

COMPETITIVENESS AND THE EMPLOYMENT RELATIONSHIP IN
THE 21ST CENTURY: A EUROPEAN PERSPECTIVE
RETURNS

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Gayle Allard

Cristina Simón

Instituto de Empresa Business School
Calle María de Molina 12, 5º
28006 Madrid, Spain
gayle.allard@ie.edu
T: +34 91 568 9600

Instituto de Empresa Business School
Calle María de Molina 12, 4º
28006 Madrid, Spain
cristina.simon@ie.edu
T: +34 91 568 9600

Abstract

Competitiveness is an often ill-defined concept that is key to economic success. This paper focuses on the links between competitiveness and the employment relationship. It ranks European countries by their specialization in high-technology, skilled labor sectors to yield a competitiveness ranking, and examines workers' values and attitudes to identify common features of the "competitive" countries. The results show that workers in competitive countries enjoy greater flexibility and autonomy.

Key words

Competitiveness, employment relationship

What is competitiveness? Developing an indicator for the 21st century

What is competitiveness? The word is employed frequently and it has probably been redefined with each use, so that its meaning has become elusive. This study proposes a simple working definition. To be competitive is to be prepared to maintain and even expand one's market niche in the rapidly changing world of the 21st century.

To move to a more specific definition, then, requires some speculation over what that world will be like. In this respect, economic models have ventured some guidelines that are broadly confirmed by experience. One traditional modelⁱ sketches the outlines of a world where countries' areas of specialization and competitiveness are determined by the resources they possess. Specifically, countries where unskilled labor is in abundant supply will occupy market niches for labor-intensive goods, such as farming and foods, textiles, footwear and other basic manufactures. On the other hand, countries with abundant skilled labor will develop products, services and technologies that used that type of labor intensively. Thus they will specialize in what are referred to as high-technology or high value-added products, where the skills of those laborers are the key and essential input. The basic pattern of global production projected by the model is shown in Figure 1 below.

<Introduce Figure 1 here>

Emerging patterns of global production and trade confirm this general interpretation of the model. Increasingly, countries where unskilled labor is cheap and abundant are expanding their global market shares of lower-technology products, and this process will continue. The challenge for developed countries, and hence the key to their competitiveness, is to shift their production away from these low-skilled industries toward sectors that employ more advanced technologies and skills.

The first task of this study was to determine which countries were progressing along the path toward the competitiveness demanded by this global division of production. It selected a series of indicators that reflected aspects of the transition, and combined them into a single ranking. The indicators chosen were:

1. **Productivity per hour worked**ⁱⁱ is a key indicator of economic success and the source not only of market competitiveness, but also of rising standards of living over time. Labor productivity is also relatively straightforward to measure for a wide sample of countries. Hence it became one of the key points of reference in this study and its conclusions.

2. **The proportion of exports in the high-technology sector**ⁱⁱⁱ shows whether an economy is moving to occupy the market niche of developed countries. This is another key indicator of competitiveness, as defined in this study.
3. **The Human Development Index**^{iv} reflects various aspects of welfare in different countries, including GDP per person, educational attainment and health indicators. This index is relevant for competitiveness because countries with a high HDI are not only showing evidence of economic success in material terms (GDP per capita), but they also provide a fertile market for local companies to launch new products. Individuals in these countries are also presumably better equipped for skilled work, due to their better education and health.
4. **Annual private-sector spending on research and development**, adjusted for the size of the country's population^v, gives an idea of how actively a country's business population is preparing itself to occupy its global market niche by developing new products and improving existing ones. Public spending on R&D is excluded because it does not give evidence of the private initiative that is essential to competitiveness.
5. **The number of patents registered in the U.S., Japanese and EU patent offices**, adjusted for the size of the economy^{vi}, is another indication that the private sector is seeking the new technologies, processes and product differentiation that will open up and conserve its global market niche in the future.
6. **The percent of university degree holders among the 25-34 population**^{vii} reflects the preparation of younger workers to move into higher skilled tasks and sectors.
7. **The percent of all university degrees that are in sciences and engineering**^{viii} is further evidence of the preparation of workers for jobs with a high technical or technological content.
8. **The percent of immigrants with higher education**^{ix} reflects not only the fact that a country is drawing new skilled workers into its pool of human capital, but also that the sectors that require highly skilled workers are in expansion. Thus the country is probably progressing toward the type of specialization required in the global environment.

Finally, in line with the work of Porter, Sachs and Warner (2000)^x on the role of variables that may condition a country's capacity to compete in the medium and long term, three institutional indicators were included in the index to represent whether the local business environment permitted the flexibility and adjustment that rapidly changing, dynamic industries would require. Those indicators were the following:

9. **Time required to start a company**;
10. **Time required to shut down a company**; and
11. **Employment rigidity index**, which combines various features of the legal requirements for hiring, firing and reassigning workers^{xi}

Clearly, some of the variables selected (e.g., education of the labor force or the indicators of the institutional environment) represent inputs into the production and competitiveness process.

Others, such as R&D spending and patent activity, represent an intermediate phase, while high-tech exports, productivity and the HDI are evidence that the drive to competitiveness is bearing fruit. Without a doubt, there is endogeneity among these variables, and it is impossible to determine which have generated competitiveness and which are the products of a more competitive economy^{xii}. Taken together, however, they give a good picture of how well an economy is poised to meet the challenges common to developed countries in the 21st century.

The variables were first combined in an index with values for 24 countries, which included the United States, Japan, China and other non-European countries. The ranking (see appendix) yielded few surprises besides the position of China, which joined the east and southern European countries at the bottom of the ranking, indicating that its market niche was still in the lower value-added sectors predicted by the model. Another interesting feature of the ranking was that the most competitive countries included economies with both high and low levels of social spending, as Figure 2 below shows. The suggestion that social spending is not an important contributor to economic success will be discussed in more detail below.

<Introduce Figure 2 here>

If competitiveness in the global environment of the 21st century is to be evaluated, countries should be compared with a wide range of trading partners from various regions, as in the ranking above. Indeed, comparing European countries only with one another omits the leading countries from the sample (Japan, the United States, Switzerland) and thus deprives the study of valuable information on how different models and attitudes may have influenced economic success. However, since the detailed survey data used in the second half of the study was only available for EU member states, the non-EU countries were dropped from the index. A ranking was elaborated for 20 EU countries for which data could be obtained for all of the competitiveness indicators. The result is shown in Table 1 below.

<Introduce Table 1 here>

The EU ranking was generally as expected. The Scandinavian countries and Ireland moved into the top slots, while the southern and east European countries remained in the lowest positions; and Germany trailed France. The countries exhibited certain features that confirmed suspicions about the type of activity and environment that enhances competitiveness. For instance, education was a key predictor of high productivity and strength in high-technology sectors, as was R&D spending. Complex administrative structures, on the other hand, were associated with lower productivity and smaller high-tech export shares^{xiii}. All of the countries at the bottom of the index were characterized by a relatively complex bureaucracy for business. In other words, the correlations among variables confirmed the selection of indicators for the index; and about the features that would be typical of countries that are successfully competing on a global scale. It also suggests that key items on the agenda for national policymakers include boosting education and seeking more flexible institutional environments for business.

What underlying factors in the economy determine the position of different countries in this ranking? Obviously there are myriad factors, some of which are not observable and cannot be quantified, such as attitudes toward work, risk and excellence. This study chose to focus on only one broad factor which it considered to be most important in determining competitiveness, which is the human factor. With the ranking in hand, this study proceeded to its second task, which was to determine whether certain attitudes, values and especially working patterns were associated with success, as defined in the first part of the report.

Moving to a micro focus: What attitudes and values are associated with competitiveness?

The European Social Survey (ESS), the source of the data for the second half of this report, is a wide-ranging annual social survey that began in 2002 that explores the interaction between institutions and the attitudes, opinions and values of EU citizens. (number of questions, subject matter, number of countries) across the European Union. This study selected the questions that were related to citizens' perceptions of their own subjective satisfaction or happiness, their views on the quality of public institutions, their perceptions of their working environment and the expression of the values that were most important to them. To facilitate the contrasts between attitudes and competitiveness, the questions were grouped into four indices, which were the following (see also Table 2 below)^{xiv}:

<Introduce Table 2>

1. **Index of Personal Wellbeing (IPW)**, which incorporates the individual's expression of satisfaction, happiness and health;
2. **Index of Perceptions of Public Institutions (IPPI)**, which reflects satisfaction with the national legal system, educational and health systems and the state of the economy in general;
3. **Index of Perception of the Working Environment (IPWE)**, which includes questions related to perceived flexibility, autonomy and the ability to influence decisions in the workplace;
4. **Index of Perception of Employability (IPE)**, which reflects the individuals' perception of his/her market value and employment possibilities

The results for each of these indices were compared with the competitive position of each country, to determine whether any clear relationships emerged.

Additionally, following the structure laid out in the Schwartz Value Survey^{xv}, 15 questions were selected from the ESS that provided information on respondents' motivational structure, and they were classified into eight of the 10 values defined by Schwartz (1999)^{xvi}. The values are power, achievement, hedonism, stimulation, self-direction, universalism, benevolence and conformism. Schwartz classifies these values into two orthogonal dimensions, which are "toward oneself" or "toward others" (power and achievement vs universalism and benevolence) and "openness to change" vs "conservatism" (self-direction and stimulation vs conformism). Again, the results of the values classification were contrasted with the competitiveness ranking to see whether patterns emerged.

Globally, the results of this experiment were startling. For each of the indices described above, the most important predictor of satisfaction was the country's degree of competitiveness on the EU ranking. The countries at the top of the competitiveness ranking showed higher degrees of satisfaction on the Index of Personal Wellbeing, as Figure 3 below indicates. The achievement of competitiveness appears to raise the subjective welfare of citizens in economically successful countries.

<Introduce Figure 3 here>

In a similar way, citizens in the most competitive countries express greater satisfaction with the quality of public institutions in their countries. Although there is a group of more “critical” countries (France, Germany, Ireland, Sweden and the UK) where satisfaction with public institutions is lower than would be predicted by their competitiveness levels, in general there is a clear positive relationship between competitiveness and perceptions of the quality of public institutions and services, as can be observed in Figure 4 below.

<Insert Figure 4 here>

In this regard, it is interesting to note once again that while the perception of the quality of public services correlates highly ($r = 0.614$, $p = 0.004$) with competitiveness as defined in this study, its correlation with the level of public spending or social spending is much lower ($r = 0.416$, $p = 0.076$). Ireland, for instance, is a country high on the competitiveness ranking and one of the ones where satisfaction with public institutions is highest; yet public social spending is the lowest for the countries in the sample^{xvii}. The finding presents an interesting paradox. Could it be that more competitive countries have better public services because they apply the same high standards and quest for quality and innovation to their public institutions as they do to their products? Or is competitiveness simply so important to the satisfaction of individuals that its effect on their wellbeing overwhelms other considerations, such as the size of spending or the extent of public services?

The values study extracted from the ESS yielded less clear results than the two indices described above. Some of the values expected to correlate highly with indicators in the competitiveness index—for example, creativity and number of patents—failed to do so. Nor did the most competitive countries show higher scores for the power or achievement values. However, there were certain patterns of values that were common to the most and least competitive countries. In all countries, the most outstanding values are those corresponding to benevolence and universalism. The most competitive countries are more focused on values related to hedonism, stimulation and self-direction, in contrast to less competitive countries, which are more centered on values linked to power and achievement.

Competitiveness and the employment relationship

The key objective of this study was to discover whether there were certain characteristics of the labor relationship that were associated with competitiveness. The answer appears to be yes, and the findings in this area are the most remarkable. The Index of Perception of the Working Environment, defined above, showed that workers in the most competitive countries felt that they had more say in their workplaces and enjoyed a greater freedom to influence decisions on the job. The relationship can be observed in Figure 5 below. Table 2 shows the ranking by countries.

<Insert Figure 5 here>

<Insert Table 2 here>

The variables of this ranking show a high positive correlation with the key indicators of economic success, such as productivity ($r=0.81$, $p=0.000$), research and development spending ($r=0.75$, $p=0.000$) and the share of exports coming from high-tech sectors ($r=0.54$, $p=0.013$). Unsurprisingly, they correlate negatively with the administrative rigidities of the index, especially with employment rigidity.

This finding is in line with might be expected to be the requirements of an employment relationship in a world where the key input for success is highly skilled labor. Managers in this world would be more likely to seek feedback from workers and would allow them greater autonomy so that they could fully employ their skills. In this sense, the study shows that the less competitive countries show evidence of a more hierarchical, rigid working relationship that may be becoming a relic of the past in the most competitive sectors. Leading countries, on their other hand, have either made the transformation to a new model or have always enjoyed the advantage of a more open working environment that bears a resemblance to the “new labor contract” described in some U.S. literature^{xviii}. Once again, the results point to important changes that

could be implemented in the workplace and the employment relationship which could help companies and countries achieve greater economic success.

The relationship between perceptions of employability and competitiveness follows the same lines described above. Employees in competitive countries perceive themselves as having greater employment possibilities outside of their current jobs. Meanwhile, workers in countries that are administratively rigid, particularly those that restrict hiring and firing, perceive themselves as less employable.

Both of these findings present important contradictions. Laws that regulate dismissals presumably exist so that workers can enjoy greater security; yet in those rigid environments the data from the ESS indicate that highly protected workers may feel that their job prospects are poorer^{xix}. At the same time, much of the current globalization debate has centered on how rapid change is reducing social wellbeing by making jobs more precarious, when the data from the ESS hint that the situation may actually be the opposite: in competitive environments, workers appear to perceive that their potential and possibilities are greater. Once again, competitiveness appears to be an important source of national and personal welfare.

An important sidelight to the variables discussed above is their relationship with hours worked, for which data were available for all of the countries in the study^{xx}. Hours worked was not included in the competitiveness index because the variable serves as the denominator to productivity per hour worked, and the two effects are inseparable. While there are countries, such as the United States and Ireland since the 1990s, that show rising employment and gains in productivity at the same time, it is also true that higher unemployment is normally associated with rising productivity, because the denominator in the productivity equation is falling. Hence any link between trends in hours worked and productivity must be interpreted with caution.

However, the study did find that individuals in countries with longer working hours expressed less satisfaction with their job environments. Hours worked also showed a (small) negative correlation with variables such as the percentage of high-tech exports, R&D spending and patents.

More important than the number of hours worked is the perception of workers that they enjoy some control and flexibility over how much and when they work. This perception, which formed part of the Index of Perception of the Working Environment discussed above, was linked to higher productivity levels ($r=0.831$, $p=0.000$). At the same time, workers who have more schedule flexibility perceive themselves as more employable. They are also more likely to suggest changes in the work situation to their superiors, and those suggestions are more frequently listened to and put into practice. Other attitudes associated with innovation were also linked to the perception of time flexibility, such as entrepreneurship and interest in continued training and education. All of these relationships suggest that providing a margin of working-time flexibility is clearly in the long-term interests of the firm.

Conclusions: How policy and human resource management can enhance competitiveness

The associations uncovered in this study between variables characterizing competitiveness and certain attitudes and features of the employment relationship challenge some received wisdom and set out clear directions for improvement. If, as this study shows, the satisfaction of individuals and their perception of the quality of national institutions depends more on the productivity of their country than on public spending, then policies that enhance competitiveness are the best way to raise national welfare. If, in addition, the laws that protect workers from dismissal are actually leaving them “trapped” in an outdated, hierarchical employment relationship, and these laws are associated besides with lower levels of productivity, there are few good arguments against their deregulation and reform. If excessive bureaucracy is a drag on competitiveness, this too needs to be made more agile. If working long hours is associated with poorer performance on competitiveness indicators and additionally reduces the perceived welfare of workers and their sense of influence and employability, longer working days should not be used as a device to make a firm or a country more competitive.

The reform agenda which this series of findings sets out is clear. National governments should pay more attention to longer-term elements that are keystones in the business environment, such as institutional quality and education, rather than using stopgap measures such as selective subsidies, government R&D spending or even social spending to try to achieve competitiveness. Human resource managers, on the other hand, should implement policies and practices that generate a more flexible working environment where the employee has some say over his/her working conditions and hours and is given an opportunity to provide constructive criticism of the productive process. All of these recommended changes appear to already form part of the operating framework for business in the most competitive countries.

This study suffers from limitations posed by the data. In particular, leaving non-EU countries out of the survey omits access to a rich variety of experience in non-EU countries, some of which (Japan, the United States, Switzerland) rank at the top of the competitive index and have shown much faster productivity growth than the EU average in recent years. A logical direction for future research is to bring some of these countries into the sample, to see whether the attitudinal links identified in this study are unique to Europe or can be generalized to countries with different social and cultural models. In addition, in an exploratory study of this nature the problem of causality was not addressed. It is possible that many of the factors identified actually caused higher levels of productivity, while others are the results of better productivity performance. This study only attempts to demonstrate that a relationship does exist between indicators, without venturing into the question of in which direction causality runs.

Even with these limitations, the study makes an important contribution to the literature on how the human factor can play a role in competitiveness. It points to important directions for future

research, and identifies possible reforms at the business and national level that can help countries achieve that elusive objective of competitiveness.

Tables and Figures

Figure 1: The patterns of trade and comparative advantage, Heckscher-Ohlin model

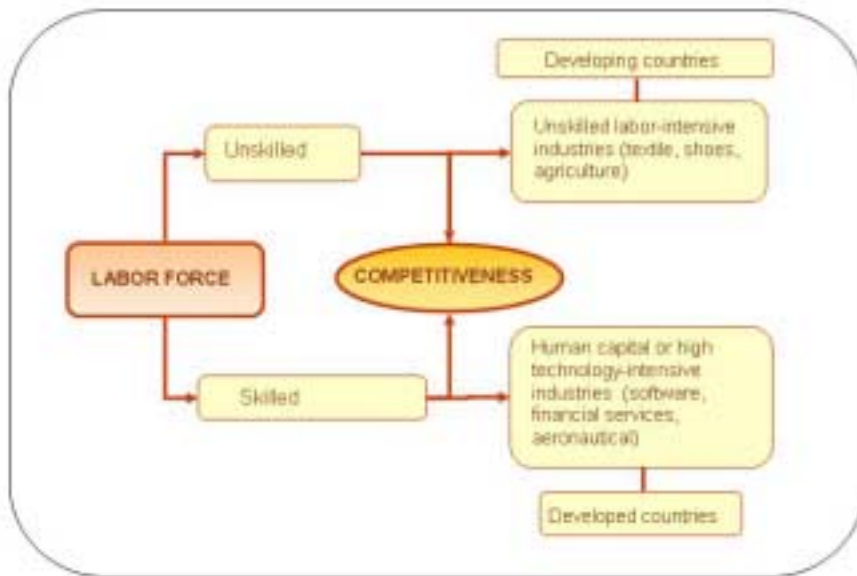


Figure 2: Public Social Spending and Competitiveness

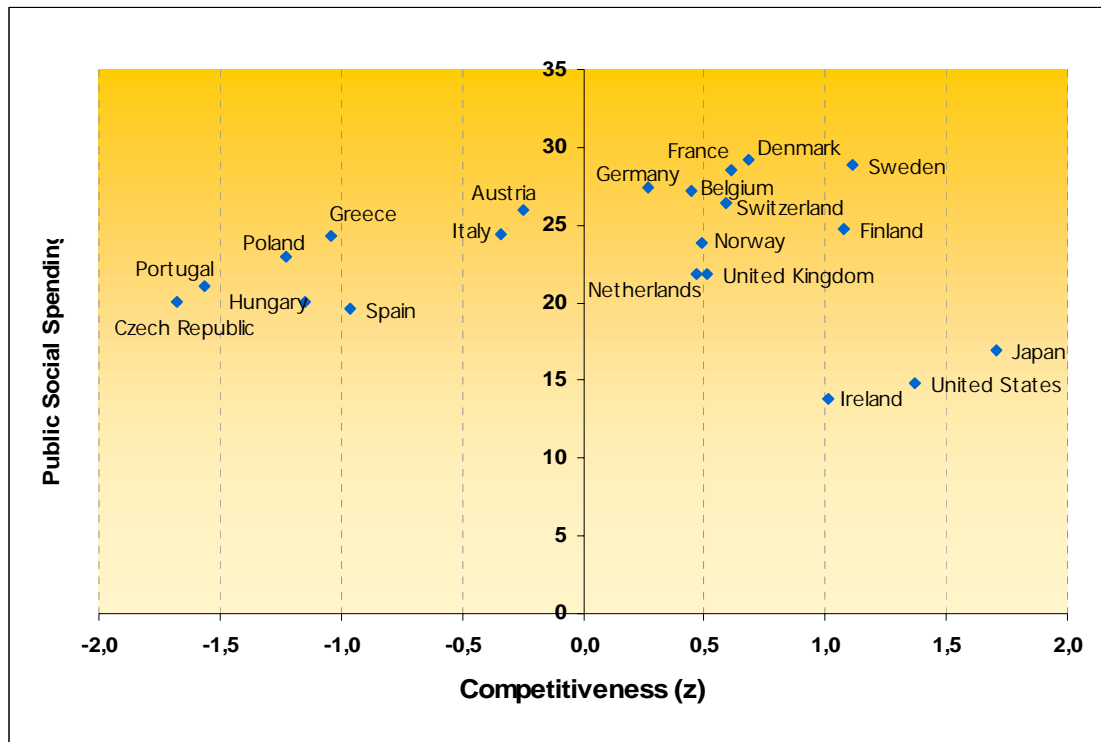


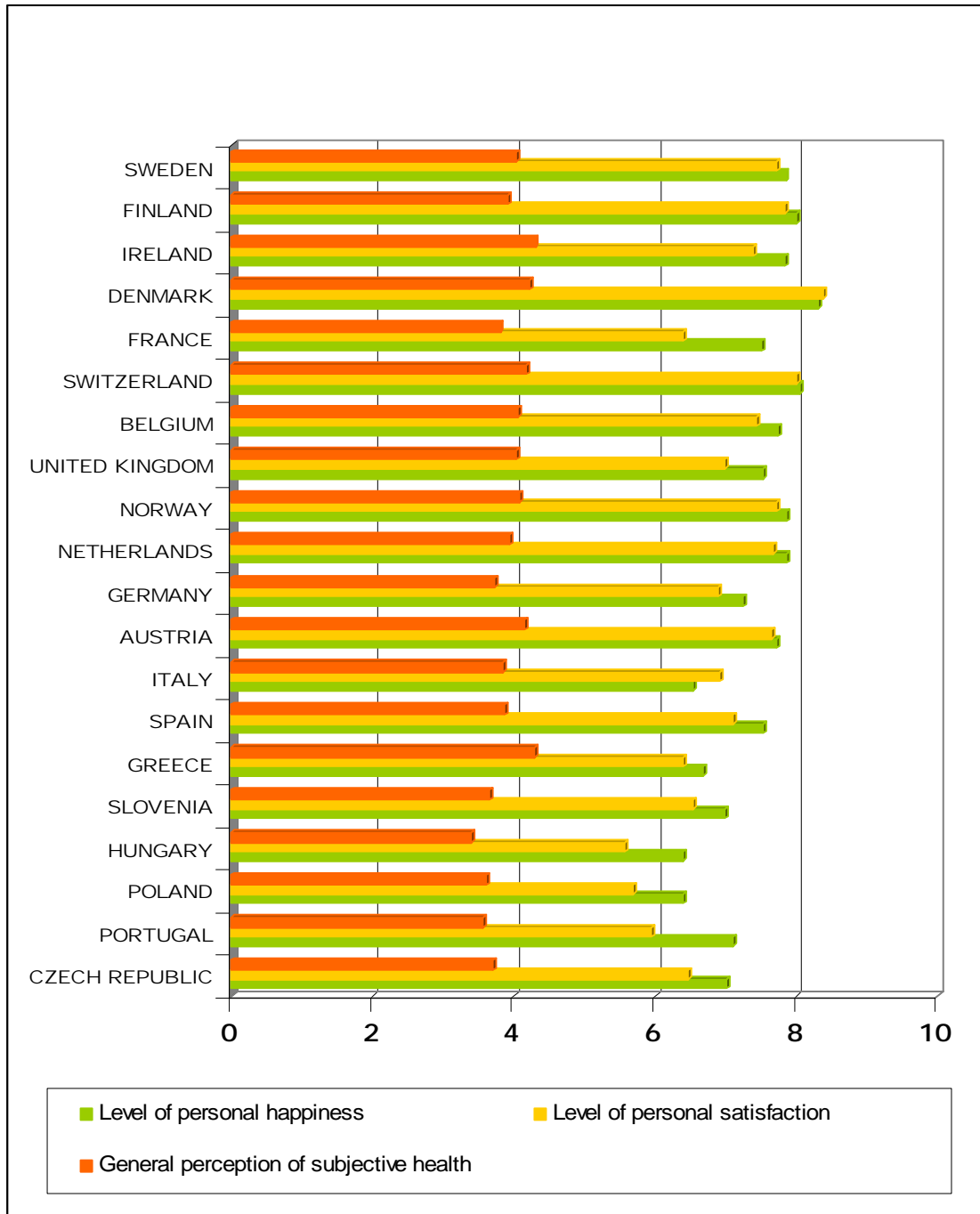
Table 1: Competitiveness ranking, 20 EU countries

Country	Position	Standard Score
Sweden	1	1,29
Finland	2	1,24
Ireland	3	1,14
Denmark	4	0,85
France	5	0,83
Switzerland	6	0,75
Belgium	7	0,61
United Kingdom	8	0,61
Norway	9	0,61
Netherlands	10	0,57
Germany	11	0,45
Austria	12	-0,15
Italy	13	-0,28
Spain	14	-0,83
Greece	15	-0,99
Slovenia	16	-1,13
Hungary	17	-1,18
Poland	18	-1,24
Portugal	19	-1,5
Czech Republic	20	-1,64

Table 2: Opinions included in the indices

Items	Index
Legal system Environment economic Health system Educational system	<i>Index of Perceptions of Public Institutions (IPPI)</i>
Estimation of the level of personal satisfaction Estimation of the level of personal happiness General perception of subjective health	<i>Index of Personal Wellbeing (IPW)</i>
Perceived flexibility in relation to the schedules of work Perceived autonomy in relation to the personal organization of work Perceived capacity to influence in the workplace Perceived capacity of decisions making Perceived capacity to make changes in the workplace	<i>Index of Perception of the Working Environment (IPWE)</i>
Perception of employability	<i>Index of Perception of Employability (IPE)</i>

**Figure 3: Personal wellbeing and competitiveness
(countries ranked by competitiveness)**



**Figure 4: Satisfaction with public institutions and competitiveness
(countries ranked by competitiveness)**

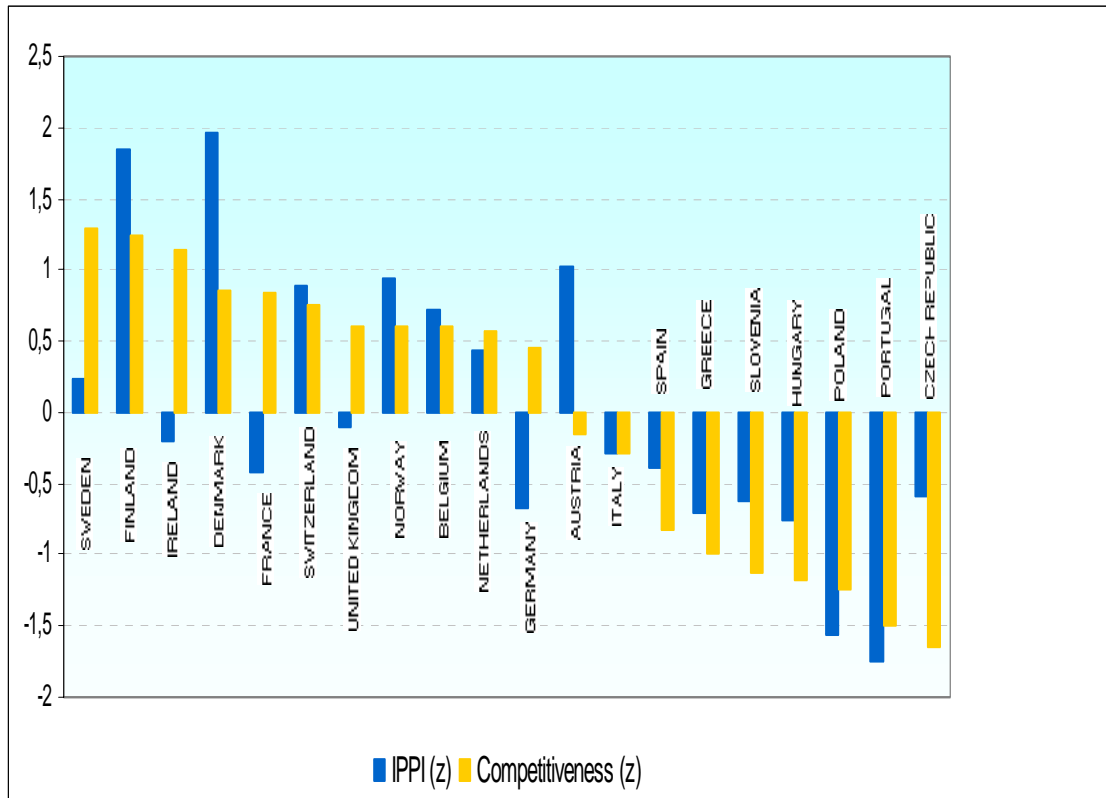


Figure 5: Competitiveness and flexibility in the working environment

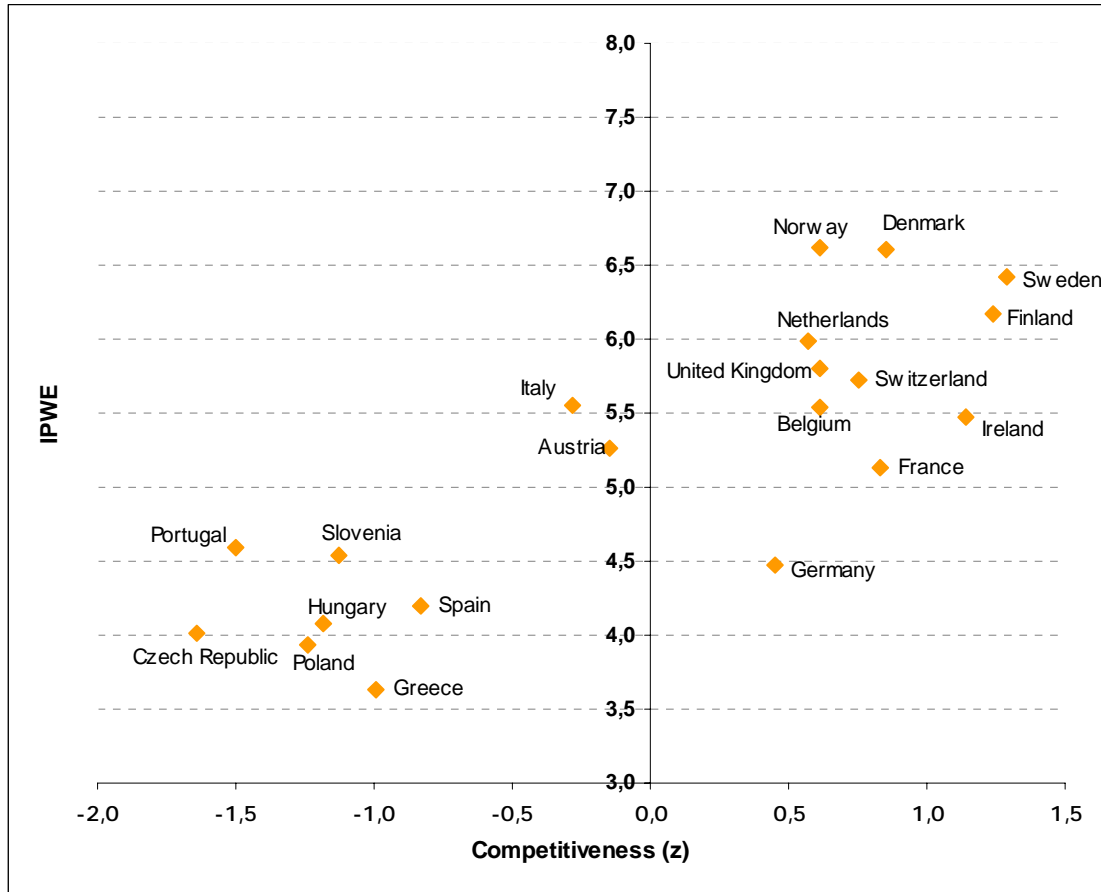


Table 2: Ranking of countries by perception of working environment, from most to least positive

Norway	+
Denmark	
Sweden	
Finland	
Netherlands	
United Kingdom	
Switzerland	
Italy	
Belgium	
Ireland	
Austria	
France	
Portugal	
Slovenia	
Germany	
Spain	
Hungary	-
Czech Republic	
Poland	
Greece	

Appendix

Competitiveness Groups

High Competitiveness Group	Middle Competitiveness Group	Low Competitiveness Group
Sweden Finland Ireland Denmark France Switzerland	Norway United Kingdom Belgium Netherlands Germany Austria Italy	Spain Greece Slovenia Hungary Poland Portugal Czech Republic

Ranking including non-EU countries

Z ¹	Position	Country
1,71	1	Japan
1,37	2	USA
1,11	3	Sweden
1,07	4	Finland
1,01	5	Ireland
0,68	6	Denmark
0,61	7	France
0,59	8	Switzerland
0,51	9	UK
0,49	10	Norway
0,47	11	Netherlands
0,45	12	Belgium
0,27	13	Germany
0,00	14	Israel
-0,24	15	Austria
-0,34	16	Italy
-0,96	17	Spain
-0,97	18	China
-1,04	19	Greece
-1,15	20	Hungary
-1,18	21	Slovenia
-1,22	22	Poland
-1,56	23	Portugal
-1,68	24	Czech Rep.

Correlation matrix: macroeconomic variables

		Labor Productivity	Working Hours	High-tech Exports	Business Expenditure on R&D	Science Degrees	Human Development Index	Higher Education achievement	Highly Educated foreing born	Starting a business time	Rigidity of Employment Index	Closing a business time
Working Hours	*	-0,69										
	**	0										
High-tech Exports	*	0,47	-0,15									
	**	0,04	0,52									

¹ Standard score.

Business Expenditure on R&D	*	0,65	-0,3	0,54								
	**	0	0,21	0,01								
Science Degrees	*	0,18	-0,4	0,11	0,2							
	**	0,44	0,08	0,63	0,39							
Human Development Index	*	0,92	-0,65	0,51	0,72	0,19						
	**	0	0	0,02	0	0,42						
Higher Education achievement	*	0,66	-0,39	0,62	0,52	0,11	0,67					
	**	0	0,09	0	0,02	0,64	0					
Highly Educated foreign born	*	0,77	-0,39	0,62	0,64	0,07	0,77	0,93				
	**	0	0,11	0,01	0	0,78	0	0				
Starting a business time	*	-0,54	0,25	-0,52	-0,54	-0,26	-0,42	-0,21	-0,35			
	**	0,01	0,28	0,02	0,01	0,26	0,06	0,38	0,16			
Rigidity of Employment Index	*	-0,26	-0,2	-0,29	-0,35	0,32	-0,14	-0,12	-0,16	0,49		
	**	0,28	0,39	0,21	0,13	0,16	0,55	0,63	0,53	0,03		
Closing a business time	*	-0,44	0,61	-0,23	-0,11	0,02	-0,42	-0,44	-0,43	0,05	-0,22	
	**	0,05	0	0,34	0,66	0,94	0,07	0,05	0,08	0,83	0,36	
Triadic Patent	*	0,5	-0,29	0,49	0,93	0,27	0,62	0,36	0,53	-0,49	-0,23	-0,08
	**	0,02	0,22	0,03	0	0,25	0	0,12	0,02	0,03	0,33	0,74

*Pearson Correlation

**Significance (bilateral)

Items included in the analysis

Items	Index
<ol style="list-style-type: none"> 1. Trust in the legal system 2. How satisfied with present state of economy in country 3. State of education in country nowadays 4. State of health services in country nowadays 	<i>(IPPI)</i>
<ol style="list-style-type: none"> 1. How satisfied with life as a whole 2. How happy are you 3. Subjective general health 	<i>(IPW)</i>
<ol style="list-style-type: none"> 1. Allowed to be flexible in working hours 2. Allowed to decide how daily work is organised 3. Allowed to influence job environment 4. Allowed to influence decisions about work direction 5. Allowed to change work tasks 	<i>(IPWE)</i>
<ol style="list-style-type: none"> 1. Get a similar or better job with another employer 	<i>(IPE)</i>
<ol style="list-style-type: none"> 1. Important to think new ideas and being creative 2. Important to be rich, have money and expensive things 3. Important that people are treated equally and have equal opportunities 4. Important to show abilities and be admired 5. Important to try new and different things in life 6. Important to do what is told and follow rules 7. Important to understand different people 8. Important to have a good time 9. Important to make own decisions and be free 10. Important to help people and care for others well-being 11. Important to be successful and that people recognize achievements 12. Important to behave properly 13. Important to get respect from others 14. Important to care for nature and environment 15. Important to seek fun and things that give pleasure 	<i>Values</i>

Correlation matrix: social index

		IPW	IPWE	IPPI
IPWE	r	0,246		
	p	0,000		
	n	16258		
IPPI	r	0,415	0,191	
	p	0,000	0,000	
	n	27653	15505	
IPE	r	0,193	0,258	0,182
	p	0,000	0,000	0,000
	n	16180	16067	15446

Values: Factorial Analysis

	ITEMS	TYPES OF VALUES
FACTOR I	Treating people equally To understand different people Concern for the environment To worry about others' wellbeing To be creative To make one's own decisions	UNIVERSALISM BENEVOLENCE SELF-DIRECTION
FACTOR II	To show ability and be admired To have authority over others To be successful To be rich	POWER ACHIEVEMENT
FACTOR III	To have a good time To look for amusement and pleasure To prove new things	HEDONISM STIMULATION
FACTOR IV	To behave correctly To obey and to follow the rules	CONFORMISM

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Notes

ⁱ The Heckscher-Ohlin model, developed in the 1930s.

ⁱⁱ Data for 2002. IMD World Competitiveness Yearbook (2003).

ⁱⁱⁱ Data for 2001. IMD World Competitiveness Yearbook (2003).

^{iv} Data for 2000. IMD World Competitiveness Yearbook (2003).

^v Data for 2001. IMD World Competitiveness Yearbook (2003).

^{vi} Data for 2004. OECD.

^{vii} Data for 2001. IMD World Competitiveness Yearbook (2003).

^{viii} Data for 1999. IMD World Competitiveness Yearbook (2003).

^{ix} OECD

^x Porter, M.E., Sachs, J.D., Warner, A.M. (2000): *Executive Summary: Current Competitiveness and growth competitiveness* in the Global Competitiveness Report 2000, New York: Oxford University Press for the World Economic Forum.

^{xi} World Bank Database, "Doing Business".

^{xii} See appendix for correlation matrix.

^{xiii} The employment rigidity index and the time period involved in starting or closing a business correlated negatively with educational attainment, R&D spending, patents, high-tech exports and productivity. See appendix for details.

^{xiv} See appendix for details on each of these indices and correlation matrices among the questions included.

^{xv} Schwartz, S.H. (1992). *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries.*

^{xvi} See appendix for details on the questions included in each of these value types.

^{xvii} Data on public social spending are not available for all countries in the study.

^{xviii} Capelli, P. (1999) *The New Deal at Work*. Cambridge, Harvard Business School Press.

^{xix} This perception could also be linked to unemployment rates, which are higher in many of these countries.

^{xx} Source: OECD.

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