

GLOBAL BENCHMARK REPORT 2006

Ready for globalisation?

GLOBAL BENCHMARK REPORT 2006

Ready for globalisation?



DANSK INDUSTRI
Confederation of Danish Industries

APRIL 2006

Published by Dansk Industri
Edited by Hans Uldall-Poulsen
Printed by P.J. Schmidt
ISBN 87-7353-595-8
1000.4.06

Preface

Success in a globalised world requires a clear strategy. However, a strategy can never stand alone. If a country wants to emerge as a global winner nation, clear political priorities and the courage to implement changes are imperative.

Citizens, companies, and politicians must be aware of their responsibilities for creating the best platform for growth and development. Globalisation offers large wealth potentials to countries that are capable of adjusting to the changing market conditions.

DI regards globalisation as an opportunity, not as a threat. The countries that take an active part in globalisation will be tomorrow's winners.

The Globalisation Report 2006 is the second in a series of reports giving DI's annual assessment of the development in the business environment and performance of the individual OECD member countries. The report includes 88 international benchmarks and provides a picture of the strengths and weaknesses of the OECD countries in our globalised world.

With the report, each country is given the opportunity to identify where to concentrate its efforts when it comes to gearing up to the international competition and seizing the opportunities of globalisation.

April 2006

Hans Skov Christensen
Director General, CEO

Content

Performance in the global arena	7
Benchmarking	12
Growth and development	12
Knowledge and competence	20
Flexibility for companies	38
Enterprise and entrepreneurship	48
Costs and taxes	56
Internationalisation and openness	66
The innovative winning strategy	75
Methods, sources and definitions	91
Summary of benchmarks	94

Performance in the global arena

The Global Benchmark Report 2006 is the second of a number of annual assessments of the development in the OECD countries with regards to how the global challenge is met. The report highlights individual strengths and weaknesses in a globalised world, thereby giving a picture of each country's capability to seize the opportunities of globalisation.

International benchmarking

The report compares 29 OECD countries' performance and business environments. When possible, data from China, India and Russia is included. The comparison is based on 88 indicators divided into six main sections:

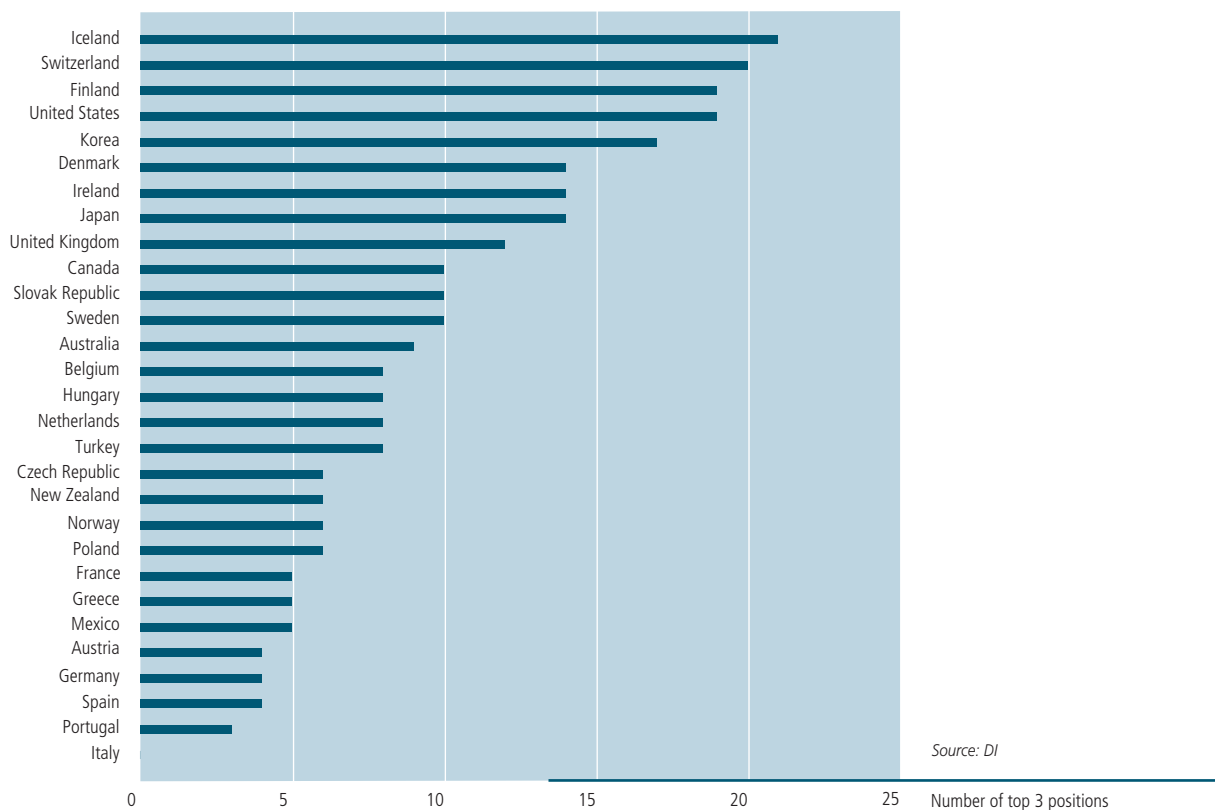
- Global performance
- Knowledge and competence
- Business flexibility
- Enterprise and entrepreneurship
- Costs and taxes
- International engagement and openness

Five countries stand out as achieving most top-3 rankings. Iceland is in front with as much as 21 top-3 rankings followed by Switzerland, Finland, the United States and South Korea, which all manage between 17 and 20 top-3 rankings. Iceland's impressive outcome is especially due to high rankings in *business flexibility* and *enterprise and entrepreneurship*. Switzerland does particularly well in *knowledge and competences*, *business flexibility* and *international engagement and openness*.

Austria, Germany, Spain, Portugal and Italy come off worst in the overall top-3 ranking - the latter without any top-3 rankings. Italy is doing particularly badly in *knowledge and competences*, *business flexibility*, and *international engagement and openness*, whereas Portugal's weaknesses are significant in *global performance* and *enterprise and entrepreneurship*.

Compared to the Global Benchmark Report 2005, the overall picture has not changed much. Replacing Ireland, Finland is the only new country in top-5. In the other end of the scale, France has managed to move from the last place in 2005 to the 24th place this year. Italy now ranks last.

TOP-3 positions



1. Global performance

The benchmarks in the global performance section indicate how well the countries are dealing with globalisation. The section includes comparisons of GDP growth, productivity measures and different benchmarks concerning exports.

As in the Global Benchmark Report 2005, Ireland takes an outstanding leading position. This is mainly due to a high level of - and growth in - productivity and significant shares of high technology and upmarket exports¹.

Also Hungary and South Korea rank high in global performance while New Zealand and Italy rank lowest.

2. Knowledge and competence

A high level of knowledge is essential to maintain competitiveness in a globalised world where industrialised countries have difficulties competing on production of standardized goods.

¹ An export product is defined as upmarket if the export price is at least 15 p.c. higher than the median price of exports (to EU15) for the same product type. A higher price can be justified by i.e. superior design, quality etc.

Finland, Switzerland, and Canada rank highest when averaging the 29 indicators of *knowledge and competence*. Finland is among the countries in the world that invests most in research and development. Moreover, these three countries obtain high rankings regarding the quality of their research institutions, the level of education in the population, and in the collaboration between universities and industries.

Mexico and Turkey rank last in this category and are in the lower end of almost all indicators of *knowledge and competence*.

3. Business flexibility

Flexibility and adaptability are necessary conditions for success in a global world with changing market conditions. A well-functioning labour market with a high degree of flexibility and high participation rates is essential for business flexibility. Other important factors are a public sector that provides the foundation for a stable business environment and promotes competition as well as easy accessible and well-functioning capital markets.

Traditionally, large parts of Europe have had inflexible labour markets. In most English-speaking countries and countries like Switzerland, Japan and Denmark, however, the labour market supports the growth and adaptability of businesses to a larger degree.

Switzerland, the United States, Iceland and Denmark rank highest when it comes to *business flexibility*. Switzerland's leading position is mainly due to a flexible labour market, a high participation rate and a well-functioning and credible credit market.

France, Italy and Poland rank last in this category.

4. Enterprise and entrepreneurship

The mentality of the population influences the dynamism in business. Enterprise and the desire to starting up in business are important factors in order to take full advantage of the framework conditions for entrepreneurship. The rapid change in market conditions that follows from international competition makes enterprise and entrepreneurship crucial ingredients in a global winner strategy.

Generally the conditions for fostering entrepreneurship are better in non-European countries. Only Iceland and Ireland are in the top-5, which suggests that European countries are not sufficiently exploiting the full growth potential of entrepreneurship.

Canada takes the leading position followed by the United States, Iceland and Australia. Canada is among the countries where it is easiest to start a new business and Canadian entrepreneurs also have relatively easy access to venture capital. The United States ranks especially high in eco-

conomic freedom, mentality supporting competitiveness and entrepreneurship of managers.

Portugal and Mexico occupy the lowest places in the category.

5. Costs and taxes

The competitiveness of businesses depends on whether the productivity and the quality of the product offset the production costs. Therefore, production costs and tax conditions are important indicators for competitiveness in a globalised world.

Once again South Korea and Ireland are leading in this category followed by Poland, which has improved its position by five places since 2005. South Korea stands out as having the lowest marginal tax rate for higher wage earners just as Ireland has a very attractive tax system, regarded as one of the most effective among the OECD countries.

Denmark, Germany and Belgium occupy the lowest places in the category due to high wage costs combined with very high tax burdens and high rates of marginal tax.

6. International engagement and openness

A global mindset among individual citizens and companies is important for exploiting the opportunities of globalisation. Cultural openness, the attractiveness of the labour market to foreign workers, and the scope for investment into and out of the country are all important factors when measuring a country's international engagement and openness.

Ireland is leading in this category followed by the Netherlands and Switzerland. Ireland has very few barriers to international trade and Irish businesses are very active when it comes to investments in foreign markets. The Netherlands has, among other things, rather efficient customs authorities. Mexico and Poland rank last in this category

The innovative winner strategy

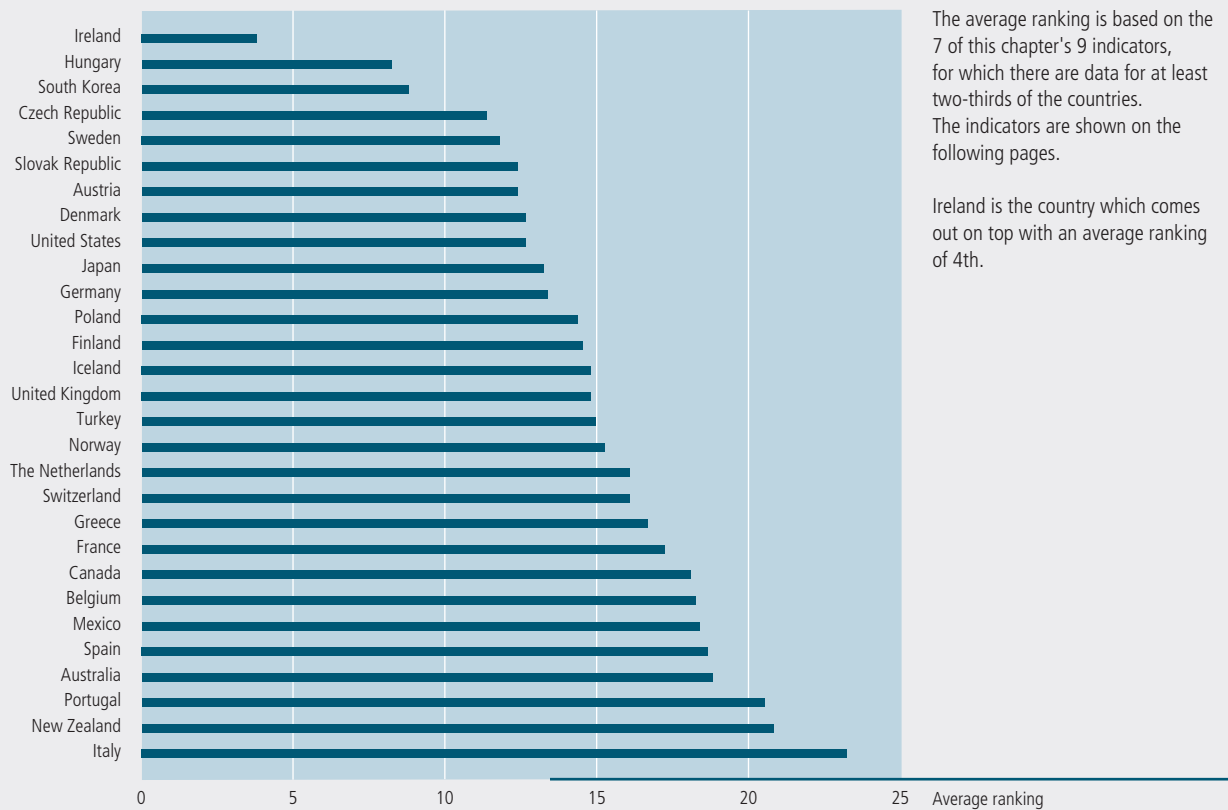
Innovation is an essential part of a global winner strategy for all countries around the world and only countries that manage to innovate, will remain competitive in the global arena. Therefore this year's Global Benchmark Report includes a special chapter focusing on innovation in a globalised world.

In highwage economies, production and export of upmarket products are becoming increasingly important. However, the competition in the upper part of the price hierarchy is keen and many upmarket products will quickly move down the price hierarchy over time. A global winner strategy based on upmarket products therefore requires a large degree of world class innovation.

The innovation process can take many forms and stems from both user demands and technological innovation. First class innovation implies increased focus on knowledge and competences and a larger degree of global outlook.

Global performance

Average ranking of countries



The average ranking is based on the 7 of this chapter's 9 indicators, for which there are data for at least two-thirds of the countries. The indicators are shown on the following pages.

Ireland is the country which comes out on top with an average ranking of 4th.

Growth and development

Ireland leads the OECD in growth and development, taking five top-5 rankings and no places below the Top-10 mark.

Hungary and South Korea rank second and third, respectively, but both countries face challenges if they are to retain their international top rankings in the years to come. Labour productivity, for example, is still relatively low compared with the other OECD member countries.

Growth in GDP, 2005



GDP growth varies considerably from year to year. However, there is a clear tendency that poorer countries participating actively in the international division of labour, experience higher growth rates than less developed countries. Among the richer countries, growth is generally higher in countries with considerable immigration, as for instance in the United States.

In recent years, growth has been unsatisfactory in the large central European countries. On the other hand, Ireland and the Nordic countries, among these especially Iceland, have done relatively well.

Source: Consensus Economics and OECD, Economic Outlook No. 78

Labour productivity, 2005

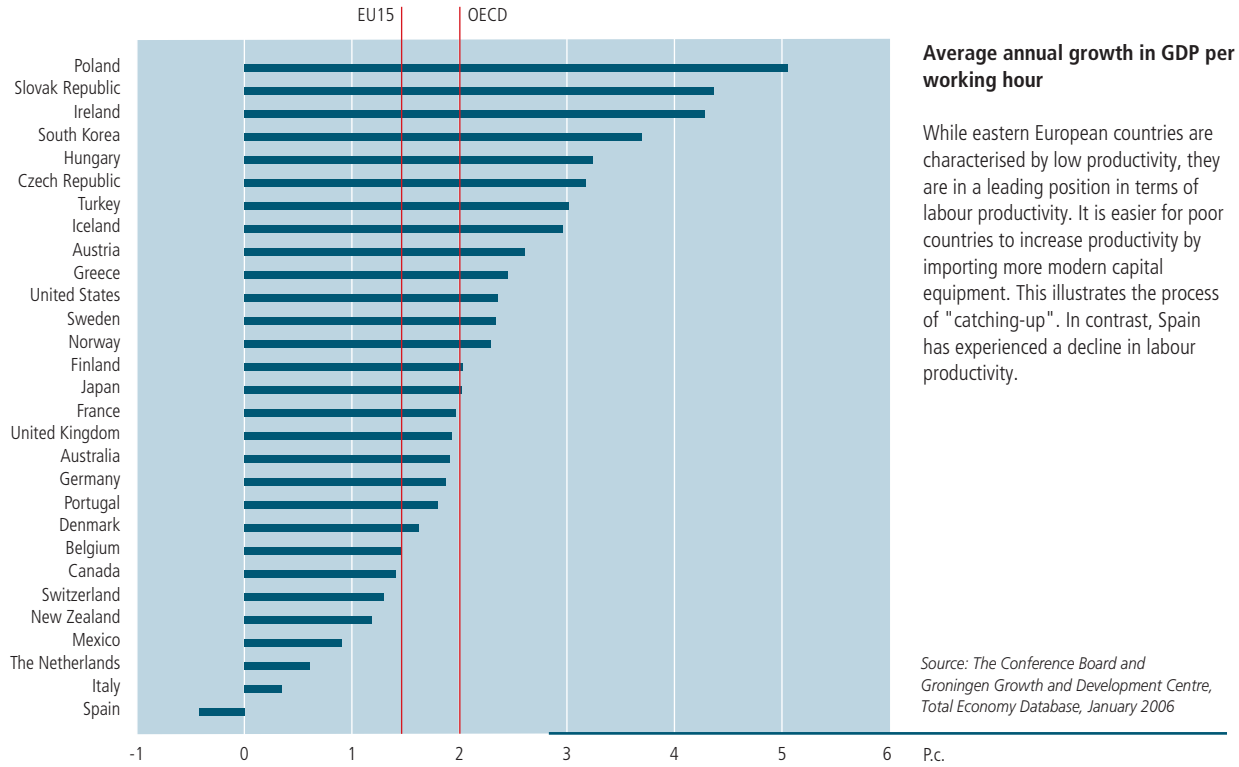


GDP per working hour

High productivity is a prerequisite for maintaining high wage levels in the western European countries and to compensate for relatively high costs. Norway has the highest level of labour productivity in the world. The eastern European countries, South Korea, Turkey, and Mexico rank lowest.

Source: The Conference Board and Groningen Growth and Development Centre, Total Economy Database, January 2006

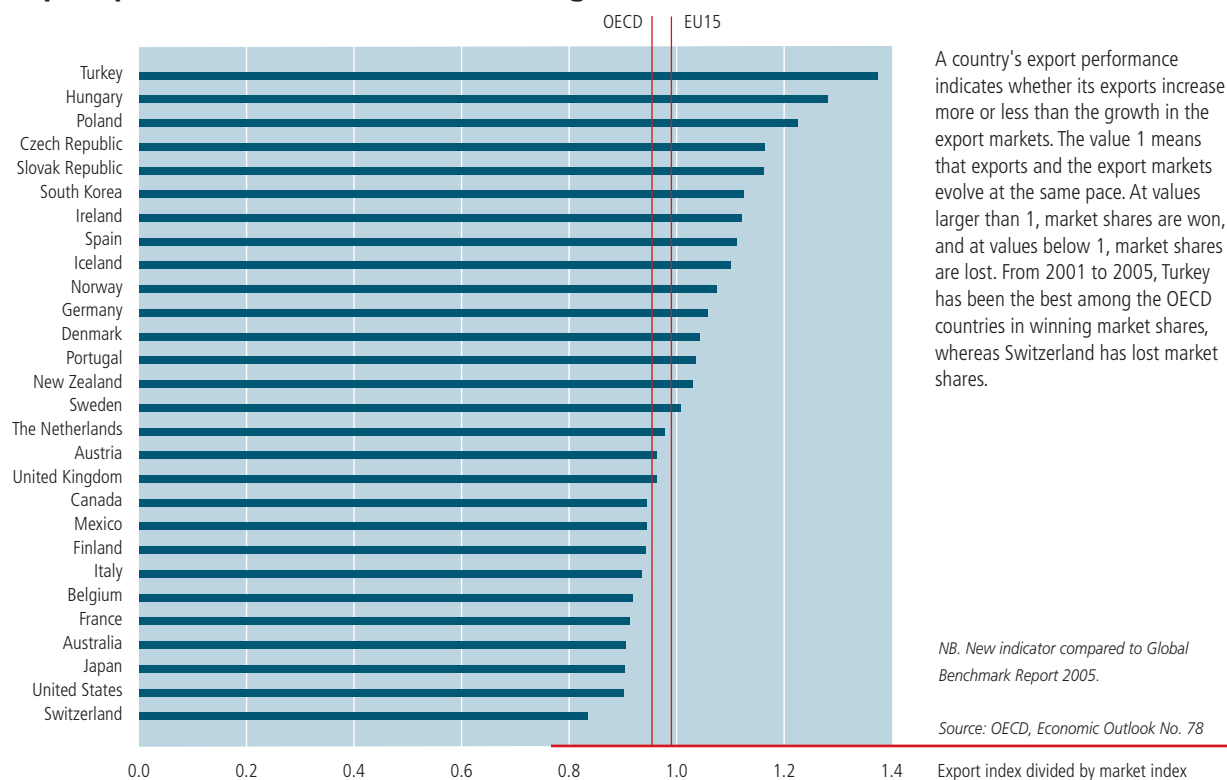
Growth in labour productivity, 2001-2005



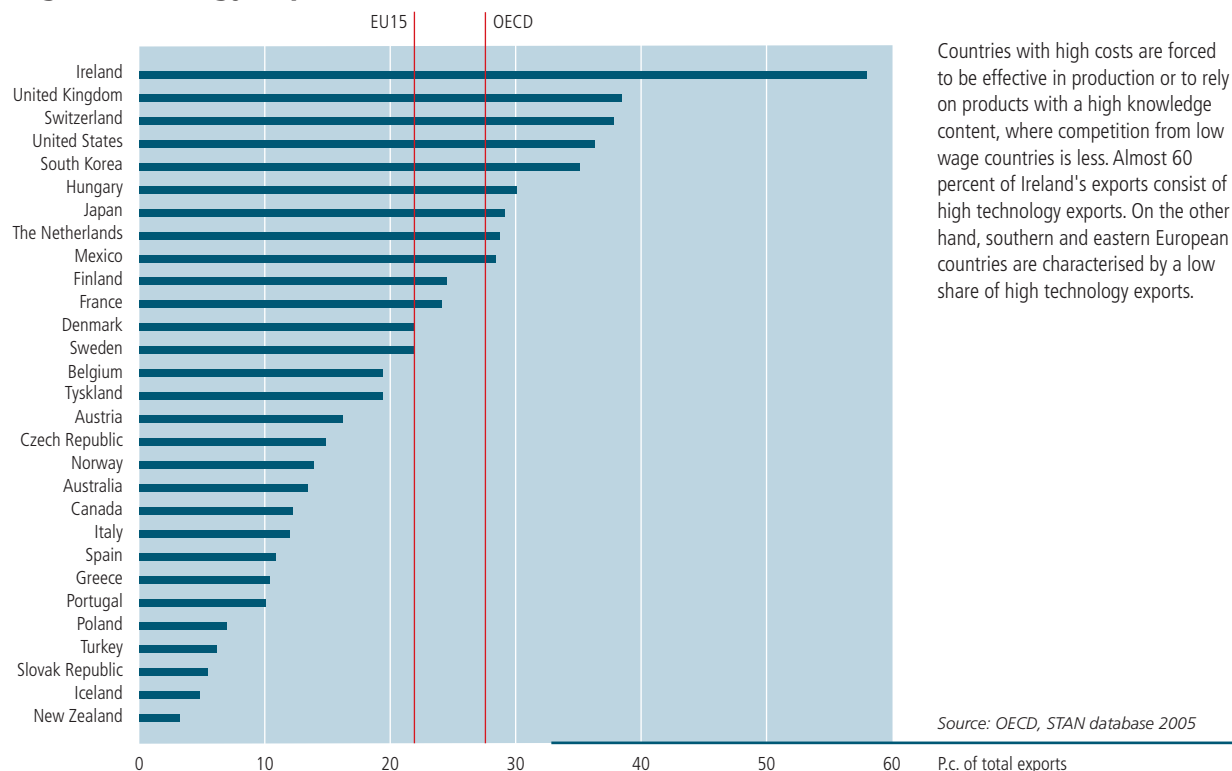
Growth in exports, 2000-2004



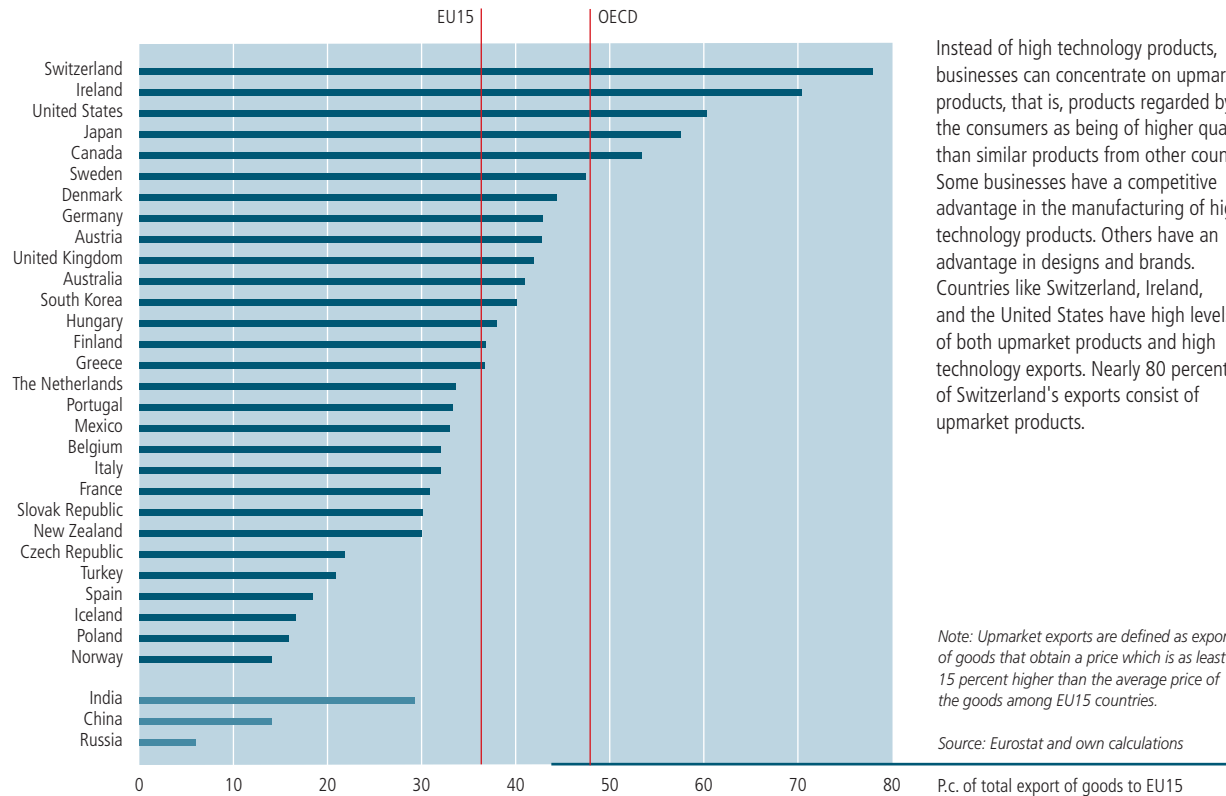
Export performance, 2001-2005 (average)



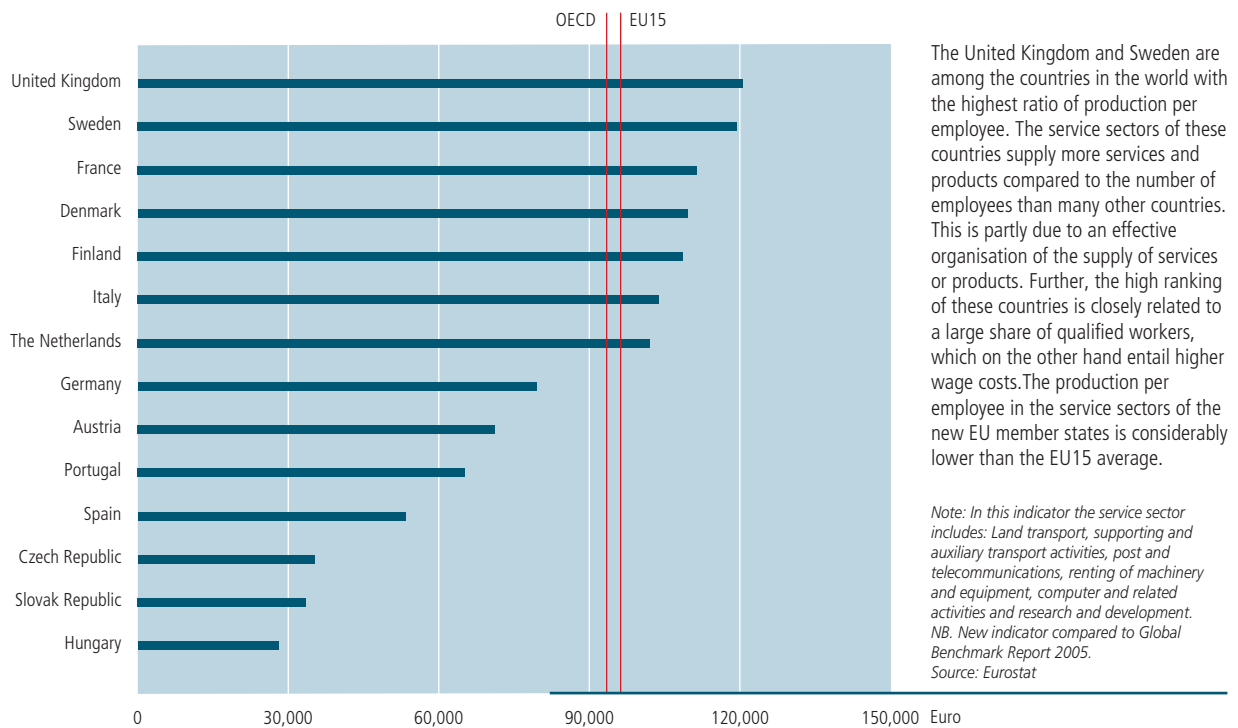
High technology exports, 2002



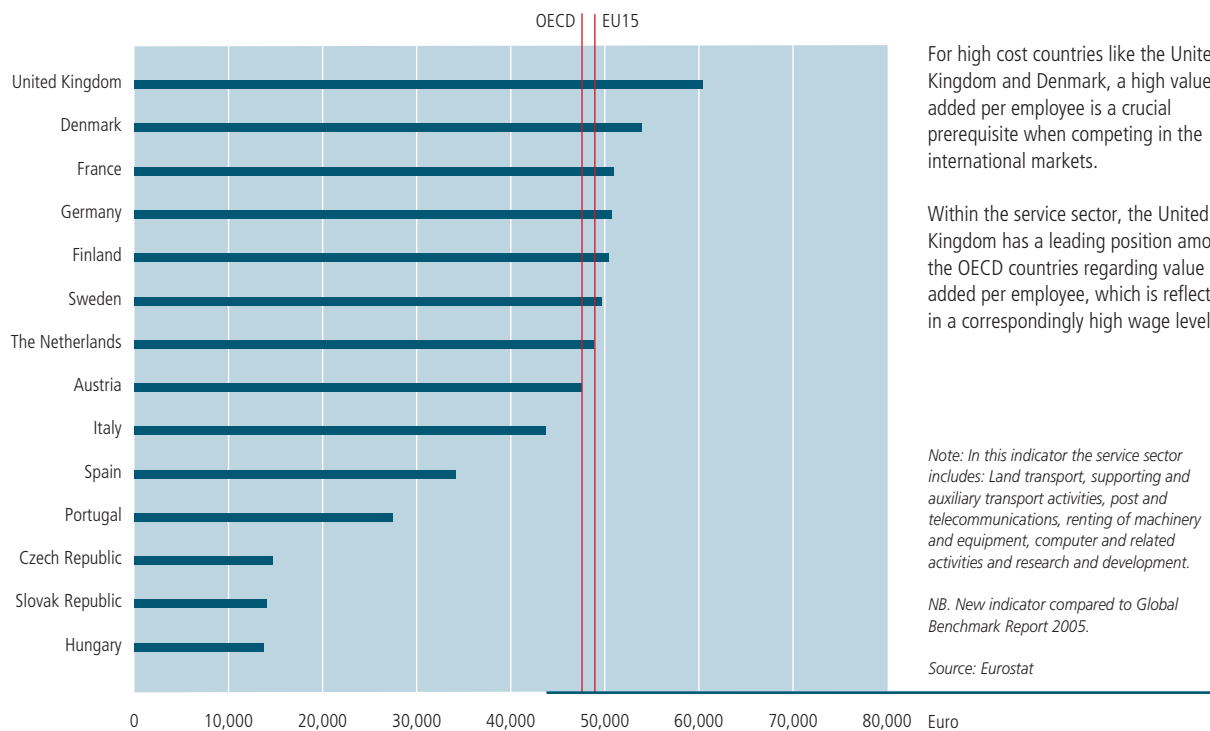
Upmarket exports to EU15, 2000-2004 (average)



Production per employee in the service sector, 2003



Gross value added per employee in the service sector, 2003



For high cost countries like the United Kingdom and Denmark, a high value added per employee is a crucial prerequisite when competing in the international markets.

Within the service sector, the United Kingdom has a leading position among the OECD countries regarding value added per employee, which is reflected in a correspondingly high wage level.

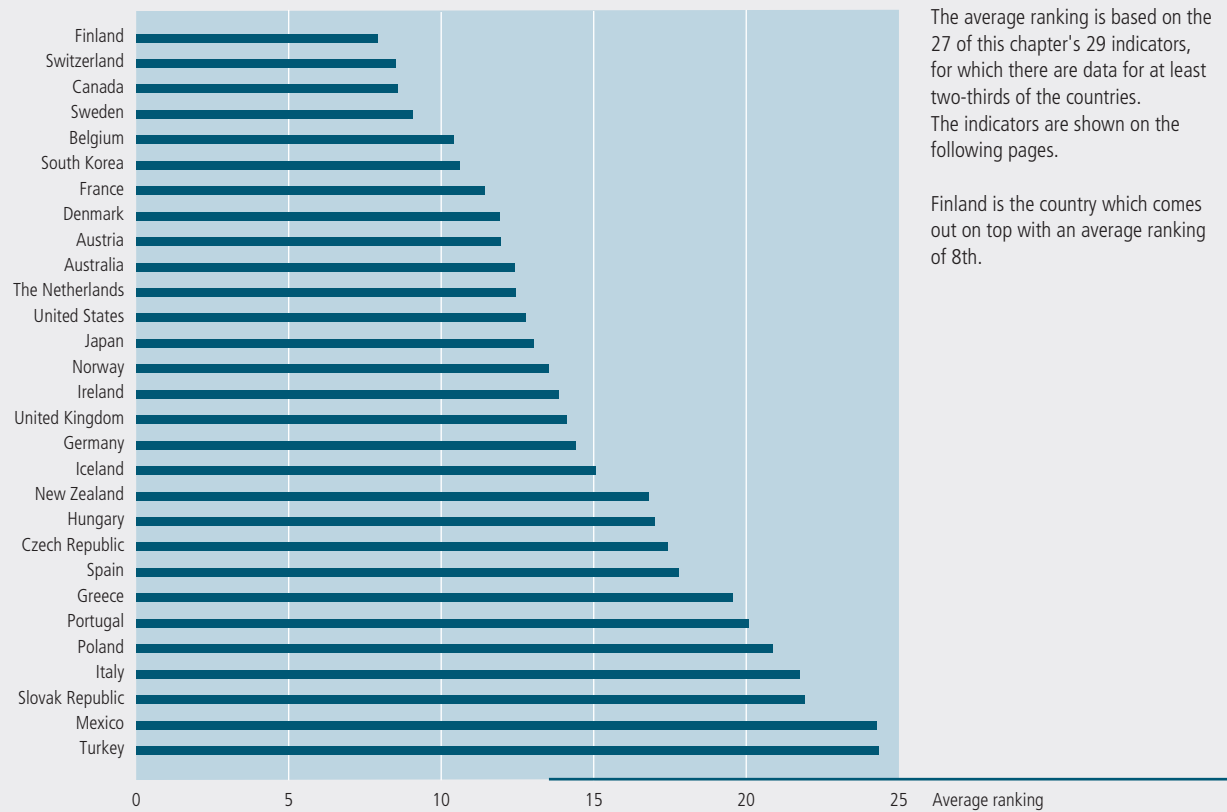
Note: In this indicator the service sector includes: Land transport, supporting and auxiliary transport activities, post and telecommunications, renting of machinery and equipment, computer and related activities and research and development.

NB. New indicator compared to Global Benchmark Report 2005.

Source: Eurostat

Knowledge and competence

Average ranking of countries



The average ranking is based on the 27 of this chapter's 29 indicators, for which there are data for at least two-thirds of the countries. The indicators are shown on the following pages.

Finland is the country which comes out on top with an average ranking of 8th.

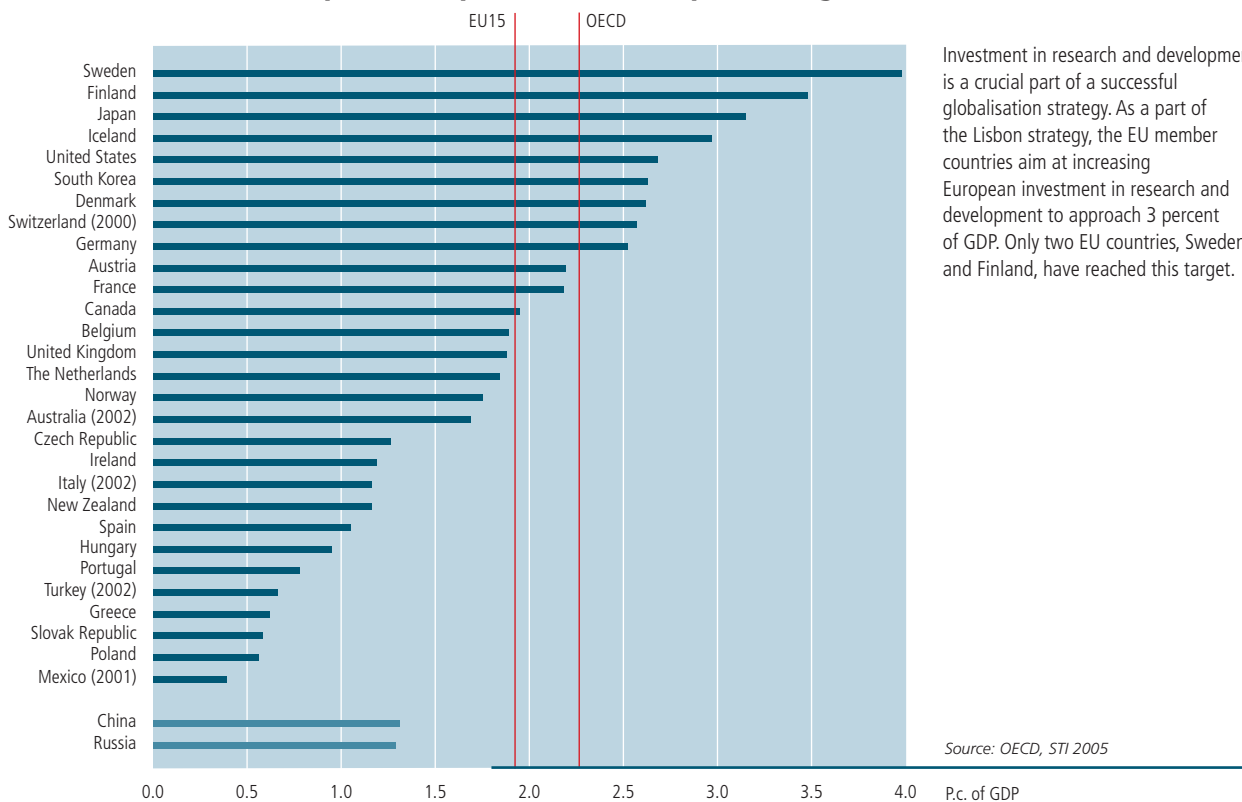
Knowledge and competence

In the globalised world, western enterprises have problems competing in the production of standard goods, and companies increasingly have to focus on knowledge and competence in order to compete internationally.

Finland leads the OECD countries and has taken as many as 13 Top-3 places out of 29 indicators.

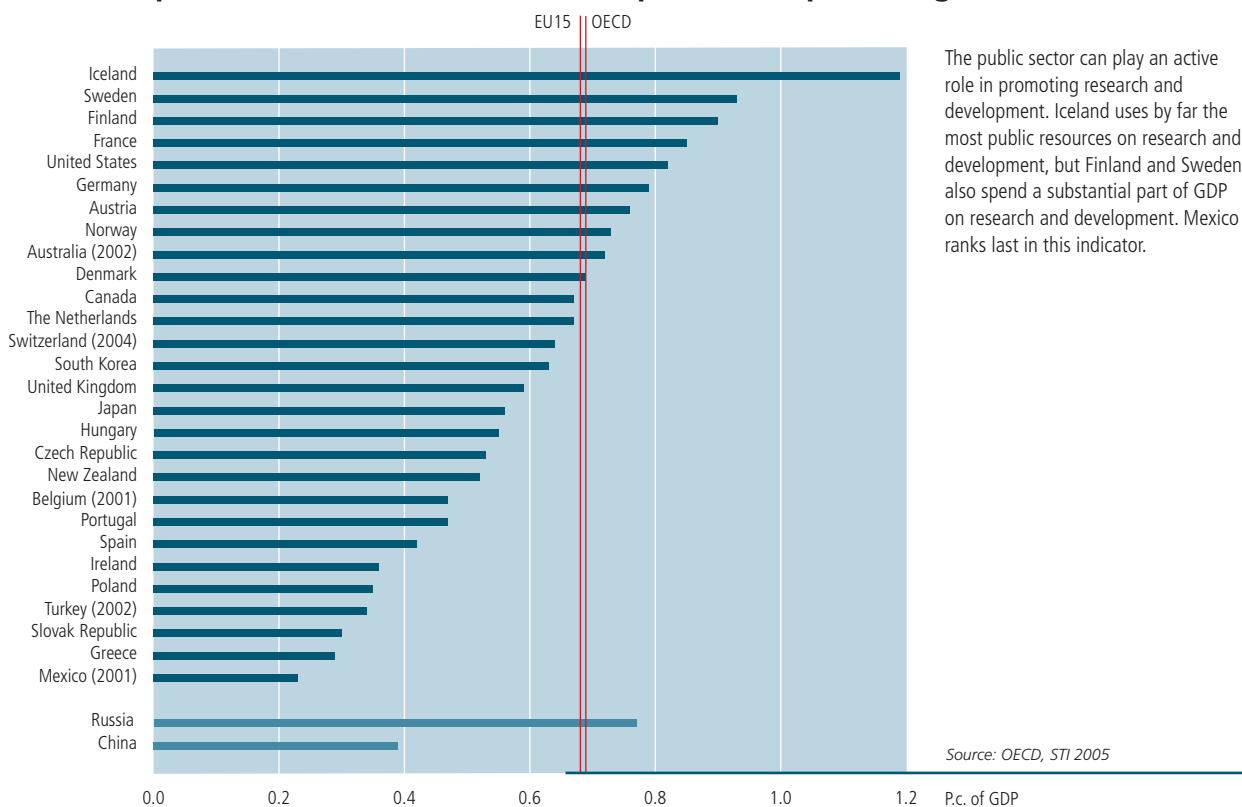
Finland is followed by Switzerland and Canada. The Swiss performance should be viewed in the light of the country's leading position in knowledge dissemination and patenting. Similarly, Canada excels by having the highest percentage of young people who complete higher education. As many as 53% of young Canadians between 25 and 34 have attained tertiary education.

Research and development expenditures as a percentage of GDP, 2003



Investment in research and development is a crucial part of a successful globalisation strategy. As a part of the Lisbon strategy, the EU member countries aim at increasing European investment in research and development to approach 3 percent of GDP. Only two EU countries, Sweden and Finland, have reached this target.

Public expenditure to research and development as a percentage of GDP, 2003



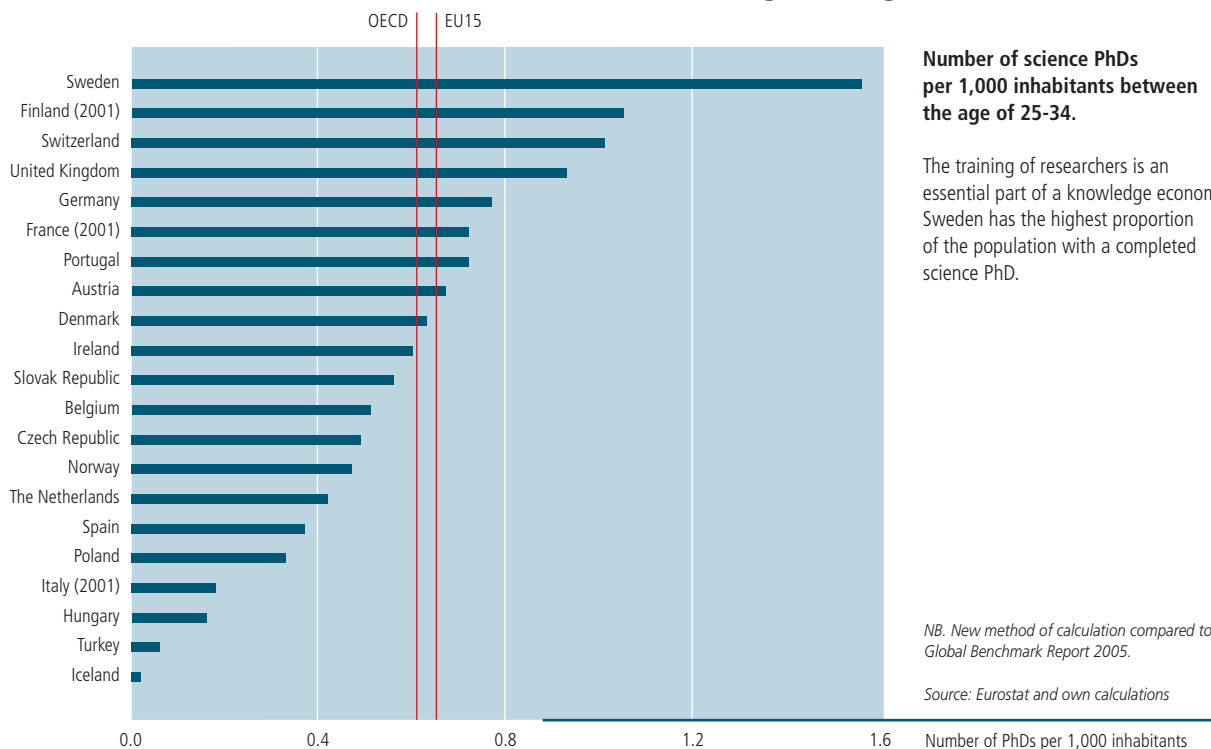
The public sector can play an active role in promoting research and development. Iceland uses by far the most public resources on research and development, but Finland and Sweden also spend a substantial part of GDP on research and development. Mexico ranks last in this indicator.

Tax incentives for research and development, 2004



Favourable tax conditions are one way to ensure sufficient incentives for investment in research and development. In countries like Spain and Mexico there are considerable tax incentives to encourage investment in research and development. However, these two countries are still characterised by relatively low levels of investment.

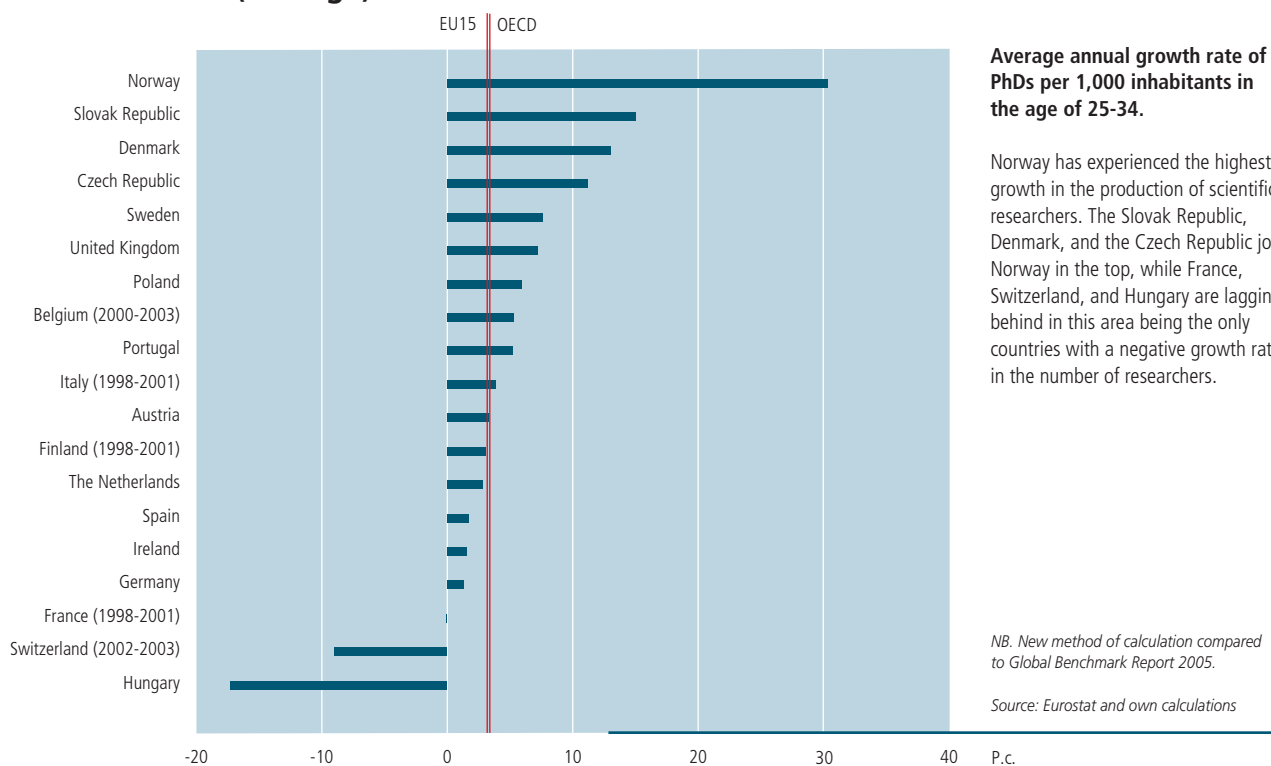
Number of researchers in the field of science and engineering, 2003



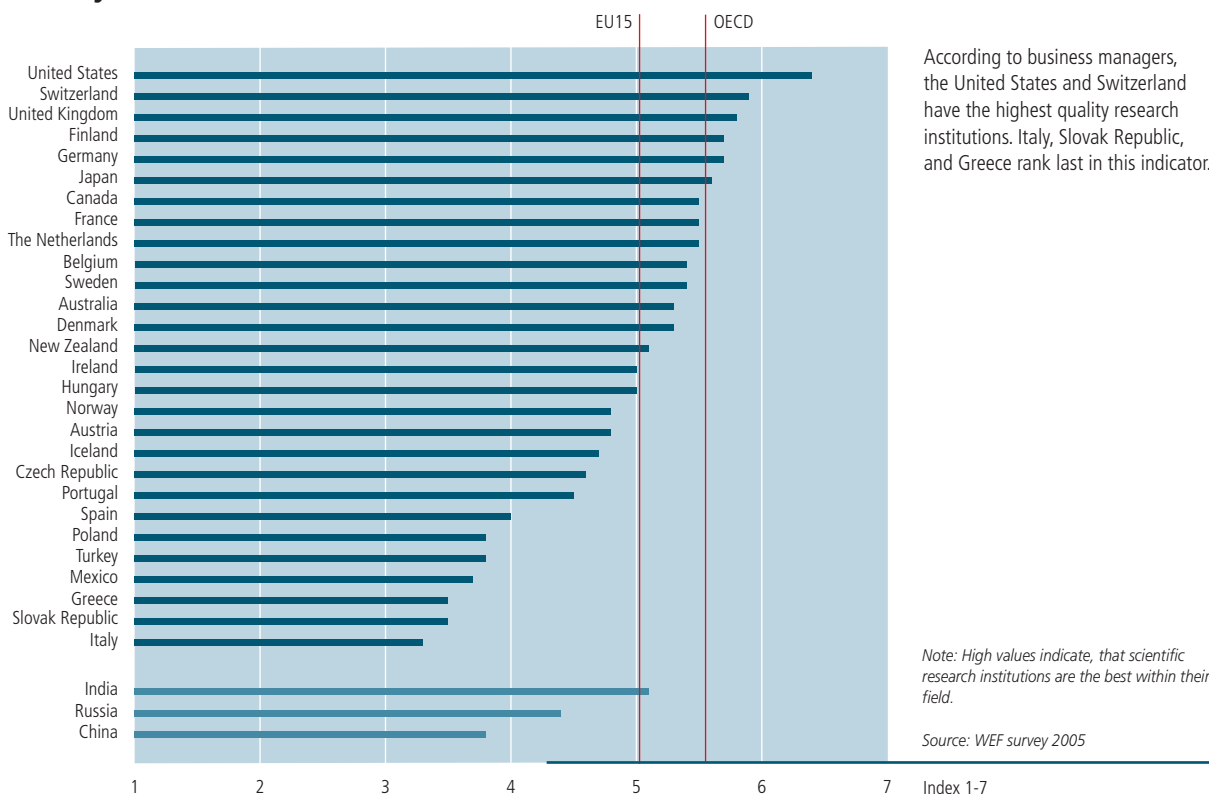
Number of science PhDs per 1,000 inhabitants between the age of 25-34.

The training of researchers is an essential part of a knowledge economy. Sweden has the highest proportion of the population with a completed science PhD.

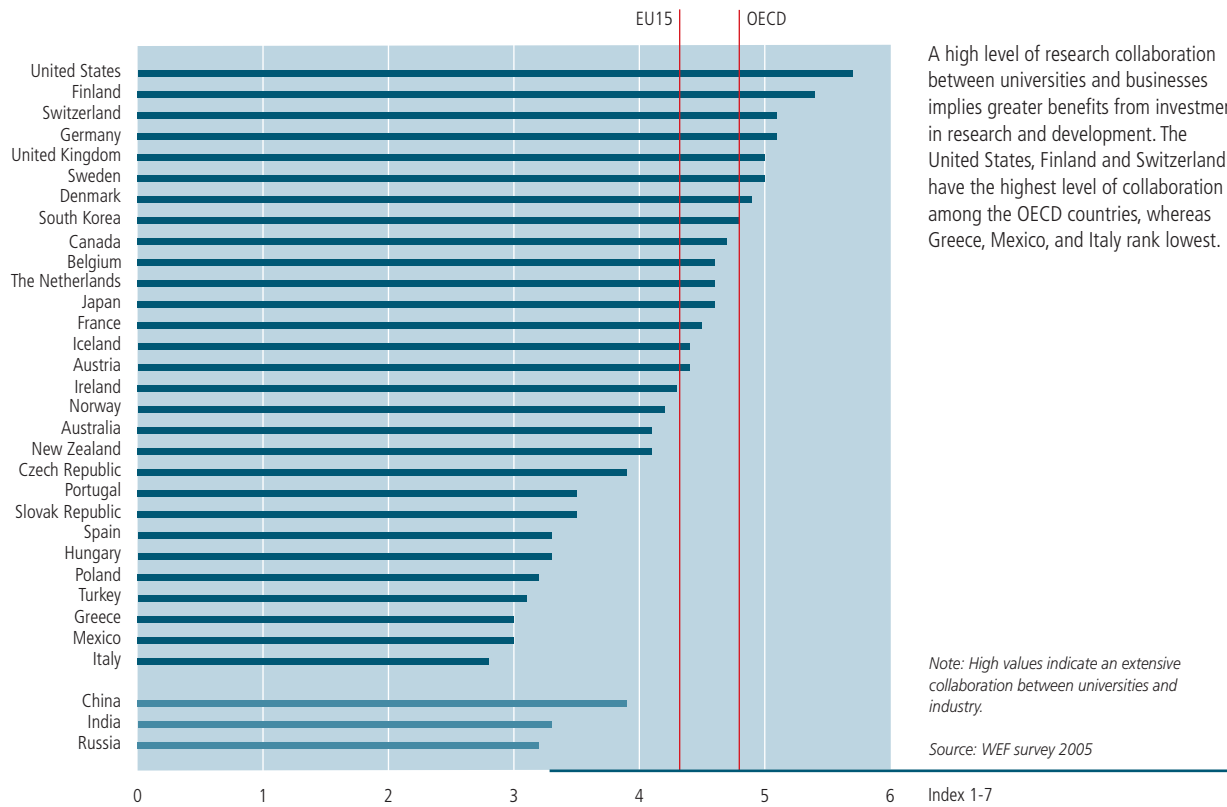
Growth in number of researchers in the field of science and engineering, 1998-2003 (average)



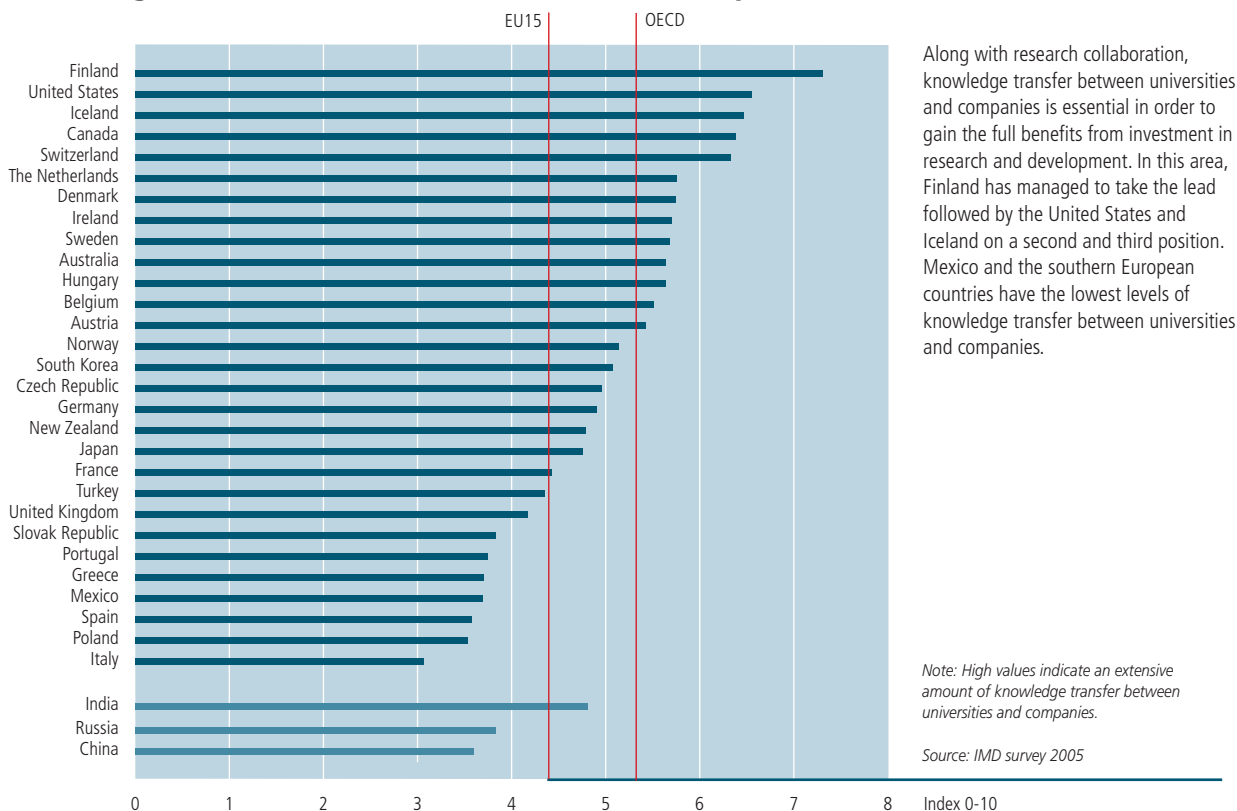
Quality of scientific research institutions, 2005



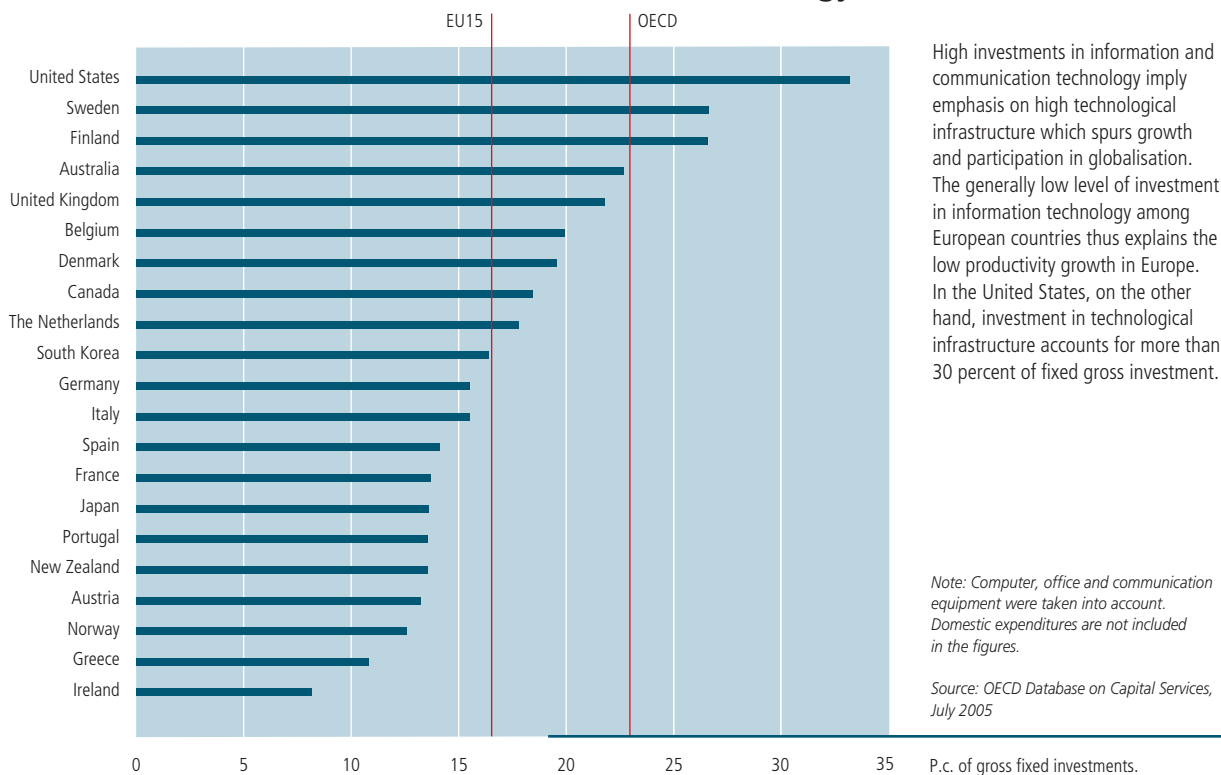
University/industry research collaboration, 2004



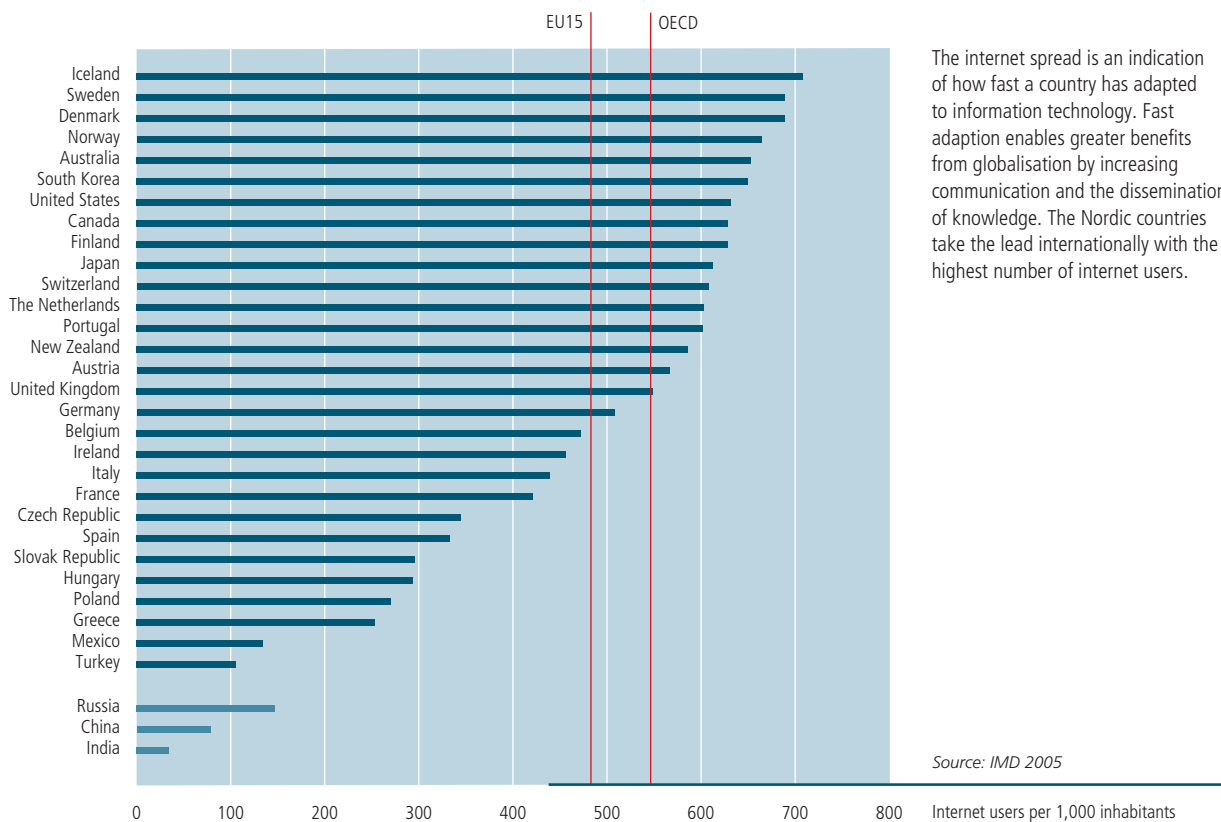
Knowledge transfer between universities and companies, 2005



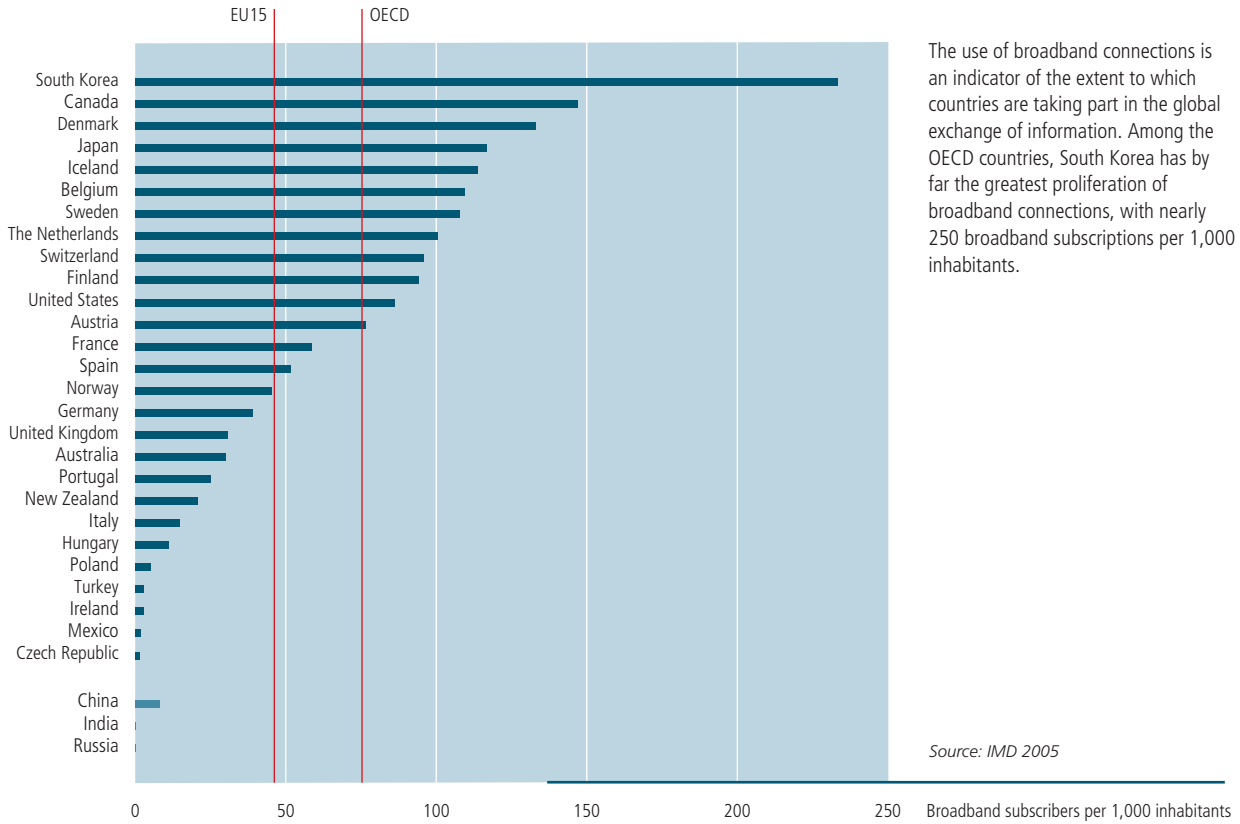
Investment in information and communication technology, 2003



Internet users, 2004

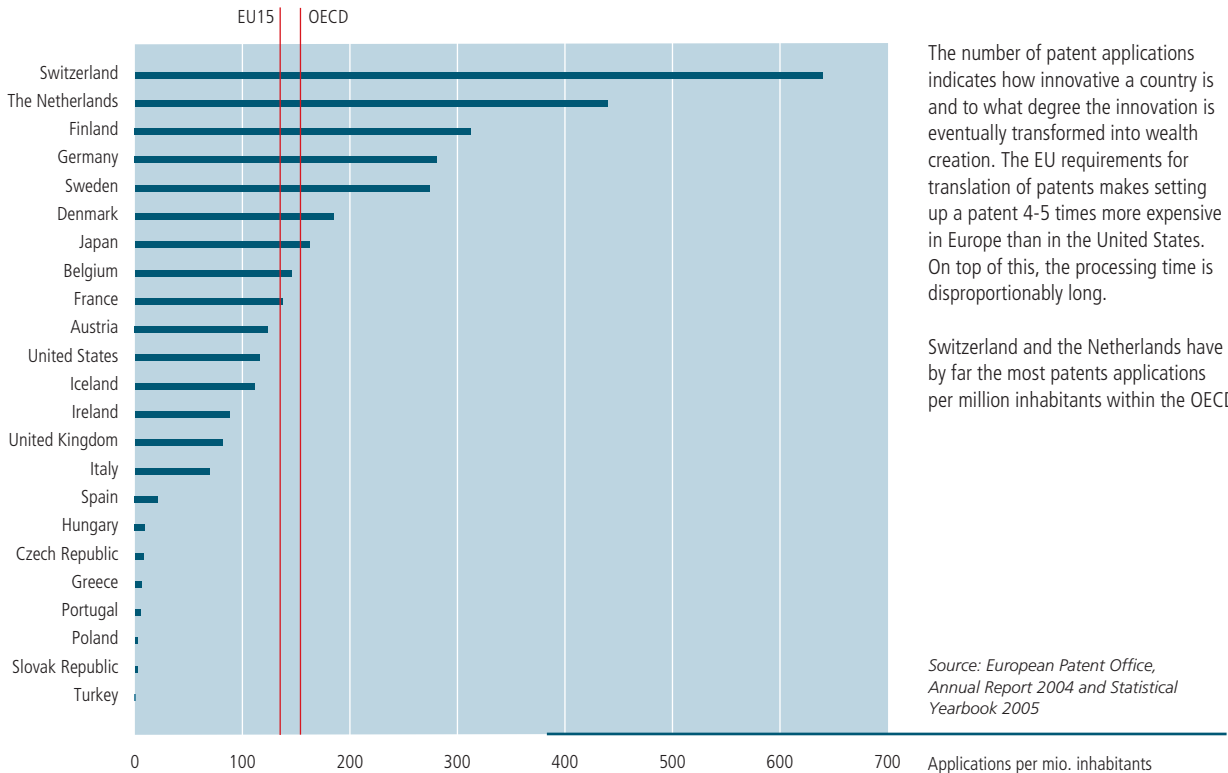


Broadband subscribers, 2003



The use of broadband connections is an indicator of the extent to which countries are taking part in the global exchange of information. Among the OECD countries, South Korea has by far the greatest proliferation of broadband connections, with nearly 250 broadband subscriptions per 1,000 inhabitants.

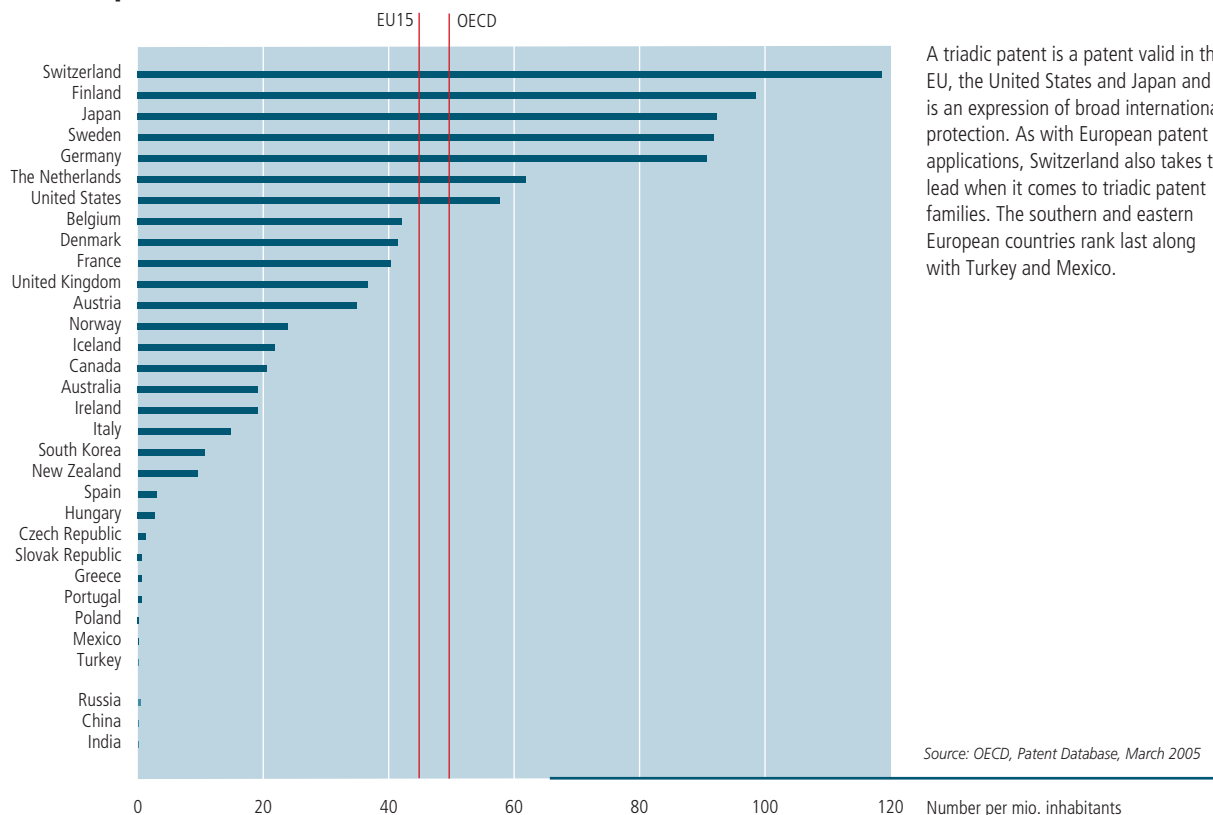
European patent applications, 2004



The number of patent applications indicates how innovative a country is and to what degree the innovation is eventually transformed into wealth creation. The EU requirements for translation of patents makes setting up a patent 4-5 times more expensive in Europe than in the United States. On top of this, the processing time is disproportionately long.

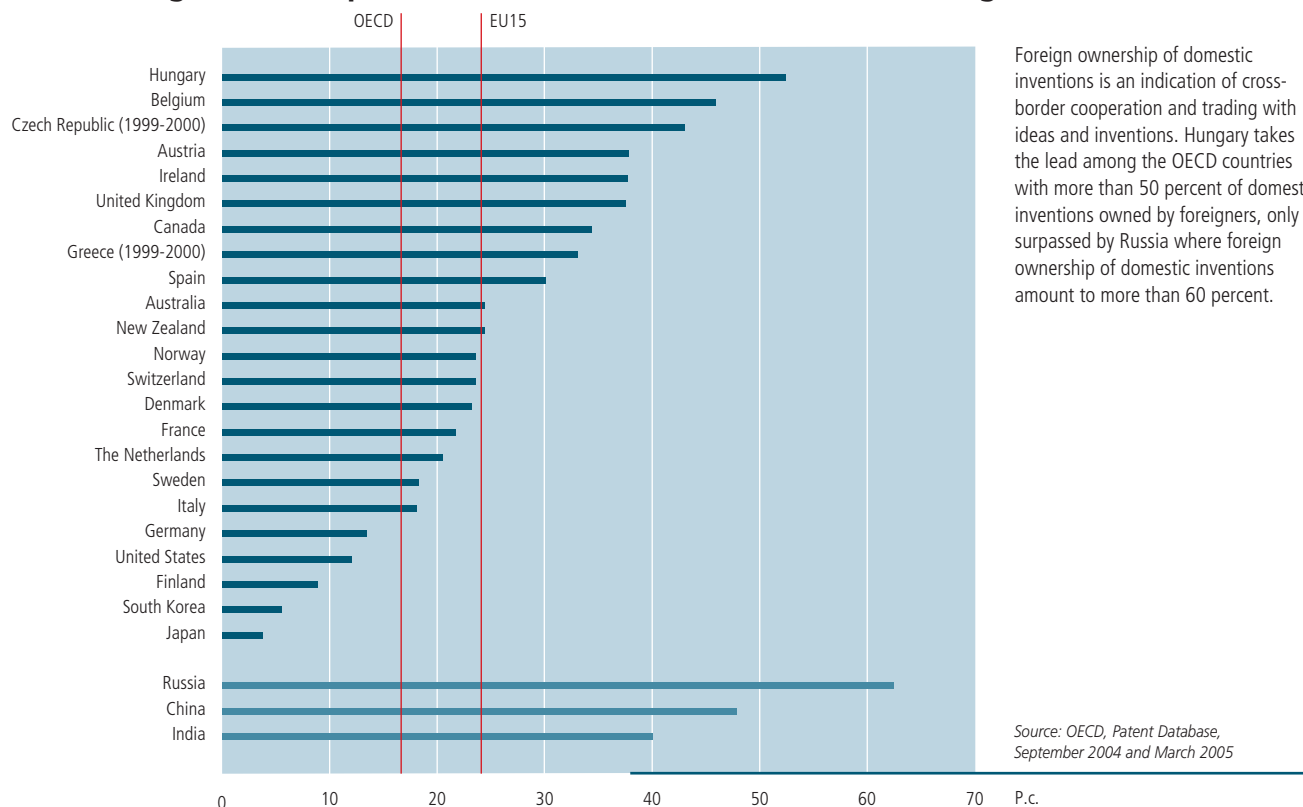
Switzerland and the Netherlands have by far the most patents applications per million inhabitants within the OECD.

Triadic patent families, 2001



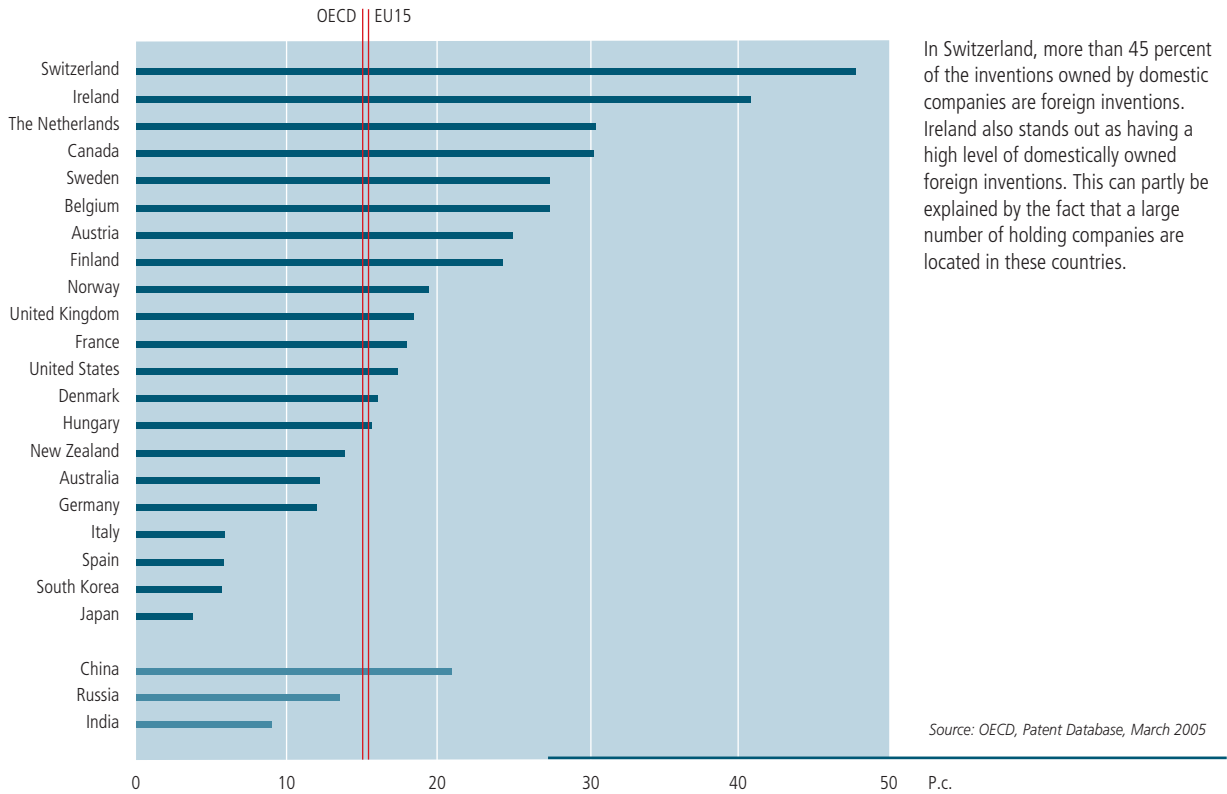
A triadic patent is a patent valid in the EU, the United States and Japan and is an expression of broad international protection. As with European patent applications, Switzerland also takes the lead when it comes to triadic patent families. The southern and eastern European countries rank last along with Turkey and Mexico.

Foreign ownership of domestic inventions, 1999-2001 (average)



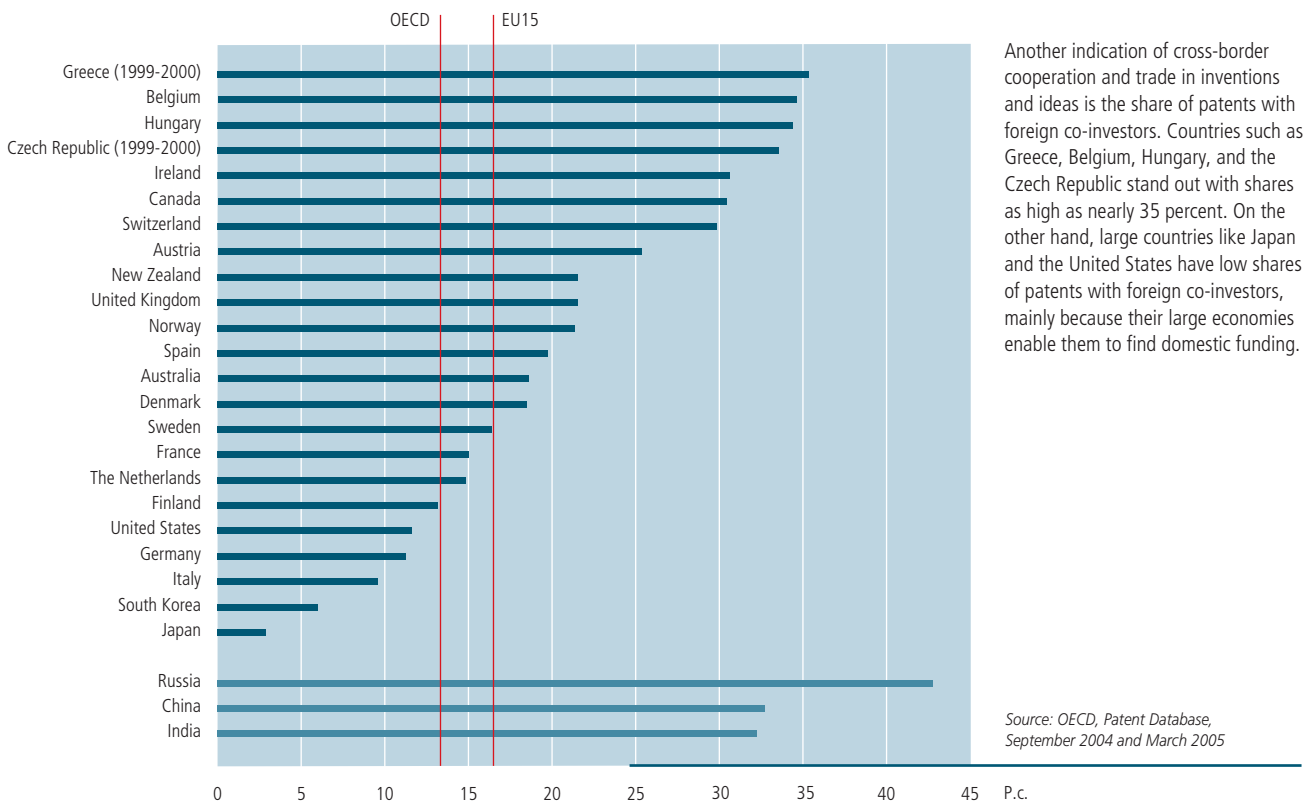
Foreign ownership of domestic inventions is an indication of cross-border cooperation and trading with ideas and inventions. Hungary takes the lead among the OECD countries with more than 50 percent of domestic inventions owned by foreigners, only surpassed by Russia where foreign ownership of domestic inventions amount to more than 60 percent.

Domestic ownership of foreign inventions, 1999-2001 (average)



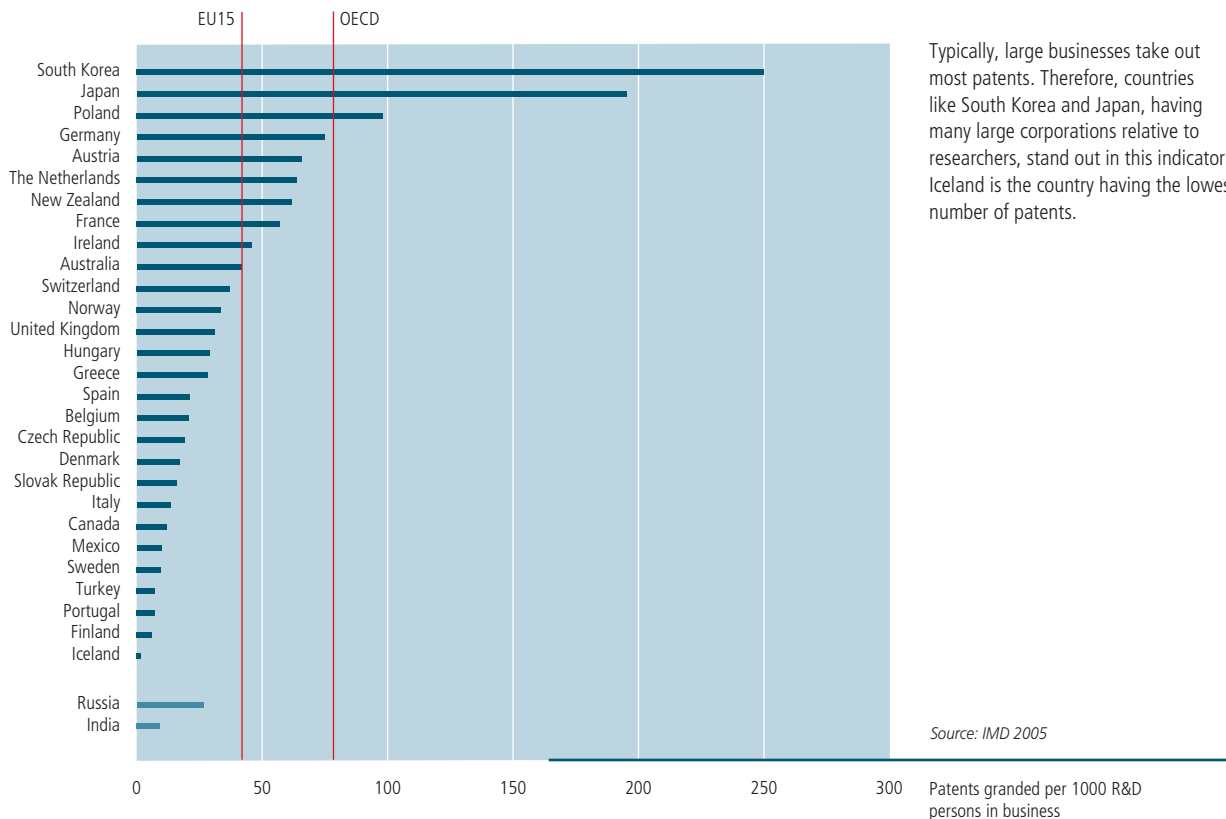
In Switzerland, more than 45 percent of the inventions owned by domestic companies are foreign inventions. Ireland also stands out as having a high level of domestically owned foreign inventions. This can partly be explained by the fact that a large number of holding companies are located in these countries.

Share of patents with foreign co-investors, 1999-2001 (average)

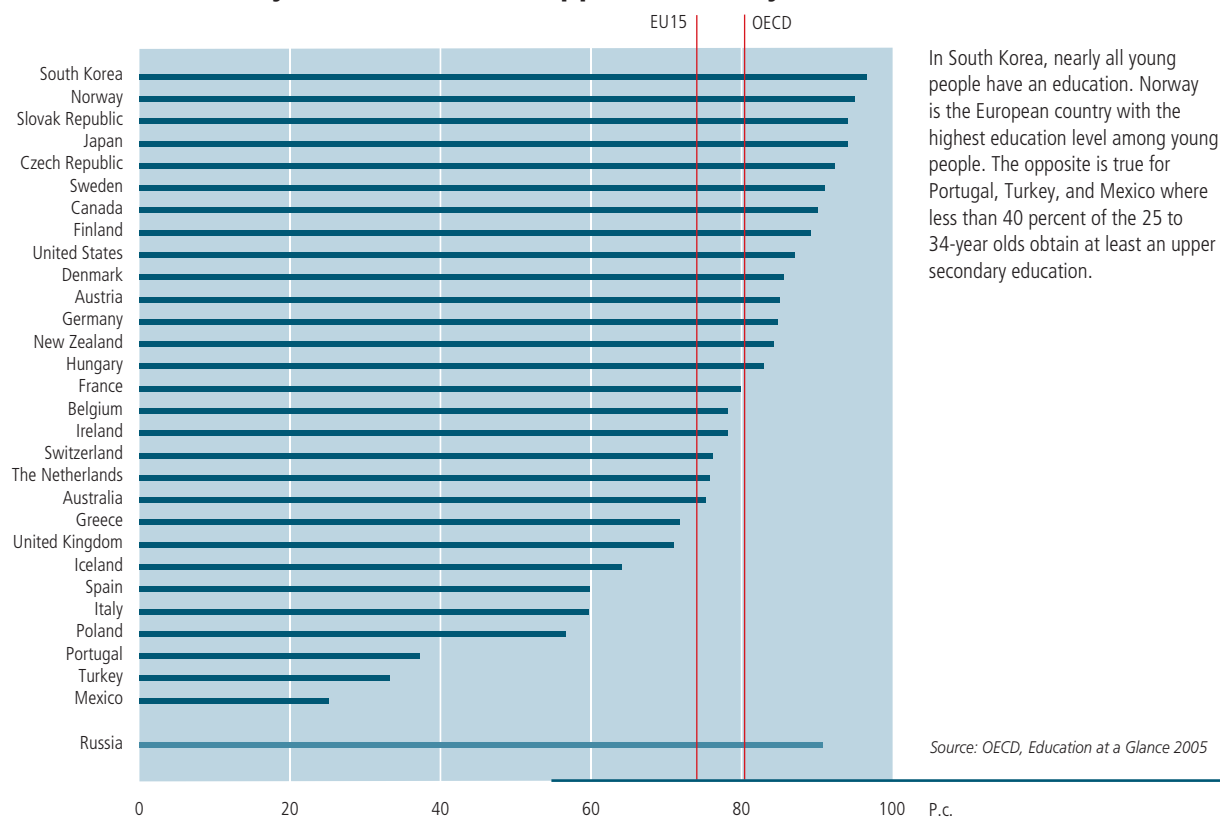


Another indication of cross-border cooperation and trade in inventions and ideas is the share of patents with foreign co-investors. Countries such as Greece, Belgium, Hungary, and the Czech Republic stand out with shares as high as nearly 35 percent. On the other hand, large countries like Japan and the United States have low shares of patents with foreign co-investors, mainly because their large economies enable them to find domestic funding.

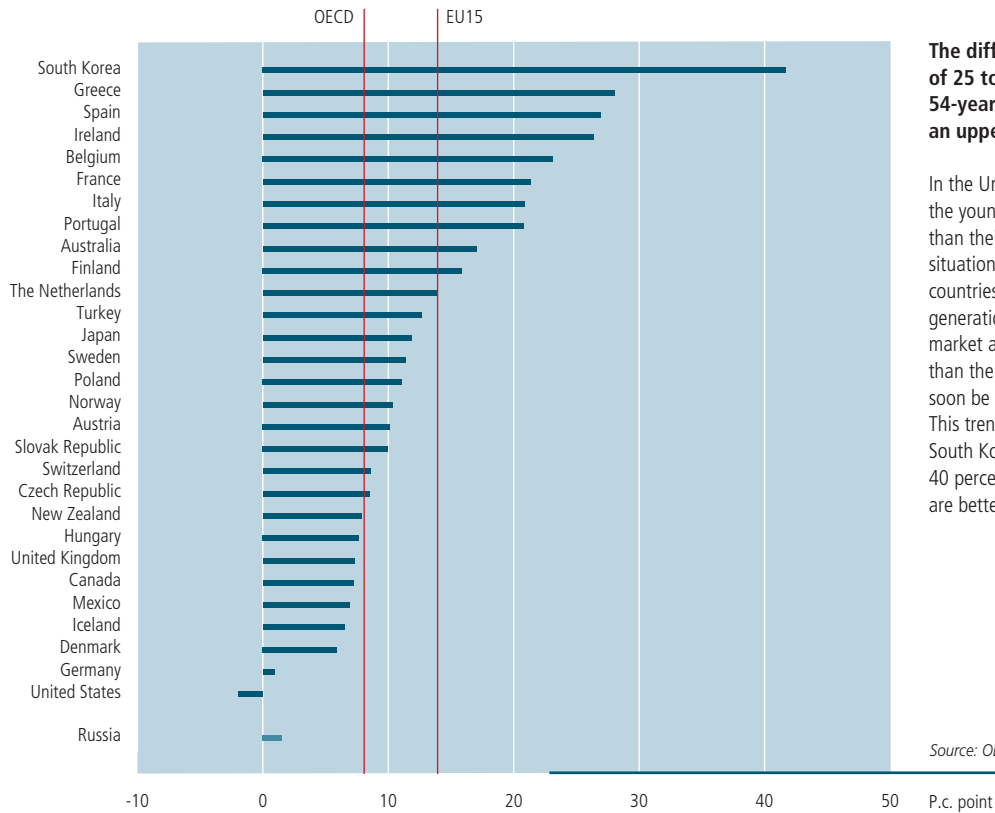
Patent productivity, 2002



Share of 25 to 34-year-olds, with an upper secondary education, 2003



Upper secondary education over two generations, 2003

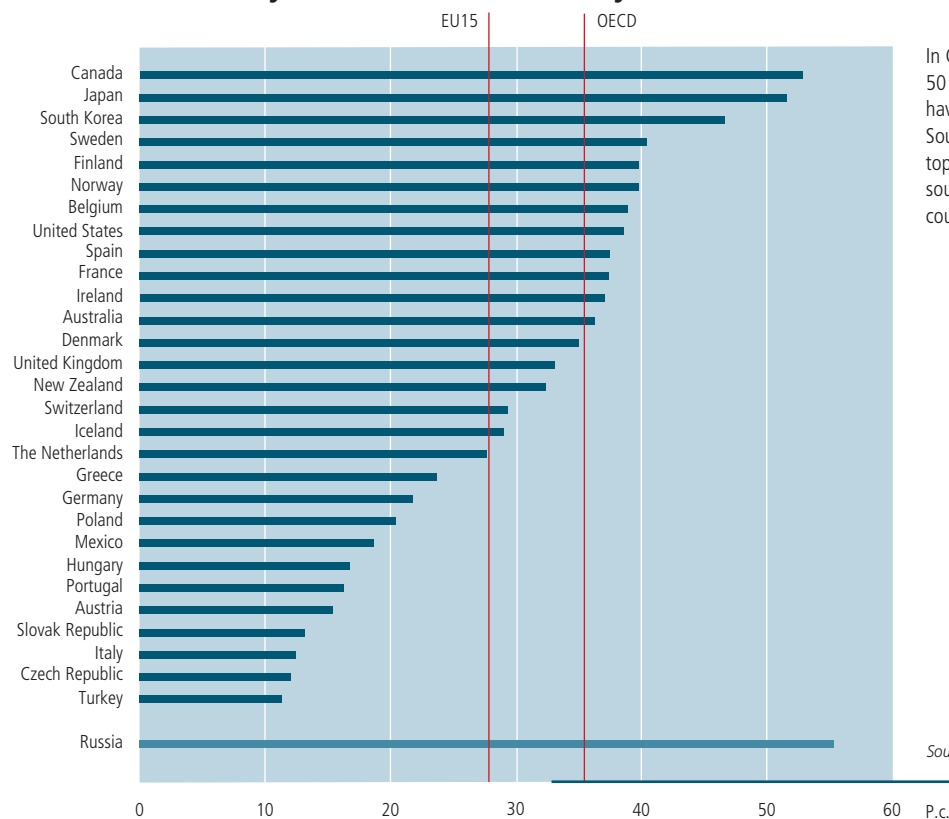


The difference between the share of 25 to 34-year-olds and 45 to 54-year-olds who have obtained an upper secondary education.

In the United States, a smaller share of the young generation is better educated than their parents' generation. The situation is reverse for all the other countries where the younger generations entering the labour market are significantly better educated than the older generation, who will soon be leaving the labour market. This trend is especially pronounced in South Korea where more than 40 percent of the younger generations are better educated than their parents.

Source: OECD, Education at a Glance 2005

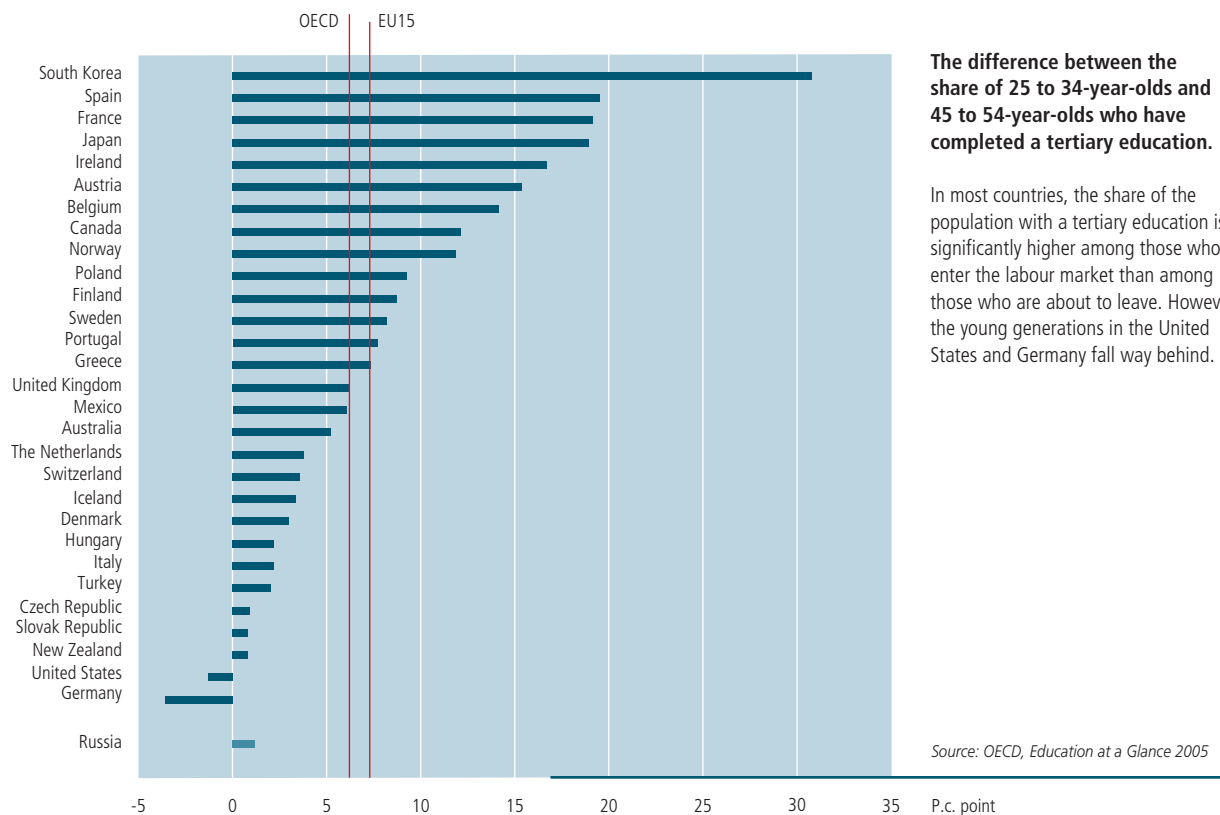
Share of 25 to 34-year-olds, with a tertiary education, 2003



In Canada and Japan, more than 50 percent of the 25 to 34-year-olds have attained tertiary education. South Korea also ranks among the top countries in this category. In the southern and eastern European countries, the level is particularly low.

Source: OECD, Education at a Glance 2005

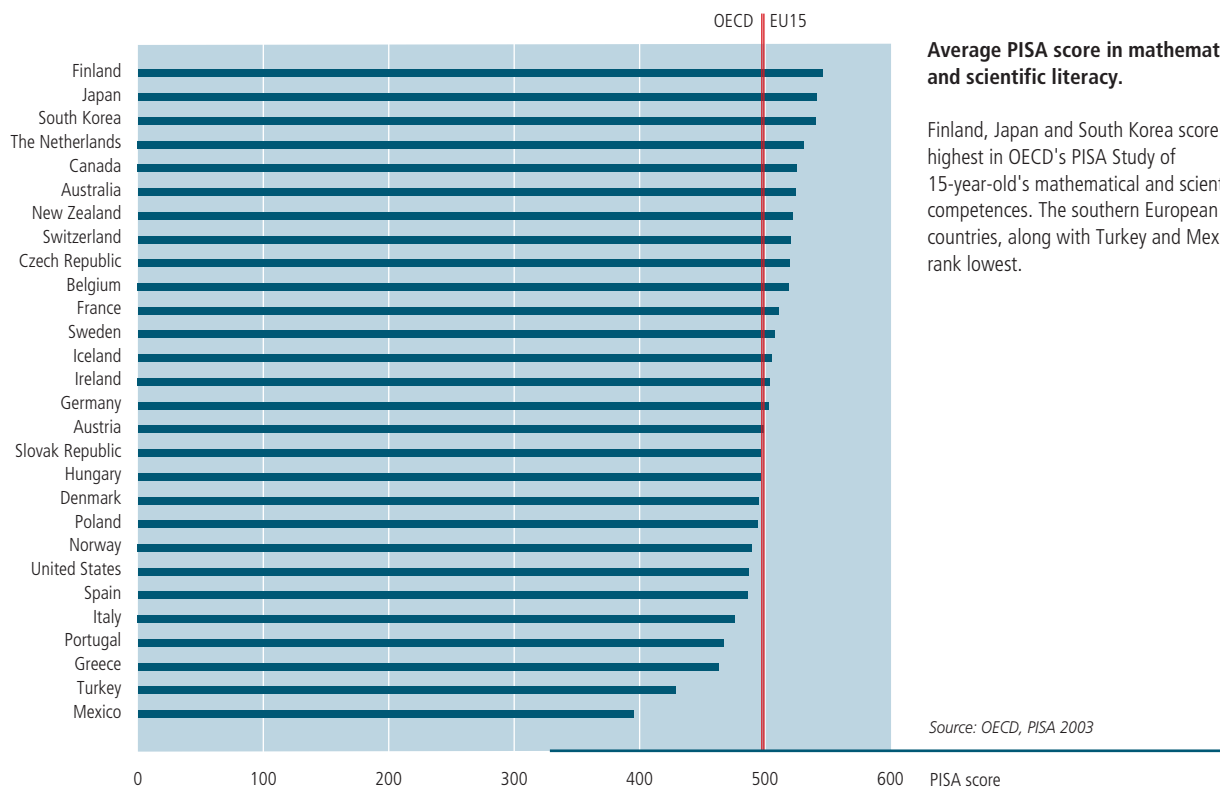
Tertiary education over two generations, 2003



The difference between the share of 25 to 34-year-olds and 45 to 54-year-olds who have completed a tertiary education.

In most countries, the share of the population with a tertiary education is significantly higher among those who enter the labour market than among those who are about to leave. However, the young generations in the United States and Germany fall way behind.

OECD's PISA (Programme for International Student Assessment) Study, 2003



Average PISA score in mathematical and scientific literacy.

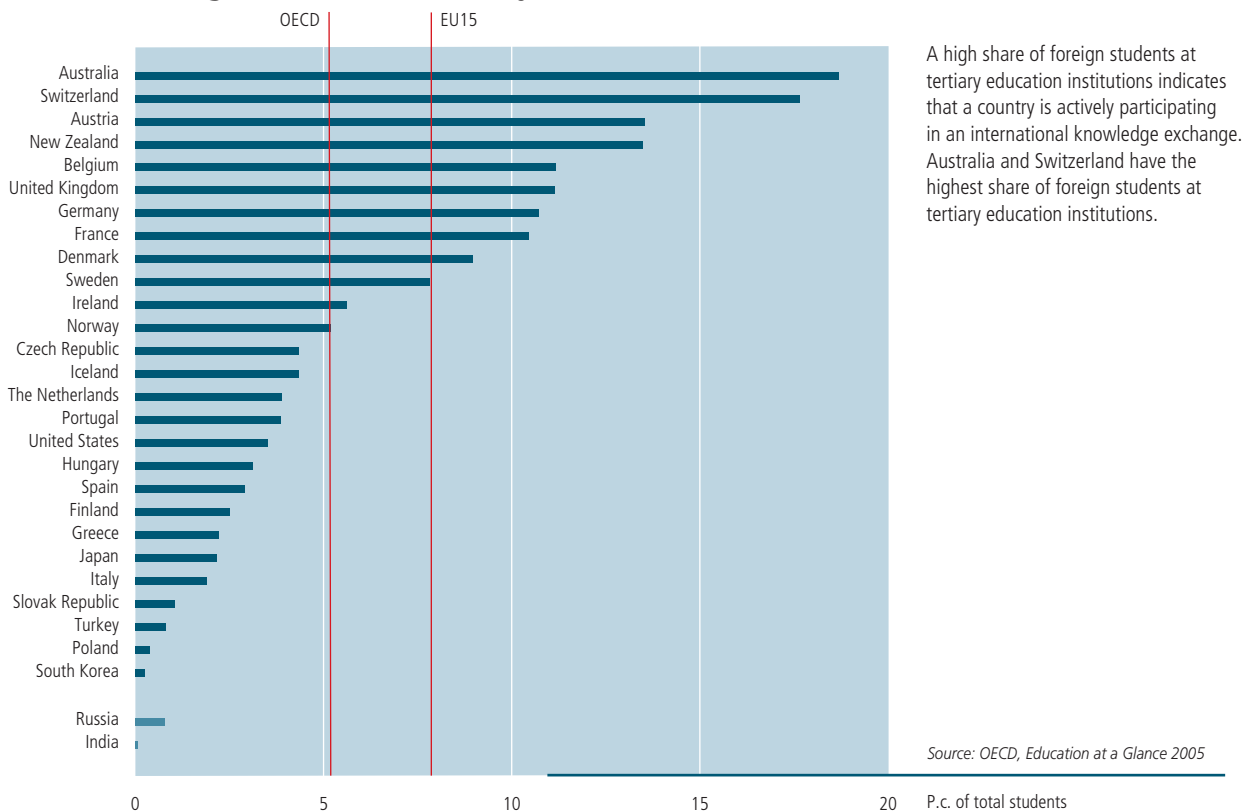
Finland, Japan and South Korea score highest in OECD's PISA Study of 15-year-old's mathematical and scientific competences. The southern European countries, along with Turkey and Mexico, rank lowest.

Share of graduates divided by subject, 2003



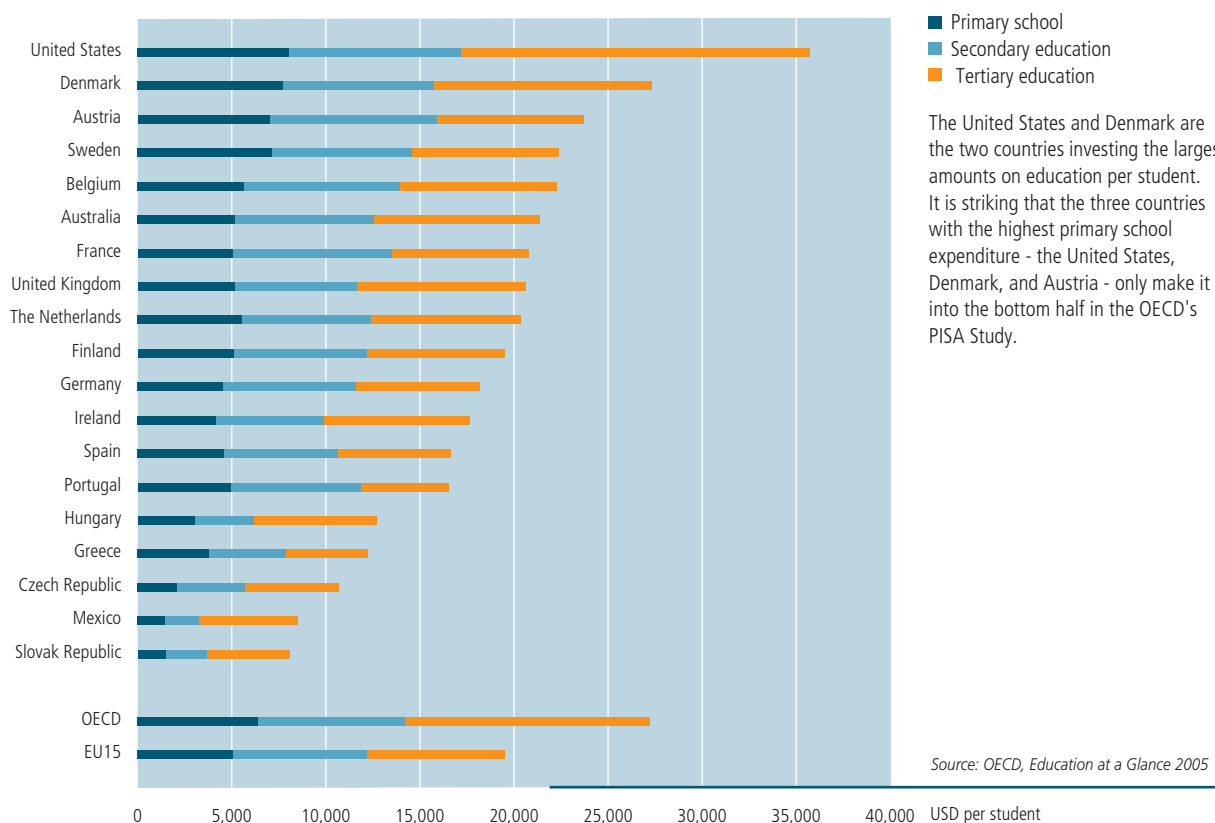
Businesses typically seek people with high qualifications within the field of science. In general, the interest for science and engineering/technical education is dropping in the Western world. South Korea is the country with the largest share of graduates with a scientific or engineering/technical education.

Share of foreign students at tertiary education institutions, 2003

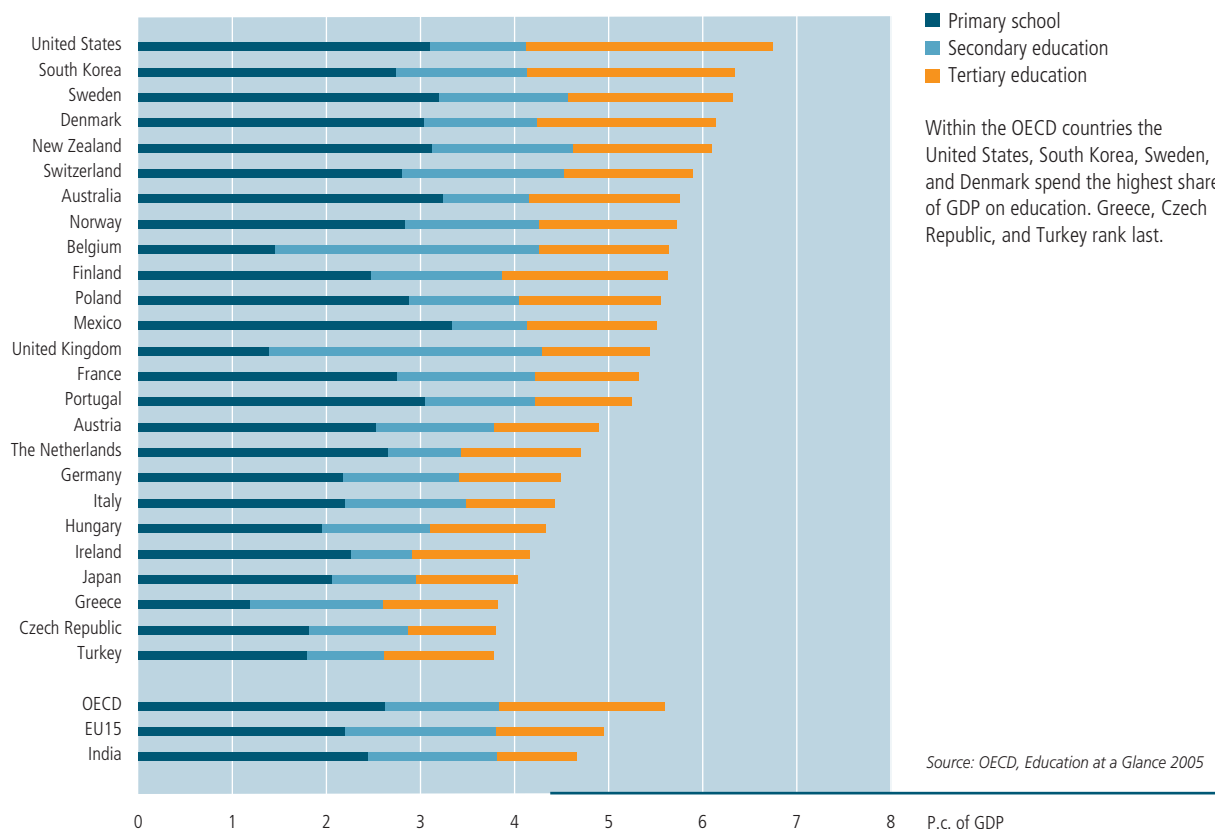


A high share of foreign students at tertiary education institutions indicates that a country is actively participating in an international knowledge exchange. Australia and Switzerland have the highest share of foreign students at tertiary education institutions.

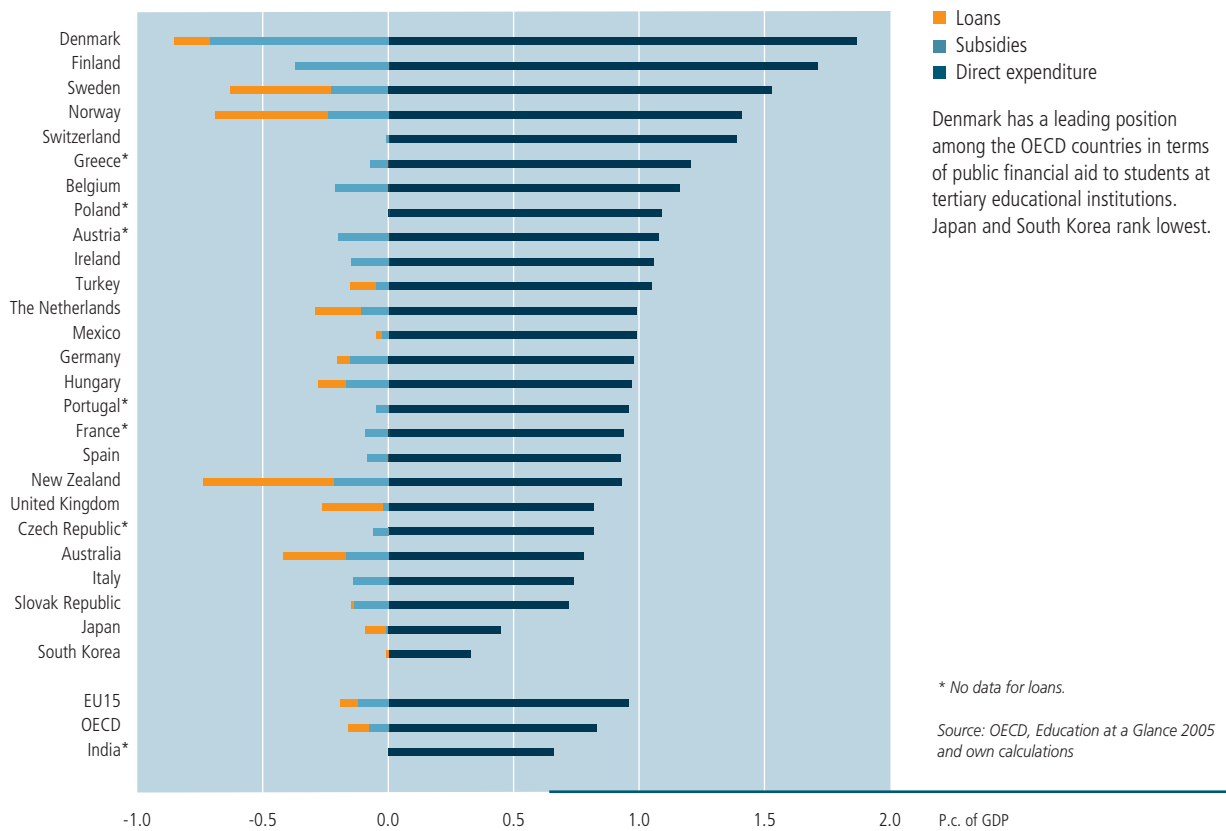
Expenditure on education per student, 2002



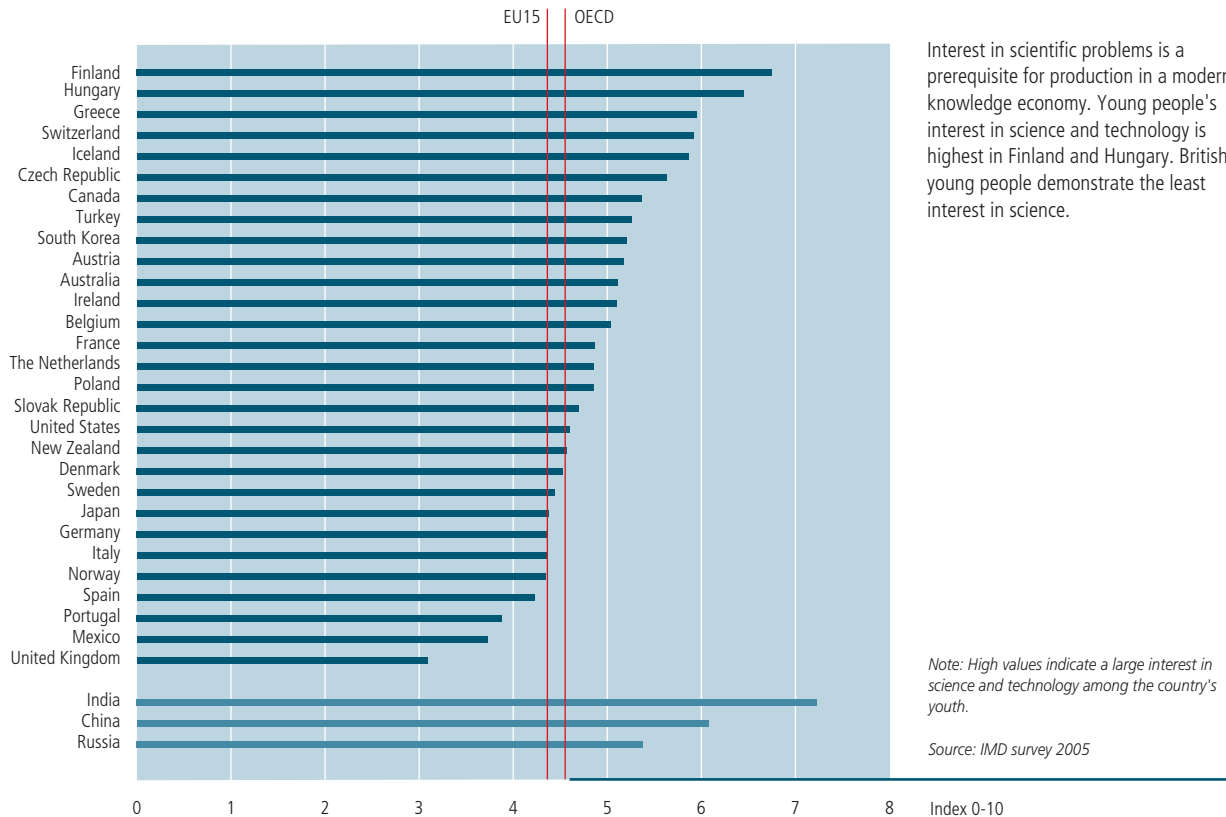
Expenditure on educational institutions as a percentage of GDP, 2002



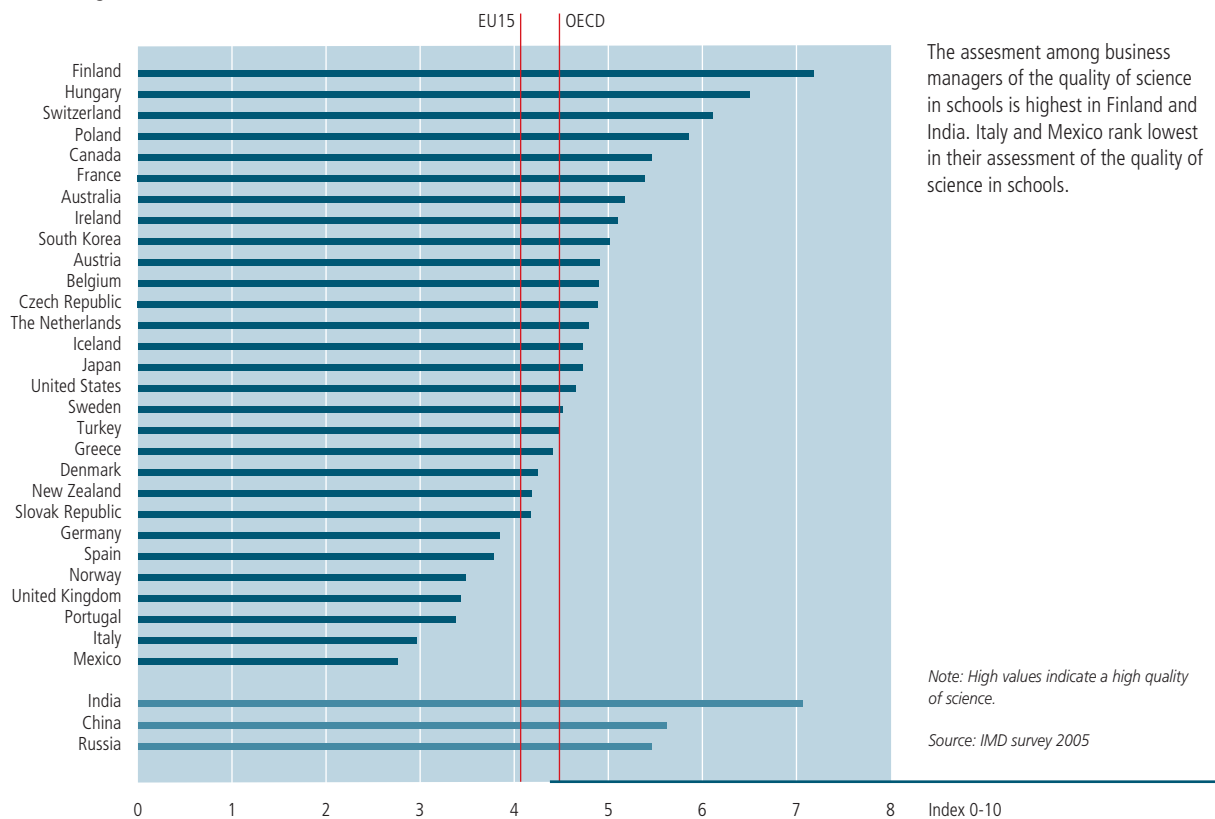
Public financial aid to students at tertiary education institutions, 2002



Interest in science and technology among youth, 2005



Quality of science in schools, 2005



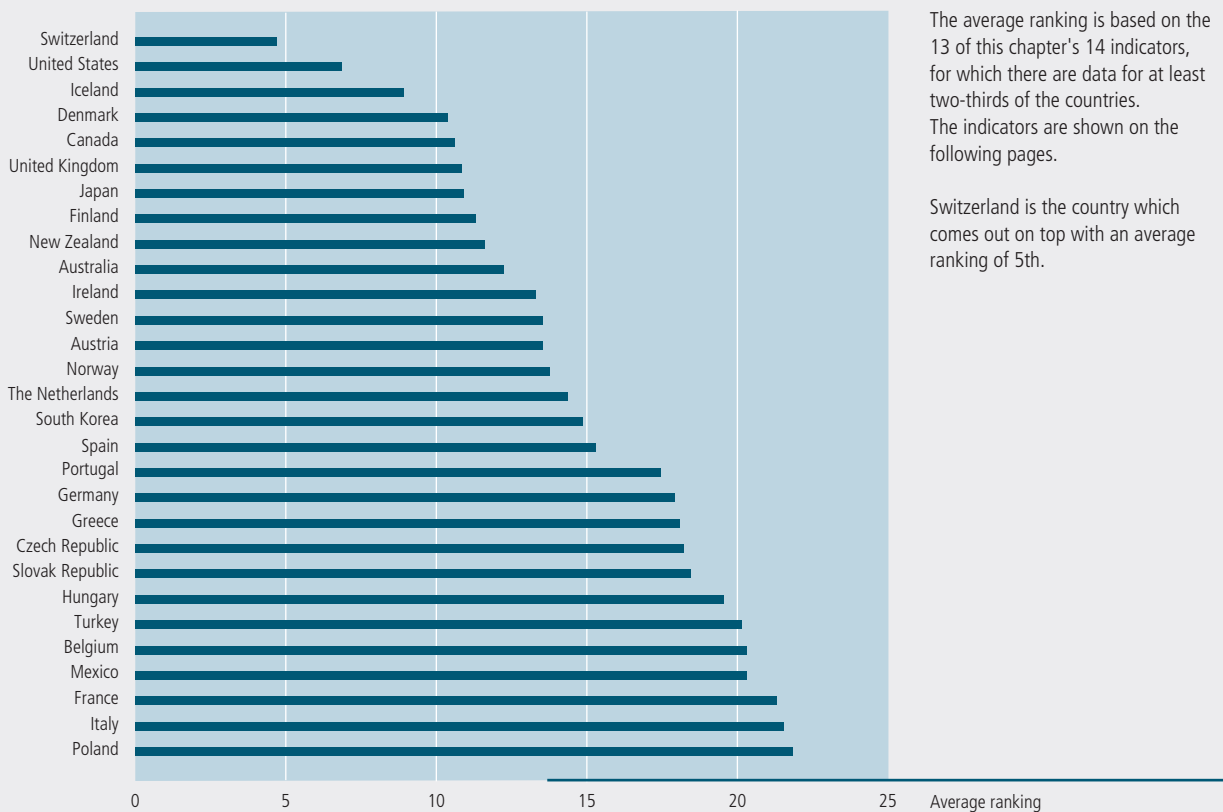
The assesment among business managers of the quality of science in schools is highest in Finland and India. Italy and Mexico rank lowest in their assesment of the quality of science in schools.

Note: High values indicate a high quality of science.

Source: IMD survey 2005

Business flexibility

Average ranking of countries



The average ranking is based on the 13 of this chapter's 14 indicators, for which there are data for at least two-thirds of the countries. The indicators are shown on the following pages.

Switzerland is the country which comes out on top with an average ranking of 5th.

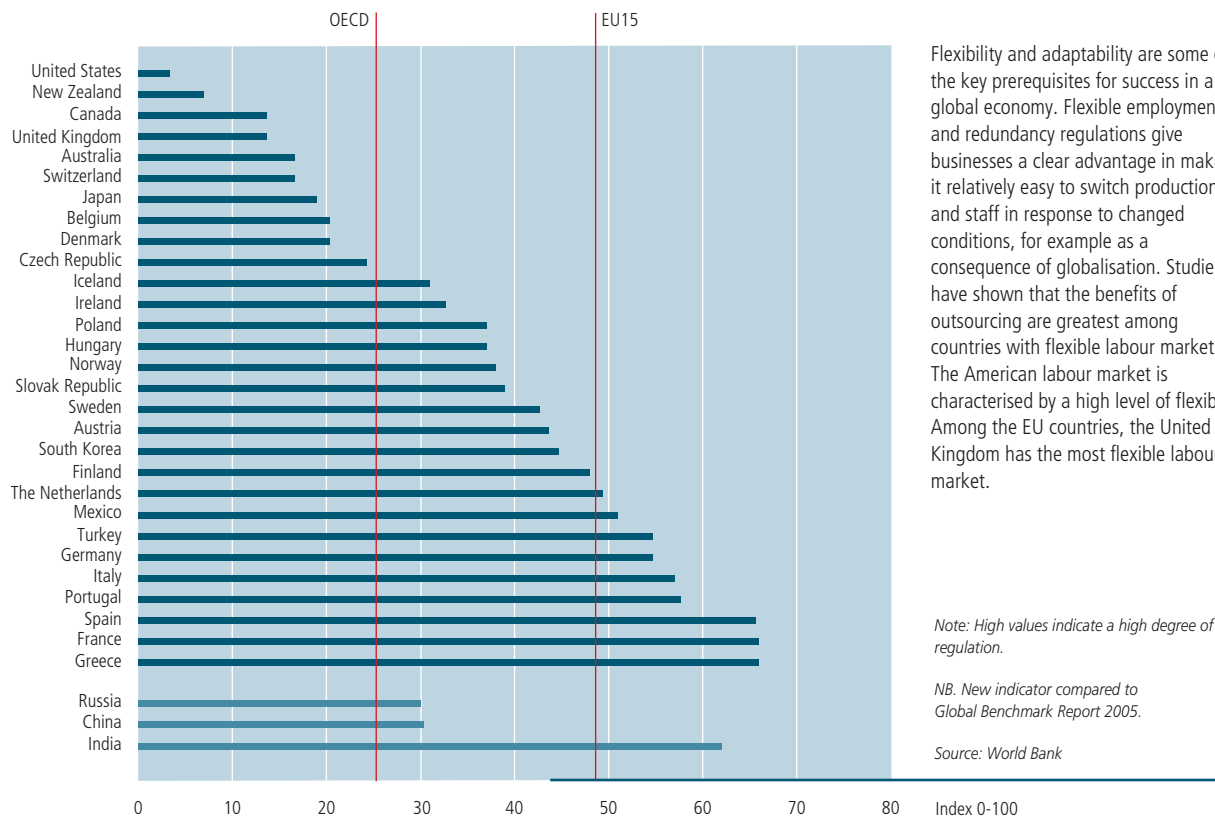
Business flexibility

In a globalised world with ever-changing market conditions, flexibility is a must if companies are to be successful.

Within the OECD, Switzerland clearly tops the list as the best country in ensuring company flexibility. The country's top rank is a result of easy access to capital markets, a high participation rate and comprehensive competition for public contracts.

Switzerland is followed by the United States and Iceland. The United States excels by having most flexibility regarding strictness of employment protection legislation while Iceland has a record participation rate among the 55 to 64-year-old.

Strictness of employment protection legislation, 2005



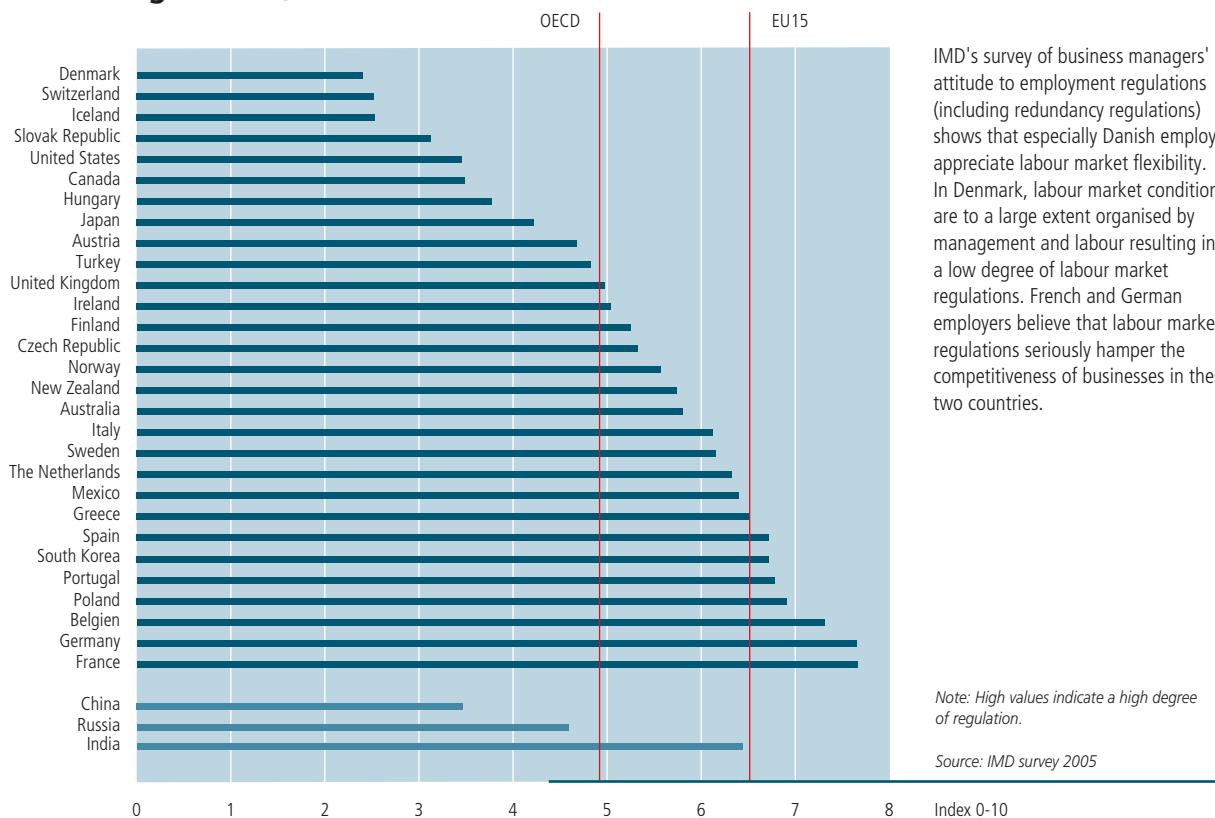
Flexibility and adaptability are some of the key prerequisites for success in a global economy. Flexible employment and redundancy regulations give businesses a clear advantage in making it relatively easy to switch production and staff in response to changed conditions, for example as a consequence of globalisation. Studies have shown that the benefits of outsourcing are greatest among countries with flexible labour markets. The American labour market is characterised by a high level of flexibility. Among the EU countries, the United Kingdom has the most flexible labour market.

Note: High values indicate a high degree of regulation.

NB. New indicator compared to Global Benchmark Report 2005.

Source: World Bank

Labour regulations, 2005

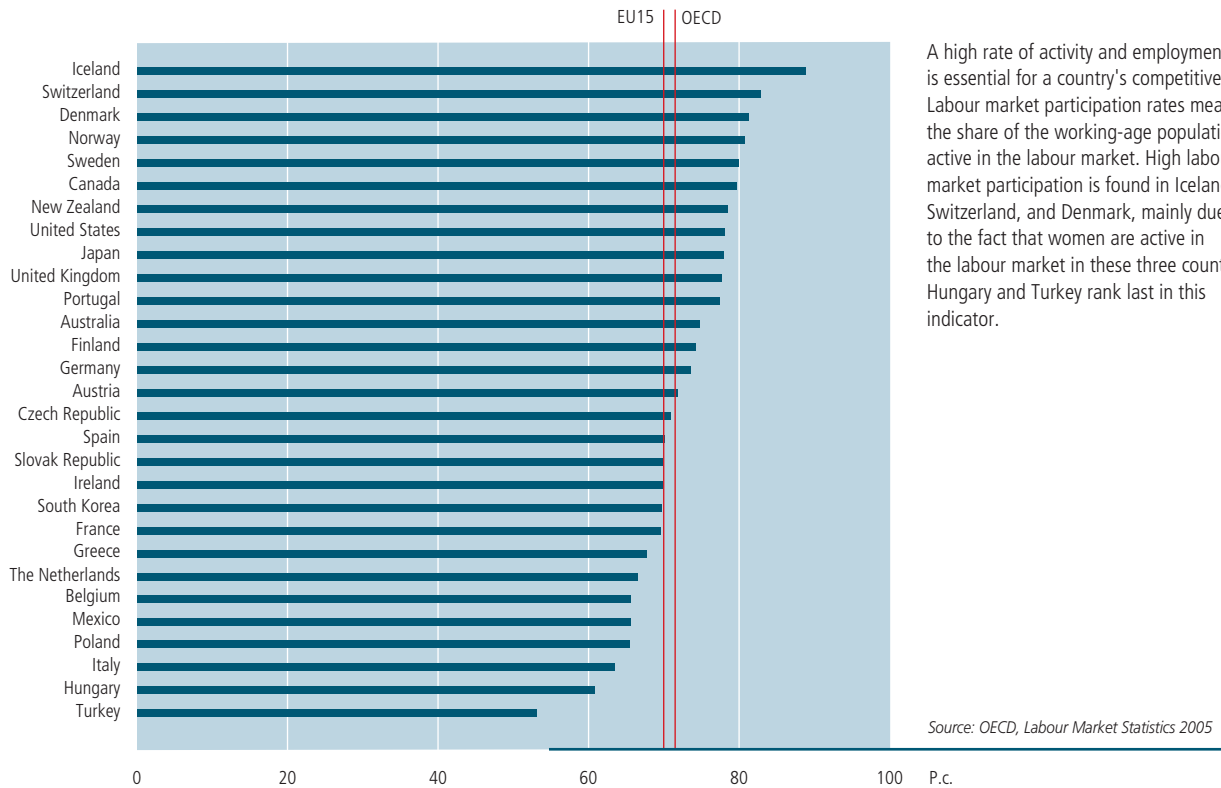


IMD's survey of business managers' attitude to employment regulations (including redundancy regulations) shows that especially Danish employers appreciate labour market flexibility. In Denmark, labour market conditions are to a large extent organised by management and labour resulting in a low degree of labour market regulations. French and German employers believe that labour market regulations seriously hamper the competitiveness of businesses in these two countries.

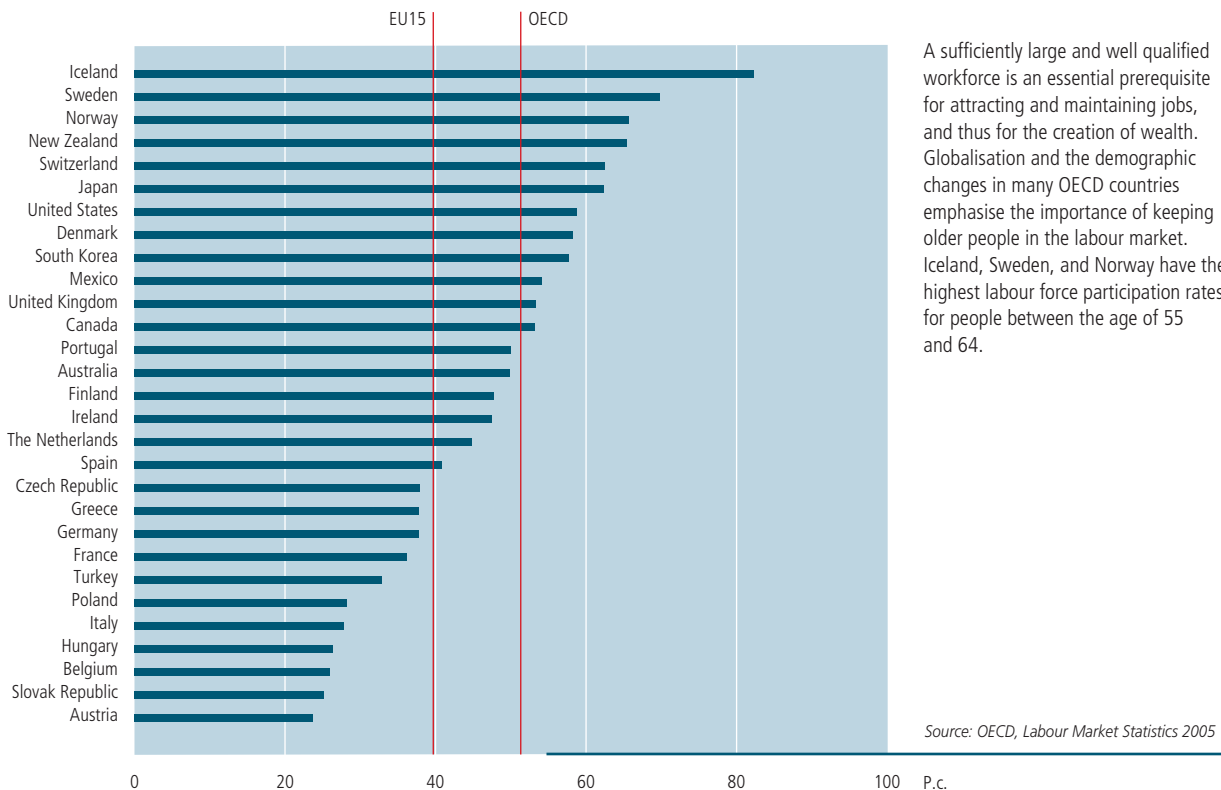
Note: High values indicate a high degree of regulation.

Source: IMD survey 2005

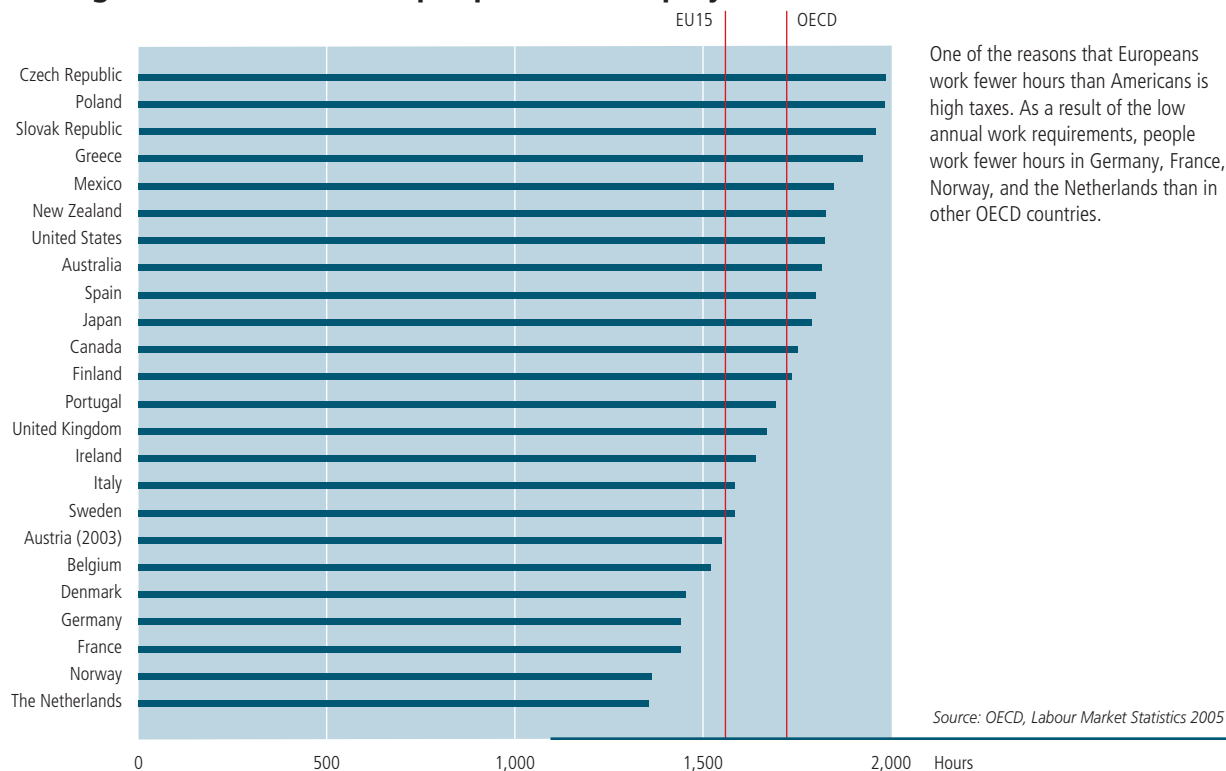
Labour force participation rates, 2004



Labour force participation rates for people between the age of 55 and 64, 2004

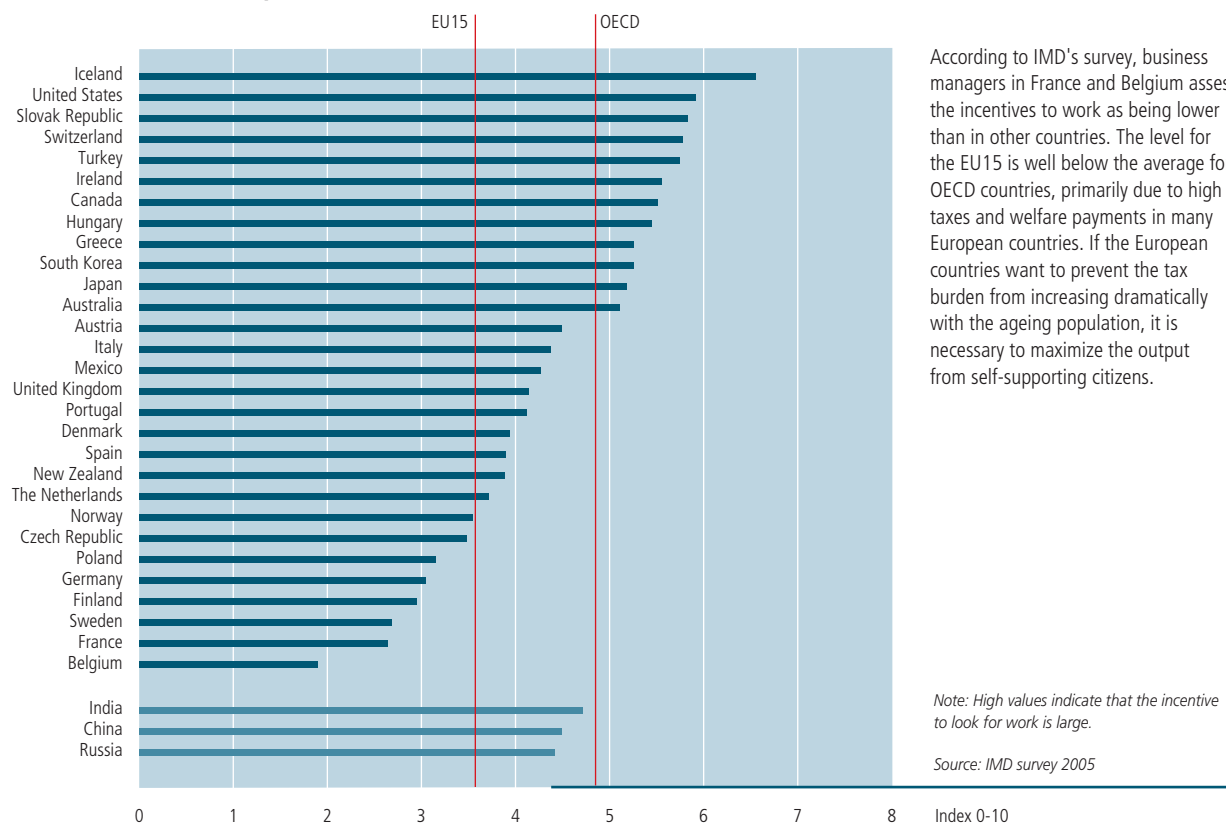


Average annual work hours per person in employment, 2004



One of the reasons that Europeans work fewer hours than Americans is high taxes. As a result of the low annual work requirements, people work fewer hours in Germany, France, Norway, and the Netherlands than in other OECD countries.

Incentive to work, 2005



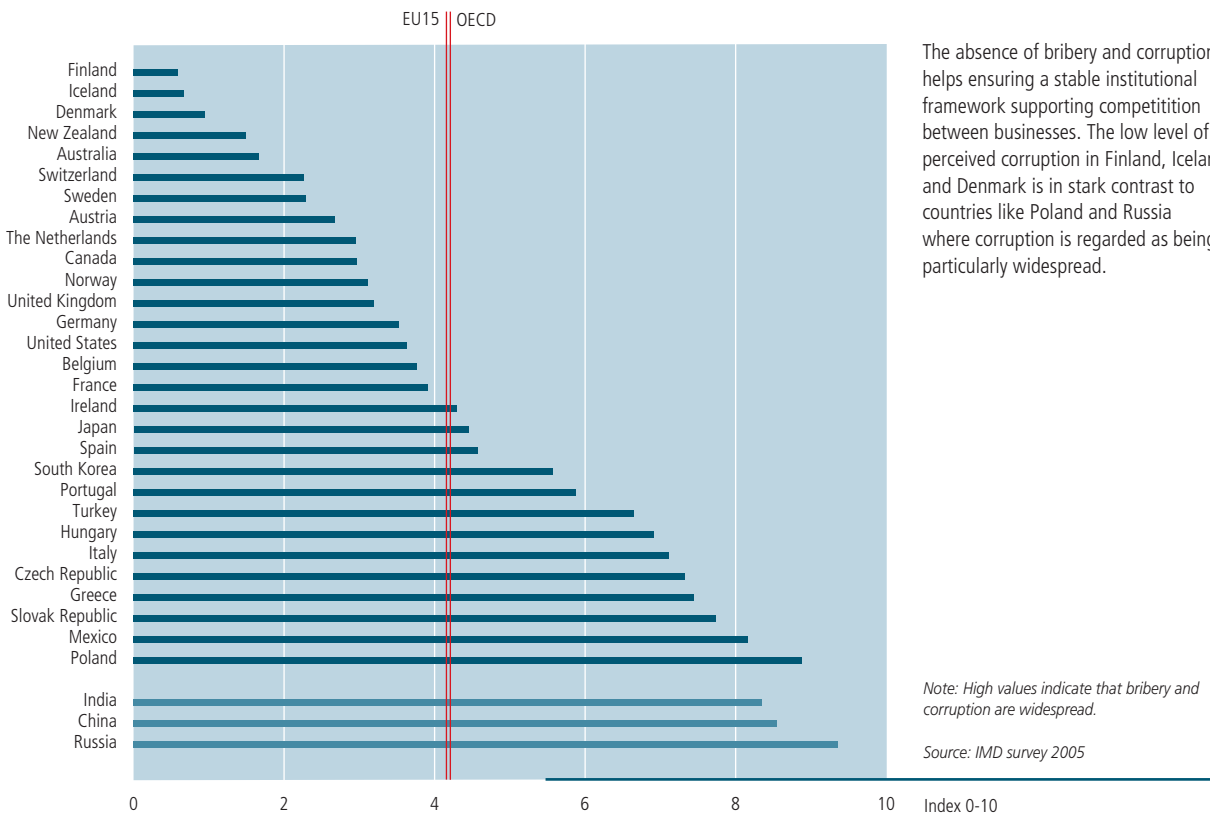
According to IMD's survey, business managers in France and Belgium assess the incentives to work as being lower than in other countries. The level for the EU15 is well below the average for OECD countries, primarily due to high taxes and welfare payments in many European countries. If the European countries want to prevent the tax burden from increasing dramatically with the ageing population, it is necessary to maximize the output from self-supporting citizens.

Public sector employment as a percentage of total employment, 2004



With the coming decade's demographic changes, it is essential that the number of public service employees is limited in order to safeguard the recruitment base for private businesses. Due to well-developed welfare systems in the Scandinavian countries, a large part of the workforce is employed in the public sector. On the other hand, in Turkey and Japan, less than 10 percent of the workforce is employed in the public sector.

Bribery and corruption, 2005



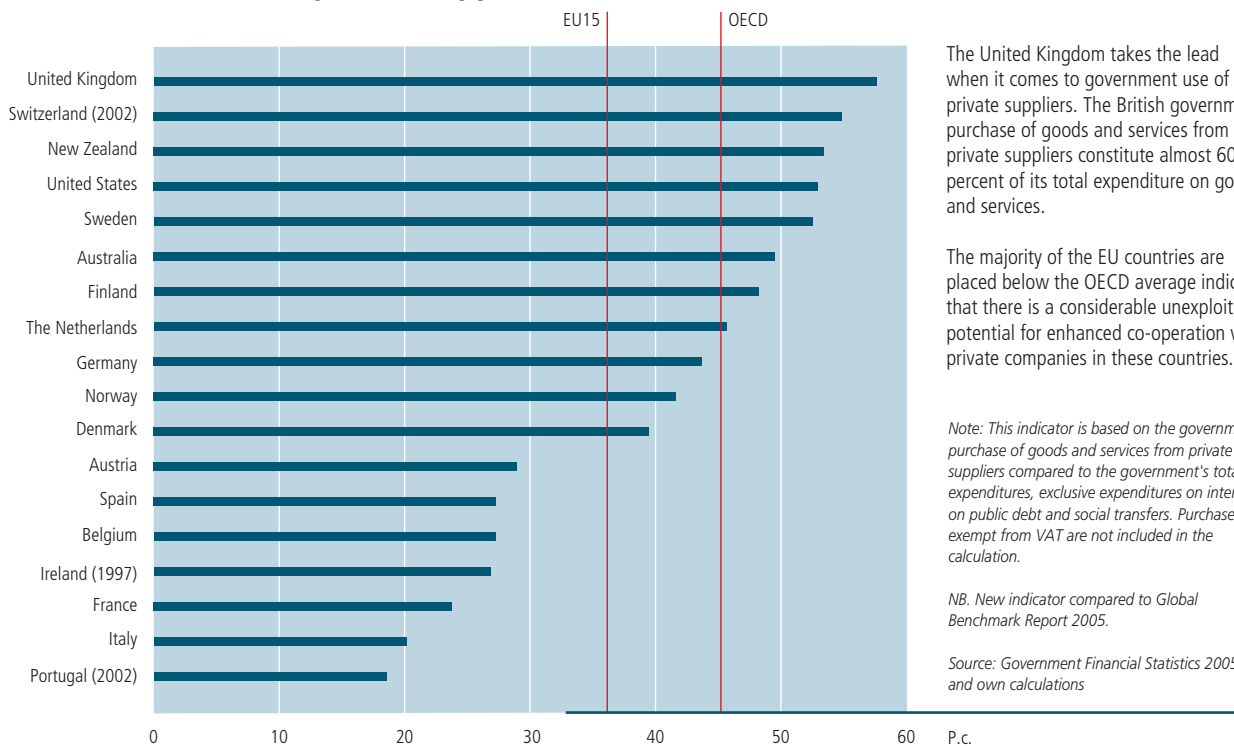
The absence of bribery and corruption helps ensuring a stable institutional framework supporting competition between businesses. The low level of perceived corruption in Finland, Iceland, and Denmark is in stark contrast to countries like Poland and Russia where corruption is regarded as being particularly widespread.

Burden of government regulation, 2005



Licences, start-up permits, reporting obligations etc. constitute administrative burdens for businesses and obstacles to growth. The administrative burdens are perceived to be lowest in Finland, Iceland, and Denmark. According to business managers, the administrative burdens are most pronounced in Italy.

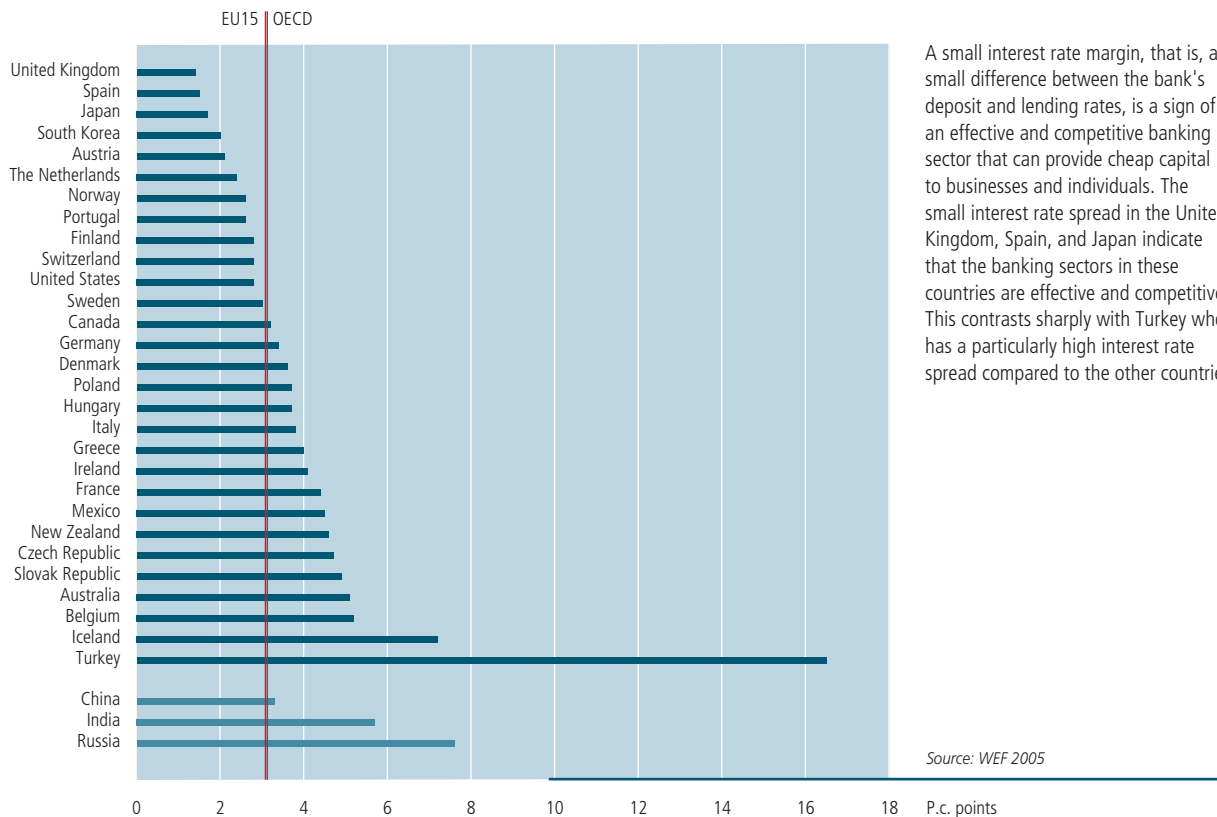
Government use of private suppliers, 2003



The United Kingdom takes the lead when it comes to government use of private suppliers. The British government's purchase of goods and services from private suppliers constitute almost 60 percent of its total expenditure on goods and services.

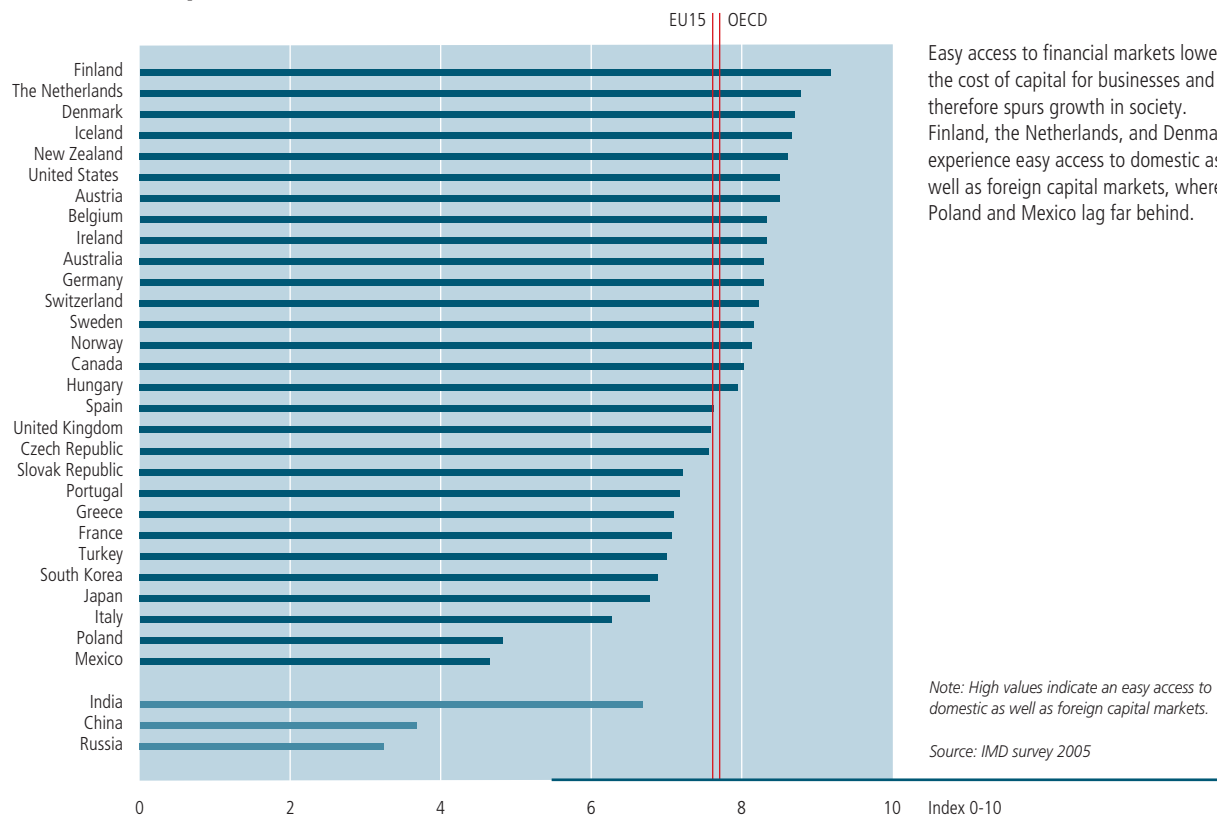
The majority of the EU countries are placed below the OECD average indicating that there is a considerable unexploited potential for enhanced co-operation with private companies in these countries.

Interest rate spread, 2004



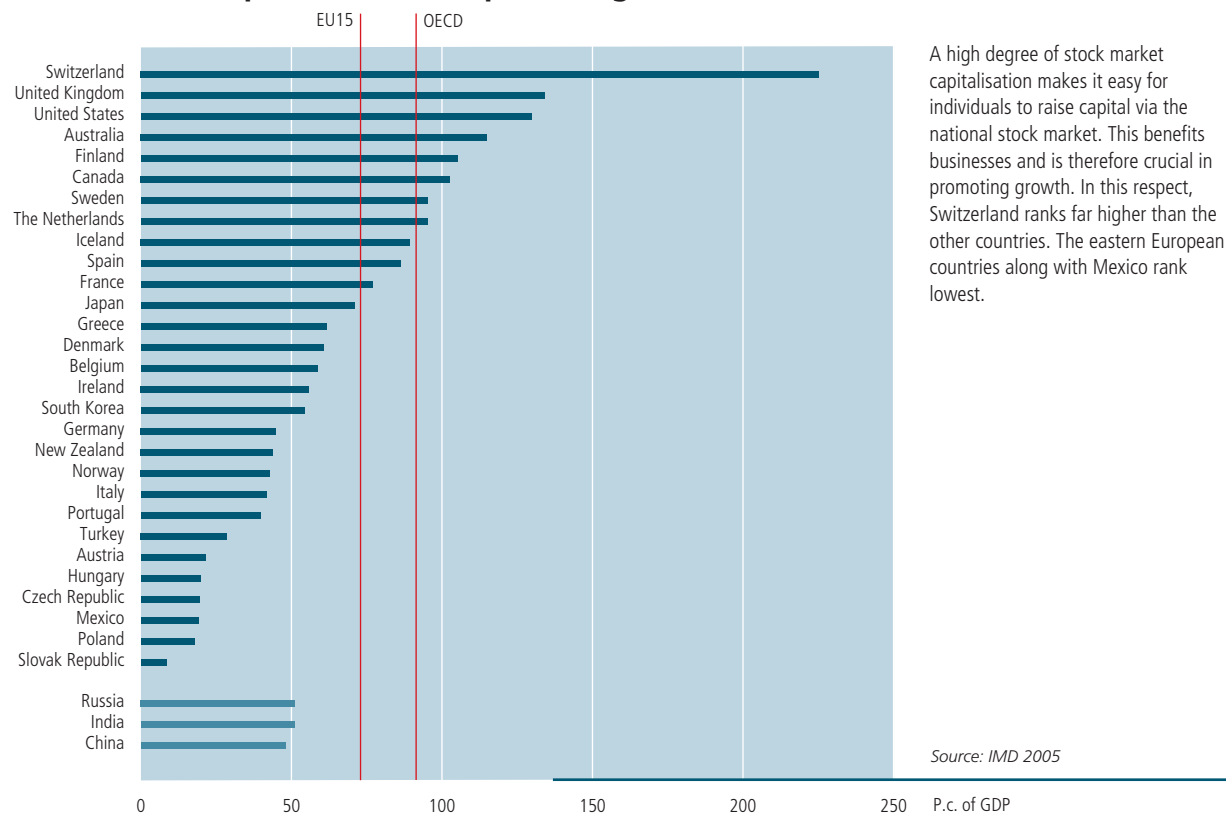
A small interest rate margin, that is, a small difference between the bank's deposit and lending rates, is a sign of an effective and competitive banking sector that can provide cheap capital to businesses and individuals. The small interest rate spread in the United Kingdom, Spain, and Japan indicate that the banking sectors in these countries are effective and competitive. This contrasts sharply with Turkey who has a particularly high interest rate spread compared to the other countries.

Access to capital markets, 2005



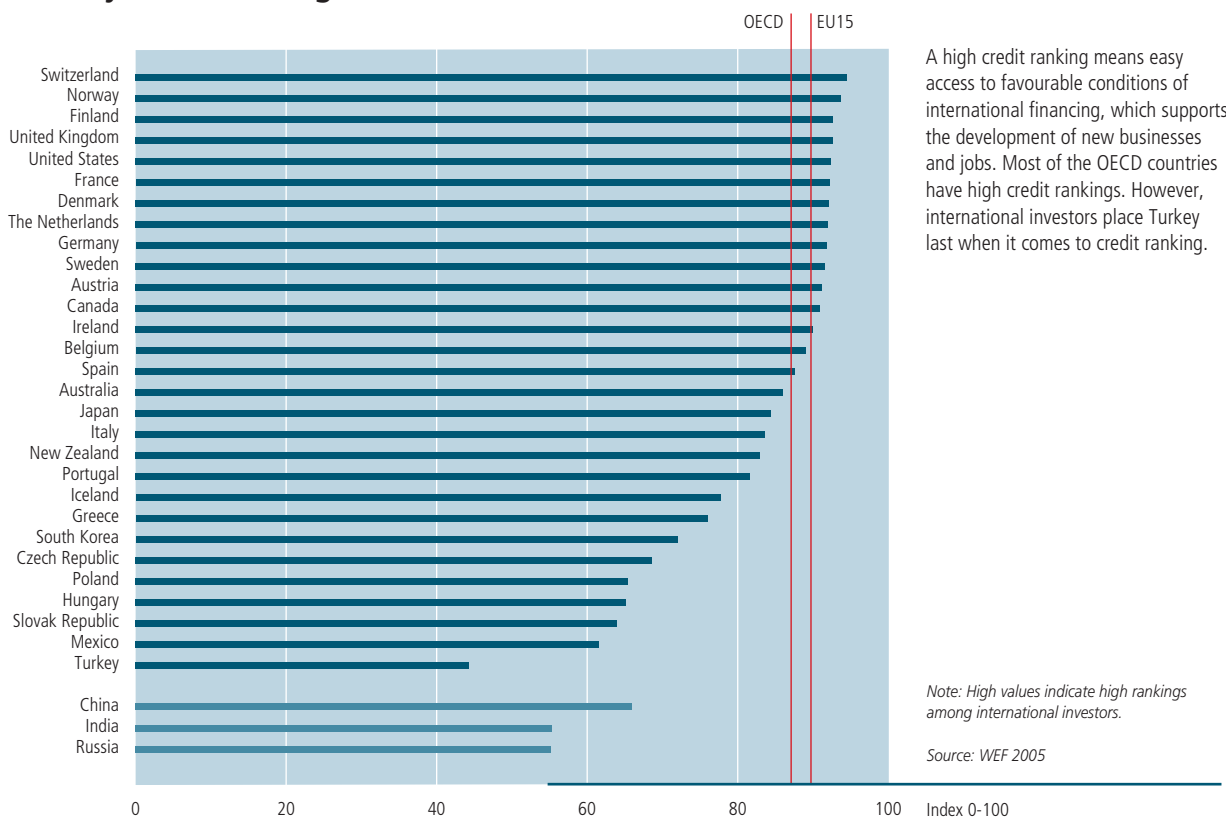
Easy access to financial markets lowers the cost of capital for businesses and therefore spurs growth in society. Finland, the Netherlands, and Denmark experience easy access to domestic as well as foreign capital markets, whereas Poland and Mexico lag far behind.

Stock market capitalization as a percentage of GDP, 2003



A high degree of stock market capitalisation makes it easy for individuals to raise capital via the national stock market. This benefits businesses and is therefore crucial in promoting growth. In this respect, Switzerland ranks far higher than the other countries. The eastern European countries along with Mexico rank lowest.

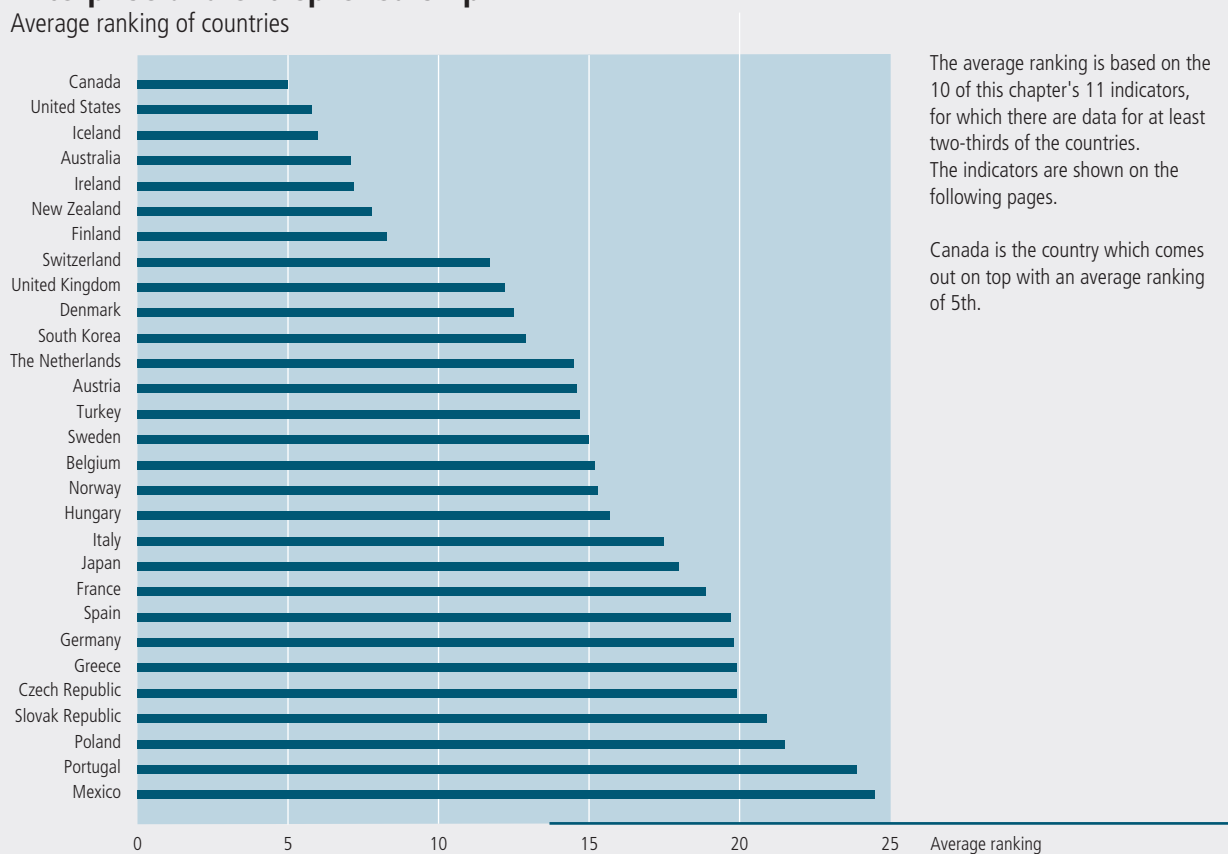
Country credit ranking, 2005



A high credit ranking means easy access to favourable conditions of international financing, which supports the development of new businesses and jobs. Most of the OECD countries have high credit rankings. However, international investors place Turkey last when it comes to credit ranking.

Enterprise and entrepreneurship

Average ranking of countries



The average ranking is based on the 10 of this chapter's 11 indicators, for which there are data for at least two-thirds of the countries. The indicators are shown on the following pages.

Canada is the country which comes out on top with an average ranking of 5th.

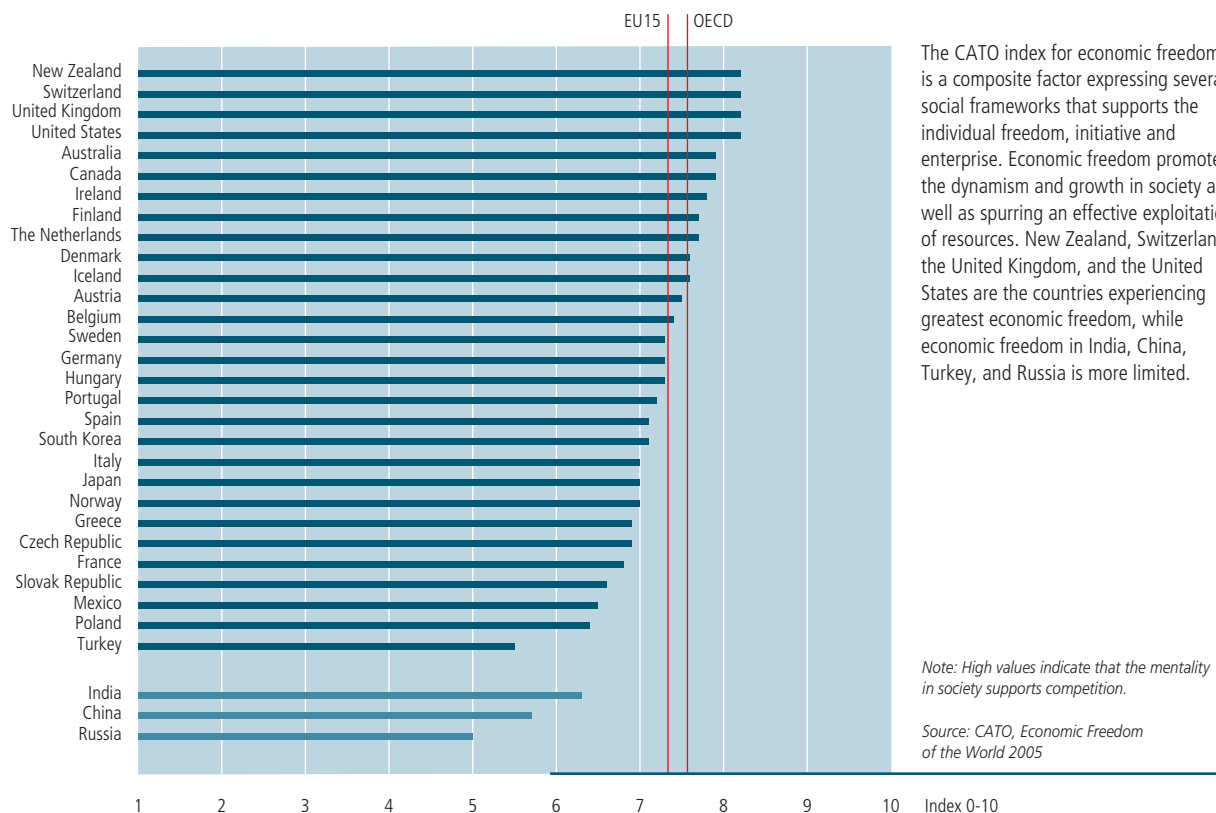
Enterprise and entrepreneurship

Globalisation places major demands on society's dynamism. Accordingly a globally successful strategy requires a country to be at the cutting edge of enterprise and entrepreneurship.

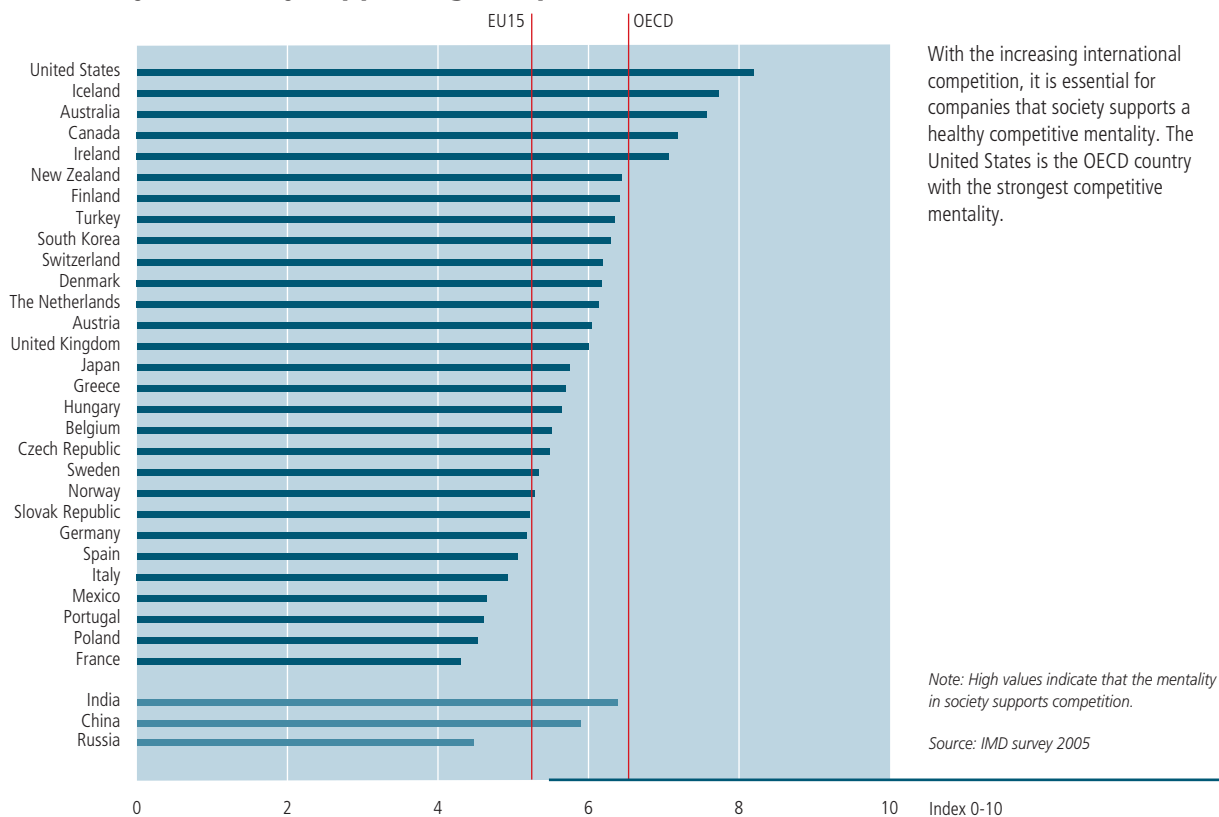
Canada appears as the OECD's leading country in enterprise and entrepreneurship and overtakes the United States in 2006. Canada is one of the OECD countries where it takes the fewest days to start a new company, and Canadian entrepreneurs have relatively easy access to venture capital.

The United States is runner-up within the OECD and is the leading country in economic freedom, competitive mentality and entrepreneurship. Iceland ranks third – a position due to its first place in the category of top management evaluation of flexibility and ability to change.

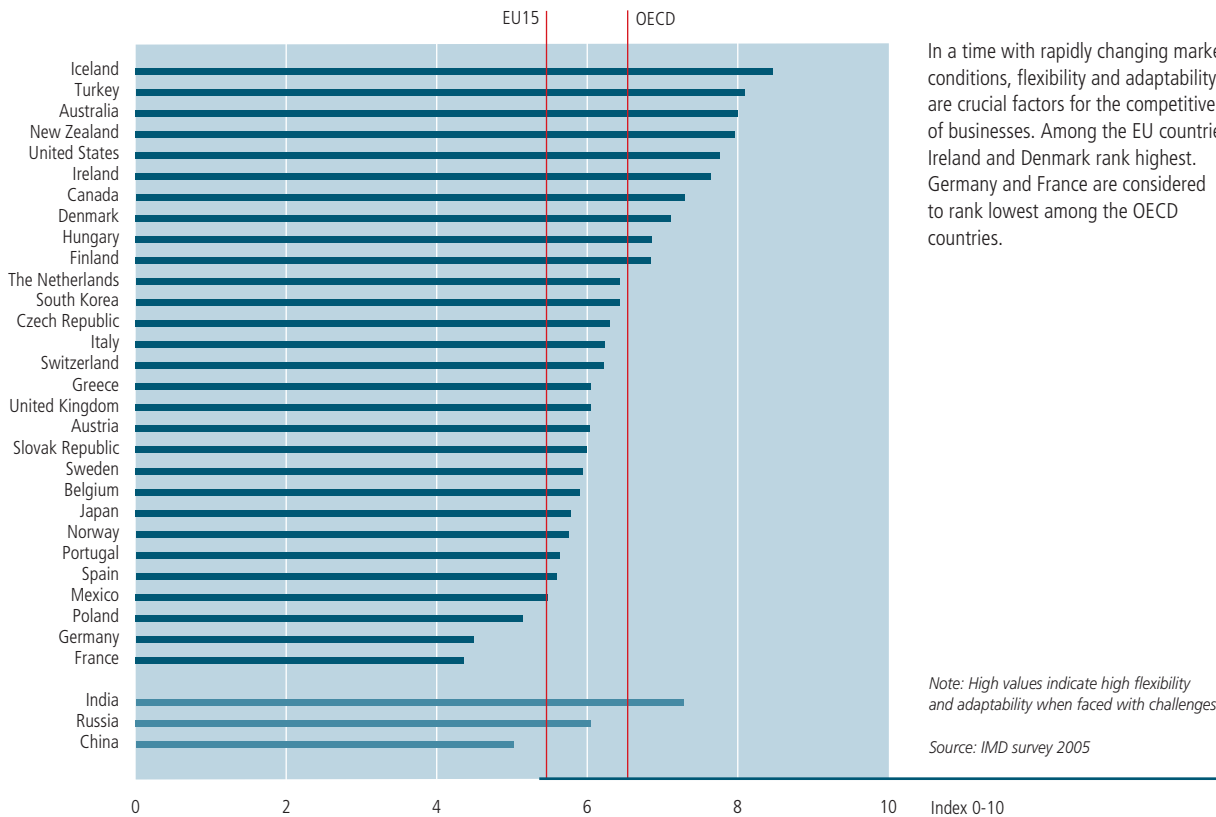
Economic freedom, 2003



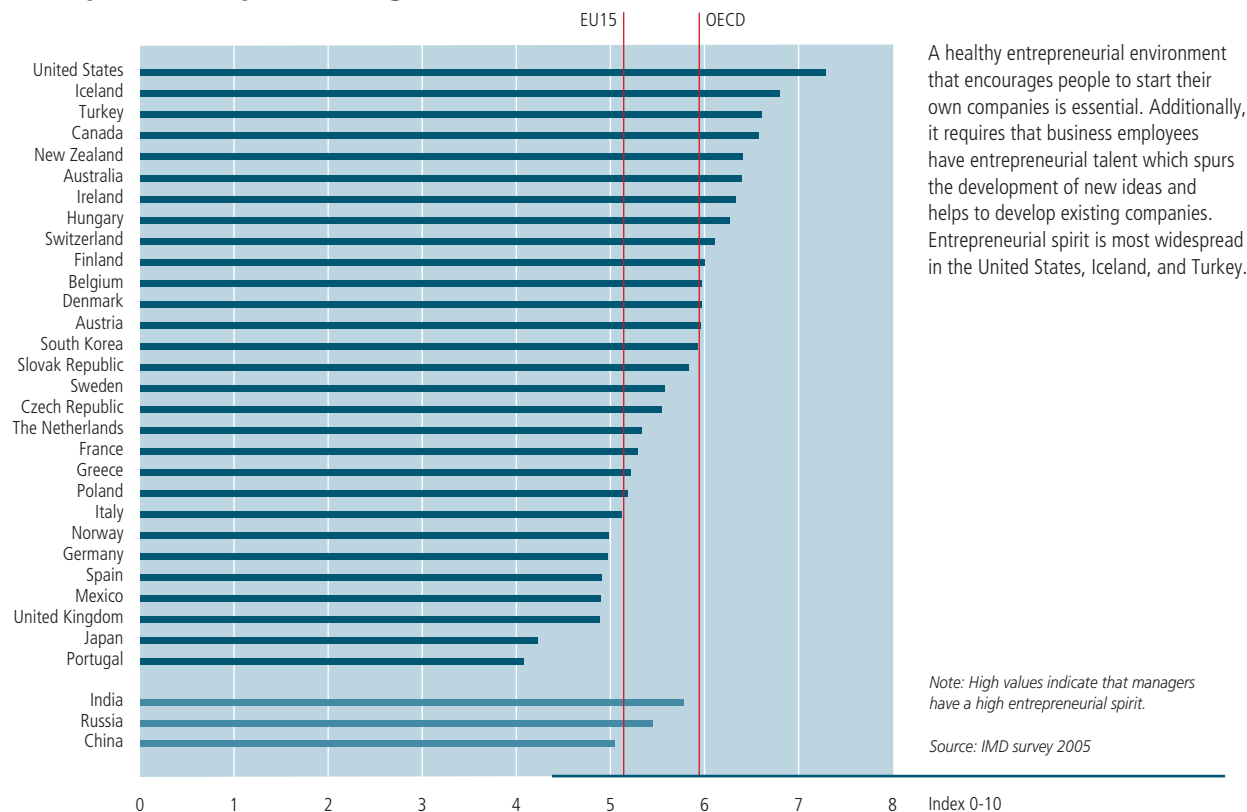
Mentality of society supporting competitiveness, 2005



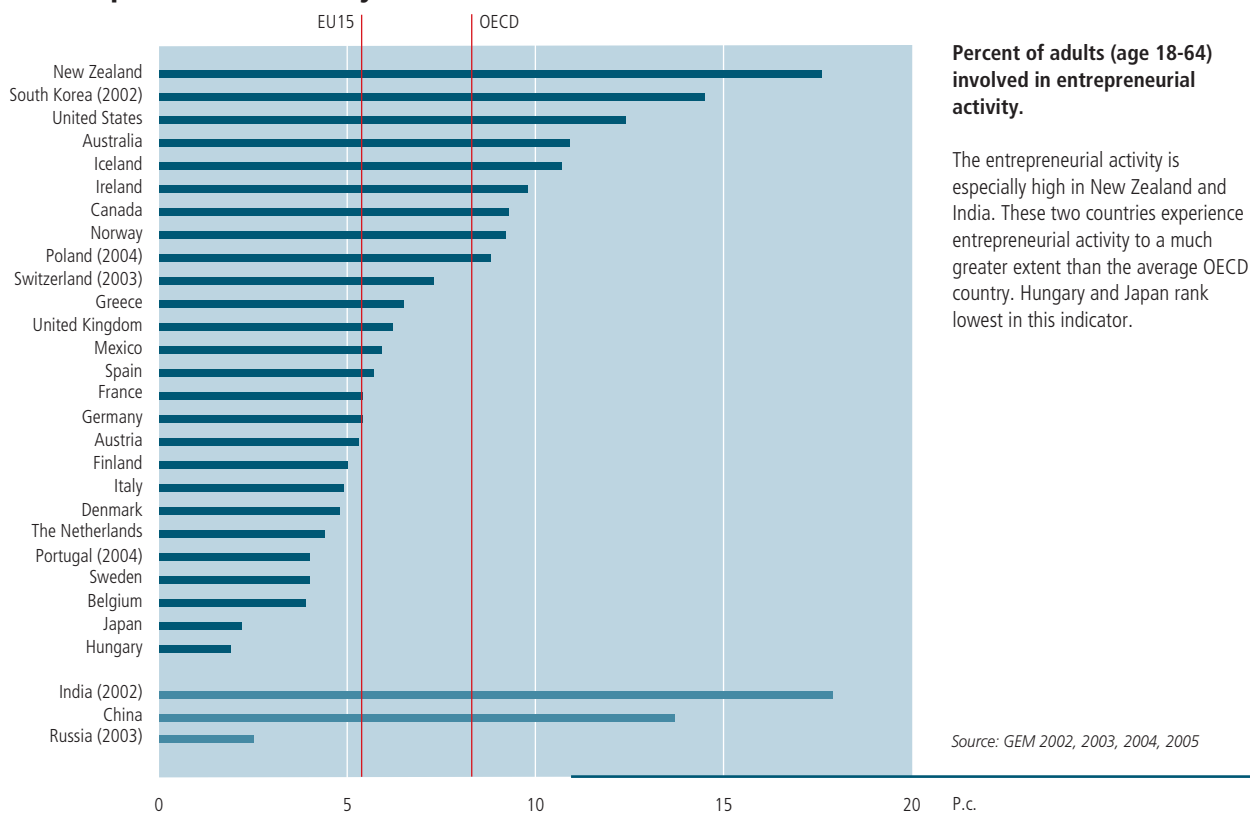
Flexibility and adaptability, 2005



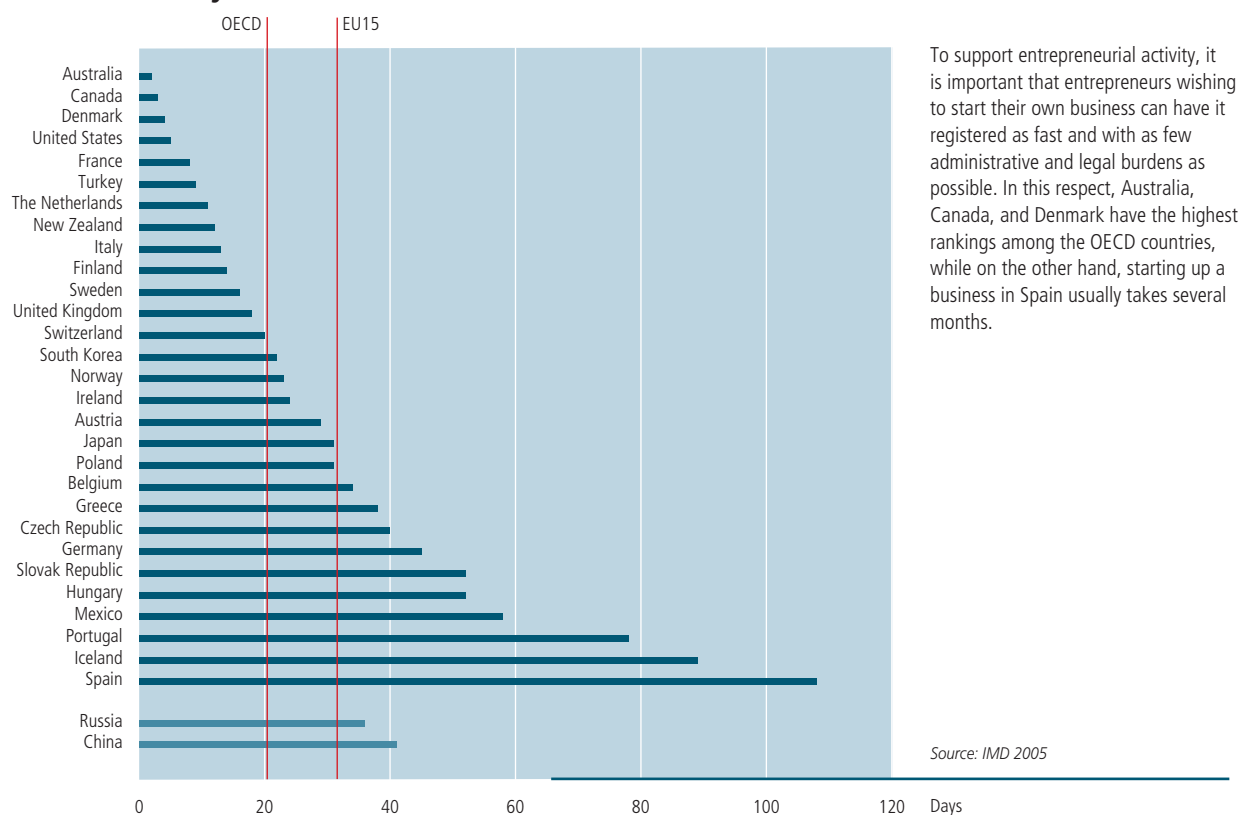
Entrepreneurship of managers, 2005



Entrepreneurial activity, 2005



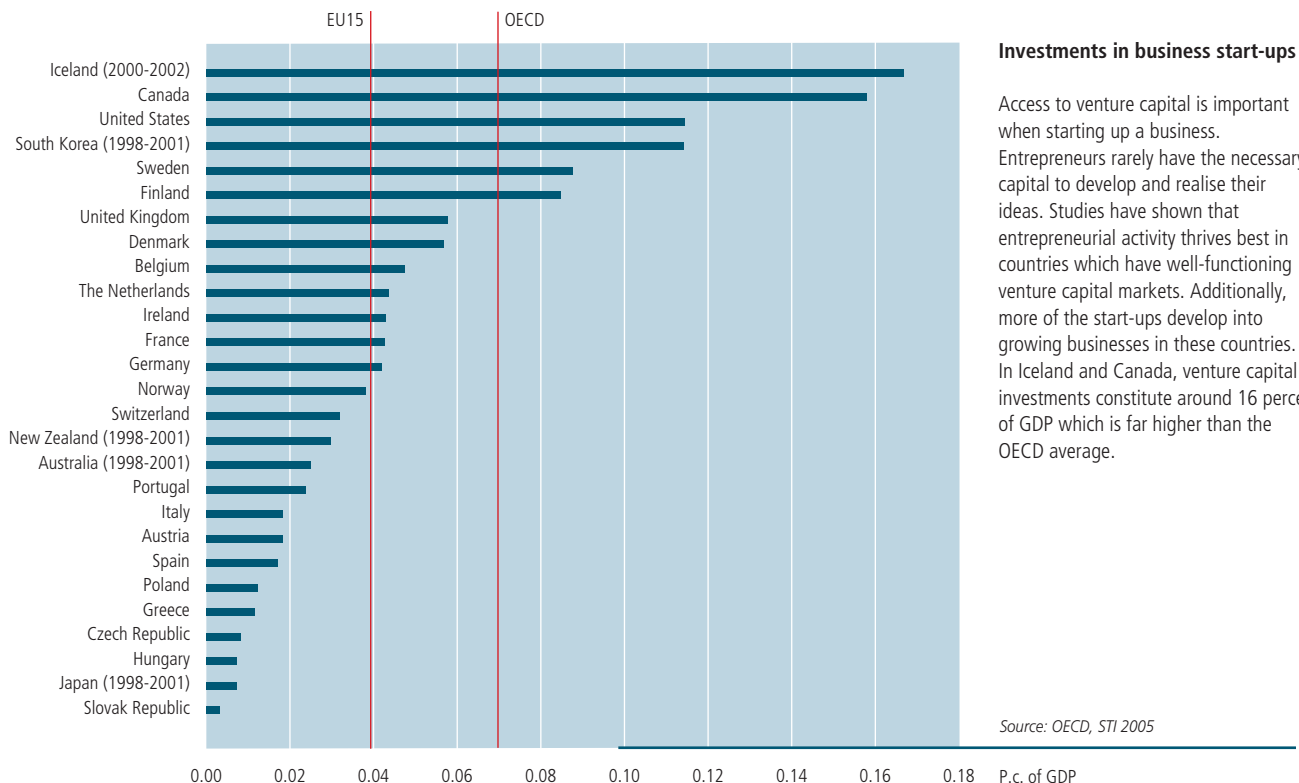
Number of days to start a business, 2004



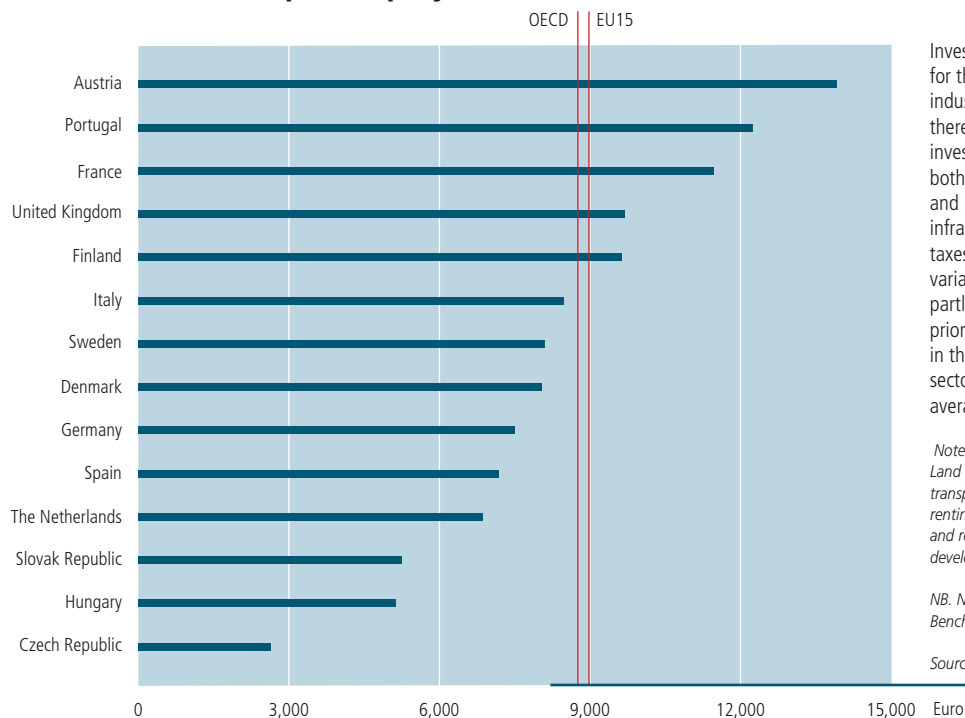
Legislation hinders the creation of firms, 2005



Venture capital investments as a percentage of GDP, 2000-2003 (average)



Gross investments per employee in the service sector, 2003



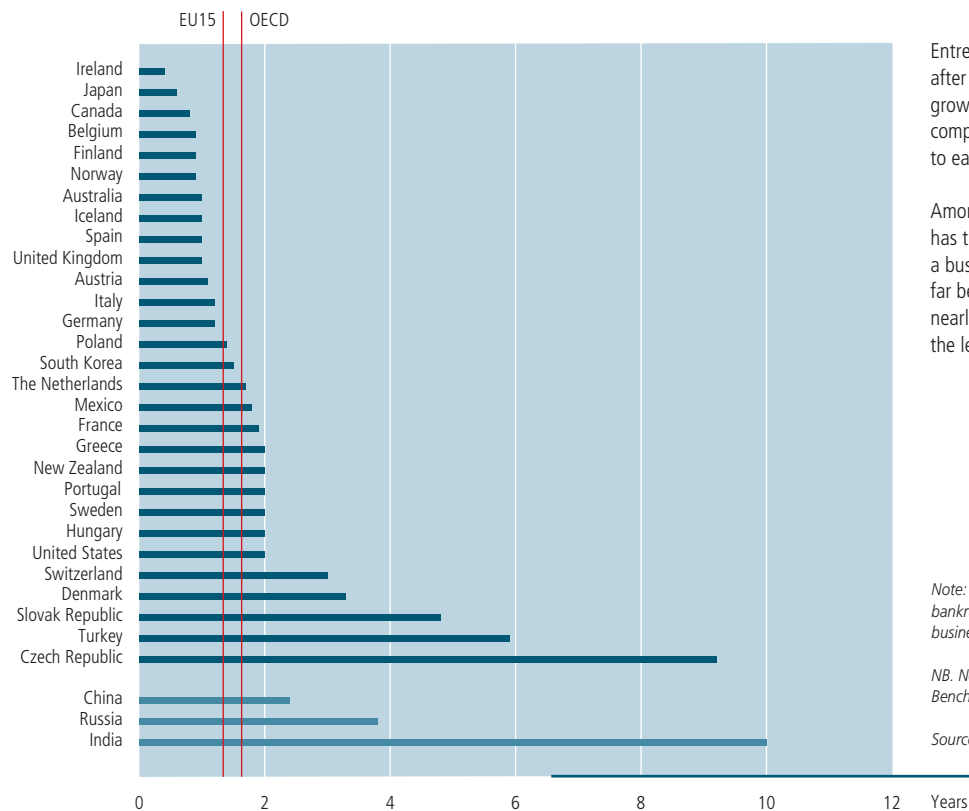
Investments in the service sector are crucial for the development of new service industrial companies, new services and thereby global competitiveness. Gross investments in the service sector include both the companies' own investments and public investments. Investments in infrastructure are often financed by taxes or regulatory price ceilings. The variation between countries can partly be attributed to different political priorities. Five countries, with Austria in the lead, invest more in the service sector than the OECD and the EU15 average.

Note: In this indicator the service sector includes: Land transport, supporting and auxiliary transport activities, post and telecommunications, renting of machinery and equipment, computer and related activities and research and development.

NB. New indicator compared to Global Benchmark Rapport, 2005

Source: Eurostat

Average time to complete the procedure of closing a business



Entrepreneurs starting up a company after a bankruptcy experience faster growth than other newly established companies. It is therefore important to ease recovery after bankruptcy.

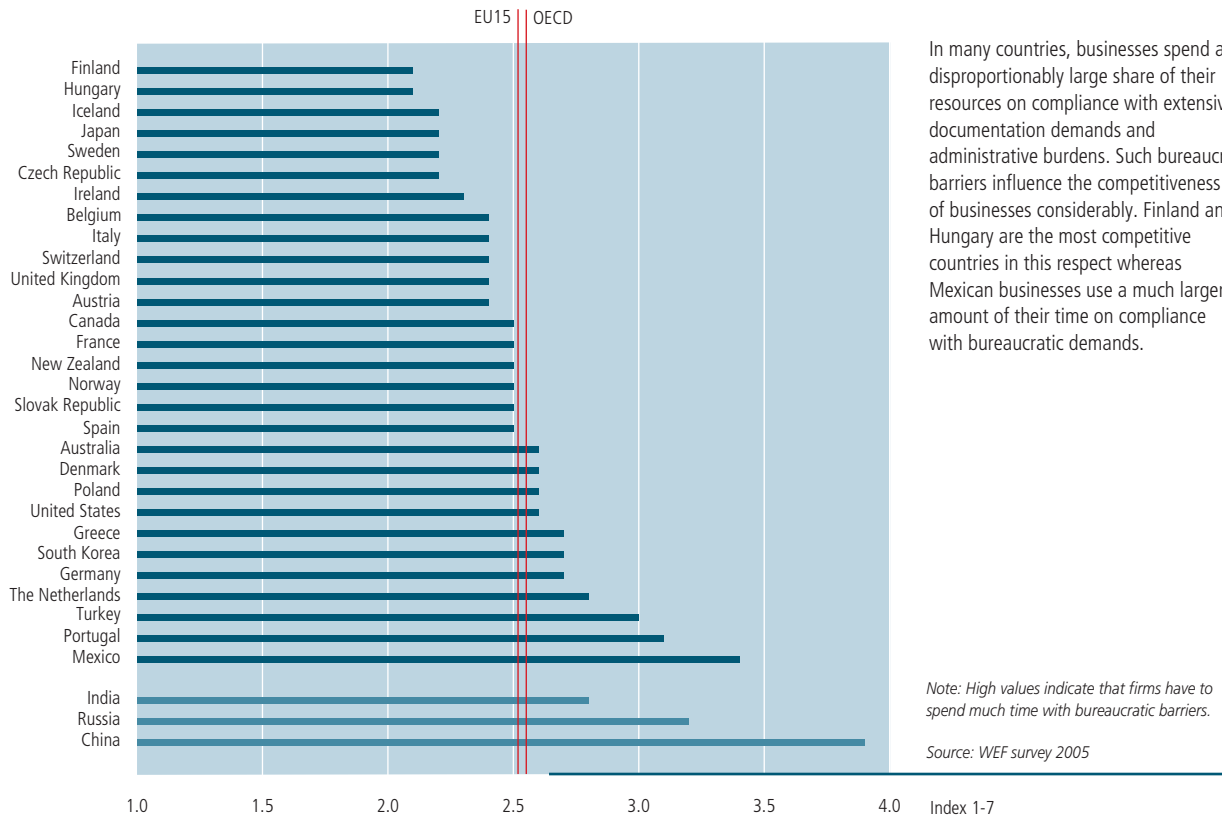
Among the OECD countries, Ireland has the fastest procedures for closing a business. The Czech Republic rank far below the other OECD countries, nearly as low as India, when it comes to the length of bankruptcy proceedings.

Note: The estimated time to complete the bankruptcy proceedings of a standardized business.

NB. New indicator compared to Global Benchmark Report 2005.

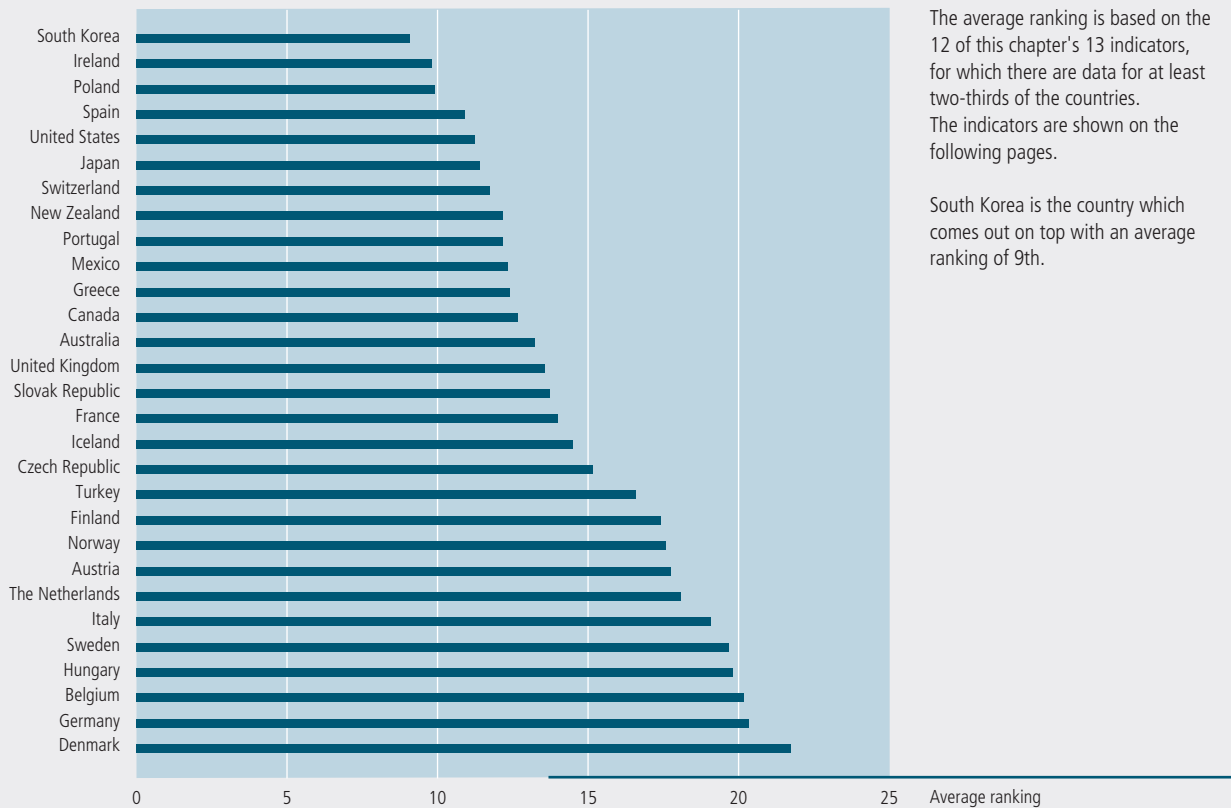
Source: World Bank, Doing Business 2005

Extent of bureaucratic red tape, 2005



Costs and taxes

Average ranking of countries



The average ranking is based on the 12 of this chapter's 13 indicators, for which there are data for at least two-thirds of the countries. The indicators are shown on the following pages.

South Korea is the country which comes out on top with an average ranking of 9th.

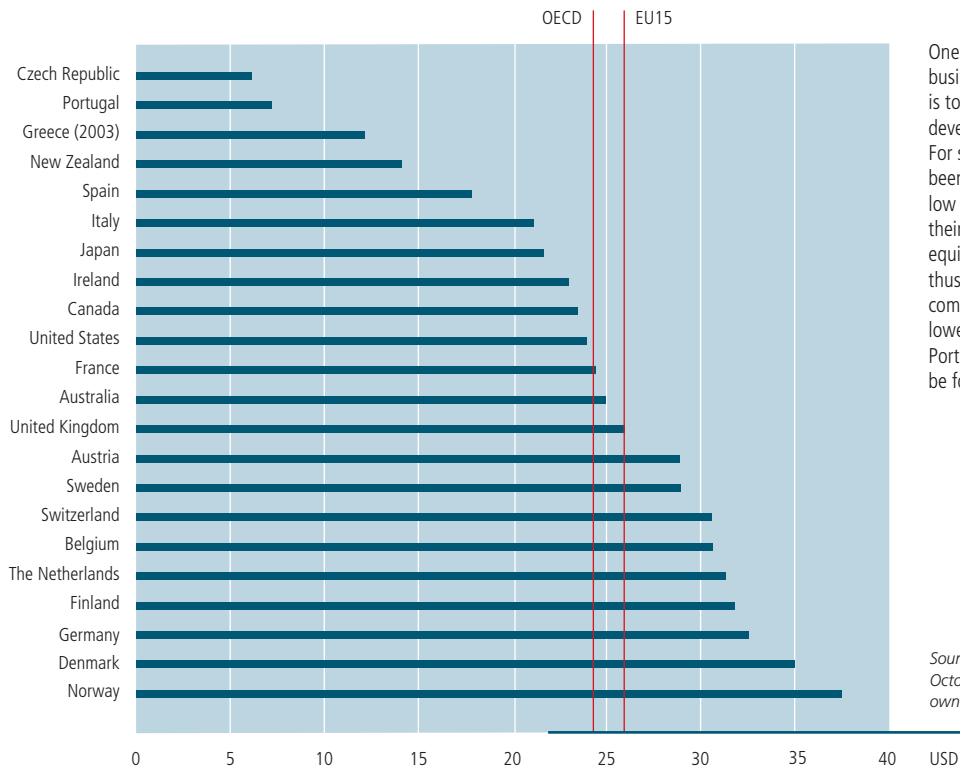
Costs and taxes

In a globalised world, company competitiveness is based on the fact that productivity counterbalances cost levels.

South Korea and Ireland are still the leading OECD countries in terms of costs and taxes. South Korea excels by having the OECD's lowest marginal tax for those with higher wages.

Ireland has the lowest tax pressure in the OECD – among other factors as a result of record low corporate tax.

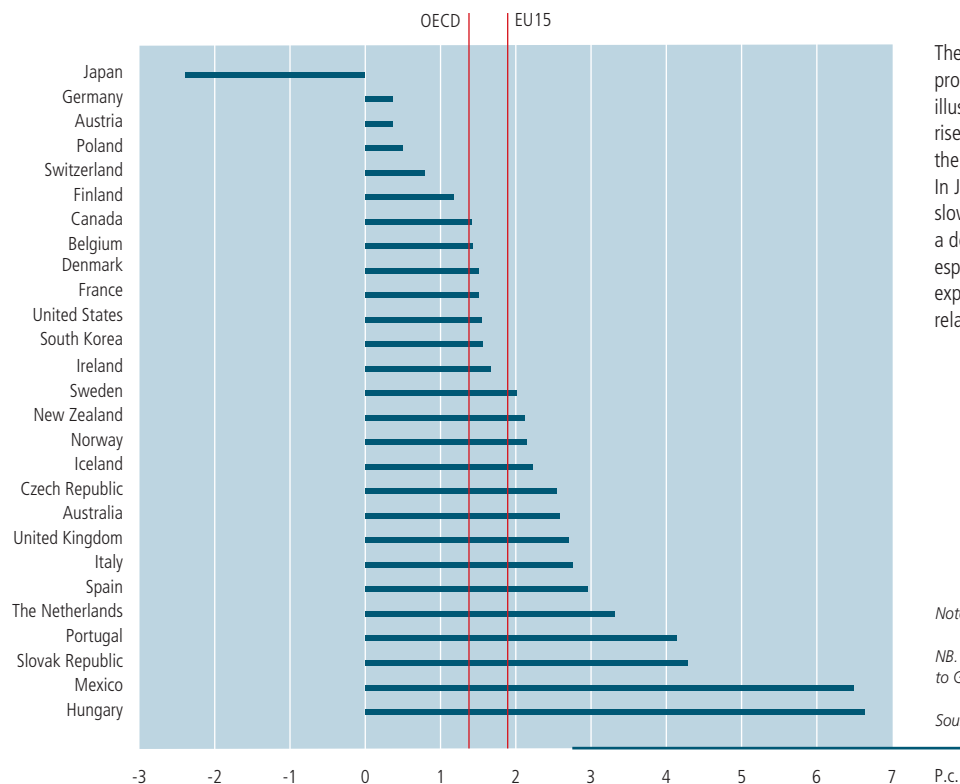
Working costs per hour for industrial workers, 2005



One of the main challenges for businesses operating internationally is to maintain production and development in the high cost countries. For some companies, the solution has been moving parts of the production to low cost countries. Others improve their output by investing in capital equipment and highly-trained workers, thus remaining internationally competitive. Wage costs per hour are lowest in the Czech Republic and Portugal. The highest wage costs can be found in Denmark and Norway.

Source: Confederation of Swedish Entreprise, October 2003 and December 2005, and own calculations

Annual growth in unit labour costs, 2000-2004 (average)



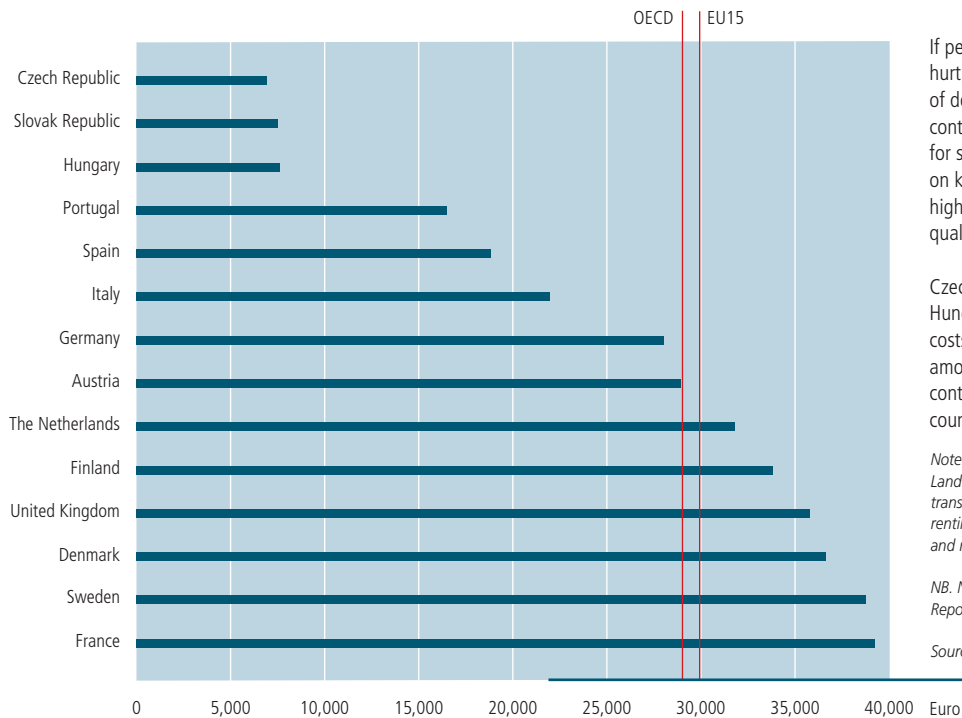
The change in wage costs per unit produced – the unit labour costs – illustrates the combined effect of wage rises and productivity development on the production costs of the business. In Japan, wage costs have risen at a slower pace than productivity, implying a decrease in unit labour costs, whereas especially Mexico and Hungary have experienced a high labour cost growth relative to productivity.

Note: Unit labour costs for the business sector.

NB. New method of calculation compared to Global Benchmark Report 2005.

Source: OECD, Economic Outlook No. 78

Personnel costs per employee in the service sector, 2003



If personnel costs are too high, it will hurt the international competitiveness of domestic companies. In a global context, it can be a business strategy for service industrial companies to stake on knowledge services, thereby accepting higher wages in return for highly qualified workers.

Czech Republic, Slovak Republic, and Hungary have the lowest personnel costs per employee in the service sector among the EU countries. This is in sharp contrast to the high personnel costs in countries such as Sweden and France.

Note: In this indicator the service sector includes: Land transport, supporting and auxiliary transport activities, post and telecommunications, renting of machinery and equipment, computer and related activities and research and development.

NB. New indicator compared to Global Benchmark Report 2005.

Source: Eurostat

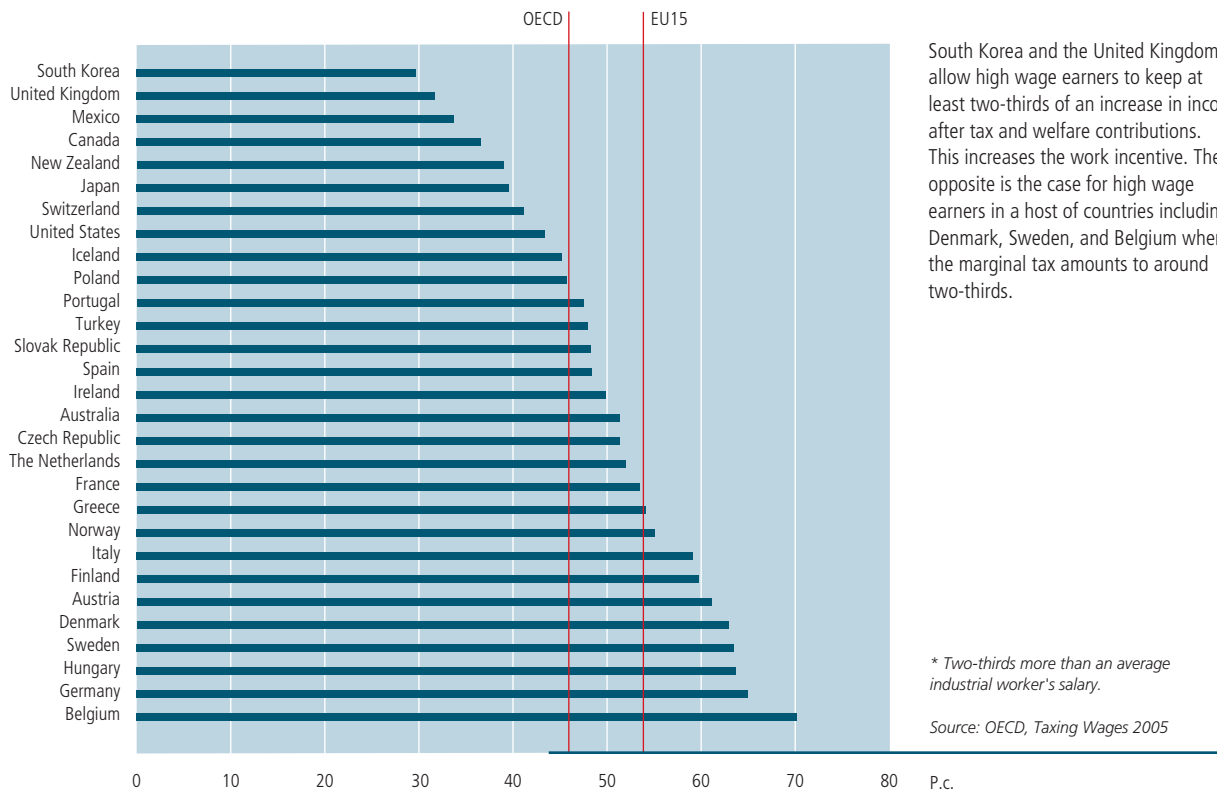
Total tax revenue as a percentage of GDP, 2004



Sweden and Denmark have the highest tax burden in the world of around 50 measured in percentage of GDP. If taxes and levies are instead measured in relation to wealth creation in society (gross added value does not include levies), the tax burden is more than 55 percent in these two countries. A tax burden of this size hampers initiative, entrepreneurship and growth. Mexico, South Korea, and Japan have the lowest tax burden among the OECD countries.

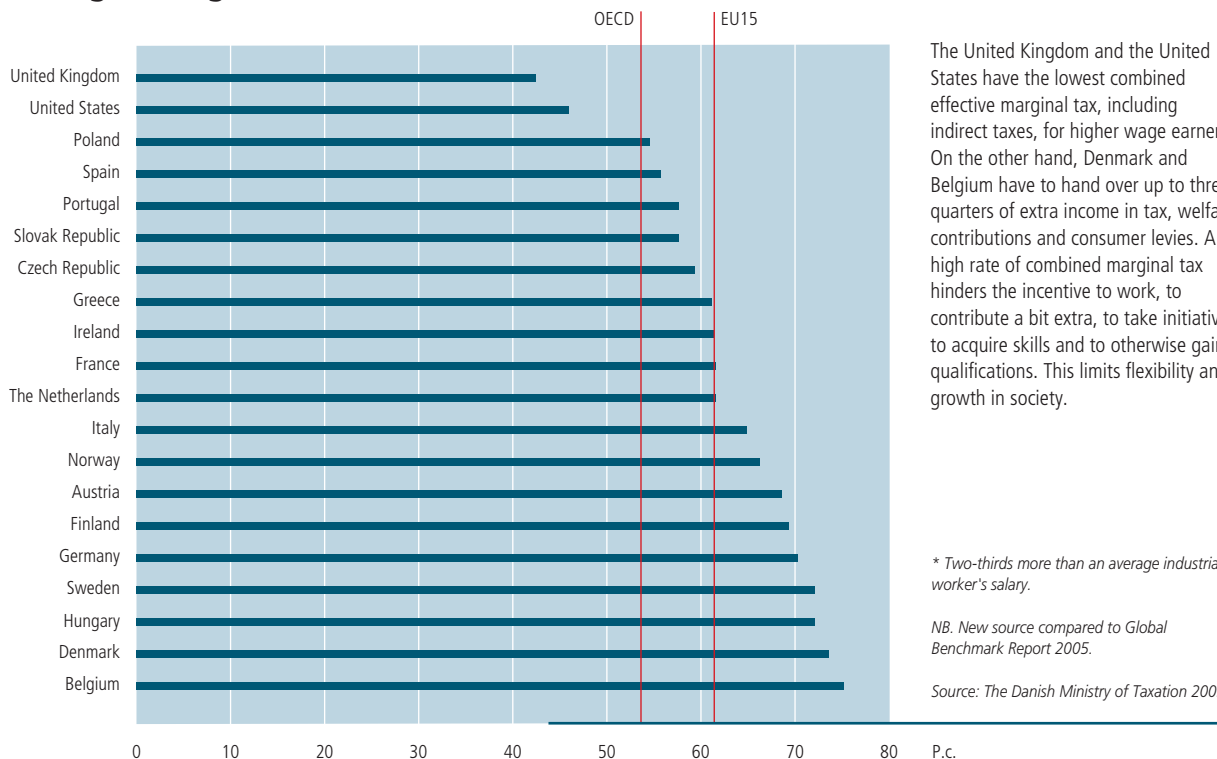
OECD, Revenue Statistics 2005

Effective marginal tax rate for higher wage earners*, 2004



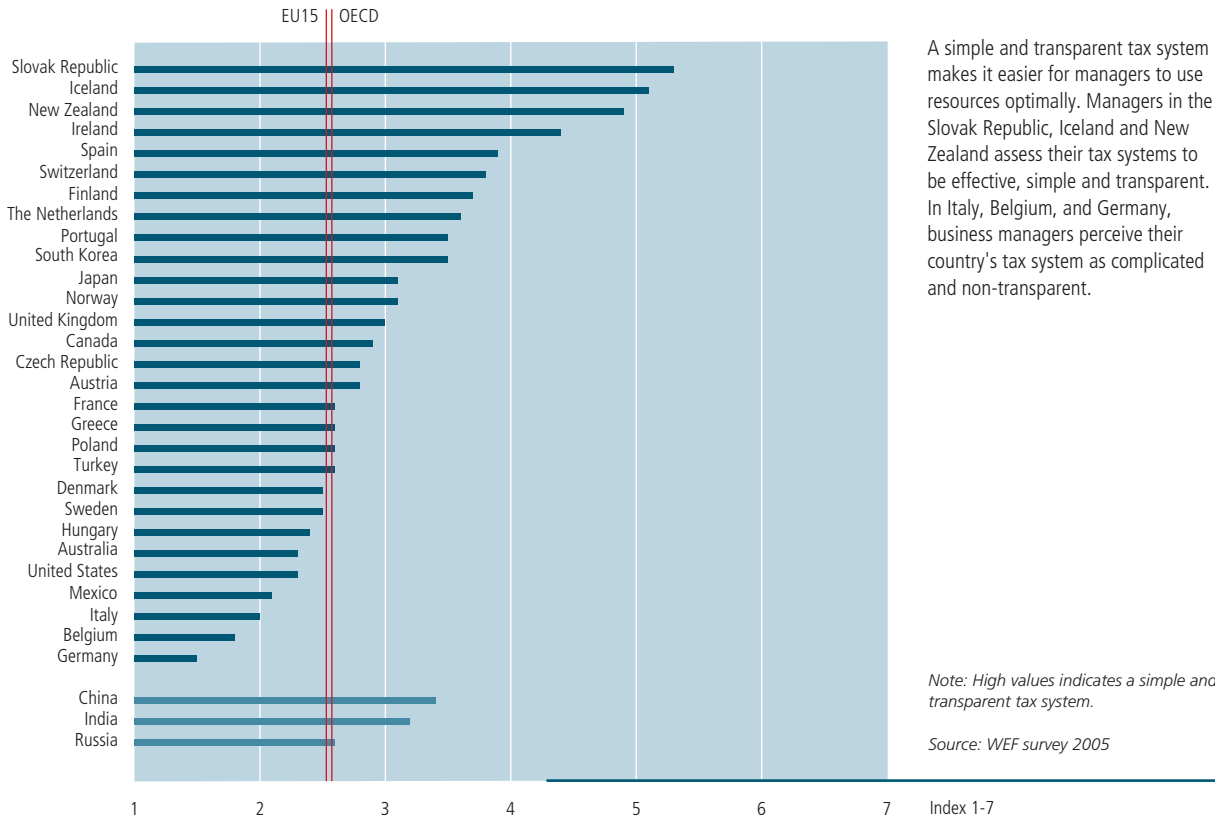
South Korea and the United Kingdom allow high wage earners to keep at least two-thirds of an increase in income after tax and welfare contributions. This increases the work incentive. The opposite is the case for high wage earners in a host of countries including Denmark, Sweden, and Belgium where the marginal tax amounts to around two-thirds.

Combined effective marginal tax rate (including indirect taxes) for higher wage earners*, 2004

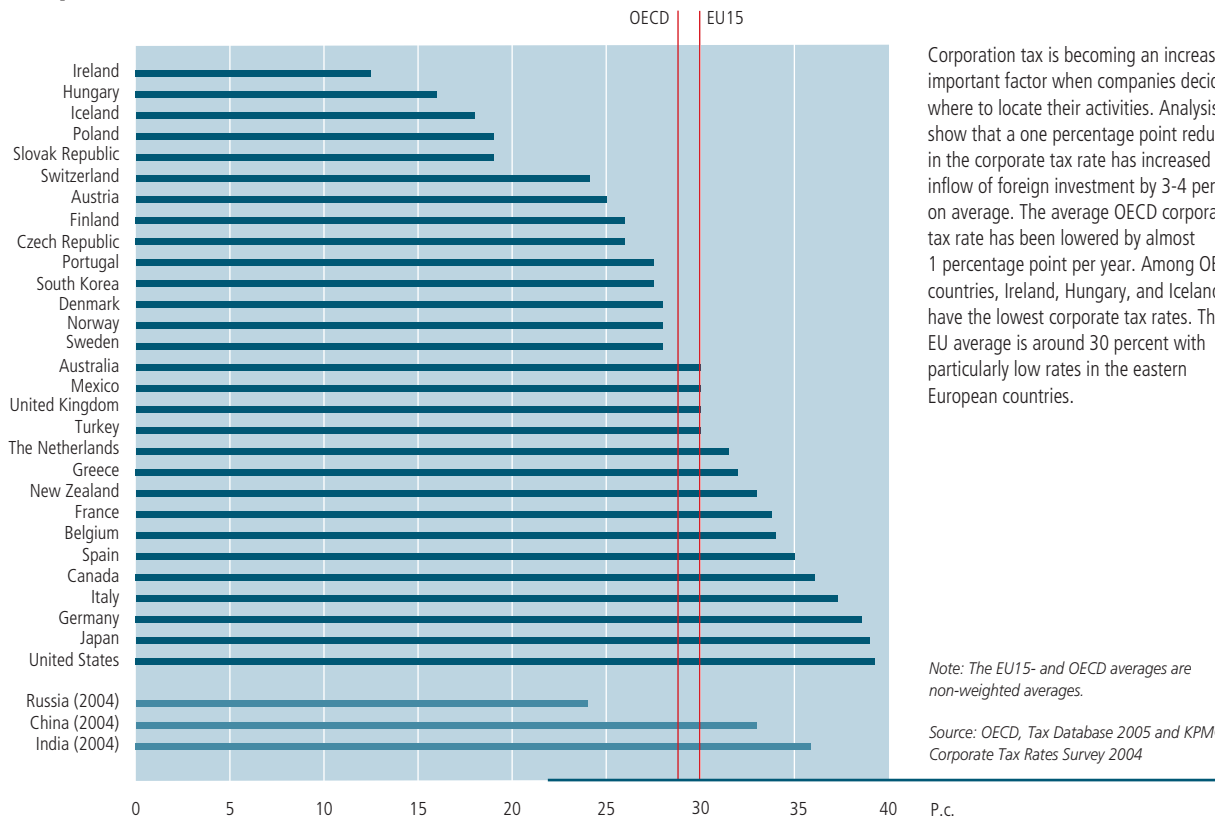


The United Kingdom and the United States have the lowest combined effective marginal tax, including indirect taxes, for higher wage earners. On the other hand, Denmark and Belgium have to hand over up to three quarters of extra income in tax, welfare contributions and consumer levies. A high rate of combined marginal tax hinders the incentive to work, to contribute a bit extra, to take initiatives, to acquire skills and to otherwise gain qualifications. This limits flexibility and growth in society.

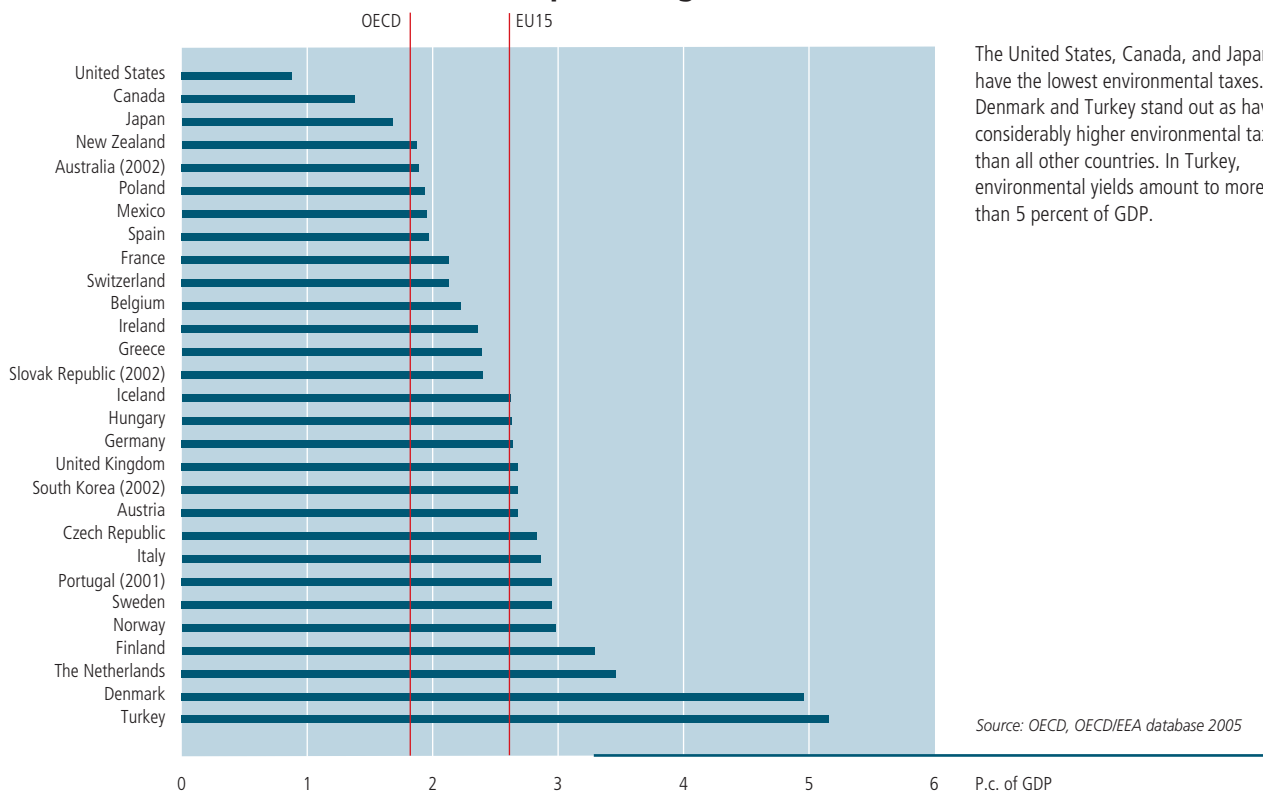
Efficiency of the tax system, 2005



Corporation tax rate, 2005



Yield of environmental taxes as a percentage of GDP, 2003



The United States, Canada, and Japan have the lowest environmental taxes. Denmark and Turkey stand out as having considerably higher environmental taxes than all other countries. In Turkey, environmental yields amount to more than 5 percent of GDP.

Source: OECD, OECD/IEA database 2005

Stringency of environmental regulations, 2005

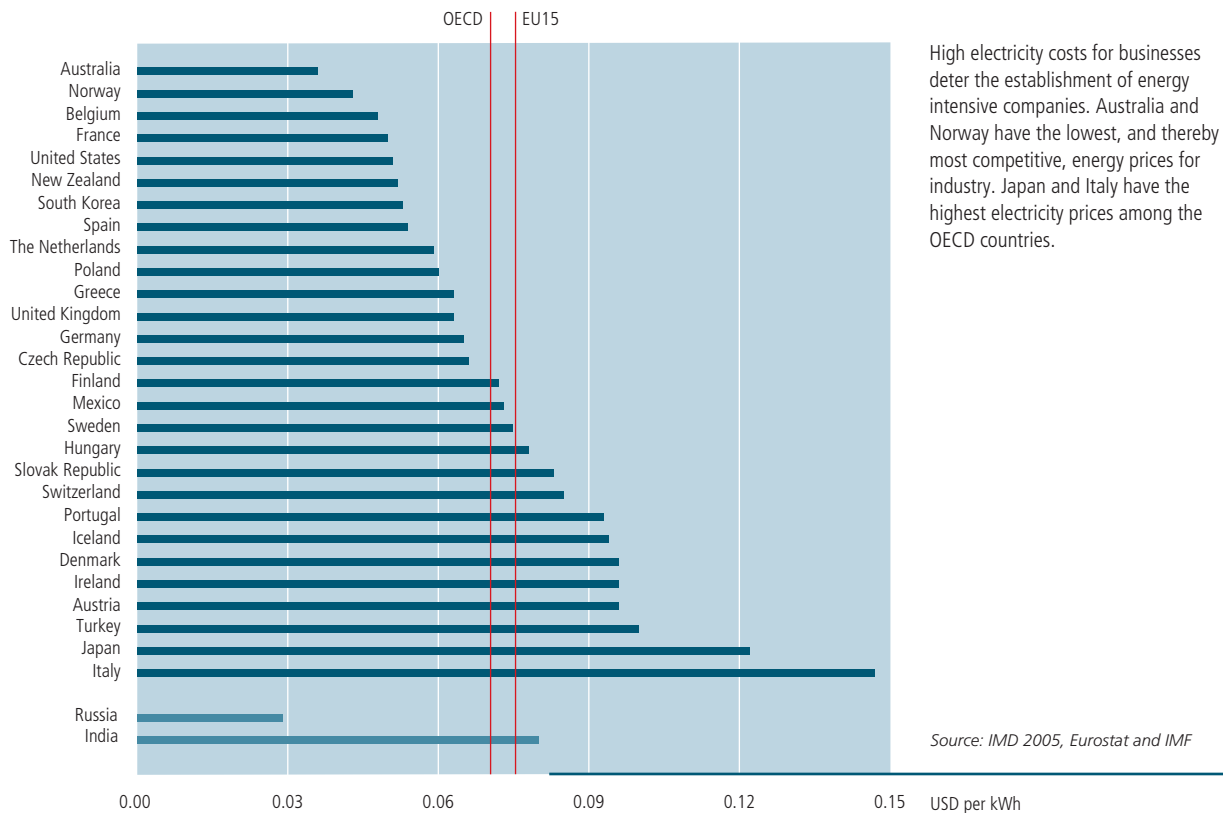


Apart from the economic restraints of environmental taxes, businesses also face considerable environmental regulations that can be difficult and costly to comply with. When business managers are asked, Turkey, Mexico, and Greece are perceived to have the least restrictive environmental regulations, while Denmark and Germany have the most comprehensive and restrictive regulations within the OECD area.

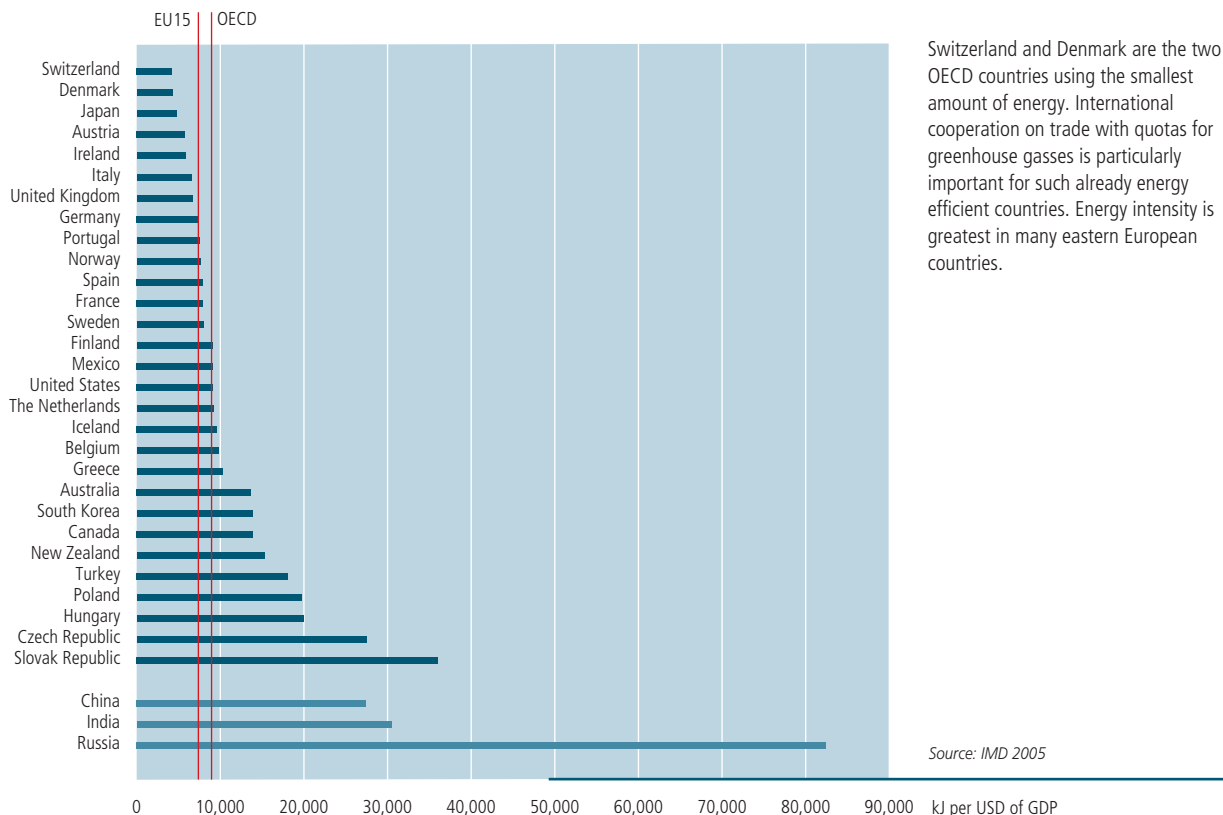
Note: High values indicate stringent regulations.

Source: WEF survey 2005

Electricity costs for industrial clients, 2004



Energy intensity, 2001



CO₂-emission permissions according to the Kyoto Protocol

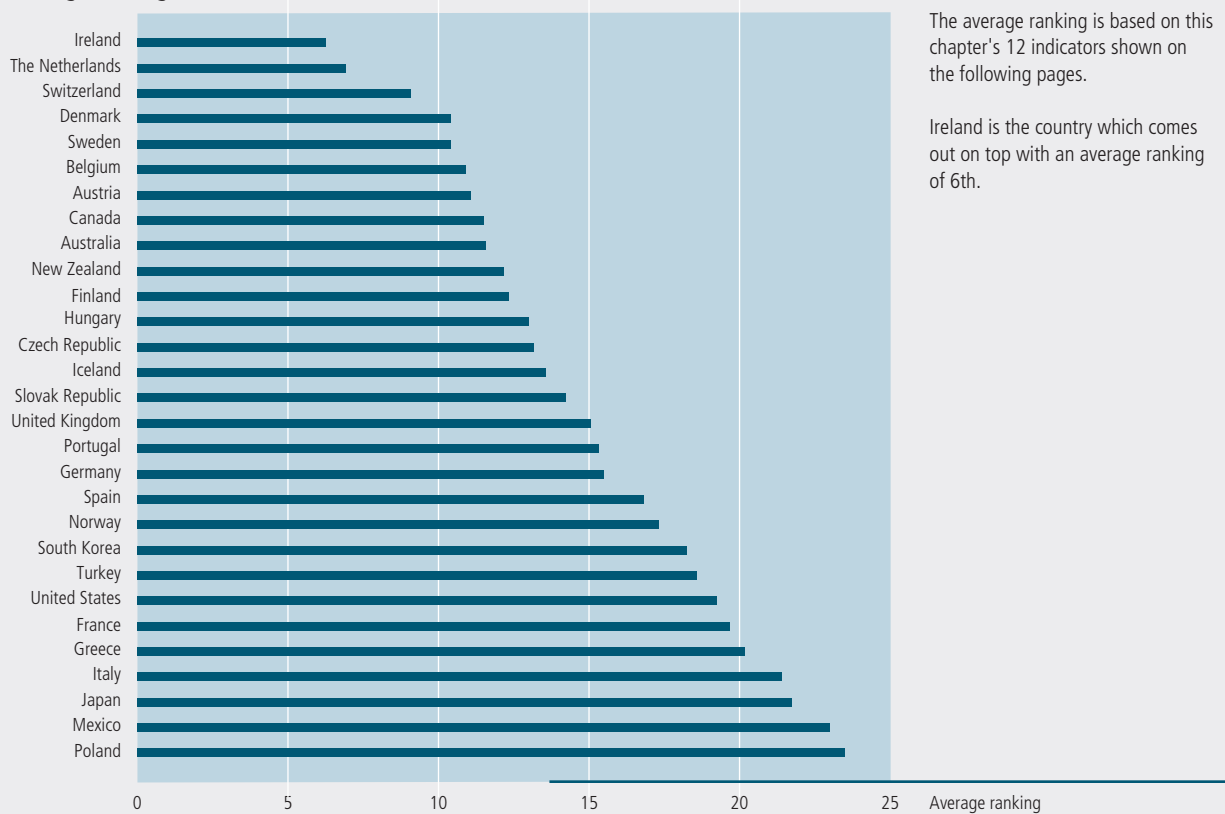


According to the Kyoto Protocol, the industrial countries are obliged to reduce their level of greenhouse gasses by 5 percent before 2012. Denmark and Germany have both promised to reduce their levels by 21 percent from their 1990 emissions. On the other hand, Portugal, Greece, Spain, Ireland, Iceland, Australia, Sweden and Norway are permitted to increase their CO₂-emissions. The Kyoto Protocol came into force in February 2005. The United States and Australia have not yet ratified the agreement.

Source: FCCC

Internationalisation and openness

Average ranking of countries



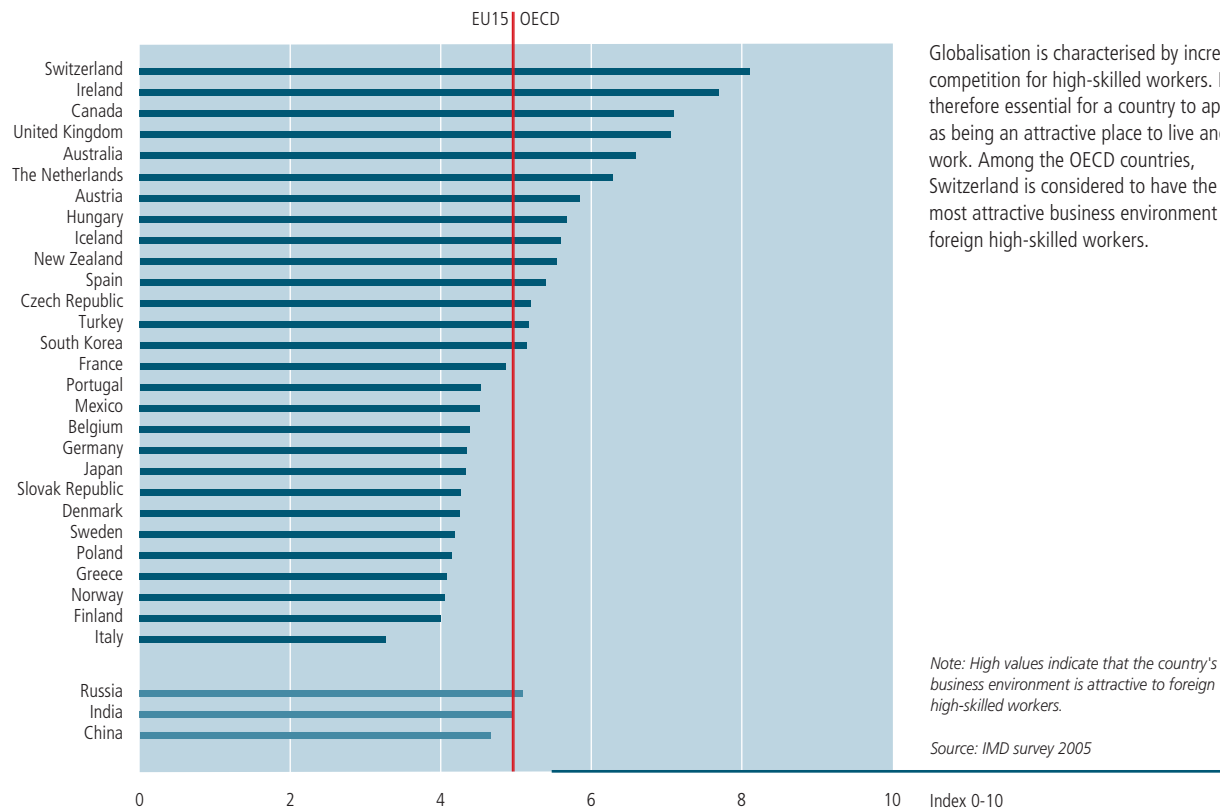
Internationalisation and openness

Globalisation is characterised by increasingly closer economic integration in the form of trade and investment. In order to take advantage of the many new opportunities of globalisation, major demands are placed on the global outlook of citizens, companies and politicians. A positive attitude towards globalisation and openness towards foreign ideas and cultures are prerequisites for success.

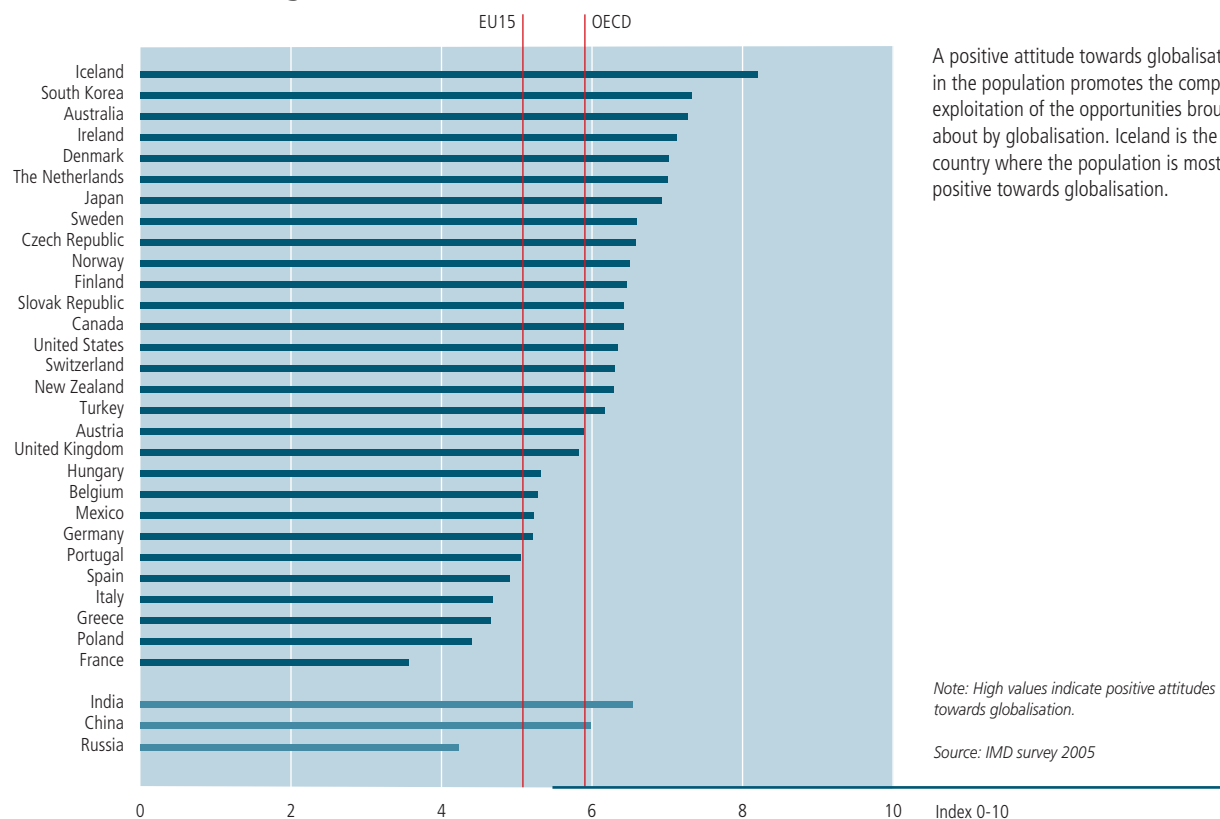
Ireland takes the leading position in the OECD – up one place from 2005. Ireland excels by having few barriers for international trade, and Irish companies are at the absolute top in investment in foreign markets.

Holland and Australia rank second and third. Holland's runner-up position can be viewed as a result of efficient customs authorities while Australia's admirable place is thanks to major cultural openness and low discrimination.

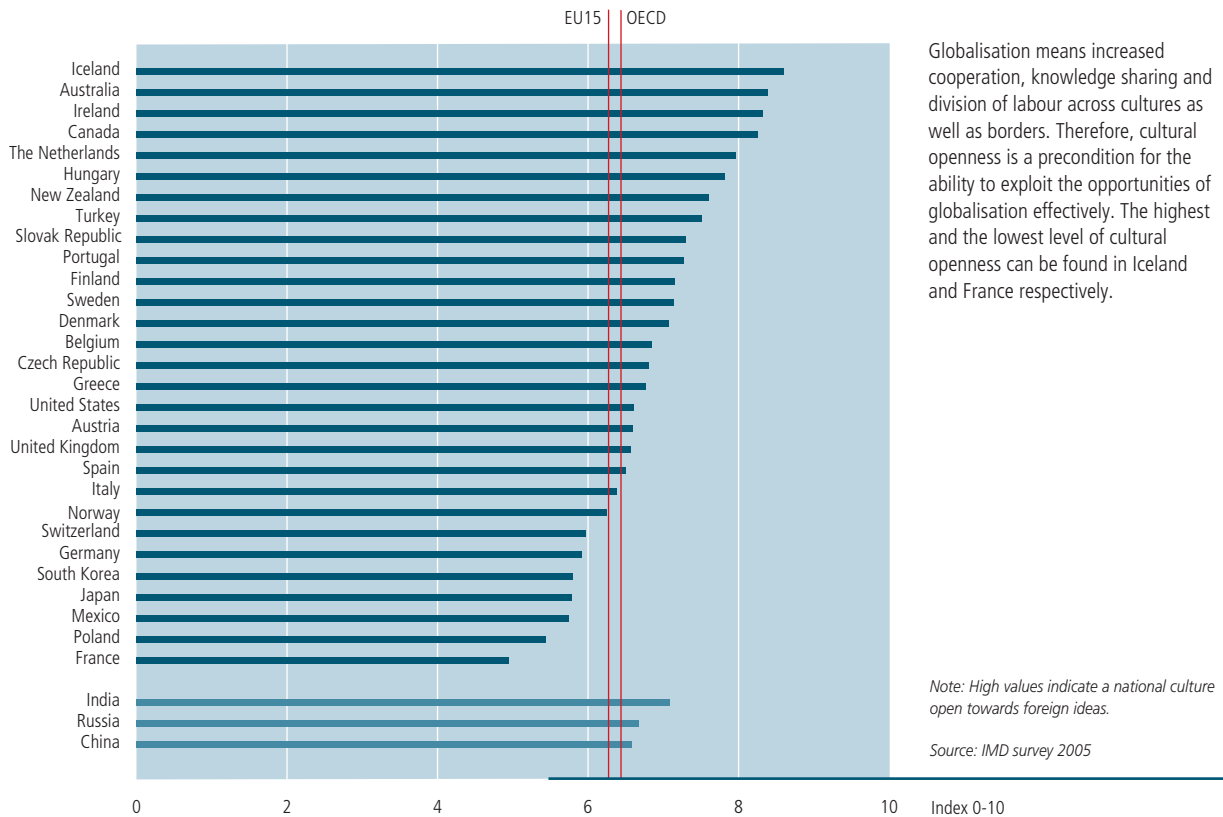
Business environment attractiveness for foreign high-skilled workers, 2005



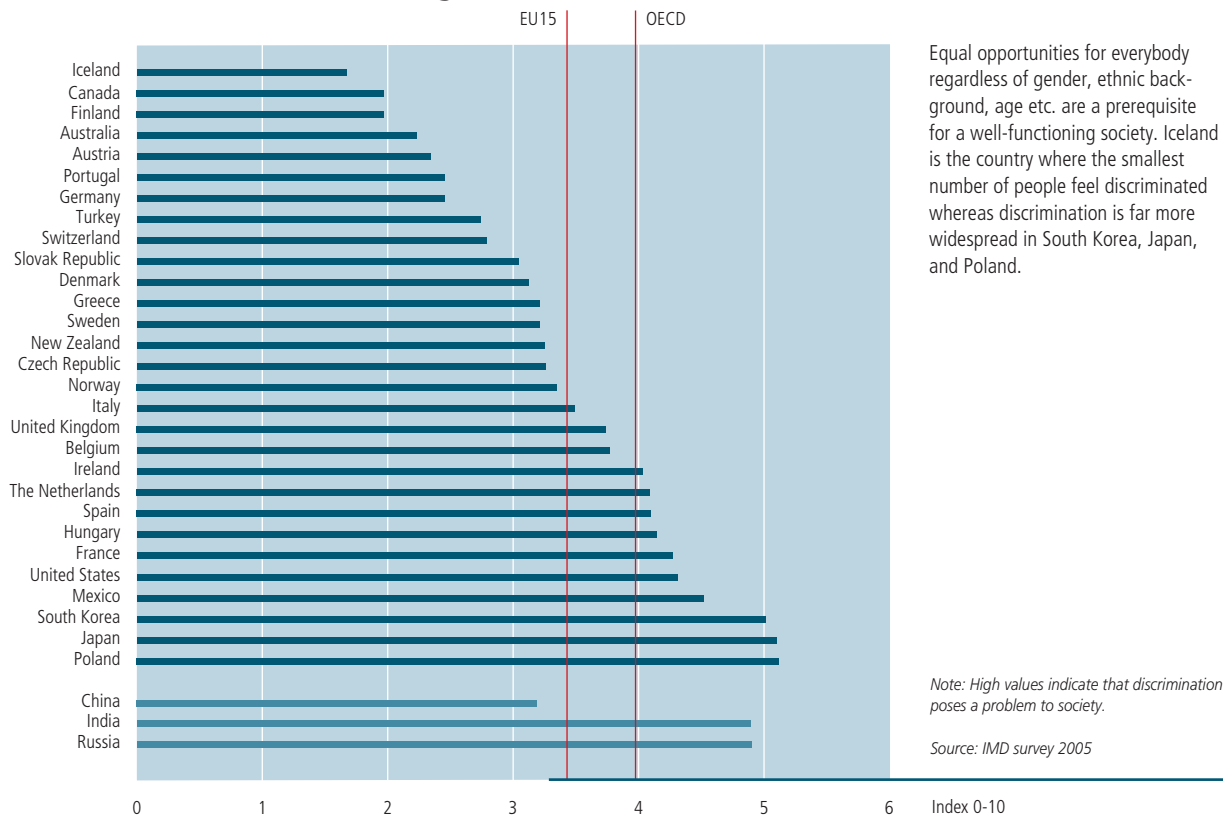
Attitudes towards globalisation, 2005



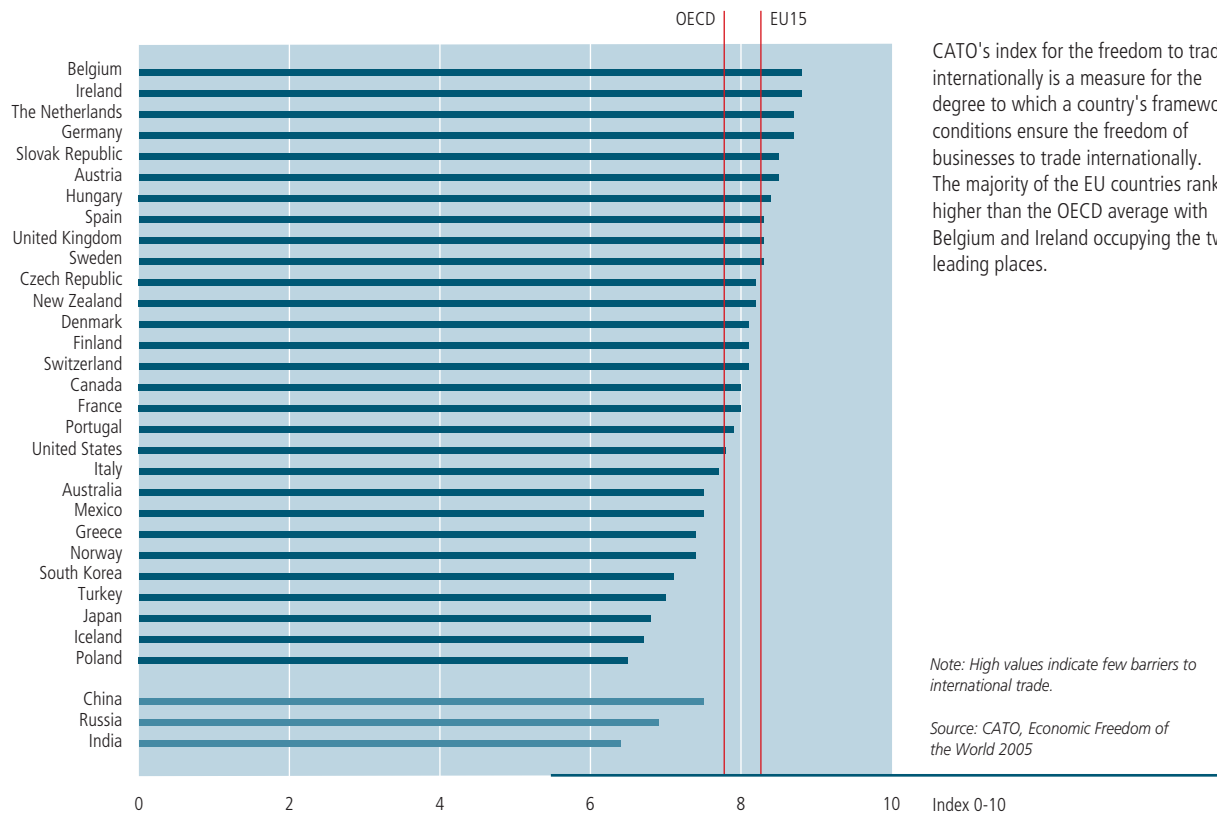
Cultural openness, 2005



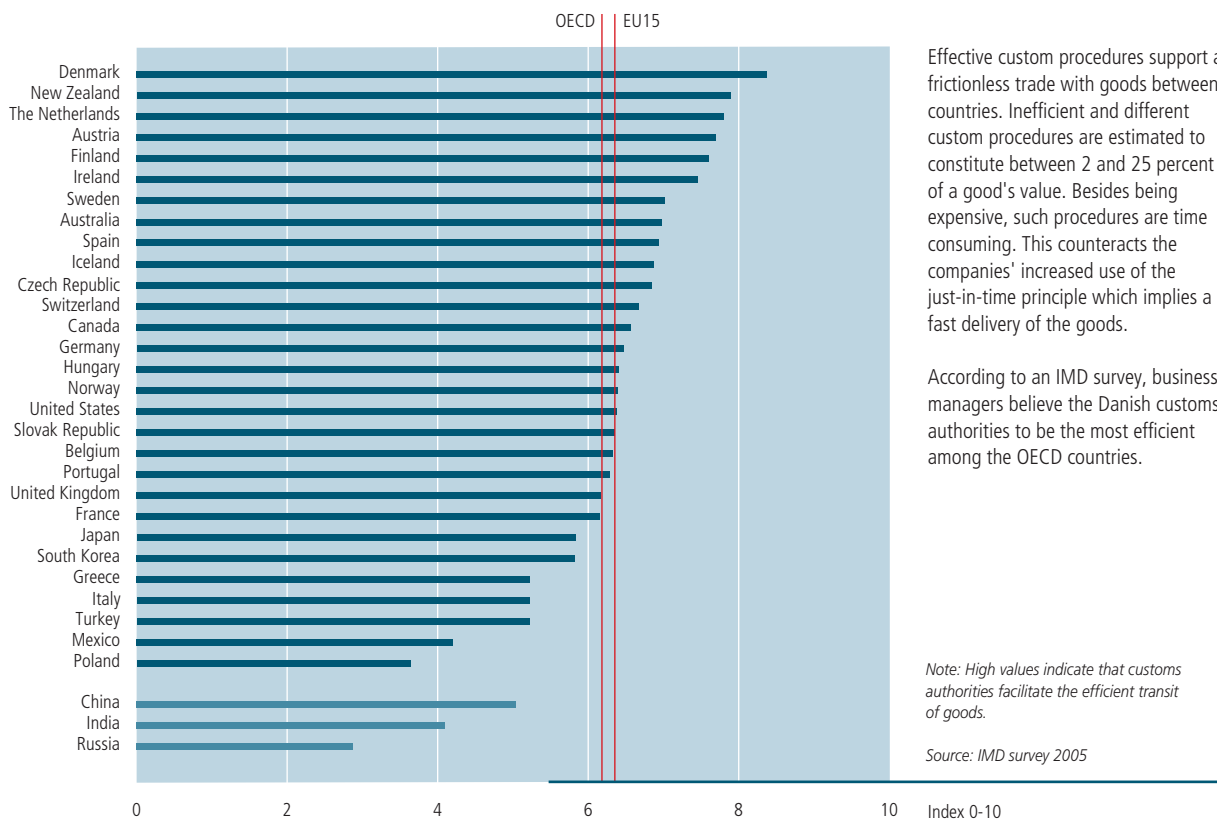
Discrimination towards race, gender, etc., 2005



Freedom to trade internationally, 2003



Efficient customs authorities, 2005



Foreign trade (exports and imports) as a percentage of GDP, 2004



Small countries typically trade more internationally than large countries. With a modest domestic market, the companies are forced to enter the export markets. Further, the specialisation means that many products are not even produced in a small country. Countries such as Belgium and the Netherlands have remarkably high imports and exports. This is probably to a large extent due to a large share of the European trade with overseas countries taking place via the Dutch and Belgium ports.

Exports as a percentage of GDP, 2004



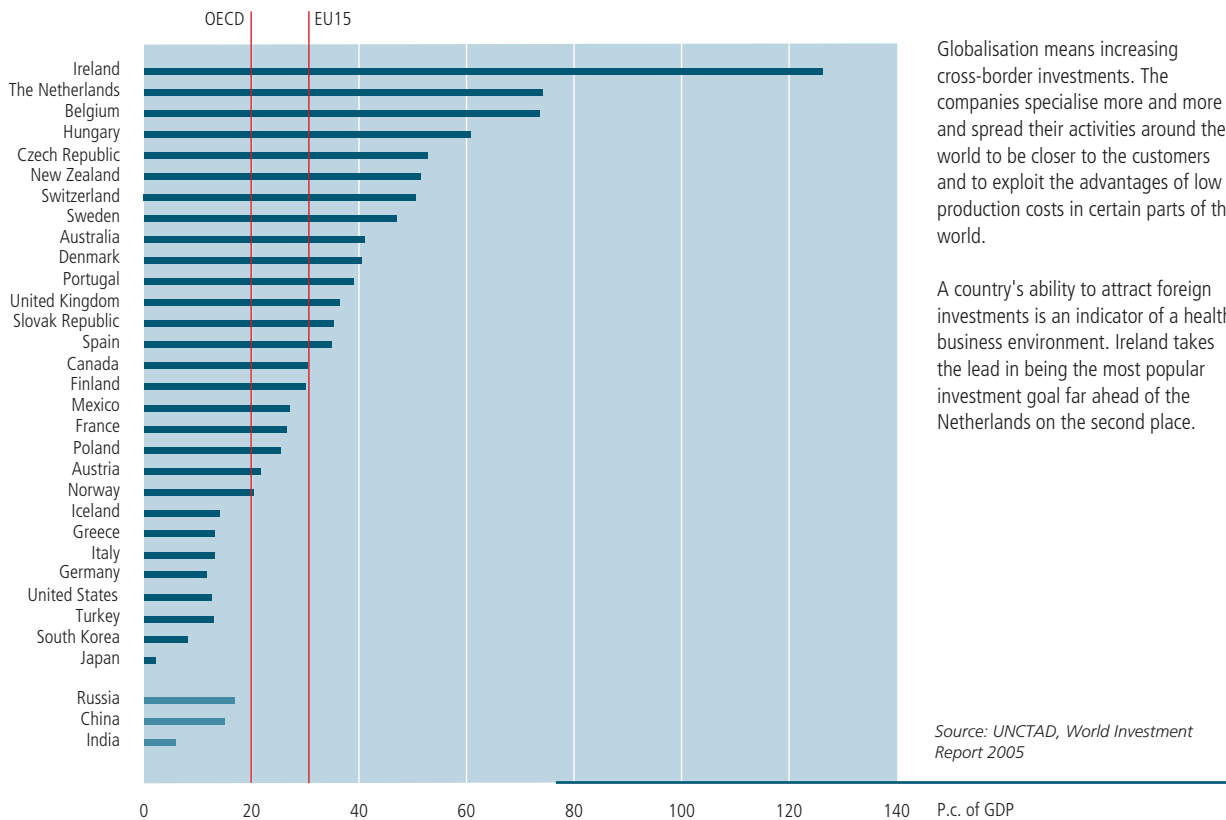
Small countries have a greater proportion of exports than large countries. This is a part of the explanation as to why countries like Ireland and Belgium are more export-oriented than the other countries. The United States is a relatively large country which is why the American export quota is modest compared to other countries. However, the difference is not substantial when excluding the internal trade among the EU countries.

Exports to emerging markets (non-OECD countries), 2004



Several emerging markets outside the OECD experience very high import growth rates. It is therefore important to reach these markets in order to participate in the high growth. The neighbouring countries of these emerging markets have of course easier market access which explains the high rankings of South Korea, Japan, and Australia.

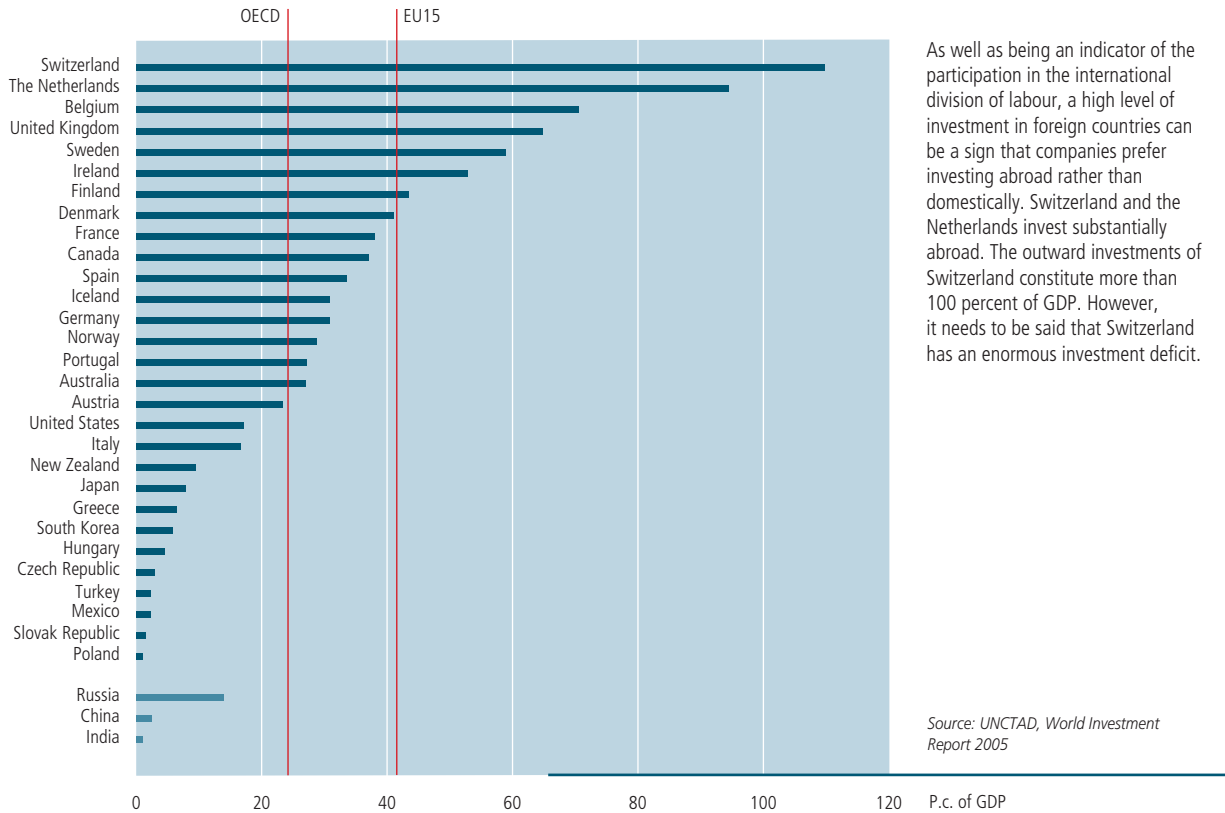
Direct investments from abroad as a percentage of GDP, 2004



Globalisation means increasing cross-border investments. The companies specialise more and more and spread their activities around the world to be closer to the customers and to exploit the advantages of low production costs in certain parts of the world.

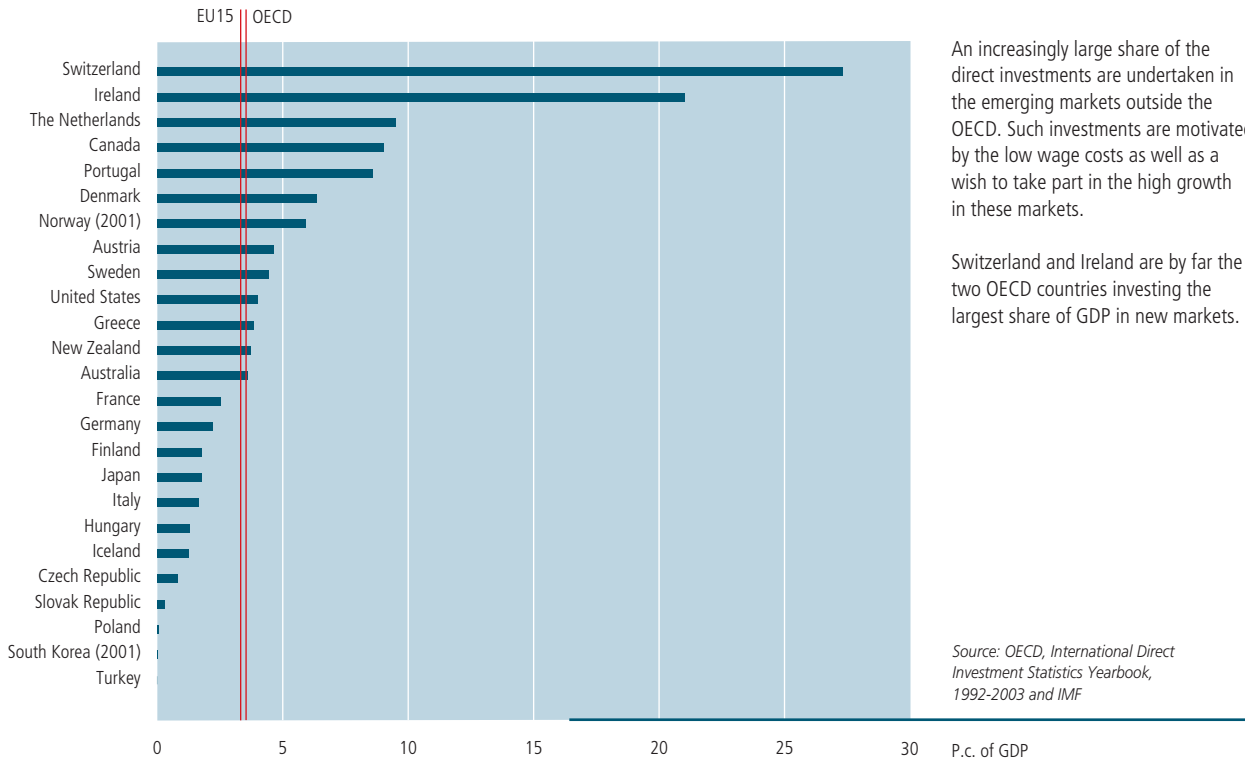
A country's ability to attract foreign investments is an indicator of a healthy business environment. Ireland takes the lead in being the most popular investment goal far ahead of the Netherlands on the second place.

Direct investments abroad as a percentage of GDP, 2004



As well as being an indicator of the participation in the international division of labour, a high level of investment in foreign countries can be a sign that companies prefer investing abroad rather than domestically. Switzerland and the Netherlands invest substantially abroad. The outward investments of Switzerland constitute more than 100 percent of GDP. However, it needs to be said that Switzerland has an enormous investment deficit.

Direct investments in emerging markets as a percentage of GDP, 2002



An increasingly large share of the direct investments are undertaken in the emerging markets outside the OECD. Such investments are motivated by the low wage costs as well as a wish to take part in the high growth in these markets.

Switzerland and Ireland are by far the two OECD countries investing the largest share of GDP in new markets.

The innovative winning strategy

In international competition, permanent product and production process innovation is a prerequisite for generating growth and wealth. Only those companies which constantly focus on reducing costs and increasing productivity will appear as competitive in the global marketplace.

In a globalised world, OECD-countries' wealth will only be developed through increased productivity since competitiveness based on low costs will need lower wages. Hence, a winning strategy requires world class innovation.

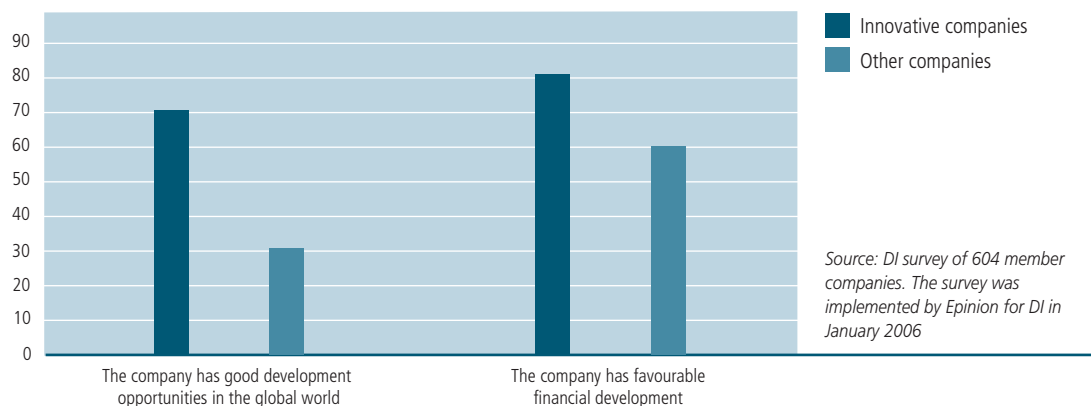
Innovation is increasingly important for businesses. A new DI survey among 600 Danish companies shows that innovative companies provide a far more positive assessment of their own financial situation and their development opportunities in the global world, than other companies.

Innovation vital for global success

More than 70% of the innovative companies currently assess their development opportunities in the globalised world as positive, while the corresponding share among other companies is only 30%.

Globalisation increases focus on innovation

Number of Danish companies agreeing with the statement (%)



Source: DI survey of 604 member companies. The survey was implemented by Epinion for DI in January 2006

Innovation in a global world

Global perspective

In a global world, a corporate innovation process will always require a global perspective, irrespective of whether we are dealing with innovation driven by new market needs or technological breakthroughs.

Less than one per mille of the world's potential consumers live in Denmark, and more than 99% of the research carried out in the world takes place outside Denmark. That is why world class innovation requires that, apart from providing good framework conditions for innovation in Denmark, citizens, companies and politicians must look outside the national borders to find new inspiration, knowledge and technology.

Standard goods become cheaper

Increasing internationalisation means that the type of products and services that companies develop in Denmark becomes very relevant. Competition in the production of standard goods becomes increasingly tough, and the products will rarely be able to maintain a price that can justify Danish cost levels.

Focus on upmarket products

A major part of the production found at the lower end of the price hierarchy will unavoidably move to low wage countries in Eastern Europe and Asia. The consequence of this development is that Denmark is increasingly forced to focus on the development of new, unique products at the top end of the quality scale – so-called upmarket products¹.

Danish companies, however, are far from alone in their great efforts to move upwards in the international price hierarchy. Many countries are currently targeting the top end of the price hierarchy through increased focus on the use of advanced technology, elegant design, branding, better quality and materials, improved hygiene etc.

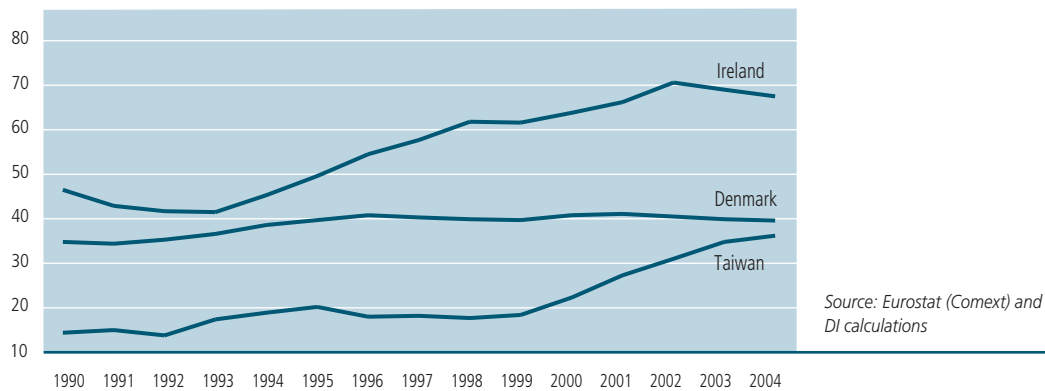
Many countries aim to move upwards in the price hierarchy

The development is seen both in western countries trying to secure their leading positions, and in current and former low-wage countries. Ireland and Taiwan are both examples of countries which have to a large extent succeeded in increasing their upmarket share during a period when the Danish upmarket share has been relatively stable. In the middle of the 1990s, Ireland's upmarket share was in line with Denmark's, at about 40%, whilst Taiwan's share of the upmarket export sector corresponded to roughly half of the Danish level. Now, Ireland's upmarket share is some 30 percentage points higher than Denmark's, while over the same period, Taiwan has succeeded in catching up with Denmark.

¹ In this context, upmarket products are defined as groups of goods capable of earning a price that is at least 15% above the level of corresponding goods in the exports of the other EU15-countries. The export sector currently has some 9,000 product codes.

Tough competition at the top end of the price hierarchy

Exports of upmarket products in % of total goods export, 3 year moving average (%)



The development clearly illustrates that countries which do not constantly strive to improve will cease to be good. Globalisation intensifies international competition in all price segments and places still greater demand on attention to business innovation.

Increased focus on innovation

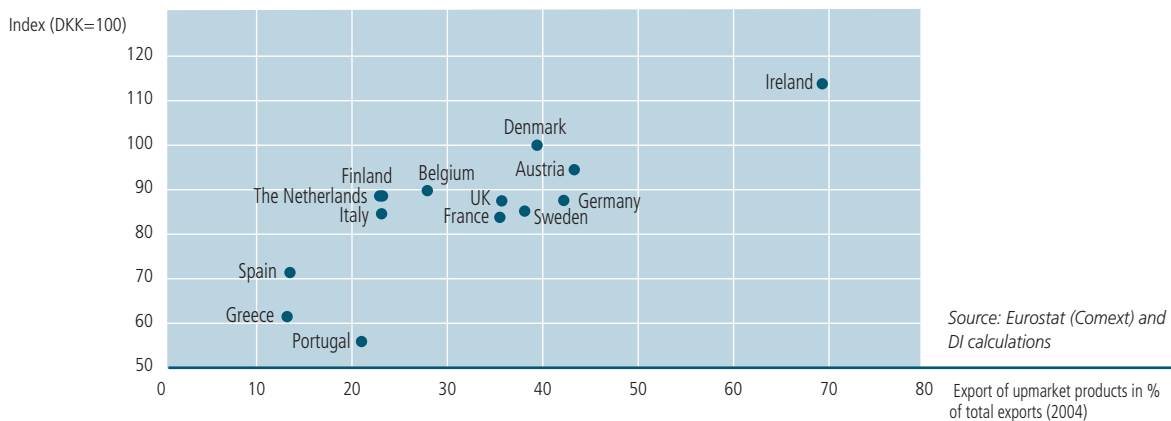
In this context, Denmark is facing challenges in relation to knowledge, education, research and global orientation.

Wealth is based on upmarket products

In a market economy, company competitiveness depends on the fact that a product's sales price exceeds its production costs. Accordingly, the economic wealth of western countries is closely related to the ability to create products that can command a price that justifies higher costs than those in the countries of Eastern Europe and Asia. The level of wealth in the western countries should therefore be seen in the light of their ability to create upmarket products.

Wealth through upmarket product exports

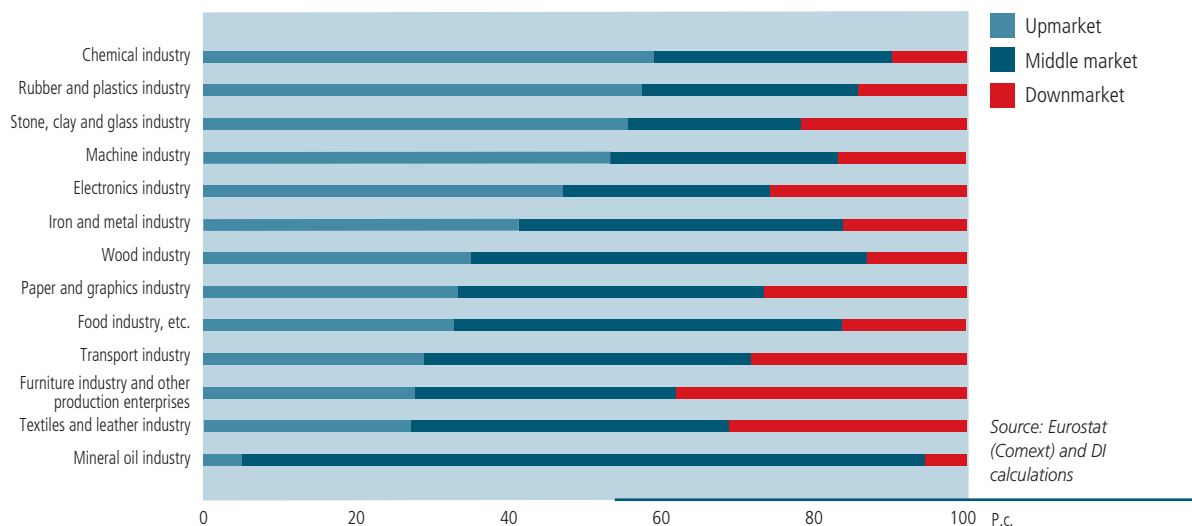
GDP per capita, adjusted for purchasing power (2004)



Upmarket products are found in nearly all sectors albeit in varying numbers. In the chemical industry upmarket products constitute almost 60% of total exports, while the corresponding share in the textile and furniture industries is only about half of that. Part of the explanation for the major differences between the sectors is natural and is simply an expression of the fact that many products – such as oil – are standard goods. But part of the difference should also be referred to other causes such as variations in the intensity of research and education.

Quality spread in Danish industrial sector exports

Average for 1996 thru 2004



Major replacement in upmarket segment

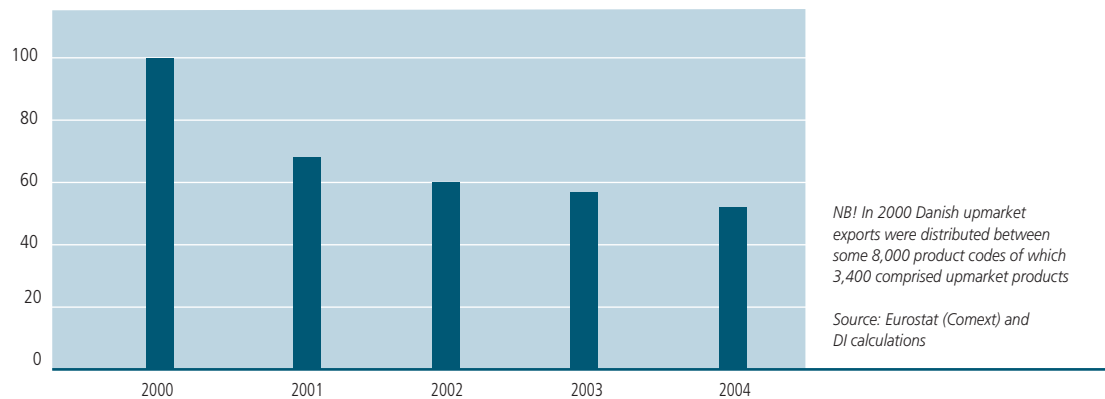
Many upmarket products lose market status

The market status of upmarket products is far from static. In tough international competition, upmarket products quickly lose their unique market position in step with the copying of existing products and services and the development of new upmarket products. Accordingly, a global winning strategy based on the production of upmarket products places major demands on continued commercial innovation.

A study of the export development in recent years clearly shows the scope of competition at the top end of the price hierarchy. If, for instance, you look at Danish exports of upmarket products in 2000, it turns out that only about 50% of these products still belonged to the upmarket segment in 2004. The remaining upmarket products had either fallen down in the price hierarchy or disappeared completely.

Upmarket products lose market status over time

Danish upmarket products (product codes) in 2000 that also belonged to the upmarket segment in the following years (%)



About one third of the products belonging to the upmarket segment in any given year will lose this market status the following year. After that the downward movement in the price hierarchy will continue, but at a more moderate speed. The major replacement in the upmarket segment demonstrates the massive requirements for innovation in a modern knowledge economy.

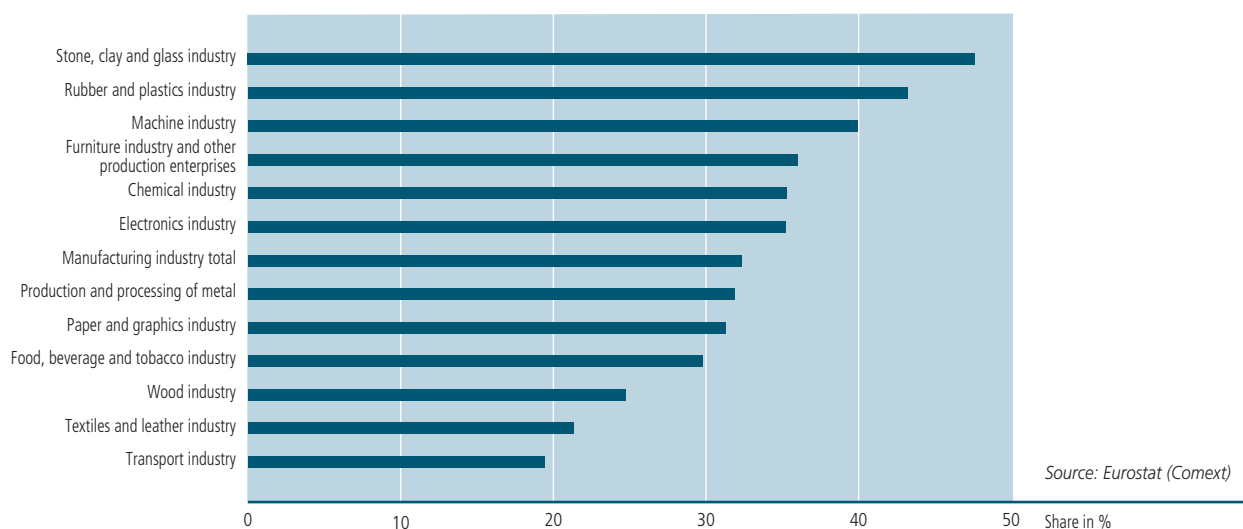
The massive replacement in the upmarket segment can be interpreted as a sign that all sectors apparently have a core of lasting upmarket products that permanently belong to the upmarket segment, and a more volatile periphery of upmarket products which change their market status over time. To some degree, the scope of lasting upmarket products can be explained by special core competences, patents etc. On the other hand, the more volatile upmarket periphery can be viewed as the result of changing consumer preferences due to fads and fashions.

A core of lasting upmarket products

If we take a look at the total Danish exports of upmarket products in 2000, it appears that only about one third of the product groups also belonged to the highest price segment in the following four years. The rest of the product groups had either lost their upmarket status or had been excluded from the product line. In the stone, clay and glass industry, however, nearly 50% of the products continued to belong to the upmarket segment in the period 2000-2004. Conversely, less than 25% of the export groups in the wood industry, textile and leather industry and transport industry belonged to the upmarket segment in all these years. This means that there are major differences between the various sectors.

Only relatively few core upmarket products

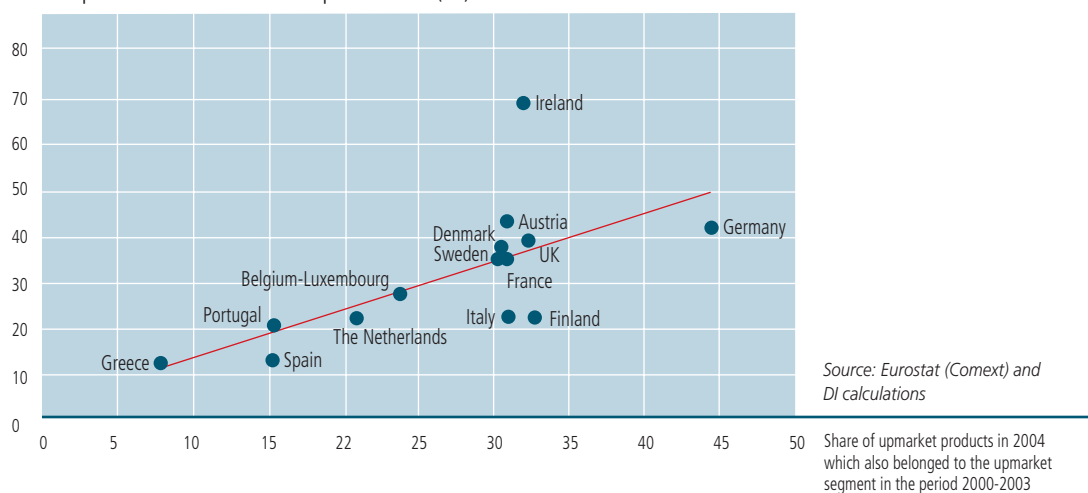
Share of Danish upmarket products in 2004 which also belonged to the upmarket segment between 2000 and 2003



Correspondingly, a significant variation is seen in the movements in and out of the upmarket segment in various countries since the movements seem to be most marked in countries with limited upmarket exports. In countries such as Greece, Spain and Portugal, the lasting upmarket products² constituted less than 20% of the upmarket segment in 2004. In Germany the corresponding share was 45%.

Focus on lasting upmarket products

Exports of upmarket products in % of total exports 2004 (%)



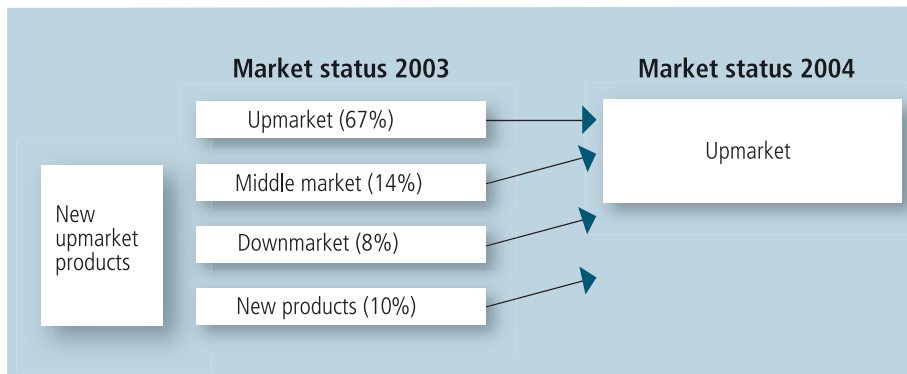
² A lasting upmarket product is defined as a product which belonged to the upmarket segment during the entire 2000-2004 period.

Innovation of new products and services

Despite the major shift in the upmarket segment, the Danish upmarket percentage has been relatively stable over the past decade. The Danish companies accordingly appear to have been able to create new unique products in step with the decline of older products in the price hierarchy.

Innovation of new upmarket products

Around two thirds of the Danish products that belonged to the upmarket segment in 2004 also belonged to this segment the year before, while the remaining products had either previously belonged to lower price segments or were entirely new on the market. The majority of new upmarket products have moved upward in the price hierarchy due to a new design, service concept or something along those lines. However, about one third of all new upmarket products are entirely new products that were not part of the exports in the previous year.



Many approaches to innovation

The company innovation process may start with the identification of user needs as well as the development and application of new knowledge about technology.

Market needs and technology

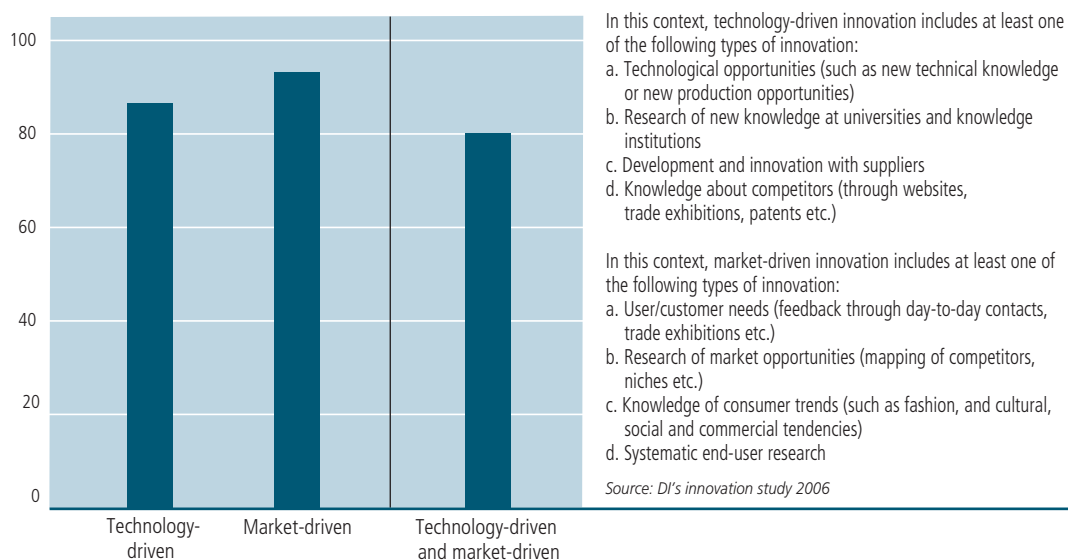
In practice, the two forms of innovation are difficult to distinguish from each other. The development of new products based on user needs normally requires the development of new technical solutions. Similarly, companies are not interested in marketing a product that does not meet user needs. The difference between technology-driven and user-driven innovation is mainly one of whether the idea for the new product is based on new technological breakthroughs or new knowledge about user needs.

The close connection between the two forms of innovation is clearly illustrated by the fact that, to some extent, all innovation-driven companies use both methods. About 90% of Danish companies use one of the two types of innovation and more than 80% use both approaches to innovation³.

3 DI's innovation study 2006

Technology-driven and market-driven innovation is closely connected

Share of Danish companies which use the method for the development and identification of new ideas (%)



Market-driven innovation

Knowledge of user needs

More than 90% of Danish businesses currently have some form of customer contact in connection with the development of new product ideas. More than 75% of the companies gain an insight into the users through their day-to-day contact with customers, but many companies also find inspiration for concept development through their research into market opportunities and consumer trends.

Methods for the generation and identification of new ideas

	Share of Danish companies using the method in question
User/customer needs (feedback through day-to-day contact, trade exhibitions etc.)	76%
Research of market opportunities (mapping of competitors, niches etc.)	40%
Knowledge of consumer trends (such as fashion, and cultural, social and commercial tendencies)	34%
Systematic end-user research (observation studies etc.)	20%
At least one of the above methods	93%

Source: DI's innovation study 2006

The interest in market-driven innovation seems to be increasing. More and more companies try to target their product development at particular customer segments. Some companies have also begun to use proper scientific and systematic methods from fields such as anthropology in their approach to user-driven innovation. More than 50% of the companies use customer interviews and tests of new products and services on potential users. So far, only about 5% of the companies have found it useful to try anthropological methods to obtain knowledge about unmapped customer needs.

Methods for gaining knowledge about customers or consumers

	Share of Danish companies using the method in question
Interviews with customers	59%
Product/service tests	53%
Market surveys	42%
Knowledge from customers and consumers through networks and databases	33%
Discussion in focus groups	27%
Questionnaire surveys among potential customers	17%
Anthropological methods (observations, photo studies etc.)	5%
Other methods	3%

Source: DI's innovation study 2006

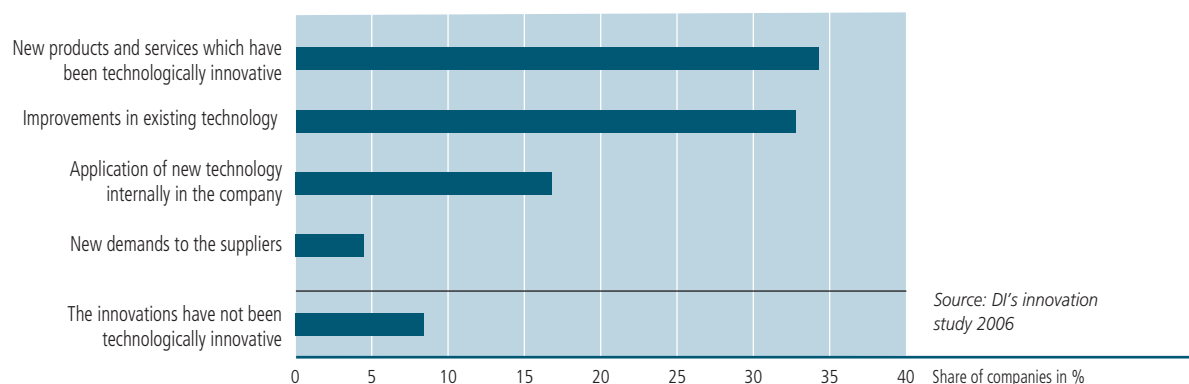
Technology-driven innovation

The generation of new products nearly always comprises the development of new technical solutions, and more than 90% of new innovations are technologically innovative⁴. Technological innovation is very varied and consists of the introduction of new products and services as well as improvements in existing technology. Technological innovation may also involve internal use of new technology in production and/or distribution.

Technological innovation

The majority of innovations are technologically innovative

How Danish company innovation has been technologically innovative over the past three years (share in %)



About 40% of the innovative companies have established an independent research and development department. In-house research departments are most widespread among larger companies. In companies with less than 20 employees only 30% have a special R&D department⁵.

⁴ DI's innovation study 2006

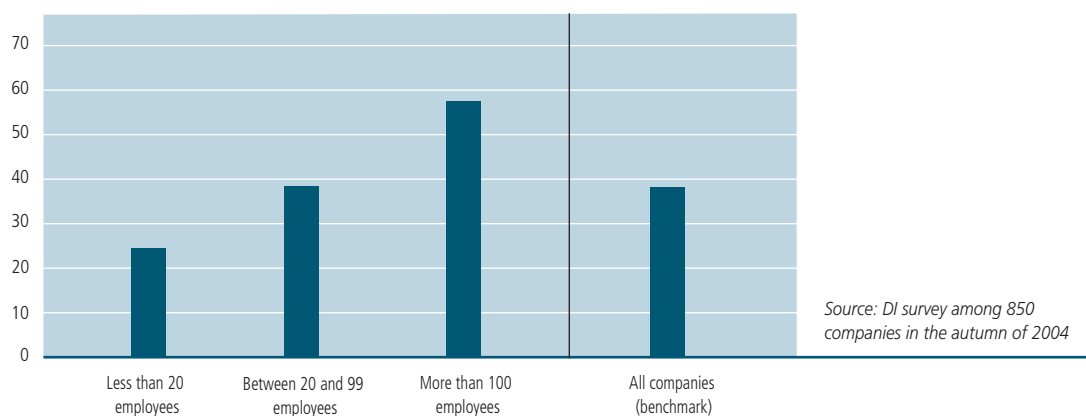
⁵ Produktudvikling i dansk fremstillingsindustri (Product development in the Danish manufacturing industry), Ina Drejer et al. Ålborg 2004

Research collaboration

Technology development and R&D can be organised in many other ways than by having an in-house research department. Many companies collaborate with other companies and knowledge institutions in the development of new products – including foreign companies and universities. Company focus on international research co-operation is not surprising viewed in the light of the fact that the majority of new knowledge is generated outside Denmark. The annual research activity in Denmark corresponds to less than a week's research activities in the United States.

Large companies often participate in international R&D co-operation

Share of Danish companies taking part in international R&D co-operation (%)



SMEs face special challenges

The close connection between the size of the company and the scope of international research co-operation clearly underlines the special challenge that smaller companies are facing in relation to applying knowledge that is generated outside Denmark.

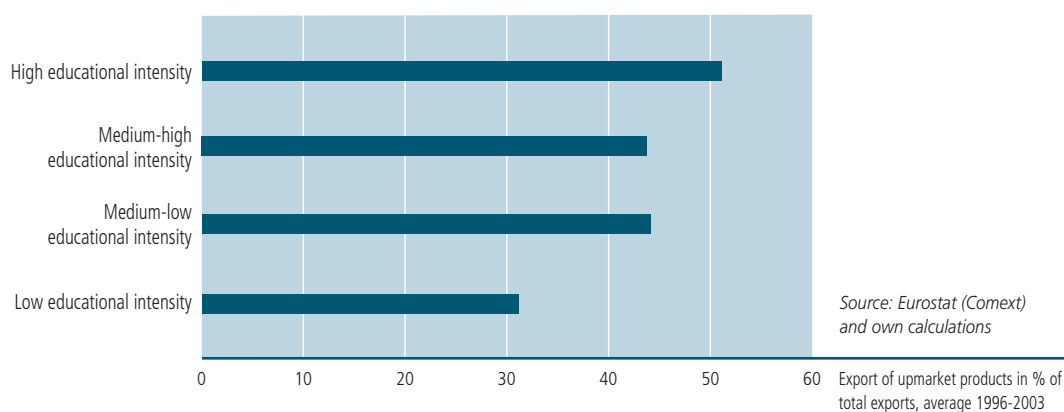
The innovative challenge

Focus on competence

Competences to develop innovative products and services and handle complex innovation processes are a precondition for retaining and developing our position in the international price hierarchy. The educational intensity in a sector is significant for the ability to create new upmarket products, and in sectors with high educational intensity, upmarket products are more dominant than in sectors with low educational intensity.

Danish educational level and export of upmarket products

Sectors categorised on the basis of educational intensity



In DI's innovation study, "easier access to qualified employees" is, not surprisingly, the focus area with the highest priority of companies in relation to an increase in innovation activity. More than a third of Danish companies expect they will have to take on new employees for innovation activities in order to meet the need for innovation.

The greatest need for future company innovation efforts is related to creativity and idea generation. However, competences in project management, research and production are also high on the agenda. Company focus on user needs is underlined by the fact that one in four companies expects an increased need for sales.

Creativity and
idea generation

Demanded competences

In which areas do you expect your company needs new competences in order to implement the innovation effort of the next few years?

Discipline	Share of Danish companies in %
Idea generation and creativity	52
Project management	44
R&D	41
Production	41
Sales	25

Source: DI's innovation study 2006

The companies agree in their indication of who is going to lift the need for new competences. Seven out of ten companies believe that the innovation of the future should primarily be carried out by engineers or employees with a background in the natural sciences. This does not mean that other groups are not important in relation to the innovation process – but they are not the most relevant group.

Education and innovation

Type of university-level education that the companies believe is the most relevant qualification when it comes to contributing to innovation in the company

Discipline	Share of Danish companies in %
Technology and science	70
Business studies	11
Design	9
Social science	1
Liberal arts	0
Don't know	9
Total	100

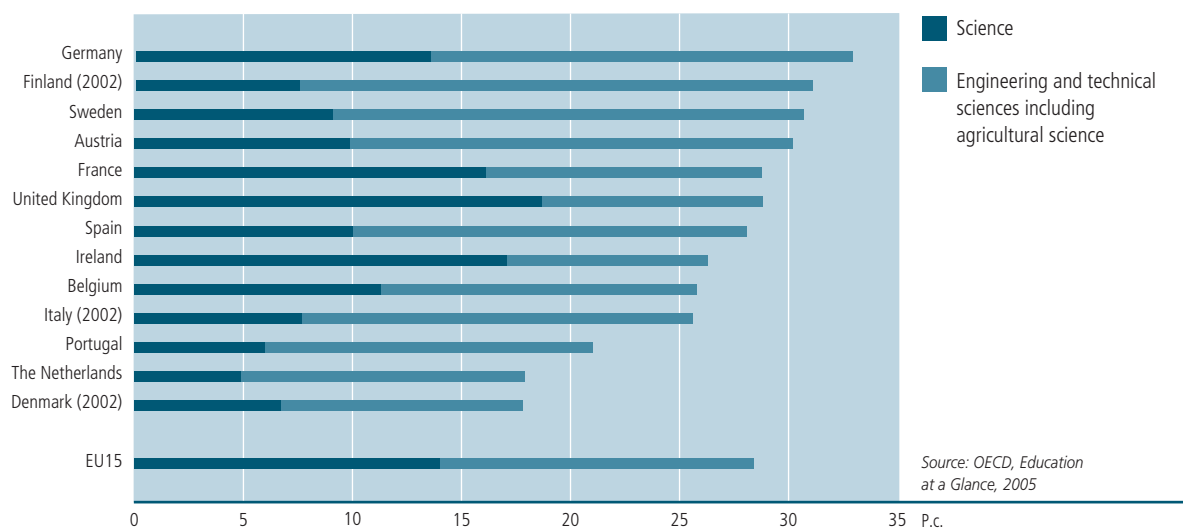
Source: DI's innovation study 2006

Few young people choose science and technology

In this context, it is thought-provoking that less than 20% of graduates in Denmark have completed a degree in the natural sciences or technical disciplines in which the potential for innovation is typically greatest. In Finland and Sweden, the corresponding share is about 30%.

Few young Danes choose to qualify in science and technology

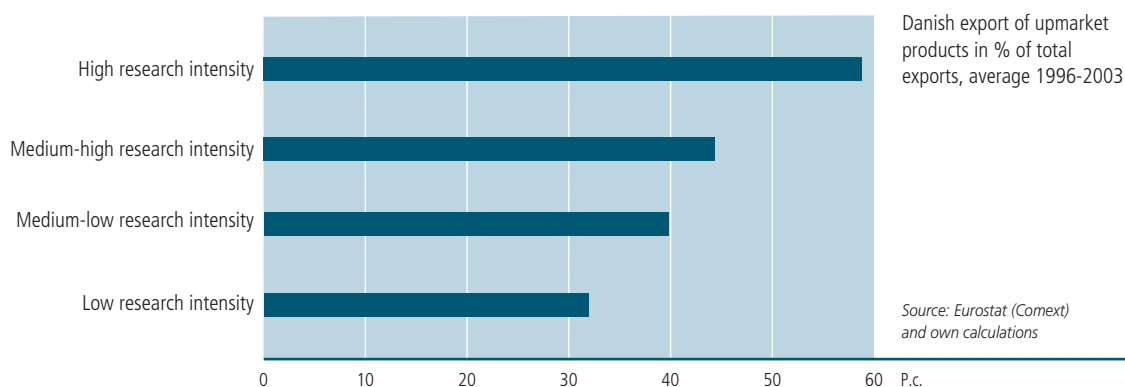
The share of university graduates in science and technology, 2003



In a knowledge-intensive economy, the creation of new upmarket products is closely tied to R&D investment. In sectors with high research intensity, upmarket products are typically more dominant than in sectors with low research intensity.

Research-intensive sectors have major exports of upmarket products

Sectors categorised on the basis of research intensity



Over the past few years, private investment in R&D has increased well while developments in government investment have been disappointing. This means that Denmark will have problems meeting the Barcelona target that R&D investment should constitute at least 3% of GDP by 2010. Finland and Sweden have been meeting the Barcelona target for many years.

Denmark far from Barcelona target

R&D investment is not the only indicator of a country's innovative framework conditions. Research co-operation and efficient knowledge dissemination between universities and companies are highly significant for the value of the public research effort as well. Similarly, the availability to companies of public research is conditioned by the fact that the research institutions are capable of generating world class knowledge. In this benchmark report, Denmark ranks 7th in relation to knowledge dissemination and research co-operation between universities and businesses while the quality of the Danish research institutions only reaches a modest 13th place.

Research effort, knowledge dissemination etc.

Indicator	Denmark's rank among OECD countries
Knowledge dissemination between universities and businesses	7
Research co-operation between universities and businesses	7
Total investment in R&D in % of GDP	7
Public investments in research in % of GDP	10
Quality of research institutions	12

Source: See indicators for Knowledge and competence in the benchmark section for precise sourcing

Research must be application-oriented

Conversion of knowledge into products

Knowledge dissemination between universities and businesses as well as high quality and scope in Danish public research are necessary, but not sufficient prerequisites for a winning Danish strategy.

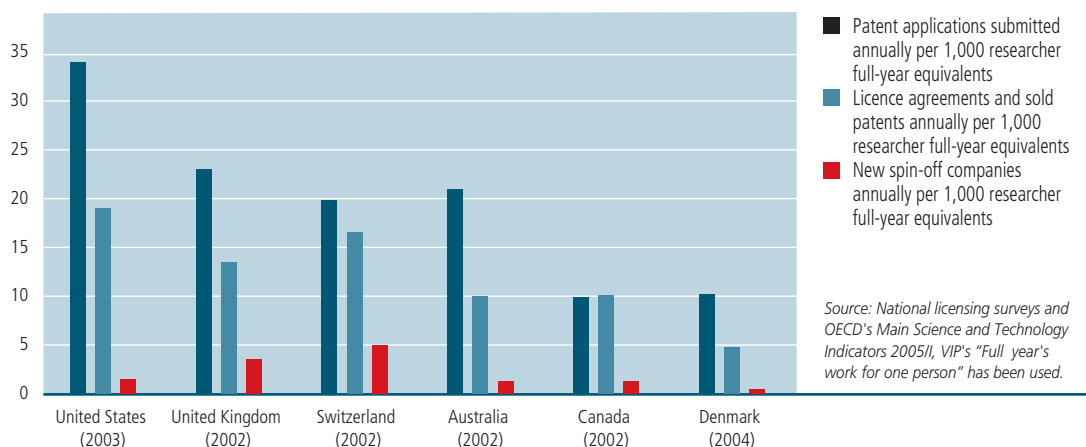
A winning strategy also requires the research to be used for the product and business development of companies.

The number of patent applications and licence agreements can be used as indicators of the scope of interaction between universities and private enterprise. In this area, Denmark lags behind in comparison with numerous other countries. In Denmark, the number of patent applications, licence agreements and sold patents per researcher full-year equivalent is only 33% of the level seen in countries such as the United States and the United Kingdom.

In these countries, universities have worked professionally with commercialisation for many years. For instance, American universities have worked with patenting scientist inventions for more than 20 years, while the British universities typically have 10-15 years of experience. According to the OECD, performance in the United States and Britain has been achieved through the gradual development of institutional activities into commercialisation and technology transfer.

Denmark is no world champion in commercialisation

Various benchmarks for the commercialisation of Danish research



Methods, Sources and Definitions

In this report we benchmark 29 OECD countries' global performance and framework conditions regarding utilisation of the possibilities offered by globalisation. Luxembourg is the only OECD-country which is not analysed due to lack of data. However, in a few benchmarks the data for Belgium also includes data for Luxembourg.

Benchmarking of
29 OECD-countries

Each chart shows a EU15 average and an OECD average. These averages have been calculated by weighting each country's GDP, adjusted for purchasing power. In addition, we include data from Russia, India and China when available. However, these countries are not included in the rankings and aggregate results.

The comparison between the 29 OECD countries is based on 88 measurable indicators divided into 6 categories: Growth and development, Knowledge and competence, Business flexibility, Enterprise and entrepreneurship, Costs and taxes, and International engagement and openness.

88 indicators in
6 categories

For each of the 88 indicators, the countries are ranked according to how well they perform in globalisation and how suited their framework conditions are with regard to supporting the utilisation of the opportunities offered by globalisation.

Ranking

Within each of the six groups of indicators, we have calculated the average position of each country as a simple average of the country's ranking in each of the indicators within the categories.

Average position

In those cases where it has not been possible to collect country data on one or more indicators, we have instead used the country's average ranking in the other indicators within the same category or subcategory of indicators to make a new ranking. In this way, every country gets a ranking between 1 and 29.

Missing data

When two (or more) countries obtain the same ranking, they are awarded with the same ranking.

Identical values

One indicator has been treated differently than the others. In CO₂ discharge quotas from the costs and tax category, five countries – the United States, Australia, Mexico, South Korea, and Turkey – rank highest only because they either have not ratified the Kyoto Protocol or have not undertaken any reduction obligations.

Different
benchmark on
CO₂ reduction

New benchmarks

Compared with the Globalisation Report 2005, there are some changes in the choice of benchmarks in this year's report. Benchmarks for investment across national borders compared with the size of the country; utilisation of FDI potential; purchase and sale of technology and production of hightech products have been omitted. Instead four benchmarks for the service sector have been included. These are production per employee; value added per employee; employment growth, and staff costs per employee.

Sources

The 88 indicators have been selected in order to give a thorough picture of the countries' globalisation performance and framework conditions. Data have been drawn from internationally recognised sources and are internationally comparable. The main sources are the OECD, IMD, World Economic Forum, UNCTAD, WTO, World Bank, CATO and GEM.

New sources

Some indicators are based on new sources. This appears from the charts illustrating the individual benchmarks. In certain cases, the change in the data basis means that it is problematic to compare the figures over time.

The table at the next pages provides an overview of the sources which have been used for each single indicator.

Summary of benchmarks

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
GLOBAL PERFORMANCE	Ireland (av. rating: 4)	Hungary (8)	South Korea (9)	–	–	–
GDP-growth, 2005	Iceland (6.6 %)	Czech Republic (6.0)	Turkey (5.6)	1.5	2.7	Consensus Economics and OECD, Economic Outlook No. 78
Labour productivity (USD per working hour), 2005	Norway (60.5 USD)	France (54.1)	Ireland (50.6)	45.0	41.7	The Conference Board and Groningen Growth and Development Centre, Total Economy Database, January 2006
Growth in GDP per worked hour (av.), 2001-2005	Poland (5.1 %)	Slovak Republic (4.4)	Ireland (4.3)	1.5	2.0	The Conference Board and Groningen Growth and Development Centre, Total Economy Database, January 2006
Annual real growth in exports (av.), 2000-2004	Turkey (13.2 %)	South Korea (12.7)	Slovak Republic (11.7)	4.4	4.4	OECD and WTO
Export performance (av.), 2001-2005	Turkey (1.4 index)	Hungary (1.3)	Poland (1.2)	1.0	1.0	OECD, Economic Outlook No. 78
Hi-tech exports as a percentage of total exports, 2002	Ireland (58.0 %)	United Kingdom (38.5)	Switzerland (37.8)	22.1	27.7	OECD, STAN database 2005
Upmarket products as a percentage of total export of goods to EU15 (av.), 2000-2004	Switzerland (77.9 %)	Ireland (70.4)	United States (60.4)	36.3	47.8	Eurostat and own calculations
Production per employee in the service sector, 2003	United Kingdom (120,600 euro)	Sweden (119,500)	France (111,500)	96,200	93,600	Eurostat
Gross value added per employee in the service sector, 2003	United Kingdom (60,400 euro)	Denmark (54,000)	France (51,000)	49,100	47,700	Eurostat

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
KNOWLEDGE AND COMPETENCE	Finland (av. rating: 8)	Switzerland (9)	Canada (9)	–	–	–
R&D expenditures as a percentage of GDP, 2003	Sweden (4.0 %)	Finland (3.5)	Japan (3.2)	1.9	2.3	OECD, STI 2005
Government expenditure to R&D as a percentage of GDP, 2003	Iceland (1.2 %)	Sweden (0.9)	Finland (0.9)	0.7	0.7	OECD, STI 2005
Rate of tax subsidies for 1 USD of R&D, 2004	Spain (0.44 USD)	Mexico (0.39)	Portugal (0.28)	0.12	0.12	OECD, STI 2005
'Production' of researchers within science and engineering (PhD's per 1000 inh.), 2002	Sweden (1.6)	Finland (1.0)	Switzerland (1.0)	0.7	0.6	Eurostat and own calculations
Growth in 'production' of researchers within science and engineering, 1998-2003	Norway (30.4 %)	Slovak Republic (15.1)	Denmark (13.0)	3.2	3.4	Eurostat and own calculations
Quality of scientific research institutions (index 1-7), 2005	United States (6.4)	Switzerland (5.9)	United Kingdom (5.8)	5.0	5.6	WEF survey 2005
University/industry research collaboration (index 1-7), 2004	United States (5.7)	Finland (5.4)	Germany and Switzerland (both 5.1)	4.3	4.8	WEF survey 2005
Knowledge transfer between companies and universities (index 0-10), 2005	Finland (7.3)	United States (6.6)	Iceland (6.5)	4.4	5.3	IMD survey 2005
ICT-investments as a percentage of gross fixed investments, 2003	United States (33.2 %)	Sweden (26.6)	Finland (26.6)	16.5	23.0	OECD, Database on Capital Services, July 2005
Internet users per 1,000 inh., 2004	Iceland (709)	Sweden (689)	Denmark (689)	484	546	IMD 2005
Broadband subscribers per 1,000 inh., 2003	South Korea (233)	Canada (147)	Denmark (133)	47	76	IMD 2005
Number of patent applications to the European Patent Office per mio. inh., 2004	Switzerland (640)	Netherlands (440)	Finland (313)	154	135	European Patent Office, Annual report 2004 and Statistical Yearbook 2005

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
Triadic patent families per mio. inh., 2001	Switzerland (118.6)	Finland (98.5)	Japan (92.3)	44.9	49.8	OECD, Patent Database, March 2005
Foreign ownership of domestic inventions (av.), 1999-2001	Hungary (52.4 %)	Belgium (45.9)	Czech Republic (43.0)	24.1	16.7	OECD, Patent Database, September 2004 and March 2005
Domestic ownership of inventions made abroad (av.), 1999-2001	Switzerland (47.8 %)	Ireland (40.8)	Netherlands (30.5)	15.4	15.1	OECD, Patent Database, March 2005
Share of patents with foreign co-investors (av.), 1999-2001	Greece (35.4 %)	Belgium (34.6)	Hungary (34.4)	16.5	13.3	OECD, Patent Database, September 2004 and March 2005
Patent-'productivity' (patents granted pr. 1,000 R&D personel in business), 2002	South Korea (250.0)	Japan (195.3)	Poland (98.1)	42.1	78.5	IMD 2005
Share of 25 to 34-year-olds, who have attained at least upper secondary education, 2003	South Korea (96.7 %)	Norway (95.0)	Slovak Republic (94.1)	74.1	80.4	OECD, Education at a Glance 2005
Difference between share of 25 to 34-year-olds and 45 to 54-year-olds, who have attained at least upper secondary education, 2003	South Korea (41.7 p.c. points)	Greece (28.0)	Spain (26.9)	14.0	8.2	OECD, Education at a Glance 2005
Share of 25 to 34-year-olds, who have attained tertiary education, 2003	Canada (52.8 %)	Japan (51.6)	South Korea (46.6)	27.9	35.5	OECD, Education at a Glance 2005
Difference between share of 25 to 34-year-olds and 45 to 54-year-olds, who have attained tertiary education, 2003	South Korea (30.8 p.c. points)	Spain (19.5)	France (19.2)	7.3	6.2	OECD, Education at a Glance 2005
Av. PISA-score in mathematical and scientific literacy, 2003	Finland (546.0)	Japan (541.0)	South Korea (540.0)	498.5	497.8	OECD, PISA 2003
Share of graduates from science and engineering, 2003	South Korea (39.9 %)	Germany (32.9)	Finland (31.2)	28.3	24.1	OECD, Education at a Glance 2005
Share of foreign students at tertiary education institutions, 2003	Australia (18.7)	Switzerland (17.7)	Austria (13.5)	7.9	5.2	OECD, Education at a Glance 2005
Annual expenditure on educational institutions per student (av.), 2002	United States (35,700 USD)	Denmark (27,300)	Austria (23,700)	19,500	27,200	OECD, Education at a Glance 2005
Annual expenditure on educational institutions as a percentage of GDP, 2002	United States (6.7 %)	South Korea (6.3)	Sweden (6.3)	4.9	5.6	OECD, Education at a Glance 2005
Public financial aid to students at tertiary education institutions as a percentage of GDP, 2002	Denmark (1.9 %)	Finland (1.7)	Sweden (1.5)	1.0	0.8	OECD, Education at a Glance 2005 and own calculations
Interest in science and technology among youth (index 0-10), 2005	Finland (6.8)	Hungary (6.5)	Greece (6.0)	4.4	4.6	IMD survey 2005
Quality of science in schools (index 0-10), 2005	Finland (7.2)	Hungary (6.5)	Switzerland (6.1)	4.1	4.5	IMD survey 2005

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
BUSINESS FLEXIBILITY	Switzerland (av. rating: 5)	United States (7)	Iceland (9)	–	–	–
Strictness of employment protection legislation (index 0-100), 2005	United States (3.3)	New Zealand (7.0)	Canada and United Kingdom (both 13.7)	48.3	25.8	World Bank
Labour regulations (index 0-10), 2005	Denmark (2.4)	Switzerland (2.5)	Iceland (2.5)	6.5	4.9	IMD survey 2005
Labour force participation rates, 2004	Iceland (88.8 %)	Switzerland (82.9)	Denmark (81.3)	71.3	74.4	OECD, Labour Market Statistics 2005
Labour force participation rates for 55 to 64-year-olds, 2004	Iceland (82.4 %)	Sweden (69.8)	Norway (65.7)	40.1	51.2	OECD, Labour Market Statistics 2005
Av. annual hours actually worked per person in employment, 2004	Czech Republic (1,986 hours)	Poland (1,983)	Slovak Republic (1,958)	1,560	1,724	OECD, Labour Market Statistics 2005
Incentive to work (index 0-10), 2005	Iceland (6.6)	United States (5.9)	Slovak Republic (5.8)	3.6	4.9	IMD survey 2005
Public sector employment as a percentage of total employment, 2004	Turkey (8.4 %)	Japan (9.0)	South Korea (9.8)	16.7	14.9	OECD
Bribing and corruption (index 0-10), 2004	Finland (0.6)	Iceland (0.7)	Denmark (0.9)	4.2	4.2	IMD survey 2005
Burden of central government regulation (index 1-7), 2005	Finland (2.5)	Iceland (2.6)	Denmark (3.0)	4.1	3.8	WEF survey 2005
The central government's use of private suppliers, 2003	United Kingdom (57.6 %)	Switzerland (54.8)	New Zealand (53.4)	36.2	45.3	Government Financial Statistics 2005 and own calculations
Interest rate spread, 2004	United Kingdom (1.4 p.c. points)	Spain (1.5)	Japan (1.7)	3.1	3.1	WEF 2005
Access to capital markets (index 0-10), 2004	Finland (9.2)	Netherlands (8.8)	Denmark (8.7)	7.6	7.7	IMD survey 2005
Stock market capitalization as a percentage of GDP, 2003	Switzerland (225.2 %)	United Kingdom (134.1)	United States (129.7)	73.0	91.5	IMD 2005
Country credit ranking (index 0-100), 2005	Switzerland (94.5)	Norway (93.7)	Finland and United Kingdom (both 92.7)	89.8	87.2	WEF 2005

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
ENTERPRISE AND ENTREPRENEURSHIP	Canada (av. rating: 5)	United States (6)	Iceland (6)	–	–	–
Economic freedom (index 0-10), 2003	—————	New Zealand, Switzerland, United Kingdom, and United States (all 8.2)	—————	7.3	7.6	CATO, Economic Freedom of the World 2005
Mentality of society supporting competitiveness (index 0-10), 2005	United States (8.2)	Iceland (7.7)	Australia (7.6)	5.3	6.5	IMD survey 2005
Flexibility and adaptability (index 0-10), 2005	Iceland (8.5)	Turkey (8.1)	Australia (8.0)	5.5	6.6	IMD survey 2005
Entrepreneurship of managers (index 0-10), 2005	United States (7.3)	Iceland (6.8)	Turkey (6.6)	5.1	6.0	IMD survey 2005
Percentage of adults (age 18-64) involved in entrepreneurial activity, 2005	New Zealand (17.6 %)	South Korea (14.5)	United States (12.4)	5.4	8.3	GEM 2002, 2003, 2004, 2005
Number of days to start a business, 2004	Australia (2)	Canada (3)	Denmark (4)	32	20	IMD 2005
Legislation supports the creation of firms, 2004	Iceland (1.9)	United States (2.1)	Canada (2.2)	4.8	3.6	IMD survey 2005
Venture capital investments (early) as a percentage of GDP, 2000-2003	Iceland (0.17 %)	Canada (0.16)	United States (0.11)	0.04	0.07	OECD, STI 2005
Gross investments per employee in the service industry, 2003	Austria (13,900 euro)	Portugal (12,200)	France (11,500)	9,000	8,800	Eurostat
Average time to complete the procedure of closing a business, 2005	Ireland (0.4 years)	Japan (0.6)	Canada (0.8)	1.3	1.6	World Bank, Doing Business 2005
Extent of bureaucratic red tape (index 1-7), 2005	Finland and	Hungary (both 2.1)	Czech Republic, Iceland, Japan, and Sweden (all 2.2)	2.5	2.6	WEF survey 2005

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
COSTS AND TAXES	South Korea (av. rating: 9)	Ireland (10)	Poland (10)	–	–	–
Working costs for industrial workers per hour, 2005	Czech Republic (6.1 USD)	Portugal (7.2)	Greece (12.2)	25.8	24.3	Confederation of Swedish Entreprise, October 2003 and December 2005, and own calculations
Annual growth in 'unit labour cost', 1999-2004	Japan (-2.4 %)	Germany (0.4)	Austria (0.4)	1.9	1.4	OECD, Economic Outlook No. 78
Staff costs per employee in the service industry, 2003	Czech Republic (6,900 euro)	Slovak Republic (7,500)	Hungary (7,600)	29,900	29,000	Eurostat
Total tax revenue as a percentage of GDP, 2004	Mexico (18.5 %)	South Korea (24.6)	Japan (25.3)	39.0	33.7	OECD, Revenue Statistics 2005
Effective marginal tax rate for wage above average, 2004	South Korea (29.7 %)	United Kingdom (31.7)	Mexico (33.7)	53.9	45.9	OECD, Taxing Wages 2005
Combined effective marginal tax rate (incl. indirect taxes) for wage above average, 2004	United Kingdom (42.5 %)	United States (46.0)	Poland (54.6)	61.5	53.7	Danish Ministry of Taxation 2005
Efficiency of the tax system (index 1-7), 2005	Slovak Republic (5.3)	Iceland (5.1)	New Zealand (4.9)	2.5	2.6	WEF survey 2005
Corporate tax rate, 2005	Ireland (12.5 %)	Hungary (16.0)	Iceland (18.0)	30.0	28.8	OECD, Tax Database 2005 and KPMG, Corporate Tax Rates Survey 2004
Yield of environmental taxes as a percentage of GDP, 2003	United States (0.9 %)	Canada (1.4)	Japan (1.7)	2.6	1.8	OECD, OECD/EEA database 2005
Stringency of environmental regulations (index 1-7), 2005	Turkey (3.5)	Mexico (3.7)	Greece and Poland (both 4.2)	5.8	5.5	WEF survey 2005
Electricity costs for industrial clients (USD per kWh), 2003	Australia (0.036 USD)	Norway (0.043)	Belgium (0.048)	0.075	0.070	IMD 2005, Eurostat, and IMF
Energy intensity (kJ per USD of GDP), 2001	Switzerland (4,200)	Denmark (4,300)	Japan (4,800)	7,400	8,900	IMD 2005
CO ₂ -emission permissions according to the Kyoto-agreement as a percentage of emissions in 1990	Portugal (127.0 %)	Greece (125.0)	Spain (115.0)	92.0	93.8	FCCC

	No. 1 (value)	No. 2 (value)	No. 3 (value)	EU15 (value)	OECD (value)	Source
INTERNATIONALISATION AND OPENNESS	Ireland (av. rating: 6)	Netherlands (7)	Switzerland (9)	–	–	–
Business environment attractiveness for foreign high-skilled workers (index 0-10), 2004	Switzerland (8.1)	Ireland (7.7)	Canada (7.1)	5.0	5.0	IMD survey 2005
Attitudes towards globalisation (index 0-10), 2005	Iceland (8.2)	South Korea (7.3)	Australia (7.3)	5.1	6.0	IMD survey 2005
National culture open towards foreign ideas (index 0-10), 2005	Iceland (8.6)	Australia (8.4)	Ireland (8.3)	6.3	6.4	IMD survey 2005
Discrimination towards race, gender, etc. (index 0-10), 2005	Iceland (1.7)	Canada and Finland (both 2.0)		3.4	4.0	IMD survey 2005
Freedom to trade internationally (index 0-10), 2003	Belgium and Ireland (both 8.8)		Germany and Netherlands (both 8.7)	8.3	7.8	CATO, Economic Freedom of the World 2005
Efficient customs authorities (index 0-10), 2005	Denmark (8.4)	New Zealand (7.9)	Netherlands (7.8)	6.4	6.2	IMD survey 2005
Foreign trade as a percentage of GDP, 2004	Belgium (163.0 %)	Slovak Republic (156.0)	Ireland (151.0)	67.7	48.0	OECD, World Bank, Ecwin, and Eurostat
Exports as a percentage of GDP, 2004	Belgium (84.0 %)	Ireland (83.0)	Slovak Republic (77.0)	34.6	23.5	OECD
Exports to emerging markets as a percentage of total exports, 2004	South Korea (54.8 %)	Japan (48.1)	Australia (42.8)	17.7	26.4	OECD, Ecwin, and Eurostat
Direct investments from abroad as a percentage of GDP, 2004	Ireland (126.3 %)	Netherlands (74.2)	Belgium (73.5)	30.8	20.0	UNCTAD, World Investment Report 2005
Direct investments abroad as a percentage of GDP, 2004	Switzerland (109.8 %)	Netherlands (94.4)	Belgium (70.6)	41.6	24.3	UNCTAD, World Investment Report 2005
Direct investments in emerging markets as a percentage of GDP, 2002	Switzerland (27.3 %)	Ireland (21.0)	Netherlands (9.5)	3.5	3.6	OECD, International Direct Investment Statistics Yearbook, 1992-2003 and IMF