>				<i>1000</i>	<i>994</i>	<i>1000</i>	<i>1000</i>	<i>1000</i>
961	Emak	Household goods & home construction (372)	Italy	4,92	-4,5	207	2,4	6,4
962	AppSense	Software (9537)	UK	4,91	21,8	34	14,5	13,2
962	Surteco	Household goods & home construction (372)	Germany	4,91	18,8	389	1,3	10,6
962	Xaar	Computer hardware (9572)	UK	4,91	9,2	64	7,7	9,6
965	Brisa	Industrial transportation (277)	Portugal	4,90	-18,3	647	0,8	9,7
965	GeoSentric	Telecommunications equipment (9578)	Finland	4,90	-40,3	2	264,9	-609,3
965	Intelligent Energy	Electrical components & equipment (2733)	UK	4,90	-28,8	9	53,8	-125,9
968	Hochtief	Construction & materials (235)	Germany	4,89	-7,9	20.159	0,0	3,2
969	Photo-Me	Leisure goods (374)	UK	4,88	-37,3	262	1,9	3,6
970	Gerresheimer	Health care equipment & services (453)	Germany	4,87	28,3	1.025	0,5	9,1
970	MLS Multimedia	Software (9537)	Greece	4,87	25,4	15	32,9	18,5
970	Recipharm	Pharmaceuticals (4577)	Sweden	4,87	-7,2	247	2,0	0,0
970	Smartrac	Electrical components & equipment (2733)	The Netherlands	4,87	2,7	180	2,7	4,4
974	CIE Automotive	Automobiles & parts (335)	Spain	4,85	-21,2	1.591	0,3	7,0
974	Consort Medical	Health care equipment & services (453)	UK	4,85	-6,3	154	3,1	12,0
974	Sinosoft Technology	Software (9537)	UK	4,85	70,6	11	44,9	17,7
977	Stonesoft	Computer services (9533)	Finland	4,83	15,1	24	19,8	-14,2
978	Innovia Films	Chemicals (135)	UK	4,80	-15,4	346	1,4	12,5
978	Osterreichische Elektrizitätswirtschaft	Electricity (753)	Austria	4,80	11,6	3.308	0,1	25,7
980	Itesoft	Software (9537)	France	4,78	2,2	20	23,6	-3,1
981	Skanska	Construction & materials (235)	Sweden	4,77	-25,9	13.552	0,0	4,3
982	Kingspan	Construction & materials (235)	Ireland	4,74	22,4	1.193	0,4	5,6
982	PiroNet NDH	Software (9537)	Germany	4,74	-51,5	63	7,5	-21,6
984	Orchestra Kazibao	Personal goods (376)	France	4,67	1,4	179	2,6	0,9
984	Provident Financial	Other financials (877)	UK	4,67	-35,5	1.011	0,5	16,4
986	Andor Technology	Electronic equipment (2737)	UK	4,65	39,5	50	9,3	12,2
986	FFastFill	Software (9537)	UK	4,65	28,4	18	25,6	11,8
986	Greencore	Food producers (357)	Ireland	4,65	-11,9	1.002	0,5	6,4
989	Hamon & Cie	Industrial machinery (2757)	Belgium	4,64	119,5	346	1,3	6,4
989	TTP	Computer services (9533)	UK	4,64	165,9	50	9,3	14,7
989	Twintec	Automobiles & parts (335)	Germany	4,64	-9,1	41	11,2	0,0
992	Ebro Food	Food producers (357)	Spain	4,61	-52,4	1.994	0,2	11,2
993	Bulgarian Telecommunications	Fixed line telecommunications (653)	Bulgaria	4,59	999,9	501	0,9	7,7
994	SQS Software Quality Systems	Computer services (9533)	Germany	4,58	37,8	163	2,8	4,2
995	John Menzies	Support services (279)	UK	4,55	2,6	2.145	0,2	2,4
995	Lindab International	Construction & materials (235)	Sweden	4,55	-19,6	724	0,6	3,3
995	Syntaxin	Pharmaceuticals (4577)	UK	4,55	10,3	2	205,7	-353,0
998	MolMed	Biotechnology (4573)	Italy	4,54	-4,2	2	217,9	-875,3
999	SUSS MicroTec	Semiconductors (9576)	Germany	4,52	-8,3	141	3,2	7,3
1000	Havenbedrijf Rotterdam	Industrial transportation (277)	The Netherlands	4,50	-10,0	538	0,8	38,7

Table A5.2 Ranking of the top 1000 non-EU companies by level of R&D investment

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
				2010	change 10/09	2010	2010	2010
				€m	%	€m	%	% of Net Sales
Top 1000 Companies				323,928.73	3.2	8,675,068	3.7	10.7
<i>number of companies for calculation</i>				<i>1000</i>	<i>996</i>	<i>1000</i>	<i>1000</i>	<i>998</i>
1	Roche	Pharmaceuticals (4577)	Switzerland	7.181,11	-4,5	37.967	18,9	28,4
2	Pfizer	Pharmaceuticals (4577)	USA	7.016,61	21,4	50.546	13,9	15,6
3	Microsoft	Software (9537)	USA	6.740,81	3,8	52.137	12,9	38,8
4	Toyota Motor	Automobiles & parts (335)	Japan	6.666,69	-19,8	174.180	3,8	1,2
5	Merck US	Pharmaceuticals (4577)	USA	6.403,88	47,0	34.280	18,7	5,4
6	Samsung Electronics	Electronic equipment (2737)	South Korea	6.181,36	24,9	101.566	6,1	12,6
7	Novartis	Pharmaceuticals (4577)	Switzerland	6.022,97	10,9	37.736	16,0	22,4
8	General Motors	Automobiles & parts (335)	USA	5.189,60	14,7	101.073	5,1	4,8
9	Johnson & Johnson	Pharmaceuticals (4577)	USA	5.101,64	-2,0	45.908	11,1	28,1
10	Intel	Semiconductors (9576)	USA	4.901,87	16,3	32.517	15,1	36,1
11	Panasonic	Leisure goods (374)	Japan	4.383,25	-7,9	68.179	6,4	-0,3
12	Honda Motor	Automobiles & parts (335)	Japan	4.258,72	-17,7	78.852	5,4	4,9
13	Sony	Leisure goods (374)	Japan	3.970,55	-13,1	66.304	6,0	0,5
14	Cisco Systems	Telecommunications equipment (9578)	USA	3.930,59	1,2	29.847	13,2	23,1
15	IBM	Computer services (9533)	USA	3.788,21	2,8	74.445	5,1	20,1
16	Ford Motor	Automobiles & parts (335)	USA	3.727,09	2,0	96.125	3,9	10,7
17	Eli Lilly	Pharmaceuticals (4577)	USA	3.640,77	12,9	17.201	21,2	28,9
18	Nissan Motor	Automobiles & parts (335)	Japan	3.542,75	-15,4	69.092	5,1	2,3
19	Hitachi	Computer hardware (9572)	Japan	3.423,40	-10,6	82.431	4,2	1,0
20	Oracle	Software (9537)	USA	3.368,54	38,9	26.553	12,7	33,8
21	Toshiba	General industrials (272)	Japan	2.970,99	-14,5	58.654	5,1	1,0
22	General Electric	General industrials (272)	USA	2.936,20	18,5	110.923	2,6	20,3
23	Canon	Electronic office equipment (9574)	Japan	2.902,70	3,7	34.070	8,5	10,4
24	Boeing	Aerospace & defence (271)	USA	2.807,24	8,5	47.935	5,9	7,8
25	Google	Internet (9535)	USA	2.804,26	32,3	21.856	12,8	35,4
26	Abbott Laboratories	Pharmaceuticals (4577)	USA	2.776,25	35,7	26.214	10,6	17,5
27	Takeda Pharmaceutical	Pharmaceuticals (4577)	Japan	2.724,16	-34,6	13.474	20,2	28,0
28	Bristol-Myers Squibb	Pharmaceuticals (4577)	USA	2.658,16	-2,2	14.524	18,3	31,5
29	NTT	Fixed line telecommunications (653)	Japan	2.556,44	3,7	93.578	2,7	11,3
30	NEC	Computer services (9533)	Japan	2.536,46	-20,4	32.933	7,7	1,3
31	Denso	Automobiles & parts (335)	Japan	2.482,30	-9,1	27.359	9,1	4,8
32	Hewlett-Packard	Computer hardware (9572)	USA	2.205,69	5,0	93.722	2,4	9,1
33	Amgen	Biotechnology (4573)	USA	2.157,24	1,0	11.221	19,2	36,8
34	LG	Electronic equipment (2737)	South Korea	2.091,54	39,5	66.122	3,2	6,9
35	Fujitsu	Computer services (9533)	Japan	2.067,54	-10,0	43.010	4,8	0,8
36	Qualcomm	Telecommunications equipment (9578)	USA	1.900,07	4,5	8.193	23,2	29,8
37	Motorola	Telecommunications equipment (9578)	USA	1.885,91	-20,5	17.013	11,1	5,9
38	Daiichi Sankyo	Pharmaceuticals (4577)	Japan	1.808,83	6,6	8.751	20,7	9,1
39	Huawei Technologies	Telecommunications equipment (9578)	China	1.805,76	22,2	20.947	8,6	15,5
40	Astellas Pharma	Pharmaceuticals (4577)	Japan	1.797,50	23,0	8.960	20,1	18,5
41	EMC	Computer hardware (9572)	USA	1.705,15	16,9	12.683	13,4	15,5
42	Eisai	Pharmaceuticals (4577)	Japan	1.645,96	14,7	7.382	22,3	10,0
43	FUJIFILM	Electronic equipment (2737)	Japan	1.609,54	-8,4	20.052	8,0	-1,8
44	Hyundai Motor	Automobiles & parts (335)	South Korea	1.587,04	8,1	73.953	2,1	9,3
45	Nestle	Food producers (357)	Switzerland	1.579,54	-11,1	87.752	1,8	13,9
46	Sharp	Electronic equipment (2737)	Japan	1.530,38	-14,8	25.330	6,0	0,5
47	Procter & Gamble	Household goods & home construction (372)	USA	1.453,56	-4,6	59.402	2,4	20,5
48	Amazon.com	General retailers (537)	USA	1.451,33	36,4	25.496	5,7	4,4

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Top 1000 Companies				323,928.73	3.2	8,675,068	3.7	10.7
<i>number of companies for calculation</i>				<i>1000</i>	<i>996</i>	<i>1000</i>	<i>1000</i>	<i>998</i>
49	Caterpillar	Commercial vehicles & trucks (2753)	USA	1.420,02	34,1	31.746	4,5	9,5
50	Otsuka	Pharmaceuticals (4577)	Japan	1.395,65	11,7	9.966	14,0	9,5
51	PetroChina	Oil & gas producers (53)	China	1.339,36	19,8	165.770	0,8	13,4
52	Apple	Computer hardware (9572)	USA	1.328,33	26,9	48.620	2,7	27,9
53	Broadcom	Semiconductors (9576)	USA	1.313,67	14,8	5.082	25,8	16,0
54	United Technologies	Aerospace & defence (271)	USA	1.301,50	12,1	40.496	3,2	13,2
55	Mitsubishi Chemical	Chemicals (135)	Japan	1.257,92	7,1	23.116	5,4	2,5
56	Dow Chemical	Chemicals (135)	USA	1.237,39	11,3	40.010	3,1	7,9
57	DuPont	Chemicals (135)	USA	1.230,68	19,8	23.484	5,2	13,0
58	Mitsubishi Heavy	General industrials (272)	Japan	1.188,06	27,6	27.030	4,4	1,2
59	Texas Instruments	Semiconductors (9576)	USA	1.170,31	6,4	10.410	11,2	32,5
60	Mitsubishi Electric	Electrical components & equipment (2733)	Japan	1.129,55	-7,7	30.820	3,7	1,9
61	Medtronic	Health care equipment & services (453)	USA	1.124,09	3,3	11.877	9,5	25,1
62	Honeywell	General industrials (272)	USA	1.092,78	10,2	24.875	4,4	9,6
63	Sumitomo Chemical	Chemicals (135)	Japan	1.078,37	-10,5	14.898	7,2	2,2
64	China Railway Construction	Construction & materials (235)	China	1.062,47	81,9	51.622	2,1	1,4
65	Advanced Micro Devices	Semiconductors (9576)	USA	1.047,31	-18,4	4.841	21,6	13,2
66	Ricoh	Electronic office equipment (9574)	Japan	1.009,42	-11,7	18.532	5,4	3,3
67	Research In Motion	Telecommunications equipment (9578)	Canada	1.007,06	40,0	14.839	6,8	23,3
68	AT&T	Fixed line telecommunications (653)	USA	1.002,59	36,4	92.901	1,1	16,4
69	Suzuki Motor	Automobiles & parts (335)	Japan	999,84	-5,4	22.693	4,4	3,4
70	Hon Hai Precision Industry	Electronic equipment (2737)	Taiwan	991,77	48,7	76.629	1,3	2,9
71	Biogen Idec	Biotechnology (4573)	USA	930,73	-2,7	3.516	26,5	26,1
72	Aisin Seiki	Automobiles & parts (335)	Japan	929,24	-12,8	18.883	4,9	3,1
73	Monsanto	Food producers (357)	USA	898,23	9,7	7.828	11,5	15,3
74	ZTE	Telecommunications equipment (9578)	China	896,90	29,6	7.948	11,3	6,8
75	Yahoo!	Internet (9535)	USA	888,67	-8,3	4.715	18,8	12,6
76	Electronic Arts	Leisure goods (374)	USA	859,47	-6,2	2.675	32,1	-8,0
77	Applied Materials	Semiconductors (9576)	USA	852,40	22,4	7.118	12,0	14,4
78	ABB	Industrial machinery (2757)	Switzerland	837,10	2,5	23.547	3,6	12,1
79	Celgene	Biotechnology (4573)	USA	833,34	43,1	2.703	30,8	27,0
80	eBay	General retailers (537)	USA	821,10	21,3	6.825	12,0	22,4
81	Gilead Sciences	Biotechnology (4573)	USA	789,49	15,9	5.926	13,3	49,8
82	Deere	Commercial vehicles & trucks (2753)	USA	784,48	7,7	19.384	4,0	14,8
83	Mazda Motor	Automobiles & parts (335)	Japan	783,13	-11,2	19.889	3,9	0,4
84	Bridgestone	Automobiles & parts (335)	Japan	782,66	-0,7	26.301	3,0	5,6
85	Syngenta	Chemicals (135)	Switzerland	769,27	7,5	8.677	8,9	15,6
86	Taiwan Semiconductor Manufacturing	Semiconductors (9576)	Taiwan	759,51	37,6	10.726	7,1	40,3
87	Exxon Mobil	Oil & gas producers (53)	USA	754,36	-3,6	275.898	0,3	14,4
88	Delphi Automotive	Automobiles & parts (335)	USA	745,42	11,1	10.299	7,2	6,9
89	Telstra	Fixed line telecommunications (653)	Australia	742,71	-31,1	19.039	3,9	26,1
90	Petroleo Brasileiro	Oil & gas producers (53)	Brazil	740,20	45,8	89.489	0,8	20,1
91	Boston Scientific	Health care equipment & services (453)	USA	699,95	-9,3	5.819	12,0	-8,5
92	Teva Pharmaceutical Industries	Pharmaceuticals (4577)	Israel	695,47	16,3	12.017	5,8	24,0
93	3M	General industrials (272)	USA	685,04	9,7	19.874	3,4	22,2
93	Schlumberger	Oil equipment, services & distribution (57)	USA	685,04	14,6	20.459	3,3	19,4
95	Juniper Networks	Telecommunications equipment (9578)	USA	684,19	23,7	3.051	22,4	18,8
96	Baxter International	Health care equipment & services (453)	USA	682,06	-0,2	9.573	7,1	15,9

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97	Marvell Technology	Semiconductors (9576)	Bermuda	669,07	8,4	2.692	24,9	25,0
98	Sumitomo Electric	Electrical components & equipment (2733)	Japan	664,14	-1,0	16.878	3,9	2,8
99	Vale	Mining (177)	Brazil	654,48	-10,5	33.762	1,9	47,9
100	Symantec	Software (9537)	USA	642,55	0,6	4.614	13,9	14,2
101	Seiko Epson	Electronic office equipment (9574)	Japan	632,80	-16,1	9.057	7,0	0,7
102	NVIDIA	Semiconductors (9576)	USA	632,73	-6,6	2.641	24,0	7,1
103	Konica Minolta	Electronic office equipment (9574)	Japan	629,36	-16,4	7.394	8,5	5,0
104	Genzyme	Biotechnology (4573)	USA	628,99	-0,1	3.381	18,6	-0,4
105	Danaher	Electronic equipment (2737)	USA	603,40	28,0	9.841	6,1	18,6
106	Allergan	Pharmaceuticals (4577)	USA	599,76	14,0	3.667	16,4	5,1
107	MediaTek	Semiconductors (9576)	Taiwan	595,98	-3,6	2.902	20,5	27,9
108	Gazprom	Oil & gas producers (53)	Russia	589,92	-15,3	87.837	0,7	33,1
109	Freescale Semiconductor	Semiconductors (9576)	Bermuda	582,92	-6,1	3.323	17,5	-11,1
110	Asahi Kasei	Chemicals (135)	Japan	578,34	3,4	13.176	4,4	3,5
111	Sanyo Electric	Electronic equipment (2737)	Japan	574,45	-17,1	15.233	3,8	-1,7
112	Olympus	Health care equipment & services (453)	Japan	568,47	-11,7	8.117	7,0	11,2
113	Nikon	Leisure goods (374)	Japan	553,86	-2,0	7.220	7,7	-2,2
114	China Petroleum & Chemicals	Oil & gas producers (53)	China	546,94	26,7	216.423	0,3	5,8
115	Forest Laboratories	Pharmaceuticals (4577)	USA	533,62	-32,1	3.264	16,3	29,9
116	Hynix Semiconductor	Semiconductors (9576)	South Korea	531,89	1,4	7.947	6,7	25,7
117	Kirin	Beverages (353)	Japan	511,58	-9,1	16.868	3,0	4,4
118	Isuzu Motors	Commercial vehicles & trucks (2753)	Japan	507,35	-18,5	9.935	5,1	1,4
119	Yamaha Motor	Automobiles & parts (335)	Japan	507,19	-11,1	11.894	4,3	4,2
120	Adobe Systems	Software (9537)	USA	507,13	20,4	2.833	17,9	26,0
121	LSI	Semiconductors (9576)	USA	499,30	10,1	1.916	26,1	1,5
122	TDK	Electronic equipment (2737)	Japan	495,79	-6,4	7.434	6,7	3,1
123	Dell	Computer hardware (9572)	USA	492,72	5,9	45.839	1,1	5,7
124	Xerox	Electronic office equipment (9574)	USA	486,76	-8,4	16.126	3,0	5,7
125	NetApp	Computer hardware (9572)	USA	483,48	21,1	3.818	12,7	16,2
126	Tokyo Electron	Semiconductors (9576)	Japan	480,07	-10,4	3.848	12,5	-2,4
127	CA	Software (9537)	USA	477,81	-3,5	3.301	14,5	28,7
128	Shionogi	Pharmaceuticals (4577)	Japan	476,17	-1,9	2.560	18,6	19,2
129	Lockheed Martin	Aerospace & defence (271)	USA	475,58	-14,9	34.953	1,4	8,6
130	Dainippon Sumitomo Pharma	Pharmaceuticals (4577)	Japan	472,15	-2,7	2.723	17,3	10,5
131	St Jude Medical	Health care equipment & services (453)	USA	470,42	12,7	3.850	12,2	24,6
132	Intuit	Software (9537)	USA	468,87	1,8	2.600	18,0	24,8
133	Raytheon	Aerospace & defence (271)	USA	465,89	10,6	18.772	2,5	10,1
134	Micron Technology	Semiconductors (9576)	USA	465,14	-11,6	6.323	7,4	18,6
135	Kyocera	Electrical components & equipment (2733)	Japan	458,74	-24,3	9.869	4,6	4,5
136	Japan Tobacco	Tobacco (378)	Japan	456,29	5,0	56.384	0,8	4,8
137	Agilent Technologies	Electronic equipment (2737)	USA	456,20	-4,7	4.058	11,2	11,9
138	Western Digital	Computer hardware (9572)	USA	455,45	20,0	7.342	6,2	15,5
139	Corning	Telecommunications equipment (9578)	USA	449,49	29,7	4.944	9,1	60,3
139	Northrop Grumman	Aerospace & defence (271)	USA	449,49	-1,1	25.908	1,7	8,9
141	Korea Electric Power	Electricity (753)	South Korea	440,48	11,3	25.896	1,7	4,5
142	Tyco Electronics	Electrical components & equipment (2733)	Switzerland	436,07	9,1	8.997	4,8	14,4
143	Kraft Foods	Food producers (357)	USA	434,58	22,2	36.929	1,2	11,6
144	Nippon Steel	Industrial metals & mining (175)	Japan	430,36	2,2	32.056	1,3	0,9

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<i>number of companies for calculation</i>				<i>1000</i>	<i>996</i>	<i>1000</i>	<i>1000</i>	<i>998</i>
145	Komatsu	Commercial vehicles & trucks (2753)	Japan	426,92	-13,6	13.158	3,2	4,7
146	Toray Industries	Chemicals (135)	Japan	424,52	-7,5	12.496	3,4	0,5
147	Thomson Reuters	Media (555)	USA	420,42	-2,6	9.743	4,3	10,9
148	Nintendo	Leisure goods (374)	Japan	417,93	7,6	13.183	3,2	25,2
149	Kao	Personal goods (376)	Japan	412,78	-2,6	10.886	3,8	7,5
150	Australia & New Zealand Banking	Banks (835)	Australia	406,51	29,4	11.660	3,5	43,3
151	Becton	Health care equipment & services (453)	USA	392,21	28,9	5.620	7,0	22,8
152	Chevron	Oil & gas producers (53)	USA	392,09	-12,8	147.740	0,3	16,2
153	Actelion	Pharmaceuticals (4577)	Switzerland	387,31	4,3	1.543	25,1	23,7
154	Whirlpool	Household goods & home construction (372)	USA	384,64	13,4	13.690	2,8	4,4
155	Vertex Pharmaceuticals	Biotechnology (4573)	USA	383,52	18,7	107	358,9	-485,5
156	Automatic Data Processing	Support services (279)	USA	383,07	2,8	6.668	5,7	20,0
157	Murata Manufacturing	Semiconductors (9576)	Japan	382,80	-11,1	4.879	7,8	5,7
158	Sega Sammy	Travel & leisure (575)	Japan	381,45	-30,5	3.536	10,8	7,6
159	General Dynamics	Aerospace & defence (271)	USA	378,67	-2,3	24.201	1,6	12,2
160	POSCO	Industrial metals & mining (175)	South Korea	370,60	15,2	39.829	0,9	9,5
161	Autodesk	Software (9537)	USA	369,88	8,5	1.455	25,4	14,1
162	Analog Devices	Semiconductors (9576)	USA	366,97	10,1	2.058	17,8	32,7
163	PepsiCo	Beverages (353)	USA	363,76	17,9	43.113	0,8	15,7
164	Asahi Glass	Construction & materials (235)	Japan	362,12	-12,4	11.847	3,1	15,5
165	Ono Pharmaceutical	Pharmaceuticals (4577)	Japan	361,86	2,5	1.250	29,0	29,5
166	Liebherr-International	Commercial vehicles & trucks (2753)	Switzerland	361,30	26,9	7.587	4,8	8,0
167	Maxim Integrated Products	Semiconductors (9576)	USA	353,81	-9,0	1.489	23,8	14,6
168	KT	Fixed line telecommunications (653)	South Korea	353,44	33,4	14.011	2,5	9,9
169	Emerson Electric	Electronic equipment (2737)	USA	352,58	2,8	16.299	2,2	14,4
170	McKesson	Food & drug retailers (533)	USA	351,09	4,4	83.549	0,4	1,6
171	Mitsui Chemicals	Chemicals (135)	Japan	350,47	-6,1	11.100	3,2	-1,2
172	Kawasaki Heavy Industries	General industrials (272)	Japan	349,78	-0,5	10.785	3,2	-1,2
173	OMRON	Electronic equipment (2737)	Japan	347,81	-22,6	4.822	7,2	1,6
174	Rohm	Semiconductors (9576)	Japan	346,25	-6,5	3.085	11,2	4,0
175	Navistar International	Commercial vehicles & trucks (2753)	USA	345,87	7,2	9.053	3,8	4,4
176	Tokyo Electric Power	Electricity (753)	Japan	345,02	-10,8	46.105	0,7	6,6
177	Fuji Heavy Industries	Automobiles & parts (335)	Japan	341,68	-13,2	13.131	2,6	0,4
178	Synopsys	Software (9537)	USA	336,99	6,9	1.029	32,7	13,8
179	JFE	Industrial metals & mining (175)	Japan	331,63	-14,0	26.143	1,3	2,6
180	HTC	Telecommunications equipment (9578)	Taiwan	330,84	54,6	7.127	4,6	16,1
181	Pioneer	Electronic equipment (2737)	Japan	330,67	-34,3	4.035	8,2	-11,2
182	Cephalon	Pharmaceuticals (4577)	USA	327,98	11,3	2.095	15,7	25,5
183	Ajinomoto	Food producers (357)	Japan	327,51	5,5	10.762	3,0	4,1
184	Givaudan	Chemicals (135)	Switzerland	326,31	4,9	3.390	9,6	13,1
185	Commonwealth Bank of Australia	Banks (835)	Australia	326,28	21,3	14.738	2,2	42,5
186	Baker Hughes	Oil equipment, services & distribution (57)	USA	319,78	8,1	10.744	3,0	9,8
187	Brother Industries	Electronic office equipment (9574)	Japan	319,66	-5,6	4.102	7,8	4,7
188	Elpida Memory	Semiconductors (9576)	Japan	317,06	7,0	4.292	7,4	4,9
189	Eaton	General industrials (272)	USA	316,80	7,6	10.223	3,1	8,5
190	SanDisk	Semiconductors (9576)	USA	314,99	10,0	3.598	8,8	29,4
191	Tata Motors	Automobiles & parts (335)	India	311,92	59,8	20.527	1,5	10,0

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192	Dai Nippon Printing	Media (555)	Japan	311,12	-0,8	14.553	2,1	3,5
193	Shin-Etsu Chemical	Chemicals (135)	Japan	308,59	-10,4	8.427	3,7	13,6
194	Teijin	Chemicals (135)	Japan	306,58	-11,4	7.039	4,4	-5,1
195	Johnson Controls	Automobiles & parts (335)	USA	304,13	21,4	25.572	1,2	5,9
196	Avaya	Telecommunications equipment (9578)	USA	303,39	31,7	3.772	8,0	-7,5
197	Textron	Aerospace & defence (271)	USA	300,40	0,5	7.846	3,8	3,3
198	Cummins	Commercial vehicles & trucks (2753)	USA	299,66	11,0	9.859	3,0	12,3
199	Dongfeng Motor	Automobiles & parts (335)	Hong Kong	296,38	25,5	13.846	2,1	11,1
200	PPG Industries	Chemicals (135)	USA	293,69	1,5	10.006	2,9	10,7
201	Stryker	Health care equipment & services (453)	USA	293,62	17,2	5.456	5,4	24,0
202	Xilinx	Semiconductors (9576)	USA	292,56	15,1	1.766	16,6	33,7
203	Philip Morris International	Tobacco (378)	USA	291,46	16,7	20.281	1,4	41,2
204	SunGard Data Systems	Computer services (9533)	USA	286,99	21,1	3.855	7,4	1,9
205	JVC KENWOOD	Leisure goods (374)	Japan	286,37	95,3	3.664	7,8	-4,5
206	KDDI	Mobile telecommunications (657)	Japan	284,80	14,9	31.637	0,9	11,0
207	Cadence Design Systems	Software (9537)	USA	284,46	4,5	698	40,8	-2,9
208	Life Technologies	Biotechnology (4573)	USA	279,88	11,4	2.675	10,5	16,9
209	CSR China	Commercial vehicles & trucks (2753)	China	276,44	44,1	7.230	3,8	5,7
210	Toyota Boshoku	Automobiles & parts (335)	Japan	275,93	3,6	8.766	3,1	2,7
211	Lexmark	Computer hardware (9572)	USA	275,06	-1,7	3.131	8,8	10,7
212	Halliburton	Oil equipment, services & distribution (57)	USA	272,82	12,6	13.397	2,0	16,6
213	Citrix Systems	Software (9537)	USA	271,59	12,6	1.397	19,4	16,9
214	Autoliv	Automobiles & parts (335)	USA	269,32	12,1	5.345	5,0	12,1
215	Yokogawa Electric	Electronic equipment (2737)	Japan	264,58	-22,7	2.910	9,1	-3,0
216	Brocade Communications	Telecommunications equipment (9578)	USA	264,07	-0,2	1.561	16,9	10,1
217	Visteon	Automobiles & parts (335)	USA	262,39	7,3	5.545	4,7	23,1
218	Statoil	Oil & gas producers (53)	Norway	262,27	-1,4	67.551	0,4	26,1
219	Kobe Steel	Industrial metals & mining (175)	Japan	259,69	-8,9	15.358	1,7	2,1
220	Daikin Industries	Construction & materials (235)	Japan	259,37	-7,6	9.411	2,8	3,9
221	Taisho Pharmaceutical	Pharmaceuticals (4577)	Japan	258,43	2,2	2.375	10,9	11,6
222	McAfee	Software (9537)	USA	257,98	6,7	1.539	16,8	11,1
223	Rockwell Collins	Aerospace & defence (271)	USA	257,17	-2,8	3.477	7,4	17,5
224	Alps Electric	Electronic equipment (2737)	Japan	255,91	-30,9	4.537	5,6	0,7
225	Goodyear	Automobiles & parts (335)	USA	254,93	1,5	14.038	1,8	2,1
226	Wistron	Computer hardware (9572)	Taiwan	252,68	19,3	15.728	1,6	2,3
227	Compal Electronics	Electronic equipment (2737)	Taiwan	252,04	10,5	22.678	1,1	2,7
228	KLA-Tencor	Semiconductors (9576)	USA	245,66	-11,3	1.357	18,1	18,1
229	Ciena	Telecommunications equipment (9578)	USA	244,22	72,1	922	26,5	-26,0
230	Harris	Telecommunications equipment (9578)	USA	242,86	33,8	3.881	6,3	17,5
231	CSL	Biotechnology (4573)	Australia	242,01	1,6	3.405	7,1	30,7
232	Harman International Industries	Leisure goods (374)	USA	240,55	-2,7	2.534	9,5	2,3
233	Toyoda Gosei	Automobiles & parts (335)	Japan	239,57	4,9	4.550	5,3	5,3
234	Eastman Kodak	Leisure goods (374)	USA	239,28	-9,8	5.357	4,5	-4,6
235	Lam Research	Semiconductors (9576)	USA	239,17	11,3	1.591	15,0	19,8
236	SK	Oil equipment, services & distribution (57)	South Korea	238,29	-24,6	59.548	0,4	5,2
237	Kimberly-Clark	Personal goods (376)	USA	236,30	5,3	14.719	1,6	15,0
238	China Railway	Construction & materials (235)	China	236,20	221,2	51.595	0,5	2,3
239	IHI	Industrial machinery (2757)	Japan	234,33	1,5	11.422	2,1	1,9

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240	Quanta Computer	Computer hardware (9572)	Taiwan	232,21	5,9	28.756	0,8	1,9
241	Chimei Innolux	Electronic equipment (2737)	Taiwan	232,10	287,0	12.607	1,8	-1,7
242	Kubota	General industrials (272)	Japan	231,99	-4,0	8.554	2,7	7,3
243	Doosan	General industrials (272)	South Korea	230,11	14,4	15.136	1,5	5,7
244	Delta Electronics (Taiwan)	Electronic equipment (2737)	Taiwan	227,56	32,0	4.362	5,2	11,1
245	NIDEC	Electrical components & equipment (2733)	Japan	227,14	-8,3	5.405	4,2	12,9
246	Lenovo	Computer hardware (9572)	Hong Kong	226,17	41,6	16.097	1,4	1,7
247	Toppan Printing	Media (555)	Japan	224,41	-15,2	13.849	1,6	2,3
248	BMC Software	Software (9537)	USA	224,00	6,7	1.540	14,5	25,8
248	Hospira	Pharmaceuticals (4577)	USA	224,00	24,9	2.920	7,7	13,3
250	United Microelectronics	Semiconductors (9576)	Taiwan	223,47	8,7	3.233	6,9	17,5
251	Tellabs	Telecommunications equipment (9578)	USA	223,40	11,5	1.224	18,2	10,9
252	Fuji Electric	Electrical components & equipment (2733)	Japan	223,31	-20,1	6.353	3,5	-1,1
253	Sekisui Chemical	Household goods & home construction (372)	Japan	220,68	-5,5	7.891	2,8	3,0
254	ASUSTeK Computer	Computer hardware (9572)	Taiwan	215,25	-43,4	10.989	2,0	5,0
255	DnB NOR	Banks (835)	Norway	214,43	25,3	5.055	4,2	45,9
256	Thermo Fisher Scientific	Health care equipment & services (453)	USA	214,08	16,7	8.042	2,7	11,5
257	Expedia	Travel & leisure (575)	USA	212,44	13,1	2.496	8,5	21,9
257	Watson Pharmaceuticals	Pharmaceuticals (4577)	USA	212,44	49,6	2.659	8,0	8,6
259	Mentor Graphics	Software (9537)	USA	212,33	11,5	682	31,1	5,5
260	Cerner	Software (9537)	USA	212,32	-0,1	1.379	15,4	19,4
261	Mylan	Pharmaceuticals (4577)	USA	210,32	2,5	4.063	5,2	12,6
262	Pegatron	Computer hardware (9572)	Taiwan	209,21	-8,7	13.564	1,5	2,0
263	Avago Technologies	Semiconductors (9576)	Singapore	208,72	14,3	1.560	13,4	22,1
264	Meiji	Food producers (357)	Japan	208,57		10.171	2,1	2,6
265	National Semiconductor	Semiconductors (9576)	USA	207,67	2,2	1.133	18,3	29,5
266	Garmin	Leisure goods (374)	Switzerland	206,68	16,3	2.005	10,3	24,0
267	Mitsubishi Motors	Automobiles & parts (335)	Japan	206,61	-37,2	13.287	1,6	0,8
268	Parker-Hannifin	Industrial machinery (2757)	USA	205,66	-4,3	7.449	2,8	8,7
269	Metallurgical Corporation of China	General industrials (272)	China	202,94	23,7	23.348	0,9	4,7
270	Beckman Coulter	Health care equipment & services (453)	USA	200,22	0,8	2.731	7,3	11,0
271	Yamaha	Leisure goods (374)	Japan	199,78	-6,4	3.813	5,2	0,0
272	BYD	Electronic equipment (2737)	China	198,48	55,2	5.281	3,8	6,8
273	Samsung Electro-Mechanics	Electrical components & equipment (2733)	South Korea	197,61	-9,2	3.646	5,4	8,7
274	Altera	Semiconductors (9576)	USA	197,27	1,7	1.457	13,5	44,4
275	Calsonic Kansei	Automobiles & parts (335)	Japan	194,82	-23,1	5.693	3,4	-1,8
276	Prithvi Information Solutions	Computer services (9533)	India	193,14	-24,1	319	60,5	3,7
277	Nitto Denko	Chemicals (135)	Japan	191,87	-3,9	5.532	3,5	9,5
278	Sumitomo Metal Industries	Industrial metals & mining (175)	Japan	191,37	-5,9	11.818	1,6	-1,6
279	Colgate-Palmolive	Personal goods (376)	USA	190,83	-4,8	11.602	1,6	22,4
280	Tencent	Internet (9535)	Cayman Islands	190,67	72,7	2.222	8,6	48,7
281	Comverse Technology	Telecommunications equipment (9578)	USA	190,54	-8,8	1.231	15,5	-4,1
282	Kudelski	Software (9537)	Switzerland	190,35	0,6	828	23,0	7,6
283	Showa Denko	Chemicals (135)	Japan	189,98	-0,4	7.327	2,6	2,9
284	Hilti	Construction & materials (235)	Liechtenstein	189,23	-8,6	3.143	6,0	6,8

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285	National Australia Bank	Banks (835)	Australia	188,74	-27,8	12.996	1,5	33,4
286	ITT	General industrials (272)	USA	188,59	-2,0	8.315	2,3	8,1
287	ON Semiconductor	Semiconductors (9576)	USA	184,86	24,7	1.724	10,7	15,9
288	Goodrich	Aerospace & defence (271)	USA	184,12	3,3	5.193	3,5	14,0
289	OC Oerlikon	General industrials (272)	Switzerland	183,15	9,0	2.880	6,4	1,2
290	Hyundai Mobis	Automobiles & parts (335)	South Korea	180,62	38,1	14.545	1,2	14,7
291	Kansai Electric Power	Electricity (753)	Japan	180,27	3,0	23.957	0,8	9,0
292	Toyota Industries	Automobiles & parts (335)	Japan	179,06	-42,1	12.663	1,4	-1,3
293	Polaris Software Lab	Software (9537)	India	178,78	23,3	264	67,6	12,1
294	China Communications Construction	Construction & materials (235)	China	178,17	-9,3	30.852	0,6	5,0
295	PACCAR	Commercial vehicles & trucks (2753)	USA	177,78	19,7	7.673	2,3	8,4
296	Atmel	Semiconductors (9576)	USA	176,52	11,7	1.226	14,4	0,5
297	General Mills	Food producers (357)	USA	175,17	7,8	11.092	1,6	18,6
298	Elbit Systems	Aerospace & defence (271)	Israel	174,53	8,0	1.990	8,8	6,5
299	Onex	General industrials (272)	Canada	173,30	-16,9	18.280	0,9	4,2
300	Sumitomo Rubber Industries	Automobiles & parts (335)	Japan	171,86	4,0	5.556	3,1	7,1
301	ConocoPhillips	Oil & gas producers (53)	USA	171,45	21,1	141.213	0,1	7,9
302	Shanghai Electric	Industrial machinery (2757)	Hong Kong	169,77	38,4	7.122	2,4	4,8
303	China Coal Energy	Mining (177)	China	169,68	18,1	7.953	2,1	15,9
304	Tatung	Electrical components & equipment (2733)	Taiwan	169,23	31,3	4.037	4,2	-8,2
305	Nanya Technology	Semiconductors (9576)	Taiwan	167,29	90,3	1.457	11,5	-25,3
306	JSR	Chemicals (135)	Japan	165,92	-14,3	2.851	5,8	5,8
307	Advantest	Semiconductors (9576)	Japan	164,48	-24,5	489	33,6	-21,9
308	Illinois Tool Works	Industrial machinery (2757)	USA	164,34	11,0	11.830	1,4	14,9
309	AU Optronics	Electronic equipment (2737)	Taiwan	164,23	3,8	11.944	1,4	2,1
310	Zimmer	Health care equipment & services (453)	USA	163,99	7,1	3.146	5,2	21,7
311	AGCO	Commercial vehicles & trucks (2753)	USA	163,69	14,4	5.141	3,2	4,5
312	NCR	Computer hardware (9572)	USA	163,25	8,4	3.592	4,5	1,7
313	International Flavors & Fragrances	Chemicals (135)	USA	163,08	12,9	1.955	8,3	15,6
314	SAIC Motor	Automobiles & parts (335)	China	161,54	-47,8	15.796	1,0	6,4
315	Terumo	Health care equipment & services (453)	Japan	161,10	2,2	2.904	5,5	20,0
316	Weatherford International	Oil equipment, services & distribution (57)	Switzerland	159,88	10,2	7.619	2,1	7,1
317	Koito Manufacturing	Automobiles & parts (335)	Japan	159,01	-8,0	3.754	4,2	3,4
318	Furukawa Electric	General industrials (272)	Japan	158,73	-13,2	7.442	2,1	1,2
319	Advanced Semiconductor Engineering	Semiconductors (9576)	Taiwan	157,55	70,6	4.826	3,3	12,8
320	Salesforce.com	Software (9537)	USA	154,66	41,2	1.235	12,5	5,5
321	Tokai Rika	Automobiles & parts (335)	Japan	152,64	-7,3	3.042	5,0	5,7
322	Edwards Lifesciences	Health care equipment & services (453)	USA	152,36	16,5	1.079	14,1	18,6
323	RUAG	Aerospace & defence (271)	Switzerland	151,96	27,6	1.436	10,6	5,7
324	East Japan Railway	Travel & leisure (575)	Japan	151,53	0,5	23.655	0,6	12,6
325	Parametric Technology	Software (9537)	USA	150,25	6,9	753	20,0	8,3
326	Hasbro	Leisure goods (374)	USA	150,10	11,1	2.983	5,0	14,6
327	Kaneka	Chemicals (135)	Japan	150,02	-5,1	3.791	4,0	3,8
328	International Game Technology	Travel & leisure (575)	USA	149,16	-5,5	1.489	10,0	18,9
329	Idemitsu Kosan	Oil & gas producers (53)	Japan	148,90	-2,5	28.605	0,5	1,2

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330	Mitsubishi Gas Chemical	Chemicals (135)	Japan	148,89	10,1	3.534	4,2	2,2
331	Namco Bandai	Leisure goods (374)	Japan	148,38	-7,8	3.479	4,3	-5,1
332	Linear Technology	Semiconductors (9576)	USA	148,31	7,1	872	17,0	48,2
333	Rockwell Automation	Industrial machinery (2757)	USA	148,26	17,0	3.620	4,1	12,5
334	Teradyne	Semiconductors (9576)	USA	146,86	19,5	1.199	12,2	25,7
335	Teradata	Computer services (9533)	USA	146,10	11,4	1.443	10,1	21,4
336	Dover	Industrial machinery (2757)	USA	144,23	8,5	5.324	2,7	14,4
337	Bombardier	Aerospace & defence (271)	Canada	143,87	36,9	13.203	1,1	5,7
338	Atheros Communications	Semiconductors (9576)	USA	141,39	45,2	691	20,5	6,7
339	Inventec	Computer hardware (9572)	Taiwan	140,97	4,0	9.643	1,5	1,2
340	Kuraray	Chemicals (135)	Japan	140,55	-6,5	3.060	4,6	6,6
341	PMC-Sierra	Semiconductors (9576)	USA	139,74	25,7	473	29,5	17,7
342	Kellogg	Food producers (357)	USA	139,39	3,3	9.241	1,5	16,1
343	Onyx Pharmaceuticals	Pharmaceuticals (4577)	USA	138,45	45,7	242	57,2	-21,3
344	Bharat Heavy Electricals	Industrial machinery (2757)	India	138,25	20,2	5.527	2,5	17,3
345	CR Bard	Health care equipment & services (453)	USA	138,20	3,2	2.028	6,8	26,7
346	Hitachi Kokusai Electric	Electronic equipment (2737)	Japan	138,12	-11,9	1.122	12,3	-3,3
347	BorgWarner	Automobiles & parts (335)	USA	137,90	19,2	4.214	3,3	9,7
348	Intersil	Semiconductors (9576)	USA	136,65	26,4	613	22,3	14,7
349	Exelixis	Pharmaceuticals (4577)	USA	136,61	-21,9	138	99,0	-49,4
350	Mitsubishi Rayon	Chemicals (135)	Japan	136,59	0,3	3.355	4,1	-0,6
351	JS	Construction & materials (235)	Japan	135,62	-7,6	9.031	1,5	0,7
352	NTN	Industrial machinery (2757)	Japan	135,00	-15,6	4.161	3,2	0,4
353	OKI Electric	Telecommunications equipment (9578)	Japan	134,41	-13,1	4.080	3,3	2,6
354	Shiseido	Personal goods (376)	Japan	132,90	-5,1	5.921	2,2	7,3
355	Illumina	Biotechnology (4573)	USA	132,65	26,5	673	19,7	22,3
356	Chungwha Picture Tubes	Electronic equipment (2737)	Taiwan	132,46	45,3	2.089	6,3	-16,4
357	Integrated Device Technology	Semiconductors (9576)	USA	132,35	12,7	466	28,4	8,3
358	Cypress Semiconductor	Semiconductors (9576)	USA	131,80	-2,4	654	20,1	10,4
359	Pou Chen	Personal goods (376)	Taiwan	131,71	5,2	4.938	2,7	9,3
360	Trident Microsystems	Semiconductors (9576)	USA	130,45	169,1	415	31,4	-30,3
361	JDS Uniphase	Telecommunications equipment (9578)	USA	130,37	2,8	1.017	12,8	-3,8
361	Semiconductor Manufacturing	Semiconductors (9576)	Cayman Islands	130,37	8,8	1.159	11,2	-5,5
363	Swatch	Personal goods (376)	Switzerland	130,36	0,6	4.885	2,7	23,6
364	Novellus Systems	Semiconductors (9576)	USA	130,25	17,2	1.006	13,0	22,2
365	Takata	Automobiles & parts (335)	Japan	130,13	-24,6	3.225	4,0	4,1
366	Santen Pharmaceutical	Pharmaceuticals (4577)	Japan	129,81	-23,5	1.016	12,8	26,0
367	Alcoa	Industrial metals & mining (175)	USA	129,70	3,0	15.663	0,8	5,0
368	Saudi Basic Industries	Chemicals (135)	Saudi Arabia	129,66	23,2	30.207	0,4	17,6
369	Mattel	Leisure goods (374)	USA	129,63	1,5	4.365	3,0	15,4
369	National Instruments	Electronic equipment (2737)	USA	129,63	19,5	651	19,9	14,8
371	Synthes	Health care equipment & services (453)	USA	128,48	2,4	2.748	4,7	34,4
372	Bio-Rad Laboratories	Health care equipment & services (453)	USA	128,41	5,3	1.437	8,9	14,6
373	NGK Spark Plug	Automobiles & parts (335)	Japan	127,83	-20,9	2.242	5,7	3,4
374	Chubu Electric Power	Electricity (753)	Japan	127,80	-1,0	20.575	0,6	9,5
375	Red Hat	Software (9537)	USA	127,66	9,3	678	18,8	16,2
376	Microchip Technology	Semiconductors (9576)	USA	127,17	41,2	1.127	11,3	30,8
377	Hyundai Heavy Industries	Commercial vehicles & trucks (2753)	South Korea	126,96	10,9	29.606	0,4	11,9
378	Tosoh	Chemicals (135)	Japan	126,84	-4,2	5.778	2,2	2,2
379	Casio Computer	Leisure goods (374)	Japan	125,85	8,4	3.933	3,2	-7,2

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380	United Therapeutics	Biotechnology (4573)	USA	124,31	36,5	450	27,6	27,3
381	Fujikura	Electrical components & equipment (2733)	Japan	124,00	-10,0	4.628	2,7	1,9
382	Funai Electric	Electronic equipment (2737)	Japan	123,95	3,3	2.894	4,3	3,3
383	Mahindra & Mahindra	Automobiles & parts (335)	India	123,24	11,2	4.953	2,5	17,1
384	Hyundai Engineering & Construction	Construction & materials (235)	South Korea	122,86	188,2	6.571	1,9	7,4
385	Yokohama Rubber	Automobiles & parts (335)	Japan	122,06	-13,1	4.286	2,8	4,4
386	Netflix	General retailers (537)	USA	121,75	42,6	1.612	7,6	12,8
387	Pitney Bowes	Electronic office equipment (9574)	USA	121,26	-15,0	4.044	3,0	13,6
388	SMC	Industrial machinery (2757)	Japan	120,98	-14,0	2.030	6,0	11,8
389	DST Systems	Computer services (9533)	USA	120,83	-7,9	1.736	7,0	16,8
390	MStar Semiconductor	Semiconductors (9576)	Taiwan	120,54	9,3	859	14,0	21,2
391	TOTO	Construction & materials (235)	Japan	120,52	0,2	3.878	3,1	1,4
392	UBE Industries	General industrials (272)	Japan	119,78	-7,7	5.051	2,4	4,4
393	Novell	Software (9537)	USA	119,41	-11,7	605	19,7	10,4
394	Swisscom	Fixed line telecommunications (653)	Switzerland	119,17	-27,0	9.588	1,2	22,0
395	CareFusion	Health care equipment & services (453)	USA	118,52		2.929	4,0	11,7
396	Koc	General industrials (272)	Turkey	117,94	-4,4	25.022	0,5	7,7
397	Cubist Pharmaceuticals	Biotechnology (4573)	USA	117,67	-7,5	474	24,8	27,5
398	Galenica	Pharmaceuticals (4577)	Switzerland	117,40	23,3	2.483	4,7	10,5
399	Guangzhou Automobile	Automobiles & parts (335)	China	116,85	93,7	6.770	1,7	9,8
400	Varian Medical Systems	Health care equipment & services (453)	USA	116,84	6,4	1.757	6,7	22,4
401	Logitech International	Computer hardware (9572)	Switzerland	116,58	15,2	1.761	6,6	6,1
402	Lite-On Technology	Computer hardware (9572)	Taiwan	116,55	11,0	5.871	2,0	6,6
403	Ibiden	Electrical components & equipment (2733)	Japan	116,53	9,7	2.520	4,6	5,6
404	Icahn Enterprises	General industrials (272)	USA	116,29	11,4	5.914	2,0	12,8
405	Lubrizol	Chemicals (135)	USA	115,76	5,1	4.039	2,9	20,2
406	Sumitomo Bakelite	Chemicals (135)	Japan	115,51	-3,9	1.570	7,4	2,6
407	Molex	Electronic equipment (2737)	USA	114,79	-3,3	2.242	5,1	4,6
408	Amylin Pharmaceuticals	Biotechnology (4573)	USA	114,51	-15,0	499	23,0	-19,0
409	DIC	Chemicals (135)	Japan	113,52	-16,1	6.965	1,6	2,3
410	Nuance Communications	Software (9537)	USA	113,36	27,3	834	13,6	3,1
411	Eastman Chemical	Chemicals (135)	USA	113,30	10,9	4.988	2,3	13,2
412	Quest Software	Software (9537)	USA	113,23	5,2	572	19,8	15,7
413	OSI Pharmaceuticals	Biotechnology (4573)	USA	113,19	12,2	320	35,4	35,4
414	Nippon Kayaku	Chemicals (135)	Japan	112,83	17,2	1.296	8,7	7,9
415	Lonza	Chemicals (135)	Switzerland	112,77	2,2	2.143	5,3	13,9
416	Huntsman	Chemicals (135)	USA	112,56	4,1	6.934	1,6	5,2
417	Trimble Navigation	Electronic equipment (2737)	USA	111,88	9,8	965	11,6	11,0
418	Polycom	Telecommunications equipment (9578)	USA	111,06	26,7	908	12,2	7,4
419	Nippon Sheet Glass	Construction & materials (235)	Japan	110,95	14,7	5.408	2,1	-6,4
420	Dongfang Electric	Industrial machinery (2757)	China	110,56	53,4	4.254	2,6	7,3
421	Kpit Cummins Infosystems	Computer services (9533)	India	110,02	61,3	171	64,5	10,9
422	OneSteel	Industrial metals & mining (175)	Australia	109,50	-22,3	4.741	2,3	6,7
423	Biomarin Pharmaceutical	Biotechnology (4573)	USA	109,30	30,1	280	39,0	-0,7
424	Seattle Genetics	Biotechnology (4573)	USA	109,14	22,9	80	136,2	-63,5
425	Tokuyama	Chemicals (135)	Japan	108,62	-0,5	2.511	4,3	4,6
426	Kyorin	Pharmaceuticals (4577)	Japan	108,52	12,1	917	11,8	13,7
427	Clariant	Chemicals (135)	Switzerland	107,97	-10,0	5.694	1,9	5,1

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428	Endo Pharmaceuticals	Pharmaceuticals (4577)	USA	107,73	-22,0	1.279	8,4	27,2
429	Regeneron Pharmaceuticals	Biotechnology (4573)	USA	107,60	10,8	342	31,4	-21,2
430	Altria	Tobacco (378)	USA	107,34	-18,6	18.161	0,6	28,1
431	Dainippon Screen Mfg	Semiconductors (9576)	Japan	106,75	-27,7	1.509	7,1	-7,2
432	RF Micro Devices	Semiconductors (9576)	USA	105,18	1,5	784	13,4	13,5
433	Zylog Systems	Software (9537)	India	104,93	16,6	163	64,2	14,7
434	Arris	Telecommunications equipment (9578)	USA	104,71	12,8	811	12,9	10,1
435	Itron	Electronic equipment (2737)	USA	104,53	14,6	1.684	6,2	7,7
436	Daicel Chemical Industries	Chemicals (135)	Japan	104,02	-6,1	2.943	3,5	6,4
437	Samsung Heavy Industries	Construction & materials (235)	South Korea	103,38	15,4	8.574	1,2	7,5
438	Sysmex	Health care equipment & services (453)	Japan	103,29	4,3	1.068	9,7	13,5
439	QLogic	Semiconductors (9576)	USA	102,61	0,6	445	23,0	23,3
440	Bruker	Health care equipment & services (453)	USA	102,57	12,9	973	10,5	11,7
441	Realtek Semiconductor	Semiconductors (9576)	Taiwan	102,42	0,6	570	18,0	8,8
442	Sasol	Oil & gas producers (53)	South Africa	102,31	-1,5	13.775	0,7	20,6
443	Sanken Electric	Semiconductors (9576)	Japan	101,65	-17,9	1.233	8,2	-13,0
444	Harley-Davidson	Automobiles & parts (335)	USA	101,53	-4,8	3.658	2,8	8,8
445	Weichai Power	Automobiles & parts (335)	China	100,41	97,1	7.089	1,4	14,8
446	Mitsubishi Materials	Industrial metals & mining (175)	Japan	100,16	-8,1	10.289	1,0	-2,4
447	Skyworks Solutions	Semiconductors (9576)	USA	99,99	8,2	799	12,5	18,6
448	Alere	Health care equipment & services (453)	USA	99,35	18,1	1.610	6,2	-42,7
449	Kissei Pharmaceutical	Pharmaceuticals (4577)	Japan	99,14	-6,7	571	17,3	9,8
450	Winbond Electronics	Semiconductors (9576)	Taiwan	98,91	20,8	1.021	9,7	9,6
451	Nippon Shokubai	Chemicals (135)	Japan	98,83	-11,0	2.246	4,4	6,2
452	Dr Reddy's Laboratories	Pharmaceuticals (4577)	India	98,66	48,5	1.206	8,2	16,2
453	TRW Automotive	Automobiles & parts (335)	USA	98,40	-14,8	10.721	0,9	8,5
454	Osaka Gas	Gas, water & multiutilities (757)	Japan	98,07	11,1	10.079	1,0	-7,1
455	Stanley Black & Decker	Household goods & home construction (372)	USA	97,95	2,8	6.269	1,6	4,0
456	Tyco International	General industrials (272)	Switzerland	97,65	11,0	12.927	0,8	9,4
457	Endress & Hauser	Electronic equipment (2737)	Switzerland	96,44	2,5	1.313	7,3	14,3
457	Open Text	Software (9537)	Canada	96,44	11,4	680	14,2	12,1
459	Gerdau	Industrial metals & mining (175)	Brazil	96,41	68,4	14.097	0,7	11,6
460	TriQuint Semiconductor	Semiconductors (9576)	USA	96,34	18,1	655	14,7	13,4
461	Hisamitsu Pharmaceutical	Pharmaceuticals (4577)	Japan	96,02	8,7	1.193	8,0	24,2
462	Newell Rubbermaid	Household goods & home construction (372)	USA	96,01	8,8	4.293	2,2	10,9
463	Kyushu Electric Power	Electricity (753)	Japan	95,97	1,5	13.281	0,7	7,1
464	Samsung Techwin	Leisure goods (374)	South Korea	95,48	41,6	2.100	4,5	9,4
465	Cheil Industries	Chemicals (135)	South Korea	95,24	40,1	3.296	2,9	6,7
466	Netlogic Microsystems	Semiconductors (9576)	USA	95,19	73,4	285	33,5	-18,5
467	Toyobo	Chemicals (135)	Japan	94,63	-3,5	2.930	3,2	1,2
468	Emulex	Computer hardware (9572)	USA	94,56	-2,3	298	31,8	1,5
469	CNOOC	Oil & gas producers (53)	Hong Kong	93,15	52,7	20.707	0,4	39,2
470	Shimano	Leisure goods (374)	Japan	93,07	21,0	1.963	4,7	15,4
471	TIBCO Software	Software (9537)	USA	92,92	14,7	562	16,5	15,3
472	Kajima	Construction & materials (235)	Japan	92,55	0,8	15.049	0,6	0,7
473	Silicon Laboratories	Semiconductors (9576)	USA	92,30	18,6	368	25,1	17,3
474	Campbell Soup	Food producers (357)	USA	91,69	7,9	5.722	1,6	17,6

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<i>number of companies for calculation</i>				<i>1000</i>	<i>996</i>	<i>1000</i>	<i>1000</i>	<i>998</i>
475	Orbital Sciences	Aerospace & defence (271)	USA	91,14	11,4	965	9,4	5,6
476	Qisda	Computer hardware (9572)	Taiwan	90,83	2,1	3.504	2,6	2,7
477	Novatek Microelectronics	Electronic equipment (2737)	Taiwan	90,09	9,8	928	9,7	13,8
478	NGK Insulators	General industrials (272)	Japan	90,04	-17,6	2.164	4,2	10,1
479	Avid Technology	Media (555)	USA	89,62	-0,6	506	17,7	-5,3
480	Fairchild Semiconductor	Semiconductors (9576)	USA	89,60	20,6	1.192	7,5	11,4
481	Intuitive Surgical	Health care equipment & services (453)	USA	89,52	20,7	1.053	8,5	39,3
482	Lukoil	Oil & gas producers (53)	Russia	89,45	50,0	64.164	0,1	14,1
483	Telenor	Mobile telecommunications (657)	Norway	89,13	-4,8	12.776	0,7	15,1
484	Clorox	Household goods & home construction (372)	USA	88,71	4,4	4.125	2,2	19,6
485	Yakult Honsha	Food producers (357)	Japan	88,44	4,0	2.672	3,3	6,9
486	Denki Kagaku Kogyo	Chemicals (135)	Japan	88,37	-6,5	2.977	3,0	4,9
486	Lupin	Pharmaceuticals (4577)	India	88,37	28,7	951	9,3	17,8
488	Infinera	Semiconductors (9576)	USA	88,35	22,0	339	26,1	-6,2
488	NHK Spring	Industrial machinery (2757)	Japan	88,35	-8,8	3.715	2,4	4,6
490	TOPCON	Health care equipment & services (453)	Japan	88,32	-17,1	872	10,1	2,2
491	F5 Networks	Telecommunications equipment (9578)	USA	88,19	14,1	657	13,4	26,0
492	Mochida Pharmaceutical	Pharmaceuticals (4577)	Japan	88,13	9,5	722	12,2	20,1
493	Infosys	Software (9537)	India	87,86	27,0	4.585	1,9	29,5
494	Hamamatsu Photonics	Electronic equipment (2737)	Japan	87,78	0,3	836	10,5	17,6
495	Norsk Hydro	Industrial metals & mining (175)	Norway	87,59	-1,0	9.715	0,9	4,2
496	Finisar	Telecommunications equipment (9578)	USA	87,42	23,8	707	12,4	11,3
497	Tenneco	Automobiles & parts (335)	USA	87,21	20,6	4.426	2,0	4,7
498	Schindler	Industrial machinery (2757)	Switzerland	87,18	0,0	9.918	0,9	8,2
499	HORIBA	Electronic equipment (2737)	Japan	87,13	-3,6	1.090	8,0	10,1
500	KB Financial	Banks (835)	South Korea	87,10	-2,4	5.127	1,7	0,2
501	Techtronic Industries	Electrical components & equipment (2733)	Hong Kong	86,90	-1,8	2.530	3,4	5,1
502	FLIR Systems	Aerospace & defence (271)	USA	86,75	27,5	1.033	8,4	26,3
503	Asahi Breweries	Beverages (353)	Japan	86,39	0,6	13.690	0,6	4,5
504	Anritsu	Electronic equipment (2737)	Japan	86,29	-19,8	676	12,8	6,1
505	Zoran	Semiconductors (9576)	USA	86,24	5,0	266	32,4	-11,0
506	Reliance Industries	Oil & gas producers (53)	India	86,22	49,9	44.313	0,2	9,2
507	Tokyo Gas	Gas, water & multiutilities (757)	Japan	84,85	0,7	13.012	0,7	6,0
508	Sunplus Technology	Semiconductors (9576)	Taiwan	84,72	-17,2	326	26,0	5,0
509	BE Aerospace	Aerospace & defence (271)	USA	84,08	9,9	1.479	5,7	15,9
510	Aristocrat Leisure	Travel & leisure (575)	Australia	83,91	-3,2	520	16,1	14,9
511	Mannkind	Biotechnology (4573)	USA	83,70	-28,2	0	121.297,1	-165.529,0
512	Chunghwa Telecom	Fixed line telecommunications (653)	Taiwan	83,09	2,4	5.176	1,6	28,5
513	Sonova	Health care equipment & services (453)	Switzerland	82,98	19,2	1.293	6,4	16,9
514	Macronix International	Semiconductors (9576)	Taiwan	82,89	14,6	717	11,6	29,7
514	Shimadzu	Electronic equipment (2737)	Japan	82,89	-1,3	2.190	3,8	4,3
516	Tohoku Electric Power	Electricity (753)	Japan	82,32	-5,9	15.288	0,5	5,6
517	Zeon	Chemicals (135)	Japan	82,30	-20,9	2.076	4,0	3,5
518	Pacific Biosciences Of California	Biotechnology (4573)	USA	82,11	45,4	1	6.578,9	-8.482,2
519	Sumitomo Heavy Industries	Industrial machinery (2757)	Japan	82,08	-16,4	4.744	1,7	4,6
520	Lion	Personal goods (376)	Japan	81,89	-1,6	3.043	2,7	3,5
521	Oji Paper	Forestry & paper (173)	Japan	81,87	-13,9	10.545	0,8	3,9
522	Oshkosh	Commercial vehicles & trucks (2753)	USA	81,47	49,1	7.337	1,1	14,1

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523	Baidu	Internet (9535)	Cayman Islands	81,23	69,9	895	9,1	50,5
524	Human Genome Sciences	Biotechnology (4573)	USA	81,16	6,0	117	69,2	-121,2
525	Applied Micro Circuits	Semiconductors (9576)	USA	81,05	23,4	185	43,9	-4,4
526	NSK	Support services (279)	Japan	80,83	-17,7	5.400	1,5	1,7
527	Glory	Industrial machinery (2757)	Japan	80,66	-4,7	1.242	6,5	6,2
528	Nektar Therapeutics	Biotechnology (4573)	USA	80,55	13,6	119	67,9	-17,2
529	CPFL Energia	Gas, water & multiutilities (757)	Brazil	80,38	14,7	5.399	1,5	22,4
530	Kongsberg Gruppen	Aerospace & defence (271)	Norway	80,28	9,1	1.987	4,0	13,6
531	CommScope	Electrical components & equipment (2733)	USA	80,09	-20,3	2.255	3,6	7,9
532	Hyosung	General industrials (272)	South Korea	79,97	19,3	7.614	1,1	5,5
533	Nortel Networks	Telecommunications equipment (9578)	Canada	79,76	-85,9	627	12,7	-454,7
534	Biomet	Health care equipment & services (453)	USA	79,46	14,0	2.011	4,0	13,5
535	Yamatake	Electronic equipment (2737)	Japan	79,41	-10,3	1.950	4,1	5,2
536	Informatica	Software (9537)	USA	79,05	35,3	485	16,3	19,0
537	WMS Industries	Travel & leisure (575)	USA	78,94	7,6	570	13,8	21,9
538	Electronics For Imaging	Computer hardware (9572)	USA	78,84	-4,6	376	21,0	-0,1
539	Check Point Software Technologies	Software (9537)	Israel	78,83	17,8	818	9,6	48,7
540	SEI Investments	Other financials (877)	USA	78,72	1,6	671	11,7	35,1
541	TPV Technology	Electronic equipment (2737)	Bermuda	78,61	31,6	8.670	0,9	1,6
542	Dolby Laboratories	Media (555)	USA	78,25	57,4	688	11,4	46,6
543	Yaskawa Electric	Electronic equipment (2737)	Japan	78,07	-12,5	2.065	3,8	-4,3
544	Citizen	Electronic equipment (2737)	Japan	78,02	-19,4	2.321	3,4	3,0
545	Hologic	Health care equipment & services (453)	USA	77,75	10,6	1.252	6,2	4,2
546	GSI Commerce	Computer services (9533)	USA	77,68	-13,3	721	10,8	-1,4
547	Nippon Shinyaku	Pharmaceuticals (4577)	Japan	77,58	7,5	578	13,4	10,6
548	Minebea	Industrial machinery (2757)	Japan	77,30	-11,1	2.100	3,7	5,0
549	Powerchip Technology	Semiconductors (9576)	Taiwan	76,76	-2,9	2.166	3,5	8,4
550	Moog	Aerospace & defence (271)	USA	76,48	2,6	1.576	4,9	8,9
551	Toyo Tire	Automobiles & parts (335)	Japan	76,43	-5,1	2.645	2,9	3,3
552	Roper Industries	Electronic equipment (2737)	USA	76,33	22,8	1.779	4,3	21,6
553	Zebra Technologies	Electronic equipment (2737)	USA	75,98	19,8	713	10,7	14,9
554	Core Projects & Technologies	Support services (279)	India	75,45	13,6	141	53,4	29,0
555	RealNetworks	Software (9537)	USA	75,25	-15,5	299	25,1	-9,1
556	Rieter	Industrial machinery (2757)	Switzerland	75,10	-4,9	1.991	3,8	3,8
557	Taisei	Construction & materials (235)	Japan	75,05	-13,7	13.253	0,6	1,6
558	Hydro-Quebec	Electricity (753)	Canada	75,02	0,0	9.256	0,8	48,2
559	Isis Pharmaceuticals	Biotechnology (4573)	USA	74,96	29,7	81	92,7	-46,6
560	FMC	Chemicals (135)	USA	74,91	8,3	2.323	3,2	13,0
561	Valspar	Construction & materials (235)	USA	74,72	9,8	2.405	3,1	11,7
562	International Rectifier	Semiconductors (9576)	USA	74,03	1,1	667	11,1	1,9
563	Obayashi	Construction & materials (235)	Japan	73,69	10,3	12.329	0,6	-5,7
564	ULVAC	Electronic equipment (2737)	Japan	73,57	-4,1	2.039	3,6	2,6
565	Harbin Power Equipment	Industrial machinery (2757)	China	73,56	40,2	3.260	2,3	3,0
566	King Pharmaceuticals	Pharmaceuticals (4577)	USA	73,54	-32,0	1.324	5,6	13,4
567	Alexion Pharmaceuticals	Biotechnology (4573)	USA	73,35	20,1	403	18,2	27,8
568	Nice-Systems	Software (9537)	Israel	73,34	25,0	514	14,3	7,1
569	Varian Semiconductor Equipment	Semiconductors (9576)	USA	73,23	22,7	620	11,8	22,4
570	Cochlear	Health care equipment & services (453)	Australia	72,50	-1,7	561	12,9	29,8

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571	Energizer	Household goods & home construction (372)	USA	72,38	7,3	3.167	2,3	16,4
572	Kaken Pharmaceutical	Pharmaceuticals (4577)	Japan	72,36	2,3	781	9,3	13,1
573	Mettler-Toledo International	Electronic equipment (2737)	USA	72,33	8,2	1.467	4,9	16,6
574	Gen-Probe	Biotechnology (4573)	USA	72,00	-1,5	405	17,8	26,8
575	Georg Fischer	Industrial machinery (2757)	Switzerland	71,98	-22,4	2.757	2,6	4,9
576	Standard Microsystems	Semiconductors (9576)	USA	71,84	24,0	305	23,5	4,6
577	Alkermes	Pharmaceuticals (4577)	USA	71,83	4,5	139	51,6	-24,6
578	Verigy	Semiconductors (9576)	Singapore	71,56	4,3	402	17,8	4,3
579	Hanjin Heavy Industries	Construction & materials (235)	South Korea	71,41	15,3	2.120	3,4	10,3
580	Disco	Semiconductors (9576)	Japan	71,39	-9,0	567	12,6	6,8
581	Rovi	Software (9537)	USA	71,33	1,1	406	17,6	23,3
582	Avery Dennison	Chemicals (135)	USA	71,26	5,4	4.855	1,5	6,6
583	PerkinElmer	Electronic equipment (2737)	USA	71,12	-3,6	1.486	4,8	10,1
584	Taiyo Yuden	Semiconductors (9576)	Japan	70,76	-9,0	1.799	3,9	1,5
585	MiTAC International	Electronic equipment (2737)	Taiwan	70,69	-4,1	1.426	5,0	-1,9
586	First Solar	Alternative energy (58)	USA	70,66	21,3	1.911	3,7	29,3
587	Shimizu	Construction & materials (235)	Japan	70,62	-2,4	14.607	0,5	0,2
588	Sumco	Semiconductors (9576)	Japan	70,24	-22,8	2.006	3,5	-57,8
589	Tokai Rubber Industries	Chemicals (135)	Japan	70,01	-9,0	2.152	3,3	3,6
590	Xyratex	Computer hardware (9572)	Bermuda	69,67	30,3	1.194	5,8	7,7
591	Samsung C&T	Electronic equipment (2737)	South Korea	69,35	9,2	15.006	0,5	4,0
592	Tesla Motors	Automobiles & parts (335)	USA	69,32	382,3	87	79,7	-131,4
593	Rambus	Semiconductors (9576)	USA	69,11	37,8	241	28,7	70,2
594	Tekelec	Telecommunications equipment (9578)	USA	68,84	-8,0	316	21,8	5,0
595	Mitsuba	Automobiles & parts (335)	Japan	68,77	-20,7	1.613	4,3	1,5
596	Brunswick	Leisure goods (374)	USA	68,58	4,0	2.537	2,7	0,3
597	Riverbed Technology	Telecommunications equipment (9578)	USA	68,44	23,3	411	16,6	10,1
598	NewMarket	Chemicals (135)	USA	67,97	5,9	1.340	5,1	15,5
599	Air Products and Chemicals	Chemicals (135)	USA	67,68	5,2	6.728	1,0	16,7
600	Progress Software	Software (9537)	USA	67,57	-2,8	394	17,1	12,8
601	Coretronic	Leisure goods (374)	Taiwan	67,44	14,1	2.358	2,9	5,1
602	Totvs	Software (9537)	Brazil	67,32	18,5	507	13,3	18,7
603	ADTRAN	Telecommunications equipment (9578)	USA	67,31	8,4	451	14,9	25,3
604	Lawson Software	Software (9537)	USA	67,29	9,6	549	12,3	7,5
605	Kinetic Concepts	Health care equipment & services (453)	USA	67,28	-2,0	1.504	4,5	22,1
606	MasterCard	Other financials (877)	USA	67,09	8,7	4.129	1,6	49,8
607	Adeka	Chemicals (135)	Japan	66,64	-3,4	1.471	4,5	6,7
608	iSOFT	Software (9537)	Australia	66,52	3,3	329	20,2	-83,5
609	Cymer	Semiconductors (9576)	USA	66,49	35,5	398	16,7	22,7
610	Daiwa House Industry	Household goods & home construction (372)	Japan	66,35	-6,9	14.797	0,4	3,3
611	ANSYS	Software (9537)	USA	66,34	11,4	433	15,3	37,8
612	OmniVision Technologies	Semiconductors (9576)	USA	65,98	14,5	713	9,3	13,4
613	VIA Technologies	Semiconductors (9576)	Taiwan	65,67	-12,0	145	45,3	-15,8
614	Alibaba.com	Internet (9535)	Cayman Islands	65,63	51,0	629	10,4	26,0
615	Sierra Wireless	Telecommunications equipment (9578)	Canada	65,62	7,2	485	13,5	-1,7
616	Ecolab	Chemicals (135)	USA	65,60	2,3	4.539	1,4	13,2
616	Sealed Air	General industrials (272)	USA	65,60	8,4	3.347	2,0	11,8
618	Investment Technology	Other financials (877)	USA	65,30	2,0	425	15,3	8,8

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619	Akamai Technologies	Internet (9535)	USA	65,25	13,5	763	8,6	24,8
619	Toyo Ink Manufacturing	Chemicals (135)	Japan	65,25	-0,5	2.078	3,1	6,0
621	Hankook Tire	Automobiles & parts (335)	South Korea	64,93	4,3	3.379	1,9	12,0
622	Proton	Automobiles & parts (335)	Malaysia	64,85	15,9	1.989	3,3	1,5
623	Keyence	Electronic equipment (2737)	Japan	64,79	-20,6	1.252	5,2	42,1
624	Synaptics	Computer hardware (9572)	USA	64,52	27,2	384	16,8	12,0
625	Nippon Paper	Forestry & paper (173)	Japan	64,20	7,5	10.066	0,6	4,2
626	Ashland	Chemicals (135)	USA	64,11	-10,4	6.718	1,0	6,6
626	Fiserv	Support services (279)	USA	64,11	6,2	3.081	2,1	24,7
628	WABCO	Automobiles & parts (335)	USA	64,03	14,2	1.622	3,9	-8,1
629	Tokyo Ohka Kogyo	Chemicals (135)	Japan	63,87	-18,6	649	9,8	-0,3
630	Medicines	Pharmaceuticals (4577)	USA	63,54	-27,5	326	19,5	14,7
631	Eclipsys	Software (9537)	USA	63,44	6,9	387	16,4	1,8
632	Polaris Industries	Leisure goods (374)	USA	63,32	34,8	1.484	4,3	11,1
633	Constellation Software	Software (9537)	Canada	63,27	29,3	470	13,5	8,4
634	Buhler	Industrial machinery (2757)	Switzerland	63,02	0,1	1.525	4,1	10,6
635	Meidensha	General industrials (272)	Japan	62,83	-1,5	1.591	3,9	1,4
636	Waters	Health care equipment & services (453)	USA	62,82	9,2	1.225	5,1	27,4
637	Makita	Household goods & home construction (372)	Japan	62,33	-1,5	2.259	2,8	12,4
638	Micro-Star International	Computer hardware (9572)	Taiwan	62,18	4,1	2.289	2,7	1,0
639	Rinnai	Household goods & home construction (372)	Japan	62,17	-2,6	2.078	3,0	9,1
640	Japan Aviation Electronics Industry	Aerospace & defence (271)	Japan	61,74	-13,6	958	6,4	2,1
641	Woodward Governor	Industrial machinery (2757)	USA	61,54	5,1	1.086	5,7	12,6
642	American Axle & Manufacturing	Automobiles & parts (335)	USA	61,50	23,1	1.702	3,6	8,9
642	Perrigo	Pharmaceuticals (4577)	USA	61,50	5,9	1.745	3,5	14,4
644	Blue Coat Systems	Software (9537)	USA	61,26	-3,2	363	16,9	13,5
645	Bobst	Industrial machinery (2757)	Switzerland	61,10	4,7	1.024	6,0	-0,7
646	China Telecom	Fixed line telecommunications (653)	China	61,09	-0,9	24.871	0,2	11,1
647	TiVo	Leisure goods (374)	USA	60,83	29,5	164	37,2	-39,0
648	ConAgra Foods	Food producers (357)	USA	60,68	4,5	9.240	0,7	11,2
648	Cree	Semiconductors (9576)	USA	60,68	14,1	646	9,4	22,8
648	Lear	Automobiles & parts (335)	USA	60,68	-5,3	8.911	0,7	4,6
651	Access	Software (9537)	Japan	60,60	4,1	298	20,3	1,5
652	Fonterra Co-operative	Food producers (357)	New Zealand	60,56	14,3	9.740	0,6	5,7
653	Nalco	Support services (279)	USA	59,93	7,8	3.168	1,9	13,6
654	Bally Technologies	Travel & leisure (575)	USA	59,86	3,9	606	9,9	23,5
655	West Japan Railway	Travel & leisure (575)	Japan	59,56	-11,8	10.939	0,5	6,5
656	Sika	Construction & materials (235)	Switzerland	59,50	-0,4	3.532	1,7	10,0
657	Chugoku Electric Power	Electricity (753)	Japan	59,34	3,0	9.544	0,6	7,3
658	Estee Lauder	Personal goods (376)	USA	59,26	-2,6	5.811	1,0	10,6
659	THQ	Leisure goods (374)	USA	59,17	-9,0	496	11,9	-20,4
660	Suzuken	Food & drug retailers (533)	Japan	59,16	19,4	15.951	0,4	1,5
661	NOK	Automobiles & parts (335)	Japan	59,13	-19,1	3.812	1,6	1,8
662	Singapore Technologies Engineering	Aerospace & defence (271)	Singapore	59,01	23,3	3.482	1,7	10,8
663	Praxair	Chemicals (135)	USA	58,89	6,8	7.541	0,8	21,0
664	Ishihara Sangyo Kaisha	Chemicals (135)	Japan	58,88	-1,5	961	6,1	2,8
665	Unisys	Computer services (9533)	USA	58,81	-22,6	3.067	1,9	10,8
666	Bucher Industries	Commercial vehicles & trucks (2753)	Switzerland	58,54	-3,6	1.626	3,6	7,4

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667	Mead Johnson Nutrition	Food producers (357)	USA	58,52	9,2	2.342	2,5	21,8
668	Geely Automobile	Automobiles & parts (335)	Hong Kong	58,41	24,1	2.274	2,6	7,2
669	Orbotech	Electronic equipment (2737)	Israel	58,39	15,4	403	14,5	8,3
670	CSG Systems International	Software (9537)	USA	58,18	11,3	410	14,2	12,1
671	TOFAS	Automobiles & parts (335)	Turkey	58,01	-49,9	3.125	1,9	5,6
672	Richemont	General retailers (537)	Switzerland	58,00	31,8	6.892	0,8	21,2
673	Amphenol	Electrical components & equipment (2733)	USA	57,82	21,2	2.649	2,2	19,7
674	VeriSign	Software (9537)	USA	57,68	-31,2	693	8,3	33,3
675	NOF	Food producers (357)	Japan	57,63	-1,3	1.318	4,4	4,0
676	Sigma Designs	Semiconductors (9576)	USA	57,60	46,8	214	26,9	2,7
677	VeriFone Systems	Computer hardware (9572)	USA	57,57	14,5	747	7,7	10,8
678	Harmonic	Telecommunications equipment (9578)	USA	57,54	25,7	316	18,2	1,0
679	Israel	General industrials (272)	Israel	57,40	1,3	7.354	0,8	16,1
680	Kureha	Chemicals (135)	Japan	57,35	2,5	1.237	4,6	3,6
681	China National Materials	Construction & materials (235)	China	57,06	10,8	5.005	1,1	10,6
682	Himax Technologies	Semiconductors (9576)	Cayman Islands	56,97	7,1	479	11,9	5,5
683	IDEXX Laboratories	Health care equipment & services (453)	USA	56,95	17,3	822	6,9	18,6
683	Jack Henry & Associates	Support services (279)	USA	56,95	13,1	624	9,1	21,8
685	Aeroflex	Electronic equipment (2737)	USA	56,76	8,3	488	11,6	11,8
686	Owens Corning	Construction & materials (235)	USA	56,65	24,6	3.725	1,5	4,2
687	Dendreon	Biotechnology (4573)	USA	56,61	23,3	36	158,0	-607,9
688	LINTEC	Chemicals (135)	Japan	56,42	-2,3	1.740	3,2	5,6
689	Sohu.com	Internet (9535)	USA	56,35	32,8	457	12,3	37,4
690	Central Glass	Construction & materials (235)	Japan	56,07	0,8	1.421	3,9	1,8
691	ResMed	Health care equipment & services (453)	USA	56,06	19,3	814	6,9	21,9
692	Vestel Elektronik Sanayi Ticaret	Leisure goods (374)	Turkey	55,99	25,2	2.562	2,2	2,7
693	Pall	Industrial machinery (2757)	USA	55,87	5,2	1.790	3,1	15,6
694	Daifuku	Industrial machinery (2757)	Japan	55,84	-24,2	1.417	3,9	1,2
695	Taiwan Power	Electricity (753)	Taiwan	55,69	0,6	13.069	0,4	-1,4
696	Lexicon Pharmaceuticals	Biotechnology (4573)	USA	55,41	3,4	4	1.514,2	-2.031,9
697	IDB	General industrials (272)	Israel	55,36	63,4	9.083	0,6	12,4
698	Diebold	Computer hardware (9572)	USA	55,33	3,1	2.105	2,6	-0,1
699	Tessera Technologies	Semiconductors (9576)	USA	55,23	12,5	225	24,6	34,3
700	ACI Worldwide	Software (9537)	USA	55,22	-4,4	312	17,7	12,8
701	Airvana	Telecommunications equipment (9578)	USA	54,92	-1,5	48	114,1	-80,0
702	Fair Isaac	Software (9537)	USA	54,85	-0,5	451	12,1	19,1
703	Electric Power Development	Electricity (753)	Japan	54,71	-28,0	5.372	1,0	11,2
703	Secom	Support services (279)	Japan	54,71	0,2	6.164	0,9	14,4
705	Salix Pharmaceuticals	Pharmaceuticals (4577)	USA	54,67	-18,0	251	21,8	-1,8
706	MSCI	Other financials (877)	USA	54,57	38,1	494	11,0	23,2
707	Quantum	Computer hardware (9572)	USA	54,42	4,4	501	10,9	3,7
708	Avon Products	Personal goods (376)	USA	54,12	8,8	8.097	0,7	9,4
709	Cytec Industries	Chemicals (135)	USA	54,04	-3,6	2.496	2,2	8,2
710	Ixia	Computer services (9533)	USA	54,03	34,3	206	26,2	1,9
711	Coherent	Electronic equipment (2737)	USA	53,93	17,8	451	12,0	9,5
712	Manitowoc	Commercial vehicles & trucks (2753)	USA	53,82	22,4	2.503	2,2	5,7
713	JDA Software	Software (9537)	USA	53,79	40,6	460	11,7	7,5
714	EMBRAER	Aerospace & defence (271)	Brazil	53,75	-49,9	3.998	1,3	7,3

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715	Impax Laboratories	Biotechnology (4573)	USA	53,61	39,4	656	8,2	44,7
716	Nissin Kogyo	Automobiles & parts (335)	Japan	53,57	-15,3	1.336	4,0	3,9
717	Nisshin Seifun	Food producers (357)	Japan	53,42	6,7	4.078	1,3	6,2
718	Interdigital	Semiconductors (9576)	USA	53,27	11,7	294	18,1	60,4
719	Veeco Instruments	Electronic equipment (2737)	USA	53,22	24,3	764	7,0	27,0
720	Komori	Industrial machinery (2757)	Japan	53,01	0,0	632	8,4	-11,5
721	Reynolds American	Tobacco (378)	USA	52,93	4,4	6.374	0,8	28,2
722	Fortune Brands	Construction & materials (235)	USA	52,70	4,3	5.323	1,0	11,2
723	Bharat Electronics	Electrical components & equipment (2733)	India	52,67	29,8	894	5,9	15,3
724	Cabot	Chemicals (135)	USA	52,18	-1,4	2.156	2,4	8,1
724	Celanese	Chemicals (135)	USA	52,18	-6,7	4.411	1,2	10,0
726	Ashok Leyland	Commercial vehicles & trucks (2753)	India	52,12	33,6	1.853	2,8	8,6
727	TerreStar	Mobile telecommunications (657)	USA	52,09	-5,0	2	2.931,4	-6.630,0
728	Aastra Technologies	Telecommunications equipment (9578)	Canada	52,06	-15,2	541	9,6	4,9
729	Esterline Technologies	Aerospace & defence (271)	USA	52,00	5,3	1.150	4,5	13,3
730	ADC Telecommunications	Telecommunications equipment (9578)	USA	51,96	-2,2	864	6,0	9,5
731	Talecris Biotherapeutics	Biotechnology (4573)	USA	51,92	-2,2	1.194	4,3	18,1
732	Semtech	Semiconductors (9576)	USA	51,90	55,2	339	15,3	17,3
733	Take-Two Interactive Software	Software (9537)	USA	51,86	37,6	847	6,1	6,4
734	SPX	Electrical components & equipment (2733)	USA	51,81	18,4	3.647	1,4	7,7
735	Mori Seiki	Industrial machinery (2757)	Japan	51,76	-0,7	610	8,5	-54,4
736	Thoratec	Health care equipment & services (453)	USA	51,66	27,8	342	15,1	19,4
737	Compuware	Software (9537)	USA	51,58	5,2	692	7,4	16,2
738	Mindray Medical International	Health care equipment & services (453)	Cayman Islands	51,55	9,7	525	9,8	22,0
739	Nippon Soda	Chemicals (135)	Japan	51,43	1,4	1.218	4,2	8,4
740	Ctrip.com International	Travel & leisure (575)	Cayman Islands	51,34	47,1	326	15,8	36,6
741	Hannstar Display	Leisure goods (374)	Taiwan	51,19	13,2	1.474	3,5	-13,8
742	Valeant Pharmaceuticals	Pharmaceuticals (4577)	Canada	50,92	55,3	881	5,8	-10,2
743	USHIO	Electronic equipment (2737)	Japan	50,76	-6,0	1.094	4,6	6,6
744	Perfect World	Software (9537)	Cayman Islands	50,74	65,9	279	18,2	35,1
745	Seikagaku	Pharmaceuticals (4577)	Japan	50,72	-7,5	254	20,0	18,9
746	Kansai Paint	Chemicals (135)	Japan	50,70	-0,7	2.044	2,5	9,6
747	ArvinMeritor	Automobiles & parts (335)	USA	50,69	-34,0	3.639	1,4	3,6
747	FMC Technologies	Oil equipment, services & distribution (57)	USA	50,69	32,6	3.075	1,6	13,2
747	L-3 Communications	Aerospace & defence (271)	USA	50,69	9,7	11.688	0,4	11,2
747	NYSE Euronext	Other financials (877)	USA	50,69	-38,7	3.298	1,5	17,9
751	Affymetrix	Biotechnology (4573)	USA	50,64	-12,2	232	21,9	-3,0
752	Great Wall Motor	Automobiles & parts (335)	Hong Kong	50,61	33,5	2.508	2,0	13,3
753	Mitsui Engineering & Shipbuilding	Industrial machinery (2757)	Japan	50,59	44,6	7.040	0,7	4,5
754	Amada	Industrial machinery (2757)	Japan	50,16	-8,8	1.250	4,0	-6,5
755	Intermec	Computer hardware (9572)	USA	50,15	12,9	506	9,9	0,1
756	Pentair	Industrial machinery (2757)	USA	50,06	16,0	2.259	2,2	11,1
757	Sanden	Automobiles & parts (335)	Japan	50,01	-22,5	1.789	2,8	3,9
758	Modine Manufacturing	Automobiles & parts (335)	USA	49,92	17,7	1.080	4,6	3,0
759	Hong Leong Asia	Construction & materials (235)	Singapore	49,58	9,7	2.970	1,7	9,0
760	FEI	Semiconductors (9576)	USA	49,40	-2,1	473	10,4	8,5
761	Juki	Industrial machinery (2757)	Japan	49,22	-27,7	524	9,4	-20,3
762	McCormick	Food producers (357)	USA	49,20	-4,3	2.487	2,0	15,3

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762	Sigma-Aldrich	Chemicals (135)	USA	49,20	4,8	1.693	2,9	24,3
764	Arena Pharmaceuticals	Pharmaceuticals (4577)	USA	49,13	-38,0	12	396,7	-547,6
765	Crane	Industrial machinery (2757)	USA	49,12	-33,2	1.653	3,0	10,7
766	Computershare	Other financials (877)	Australia	49,11	3,6	1.192	4,1	26,7
767	Nufarm	Chemicals (135)	Australia	49,07	-8,5	1.657	3,0	3,2
768	Diversey	Household goods & home construction (372)	USA	48,94	3,7	2.331	2,1	8,2
769	Digital River	Internet (9535)	USA	48,78	-8,3	271	18,0	3,3
770	Spansion	Semiconductors (9576)	USA	48,76	-52,1	570	8,6	-9,1
771	Fuji Machine Manufacturing	Electronic equipment (2737)	Japan	48,70	2,5	384	12,7	-20,9
772	Theravance	Pharmaceuticals (4577)	USA	48,63	4,5	18	269,4	-323,3
773	IAC/InterActiveCorp	Internet (9535)	USA	48,52	1,2	1.247	3,9	-1,5
774	Alliant Techsystems	Aerospace & defence (271)	USA	48,42	-14,4	3.610	1,3	10,9
775	Japan Radio	Electronic equipment (2737)	Japan	48,41	-32,5	1.022	4,7	2,5
776	United Online	Internet (9535)	USA	48,14	-14,8	686	7,0	12,3
777	Renewable Energy	Alternative energy (58)	Norway	47,97	1,4	1.781	2,7	6,7
778	Gentex	Automobiles & parts (335)	USA	47,78	36,0	608	7,9	24,6
779	Orkla	General industrials (272)	Norway	47,71	-21,8	8.298	0,6	-1,3
780	Cirrus Logic	Semiconductors (9576)	USA	47,66	28,4	275	17,3	22,6
781	Cipla	Pharmaceuticals (4577)	India	47,48	18,6	1.022	4,6	19,9
781	NCsoft	Internet (9535)	South Korea	47,48	-34,9	427	11,1	28,9
783	Shikoku Electric Power	Electricity (753)	Japan	47,22	-0,2	5.013	0,9	8,4
784	Advantech	Computer hardware (9572)	Taiwan	47,21	32,4	589	8,0	15,7
785	Plantronics	Telecommunications equipment (9578)	USA	47,10	18,5	510	9,2	20,6
786	Hill-Rom	Health care equipment & services (453)	USA	47,04	13,3	1.095	4,3	12,9
787	Sonus Networks	Telecommunications equipment (9578)	USA	46,80	4,9	186	25,2	-4,2
788	Sulzer	Industrial machinery (2757)	Switzerland	46,79	-7,7	2.546	1,8	12,6
789	Nippon Light Metal	Industrial metals & mining (175)	Japan	46,74	-14,9	4.234	1,1	-0,5
790	MKS Instruments	Semiconductors (9576)	USA	46,73	17,1	645	7,2	22,9
791	Bucyrus International	Commercial vehicles & trucks (2753)	USA	46,59	49,1	2.721	1,7	14,4
792	Powerwave Technologies	Telecommunications equipment (9578)	USA	46,58	6,1	441	10,6	4,9
793	Randon SA Implementos E	Automobiles & parts (335)	Brazil	46,55		1.670	2,8	12,1
794	Nuvoton Technology	Electrical components & equipment (2733)	Taiwan	46,53	1,1	203	22,9	11,9
795	Metall Zug	Household goods & home construction (372)	Switzerland	46,50	-1,8	665	7,0	12,7
795	Sanyo Chemical Industries	Chemicals (135)	Japan	46,50	2,4	1.096	4,2	4,5
797	Targacept	Biotechnology (4573)	USA	46,38	54,8	64	72,6	15,3
798	Nisshin Steel	Industrial metals & mining (175)	Japan	46,31	-3,5	4.058	1,1	-12,4
799	Opnext	Semiconductors (9576)	USA	46,25	-16,3	267	17,3	-14,3
800	Owens-Illinois	General industrials (272)	USA	46,22	5,4	5.041	0,9	10,4
801	Convergys	Support services (279)	USA	46,07	-21,5	1.722	2,7	-0,6
802	JGC	Industrial machinery (2757)	Japan	46,04	-6,0	3.807	1,2	9,6
803	Geron	Biotechnology (4573)	USA	45,98	7,9	3	1.731,3	-3.180,5
804	Ebara	Industrial machinery (2757)	Japan	45,74	-43,6	4.466	1,0	3,8
805	Teledyne Technologies	Aerospace & defence (271)	USA	45,69	0,8	1.226	3,7	11,0
806	Ascom	Telecommunications equipment (9578)	Switzerland	45,51	21,1	457	10,0	7,9
807	Mitsui Mining & Smelting	Industrial metals & mining (175)	Japan	45,41	-38,3	3.606	1,3	6,4
808	NPS Pharmaceuticals	Biotechnology (4573)	USA	45,33	72,1	67	68,0	11,4
809	Ikanos Communications	Telecommunications equipment (9578)	USA	45,30	22,0	143	31,7	-26,2

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810	WEG	Industrial machinery (2757)	Brazil	45,27	21,7	1.972	2,3	15,3
811	A123 Systems	Electrical components & equipment (2733)	USA	45,26	25,8	73	62,4	-154,4
811	Actel	Semiconductors (9576)	USA	45,26	-7,5	142	31,9	-12,9
813	Cavium Networks	Semiconductors (9576)	USA	45,17	42,0	154	29,3	5,0
814	Lattice Semiconductor	Semiconductors (9576)	USA	44,97	7,5	222	20,3	18,8
815	WR Grace	Chemicals (135)	USA	44,95	-14,0	1.994	2,3	10,5
816	Nichias	General industrials (272)	Japan	44,77	-8,1	1.177	3,8	10,6
817	Terex	Commercial vehicles & trucks (2753)	USA	44,65	-8,1	3.411	1,3	-2,3
818	Nipro	Health care equipment & services (453)	Japan	44,54	-9,5	1.634	2,7	9,0
819	Basilea Pharmaceutica	Biotechnology (4573)	Switzerland	44,34	-27,4	93	47,7	92,7
820	Creative Technology	Computer hardware (9572)	Singapore	43,85	-4,7	205	21,4	-18,5
821	Spreadtrum Communications	Semiconductors (9576)	Cayman Islands	43,75	58,4	258	16,9	21,0
822	Advanced Energy Industries	Electrical components & equipment (2733)	USA	43,63	35,3	381	11,5	14,5
823	Sumitomo Metal Mining	Mining (177)	Japan	43,62	-19,5	6.671	0,7	11,8
824	Albemarle	Chemicals (135)	USA	43,53	-4,1	1.761	2,5	17,6
825	Eizo Nanao	Computer hardware (9572)	Japan	43,45	-10,9	713	6,1	11,3
826	Medicis Pharmaceutical	Pharmaceuticals (4577)	USA	43,44	-18,8	522	8,3	29,6
827	Delta Electronics (Thailand)	Computer hardware (9572)	Thailand	43,32	13,4	884	4,9	10,9
828	XOMA	Biotechnology (4573)	USA	43,28	37,6	25	172,6	-203,2
829	Momentive Specialty Chemicals	Chemicals (135)	USA	43,23	-4,9	3.591	1,2	11,4
830	ARIAD Pharmaceuticals	Biotechnology (4573)	USA	43,22	-8,6	133	32,4	47,7
831	Aloka	Health care equipment & services (453)	Japan	43,12	-11,4	421	10,2	5,4
832	Daewoo Shipbuilding & Marine	Commercial vehicles & trucks (2753)	South Korea	42,96	0,5	7.931	0,5	8,4
833	Ichikoh Industries	Automobiles & parts (335)	Japan	42,85	-19,5	858	5,0	0,7
834	Sekisui House	Household goods & home construction (372)	Japan	42,80	-8,5	13.680	0,3	3,8
835	Spectrum Pharmaceuticals	Biotechnology (4573)	USA	42,71	172,1	55	77,3	-66,0
836	Amorepacific	Personal goods (376)	South Korea	42,56	12,6	1.756	2,4	13,3
836	Gigabyte Technology	Computer hardware (9572)	Taiwan	42,56	-1,5	1.428	3,0	3,4
838	Taiheiyo Cement	Construction & materials (235)	Japan	42,46	-9,0	6.696	0,6	-4,5
839	Silicon Graphics International	Computer hardware (9572)	USA	42,39	144,1	301	14,1	-23,1
840	Visma	Software (9537)	Norway	42,38	9,6	535	7,9	15,1
841	AMETEK	Electronic equipment (2737)	USA	42,34	12,5	1.842	2,3	19,2
841	Mellanox Technologies	Semiconductors (9576)	Israel	42,34	34,5	115	36,7	15,0
841	VTech	Telecommunications equipment (9578)	Hong Kong	42,34	0,0	1.277	3,3	12,7
844	Clinical Data	Health care equipment & services (453)	USA	42,33	28,7	10	418,0	-625,3
845	Marel	Industrial machinery (2757)	Iceland	42,25	-10,7	600	7,0	9,5
846	Kulicke & Soffa	Semiconductors (9576)	USA	42,24	5,9	569	7,4	19,4
847	Aker Solutions	Oil equipment, services & distribution (57)	Norway	42,19	-3,5	6.491	0,7	6,6
848	Toagosei	Chemicals (135)	Japan	42,11	2,5	1.413	3,0	12,0
849	Dong-A Pharmaceutical	Pharmaceuticals (4577)	South Korea	42,09	29,4	556	7,6	14,9
850	Unicharm	Personal goods (376)	Japan	41,89	2,2	3.280	1,3	11,7
851	JEOL	Industrial machinery (2757)	Japan	41,76	-19,5	779	5,4	0,2
852	Archer Daniels Midland	Food producers (357)	USA	41,74	12,0	45.979	0,1	4,9
853	Hitachi Zosen	Industrial machinery (2757)	Japan	41,65	0,7	2.514	1,7	4,1

Rank	Company	ICB Sector	Country	R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
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Top 1000 Companies				323,928.73	3.2	8,675,068	3.7	10.7
<i>number of companies for calculation</i>				<i>1000</i>	<i>996</i>	<i>1000</i>	<i>1000</i>	<i>998</i>
854	Shutterfly	Internet (9535)	USA	41,59	11,8	229	18,1	8,1
855	Conexant Systems	Semiconductors (9576)	USA	41,55	8,6	179	23,2	16,4
856	Universal Scientific Industrial	Computer hardware (9572)	Taiwan	41,50	3,8	1.635	2,5	4,9
857	MEMC Electronic Materials	Semiconductors (9576)	USA	41,45	37,6	1.669	2,5	0,5
858	DSP	Semiconductors (9576)	USA	41,44	-1,0	168	24,7	-4,7
859	Calix	Telecommunications equipment (9578)	USA	41,31	20,1	214	19,3	-6,2
860	FormFactor	Semiconductors (9576)	USA	41,29	-3,7	141	29,4	-102,2
860	Microsemi	Semiconductors (9576)	USA	41,29	33,7	386	10,7	10,7
862	Silicon Image	Semiconductors (9576)	USA	41,23	-18,9	143	28,9	4,9
863	Cameron International	Oil equipment, services & distribution (57)	USA	41,15	-29,3	4.573	0,9	13,2
864	Pegasystems	Software (9537)	USA	41,14	42,0	251	16,4	-0,4
865	Blackboard	Software (9537)	USA	41,01	7,5	333	12,3	7,9
866	SAIC	Computer services (9533)	USA	41,00	12,2	8.287	0,5	8,6
867	China Steel	Industrial metals & mining (175)	Taiwan	40,92	12,1	8.954	0,5	14,6
868	Alpha Networks	Telecommunications equipment (9578)	Taiwan	40,84	6,5	661	6,2	5,7
869	GS Yuasa	Electrical components & equipment (2733)	Japan	40,83	-17,7	2.272	1,8	4,9
870	Cheng Shin Rubber Industry	Automobiles & parts (335)	Taiwan	40,68	11,3	2.556	1,6	12,3
871	Emergent BioSolutions	Biotechnology (4573)	USA	40,63	-4,3	213	19,0	24,7
872	Nihon Kohden	Health care equipment & services (453)	Japan	40,62	-5,1	984	4,1	8,8
873	AMAG Pharmaceuticals	Biotechnology (4573)	USA	40,60	50,1	49	82,2	-126,5
874	Websense	Software (9537)	USA	40,50	3,2	248	16,3	9,2
875	Curtiss-Wright	Aerospace & defence (271)	USA	40,35	-0,9	1.411	2,9	9,5
876	Mitel Networks	Telecommunications equipment (9578)	Canada	40,33	4,6	484	8,3	3,3
877	EXEDY	Automobiles & parts (335)	Japan	40,17	-11,7	1.403	2,9	7,2
878	E Ink	Computer hardware (9572)	Taiwan	40,16	73,5	644	6,2	19,9
879	Ford Otomotiv	Automobiles & parts (335)	Turkey	40,11	48,7	3.705	1,1	7,9
880	Church & Dwight	Household goods & home construction (372)	USA	40,03	-2,5	1.930	2,1	17,2
881	Advent Software	Software (9537)	USA	39,92	4,3	211	18,9	12,7
882	American Medical Systems	Health care equipment & services (453)	USA	39,78	1,1	404	9,8	28,8
883	Toro	Commercial vehicles & trucks (2753)	USA	39,73	1,1	1.260	3,2	9,3
884	Kose	Personal goods (376)	Japan	39,58	-0,6	1.586	2,5	5,2
885	SMART Technologies	Computer hardware (9572)	Canada	39,53	56,9	589	6,7	15,9
886	Siliconware Precision Industries	Semiconductors (9576)	Taiwan	39,33	20,6	1.633	2,4	10,0
887	MicroStrategy	Software (9537)	USA	39,32	14,7	339	11,6	11,5
888	Nihon Unisys	Computer services (9533)	Japan	39,26	-4,9	2.492	1,6	2,0
889	Deltek	Software (9537)	USA	39,20	20,5	208	18,8	3,4
890	Pilatus Aircraft	Aerospace & defence (271)	Switzerland	39,19	19,5	550	7,1	
891	Epicor Software	Software (9537)	USA	39,12	6,6	328	11,9	3,3
892	Cabot Microelectronics	Semiconductors (9576)	USA	38,63	7,6	304	12,7	18,0
893	Hypercom	Computer hardware (9572)	USA	38,56	13,5	352	10,9	4,2
894	Clal Industries and Investments	General industrials (272)	Israel	38,52	23,6	1.088	3,5	10,7
895	Aruba Networks	Telecommunications equipment (9578)	USA	38,48	28,1	199	19,4	-12,5
896	Sauer-Danfoss	Industrial machinery (2757)	USA	38,45	-16,0	1.223	3,1	15,5
897	AptarGroup	General industrials (272)	USA	38,31	2,4	1.548	2,5	12,8
898	Mindspeed Technologies	Semiconductors (9576)	USA	38,29	1,4	133	28,8	12,8

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899	EXAR	Semiconductors (9576)	USA	38,09	5,3	109	35,0	-27,5
899	Snap-on	Household goods & home construction (372)	USA	38,09	14,8	1.952	2,0	12,8
899	Vitesse Semiconductor	Semiconductors (9576)	USA	38,09	11,9	124	30,8	2,6
902	Japan Steel Works	Industrial metals & mining (175)	Japan	38,06	-0,9	1.854	2,1	15,2
903	XenoPort	Biotechnology (4573)	USA	38,04	39,9	2	1.772,6	-2.892,2
904	Taiyo Nippon Sanso	Oil & gas producers (53)	Japan	38,02	5,1	3.983	1,0	7,2
905	Advanced Digital Broadcast	Telecommunications equipment (9578)	Switzerland	38,01	-13,8	266	14,3	4,8
906	Vishay Intertechnology	Electrical components & equipment (2733)	USA	37,99	0,4	2.031	1,9	15,3
907	BigBand Networks	Telecommunications equipment (9578)	USA	37,96	9,7	83	45,6	-29,1
908	ZyXEL Communications	Telecommunications equipment (9578)	Taiwan	37,92	-2,0	295	12,9	-0,9
909	Triumph	Aerospace & defence (271)	USA	37,62	96,6	2.167	1,7	10,8
910	Par Pharmaceutical Companies	Pharmaceuticals (4577)	USA	37,55	28,4	752	5,0	13,2
911	Sun Pharmaceutical Industries	Pharmaceuticals (4577)	India	37,38	-32,5	651	5,7	32,4
912	Anadigics	Semiconductors (9576)	USA	37,36	9,0	162	23,1	0,2
913	TravelSky Technology	Telecommunications equipment (9578)	China	37,34	13,0	346	10,8	33,0
914	Dana	Automobiles & parts (335)	USA	37,27	13,6	4.554	0,8	2,0
915	Magma Design Automation	Software (9537)	USA	37,19	6,1	104	35,8	3,0
916	Fortinet	Software (9537)	USA	37,12	18,0	242	15,3	17,0
917	Ralink Technology	Semiconductors (9576)	Taiwan	37,05	46,2	188	19,7	12,4
918	ISEKI	Commercial vehicles & trucks (2753)	Japan	36,99	-2,0	1.372	2,7	2,3
919	Analogic	Electronic equipment (2737)	USA	36,98	5,7	316	11,7	5,0
920	Shinko Electric Industries	Semiconductors (9576)	Japan	36,94	-13,6	1.193	3,1	3,6
921	Lennox International	Construction & materials (235)	USA	36,90	1,2	2.308	1,6	6,1
922	Tadano	Commercial vehicles & trucks (2753)	Japan	36,87	-4,5	958	3,8	0,1
923	Dentsply International	Health care equipment & services (453)	USA	36,82	-7,8	1.656	2,2	17,2
923	Extreme Networks	Telecommunications equipment (9578)	USA	36,82	-15,1	231	16,0	-0,4
925	Rockwood	Chemicals (135)	USA	36,75	6,3	2.551	1,4	11,3
926	Morningstar	Media (555)	USA	36,71	28,3	414	8,9	22,8
926	Nippon Suisan Kaisha	Food producers (357)	Japan	36,71	5,0	4.426	0,8	1,4
928	Kurita Water Industries	Gas, water & multiutilities (757)	Japan	36,67	-8,6	1.641	2,2	15,8
928	Oil and Natural Gas	Oil equipment, services & distribution (57)	India	36,67	6,0	16.963	0,2	27,2
930	Sunpower	Alternative energy (58)	USA	36,59	55,1	1.663	2,2	11,2
931	LTX-Credence	Semiconductors (9576)	USA	36,48	-31,2	163	22,3	8,2
932	Aspen Technology	Software (9537)	USA	36,47	11,6	124	29,4	-65,6
933	Novatel Wireless	Telecommunications equipment (9578)	USA	36,46	8,9	253	14,4	-6,8
934	Kobayashi Pharmaceutical	Pharmaceuticals (4577)	Japan	36,42	17,9	1.187	3,1	12,4
935	Entropic Communications	Semiconductors (9576)	USA	36,31	7,9	157	23,2	15,8
936	ATMI	Semiconductors (9576)	USA	36,26	30,9	274	13,2	13,5
937	NACCO Industries	Industrial machinery (2757)	USA	36,23	-3,6	2.003	1,8	4,7
938	THK	Industrial machinery (2757)	Japan	36,21	8,2	1.060	3,4	-12,2
939	SeaChange International	Software (9537)	USA	36,08	-4,5	162	22,3	0,6
939	Timken	Industrial machinery (2757)	USA	36,08	0,2	3.023	1,2	10,7
941	Pharmasset	Biotechnology (4573)	USA	35,98	17,6	1	4.733,6	-6.247,6
942	Netease.com	Internet (9535)	Cayman Islands	35,97	38,0	640	5,6	44,6
943	Daido Steel	Industrial metals & mining (175)	Japan	35,93	-7,9	3.332	1,1	-4,0

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944	Miraca	Pharmaceuticals (4577)	Japan	35,90	-0,7	1.370	2,6	
945	Integra Lifesciences	Health care equipment & services (453)	USA	35,87	8,7	546	6,6	13,7
946	House Foods	Food producers (357)	Japan	35,82	6,9	2.028	1,8	4,5
947	TCL Communication Technology	Telecommunications equipment (9578)	Cayman Islands	35,81	47,9	834	4,3	6,9
948	Auxilium Pharmaceuticals	Pharmaceuticals (4577)	USA	35,78	-6,6	158	22,7	-24,1
949	Chicony Electronics	Computer hardware (9572)	Taiwan	35,74	22,6	1.542	2,3	7,5
950	Ardea Biosciences	Biotechnology (4573)	USA	35,62	20,4	20	174,3	-150,0
951	Enzon Pharmaceuticals	Biotechnology (4573)	USA	35,59	-32,0	79	44,8	3,1
952	Amkor Technology	Semiconductors (9576)	USA	35,43	6,9	2.191	1,6	13,0
953	Braskem	Chemicals (135)	Brazil	35,38	37,5	11.449	0,3	12,6
953	Stats ChipPAC	Semiconductors (9576)	Singapore	35,38	9,5	1.251	2,8	11,1
955	Geberit	Construction & materials (235)	Switzerland	35,35	5,7	1.520	2,3	25,6
956	Dowa	Mining (177)	Japan	35,19	-13,4	2.826	1,2	4,1
957	Hanesbrands	Personal goods (376)	USA	35,10	1,7	3.225	1,1	8,9
958	Smithfield Foods	Food producers (357)	USA	35,04	21,1	9.096	0,4	8,2
959	TECO Electric & Machinery	Electrical components & equipment (2733)	Taiwan	34,74	22,9	1.052	3,3	9,0
960	Faraday Technology	Semiconductors (9576)	Taiwan	34,72	9,9	169	20,5	13,2
961	T Hasegawa	Personal goods (376)	Japan	34,67	12,1	415	8,4	8,4
962	Kikkoman	Food producers (357)	Japan	34,66	-6,1	2.626	1,3	5,8
963	Tsumura	Pharmaceuticals (4577)	Japan	34,65	-4,8	836	4,1	20,4
964	Sirona Dental Systems	Health care equipment & services (453)	USA	34,56	14,1	574	6,0	16,5
965	Micrel	Semiconductors (9576)	USA	34,49	-0,5	222	15,6	25,3
966	Comtech Telecommunications	Telecommunications equipment (9578)	USA	34,43	-7,6	580	5,9	13,4
966	Nabtesco	Industrial machinery (2757)	Japan	34,43	-8,8	1.160	3,0	6,1
968	China Motor	Automobiles & parts (335)	Taiwan	34,42	3,8	1.019	3,4	8,1
969	Array BioPharma	Biotechnology (4573)	USA	34,36	-36,3	40	85,6	-116,5
969	EchoStar	Telecommunications equipment (9578)	USA	34,36	4,7	1.752	2,0	12,2
971	Ariba	Computer services (9533)	USA	34,32	5,9	269	12,7	5,1
972	Rohto Pharmaceutical	Pharmaceuticals (4577)	Japan	34,31	-0,1	1.043	3,3	10,7
973	Zoll Medical	Health care equipment & services (453)	USA	34,24	16,4	331	10,3	6,1
974	Progenics Pharmaceuticals	Biotechnology (4573)	USA	34,23		6	577,5	-878,8
975	Orica	Chemicals (135)	Australia	34,16	5,4	4.997	0,7	15,7
976	Blackbaud	Software (9537)	USA	33,94	-0,3	244	13,9	14,1
977	Takara	Beverages (353)	Japan	33,69	9,6	1.751	1,9	4,4
978	Mitsubishi	General industrials (272)	Japan	33,63	40,5	41.741	0,1	6,3
979	Sakata Seed	Food producers (357)	Japan	33,62	3,9	417	8,1	-1,6
980	Cosmo Oil	Oil & gas producers (53)	Japan	33,61	-5,3	24.008	0,1	1,5
981	Pola Orbis	Personal goods (376)	Japan	33,57	-14,7	1.519	2,2	7,2
982	ImmunoGen	Biotechnology (4573)	USA	33,48	17,2	10	322,1	-368,3
983	Inspire Pharmaceuticals	Biotechnology (4573)	USA	33,47	-12,2	79	42,2	-32,7
984	Straumann	Health care equipment & services (453)	Switzerland	33,45	4,8	590	5,7	22,2
985	MICROS Systems	Computer hardware (9572)	USA	33,30	3,6	682	4,9	17,9
986	Viasat	Telecommunications equipment (9578)	USA	33,18	26,0	598	5,5	4,9
987	Donaldson	Industrial machinery (2757)	USA	33,16	9,5	1.399	2,4	13,1
988	Mitsui	General industrials (272)	Japan	33,11	3,7	37.769	0,1	1,4
989	Monolithic Power Systems	Semiconductors (9576)	USA	33,08	15,9	163	20,3	13,8
990	FCS Software Solutions	Computer services (9533)	India	33,07	36,5	45	73,2	11,7

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991	Sawai Pharmaceutical	Pharmaceuticals (4577)	Japan	33,02	5,4	460	7,2	17,1
992	Nippon Chemi-Con	Electrical components & equipment (2733)	Japan	33,00	-4,5	973	3,4	-2,5
993	Nippon Electric Glass	Electronic equipment (2737)	Japan	32,99	-28,9	3.055	1,1	28,1
994	Stanley Electric	Automobiles & parts (335)	Japan	32,96	-12,3	2.196	1,5	15,0
995	Kingsoft	Software (9537)	Cayman Islands	32,94	37,2	110	30,0	26,3
996	STEC	Computer hardware (9572)	USA	32,91	60,6	209	15,8	10,7
997	Telenav	Leisure goods (374)	USA	32,77	74,9	128	25,7	39,7
998	Barry Callebaut	Food producers (357)	Switzerland	32,76	-18,1	4.170	0,8	7,0
999	Entegris	Semiconductors (9576)	USA	32,75	25,4	513	6,4	15,3
1000	Nomura Research Institute	Computer services (9533)	Japan	32,73	-13,2	3.112	1,1	10,9

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Abstract

The 2011 “EU Industrial R&D Investment Scoreboard” (the Scoreboard) contains economic and financial data from the world’s top 1400 companies ranked by their investments in research and development (R&D). Each of these companies invested more than € 30 million in R&D in 2010; 400 were headquartered in the EU and 1000 were located elsewhere. The data are drawn from the companies’ latest available accounts, i.e. statements for fiscal year 2010.

While last year’s Scoreboard companies’ figures reflected the major impact of the crisis that started in 2008, this year’s figures show significant signs of recovery although companies still have to deal with a challenging economic environment. The willingness of many of the top R&D investing firms to increase R&D investment underlines the role R&D plays in maintaining or enhancing competitiveness.

The analysis in this report concentrates on the main trends of companies’ R&D activities and results. The focus is on the evolution of R&D investments across regions and industries and its comparison with companies’ parameters such as net sales, profits, market capitalisation and capital expenditures.

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