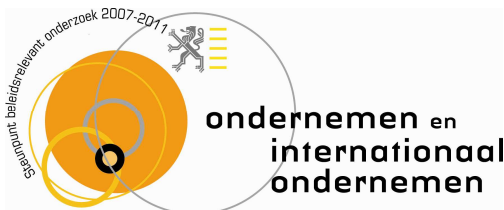


**THE POSITION OF FLANDERS IN THE WORLD ECONOMIC FORUM
COMPETITIVENESS RANKING**

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The Position of Flanders in the World Economic Forum Competitiveness Ranking

Each year the World Economic Forum (WEF) presents a ranking of the relative competitiveness of nations based on their score on its Growth Competitiveness Index. For 2006, the WEF reported that Belgium ranked 31st; the third consecutive year of decline (WEF, 2005). This study investigates where the region of Flanders might figure in this ranking of nations. To address this question, data on Flanders were mapped (to the extent possible) to the relevant sub-domains of the WEF's Growth Competitiveness Index and a competitiveness score was computed for Flanders. The result places Flanders in 19th position for 2006.

The Growth Competitiveness Index

Conceptually, the World Economic Forum's (WEF) Growth Competitiveness Index (WEF, 2005) is meant to reveal the extent to which a country's institutions, economic infrastructure, and policies and practices are supportive of growth in income per capita over the medium term (3 to 5 years). The WEF thus uses a broad definition of national competitiveness, one that goes beyond conventional notions of exchange rate competitiveness, that seeks to embody the concepts to productivity and prosperity.

The Growth Competitiveness Index is constructed by combining "hard" data from official sources on various national characteristics and "soft" data compiled from the responses to the WEF's *Annual Executive Opinion Survey* (WEF, 2005: 2006). To aggregate the various hard and soft primitive data into a unified composite index the WEF has chosen to select 36 items for each country which are then added up (averaged) to arrive at a composite score value. This score value is then used to rank countries in

terms of their Growth Competitiveness. To add up the different items underlying its Growth Competitiveness Index, the WEF uses a fixed set of weights that are applied uniformly to the same set of underlying data items for each country.

In general, the construction of any composite indicator that collapses information across several primitive data dimensions must address three sets of issues:

- 1) Scope: what primitive data are to be used to represent the underlying concept, which the index is intended to summarize?
- 2) Normalization: on what common scale will the underlying primitive data be measured?
- 3) Aggregation: what weights are to be given to each primitive data component?

Each of these issues will be briefly commented on below.

Regarding scope, the WEF considers three domains to be supportive of growth in prosperity: technology, public institutions and the macroeconomic environment. Score values for each of three domains is built up from several sub-domain items which are themselves constructs based on underlying primitive data (individual items). A complete list of the domains, sub-domains, item data and their relative weights is presented in the Appendix to this paper.

A normalization procedure to make the item data comparable runs as follows. The soft data from the WEF's *Executive Opinion Survey* are directly converted to a discrete (Likert) scale that ranges from 1 to 7. A score of 7 indicates superior achievement on a given data item. The hard data are also converted to a discrete scale ranging from a 1 to 7 using the following standard formula:

$$1 + 6 \left[\frac{(\text{country value} - \text{sample minimum value})}{(\text{sample maximum value} - \text{sample minimum value})} \right]$$

In cases where a higher numerical value indicates an inferior performance (e.g. national debt level) the data item values are reverse coded by first apply the above formula and then subtracting the value of this formula from 8. In this way a score of 7 consistently refers to the best outcome.

In some instances the WEF adjusts the standard formula for converting hard data to account for extreme outliers. Unfortunately, the WEF (WEF, 2005) does not specify how these precise adjustments are made. Therefore, to achieve consistency with the WEF results, we first normalized the hard data for Belgium using the above formula. Then, where minor differences arose between our calculated values and those reported by the WEF, we calculated an appropriate correction factor that would adjust our value to be the same as that reported for Belgium by the WEF. This correction factor for the Belgian data was then also applied to the same data items for Flanders. The details of these calculations and adjustment factors are reported in the Appendix.

The most important step of the present exercise was to obtain adequate data for Flanders. While there are ample statistical sources for national level data, regional data is rather scarce. To obtain data for Flanders we worked with three alternative types of data.

First, for some items we were able to find a numerical value for Flanders that exactly matched the same concept as the numerical value for Belgium. A typical example is the WEF's *Executive Opinion Survey* item 3.17: "US utility patents granted per million population." For other items we had to instead search for a proxy. A typical example is survey item 6.08: "Is your government neutral among bidders when deciding among public contracts?" Luckily, the European Social Survey publishes regional and

national data on 1) trust in country's parliament; 2) trust in legal system; 3) trust in the police; 4) trust in politicians; and 5) trust in political parties. From these data we calculated a weighted average for Belgium and Flanders which we then used to extrapolate a Likert scale score for Flanders.

For the third category of variables we assumed the same value for Flanders as for Belgium. This reasoning held particularly for the primitive items related to the "macroeconomic environment." A typical example is *Executive Opinion Survey* item 2.17: "lending-borrowing interest rate spread."

The Appendix to this report presents for each primitive data item an information sheet with all relevant underlying information on our calculations: the Belgian hard data, the Belgian Likert-score, the Flanders hard data, the Flanders Likert-score, the conversion arithmetic to the Likert-score, and identification of the data sources as well as the final calculation of the overall composite score value. The outcome of our calculation is summarized in Table 1.

Based on our calculations, the Growth Competitiveness Index score and position in the ranking that Flanders obtains is quite impressive and exceeds our own ex-ante expectations. For 2006, Flanders obtains a Growth Competitiveness Index value of 4.97 compared to the score of 4.63 for Belgium; a superior performance of 7.4%. On the basis of its score value, Flanders would be positioned at a rank of 19 (see Table 1), overtaking countries such as France, Spain, Ireland, Luxembourg to move into the neighborhood of countries that includes Canada (rank 14), Germany (rank 15), New Zealand (rank 16) and Austria (rank 21).

The New Global Competitiveness Index

Starting with its 2006-2007 edition of the *World Competitiveness Report* (WEF, 2006), the WEF favors a new index, the “Global Competitiveness Index,” as the workhorse for its competitiveness ranking. This new index encompasses nine “pillars” and is therefore broader in scope than the previously used Growth Competitiveness Index. The nine pillars are:

- 1) Institutions
- 2) Infrastructure
- 3) Macro economy
- 4) Health and primary education
- 5) Higher education and training
- 6) Market efficiency
- 7) Technological readiness
- 8) Business sophistication
- 9) Innovation

Each pillar is itself constructed from underlying primitive data items, some are hard data and some are “soft” data coming from responses to the *Executive Opinion Survey*. Since the new Global Competitiveness Index covers some 90 individual items, attempting to impute a value on this index for Flanders would require a much greater search for primitive data. A full calculation for Flanders would therefore involve a more time consuming effort that goes beyond the terms of reference of the present analysis; indeed, at the time the present assignment was negotiated with the cabinet of the Minister of Economic Affairs (Flemish Government), the older Growth Competitiveness Index was still the WEF’s “flagship” index. Nonetheless, it is tempting to attempt to determine where Flanders might figure on the new Global Competitiveness Index.

In this regard, the following shortcut procedure was used to provide a “guesstimate” for Flanders position in the new competitiveness ranking. Starting from 7.4% premium of Flanders over Belgium as whole (calculated for 2005), we extrapolated this percentage to the new series (for 2006). On the new Global Competitiveness Index, Belgium held 20th position with an overall score of 5.27 in 2006. Applying the 7.4% premium of Flanders over Belgium to Belgium’s 2006 score yields an estimated 2006 score for Flanders of 5.66. As summarized in Table 2, this score value would rank Flanders in 5th position, just behind Switzerland, Finland, Sweden and Denmark but ahead of the United States (6th), Japan (7th), Germany (8th) and the Netherlands (9th).

Is it adequate to assume that the same ‘comparative advantage’ of Flanders vis-à-vis Belgium on the old index can be ‘translated’ into the new concept? We tend to think that the composition itself of the new index may support this view. For example, the new Global Competitiveness Index includes (and with a higher weight) the status of health and education within a country. It is widely believed that Flanders excels in these social provisions. Other items included in the new index also strengthen the case for superior Flemish performance. The following are a few other examples of the items included in the new index that would tend to favor Flanders overall position:

- Infrastructure: Item 2.03: Quality of port infrastructure
- Market efficiency: Item 6.11: Size of exports
- Business sophistication: Item 8.03: Production process sophistication

Table 3 extends analysis of this suggested premium for Flanders over Belgium even on the basis of the new index by showing, for Belgium and for Flanders, calculated values for several of the primitive data items underlying each of the pillar indices of the

Global Competitiveness Index. Among the individual items, those showing a markedly higher score or “premium” for Flanders over Belgium as a whole are the following:

- ❖ 3.01 What is your country's position in technology relative to world leaders'?
- ❖ 3.02 Are companies in your country unable/aggressive in absorbing new technology?
- ❖ 3.07 What is the extent of business collaboration in R&D with local universities?
- ❖ 3.11 How extensive is Internet access in schools?
- ❖ 3.14 Are government programs successful in promoting the use of ICT?
- ❖ 3.17 US utility patents granted per million population

Despite the above, two caveats must be kept in mind regarding this exercise of determining the position of Flanders among the ranking of countries. First, quite often the difference in the numerical score of countries is so small that the ranking is sensitive to minor changes in the values of the underlying primitive data. Therefore, we recommend a broad “ordinal” interpretation of the ranking. Second, the exercises presented in this paper are typical examples of “comparative statics,” whereby one plugs in data for Flanders instead of Belgium and assumes that all other things remain equal. However, for Flanders the unit of observation is a region whereas the unit of observation in all other cases in the nation. Hence, the units of observation are potentially not comparable.

With regard to the latter caveat, a benchmarking of affluent regions themselves was previously undertaken within a project done for the ‘Flanders District of Creativity’ (Bowen, Moesen and Sleuwaegen (2006), 2006). In that study, it was calculated that Flanders held third position behind first ranked Baden-Württemberg and second ranked

Maryland, with Flanders ranking above the regions of Quebec, Lombardy, Scotland, Rhône-Alpes, Catalonia, and Nord-Pas-de-Calais. Hence Flanders does appear to score well when regions are compared, and suggests that our findings of a premium for Flanders over Belgium as a whole can be regarded as valid, if nonetheless subject to a margin of error.

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Table 1. Growth Competitiveness Index rankings, 2005

Country	GCI 2005	
	Rank	Score
Finland	1	5.94
United States	2	5.81
Sweden	3	5.65
Denmark	4	5.65
Taiwan	5	5.58
Singapore	6	5.48
Iceland	7	5.48
Switzerland	8	5.46
Norway	9	5.40
Australia	10	5.21
Netherlands	11	5.21
Japan	12	5.18
United Kingdom	13	5.11
Canada	14	5.10
Germany	15	5.10
New Zealand	16	5.09
Korea, Rep.	17	5.07
United Arab Emirates	18	4.99
Qatar	19	4.97
Estonia	20	4.95
Austria	21	4.95
Portugal	22	4.91
Chile	23	4.91
Malaysia	24	4.90
Luxembourg	25	4.90
Ireland	26	4.86

Country	GCI 2005	
	Rank	Score
Israel	27	4.84
Hong Kong SAR	28	4.83
Spain	29	4.80
France	30	4.78
Belgium	31	4.63
Slovenia	32	4.59
Kuwait	33	4.58
Cyprus	34	4.54
Malta	35	4.54
Thailand	36	4.50
Bahrain	37	4.48
Czech Republic	38	4.42
Hungary	39	4.38
Tunisia	40	4.32
Slovak Republic	41	4.31
South Africa	42	4.31
Lithuania	43	4.30
Latvia	44	4.29
Jordan	45	4.28
Greece	46	4.26
Italy	47	4.21
Botswana	48	4.21
China	49	4.07
India	50	4.04

Source: World Economic Forum (2005, Table 1)

FLANDERS 4.97

Table 2. Global Competitiveness Index rankings, 2006

Country	GCI 2006-07		GCI 2005-06
	Rank	Score	Rank
Switzerland	1	5.81	4
Finland	2	5.76	2
Sweden	3	5.74	7
Denmark	4	5.70	3
Singapore	5	5.63	5
United States	6	5.61	1
Japan	7	5.60	10
Germany	8	5.58	6
Netherlands	9	5.56	11
United Kingdom	10	5.54	9
Hong Kong	11	5.46	14
Norway	12	5.42	17
Taiwan, China	13	5.41	8
Iceland	14	5.40	16
Israel	15	5.38	23
Canada	16	5.37	13
Austria	17	5.32	15
France	18	5.31	12
Australia	19	5.29	18
Belgium	20	5.27	20
Ireland	21	5.21	21
Luxembourg	22	5.16	24
New Zealand	23	5.15	22
Korea, Rep.	24	5.13	19
Estonia	25	5.12	26
Malaysia	26	5.11	25
Chile	27	4.85	27
Spain	28	4.77	28
Czech Republic	29	4.74	29
Tunisia	30	4.71	37
Barbados	31	4.70	—
United Arab Emirates	32	4.66	32
Slovenia	33	4.64	30
Portugal	34	4.60	31
Thailand	35	4.58	33
Latvia	36	4.57	39
Slovak Republic	37	4.55	36
Qatar	38	4.55	46
Malta	39	4.54	44
Lithuania	40	4.53	34

Country	GCI 2006-07		GCI 2005-06
	Rank	Score	Rank
Hungary	41	4.52	35
Italy	42	4.46	38
India	43	4.44	45
Kuwait	44	4.41	49
South Africa	45	4.36	40
Cyprus	46	4.36	41
Greece	47	4.33	47
Poland	48	4.30	43
Bahram	49	4.28	50
Indonesia	50	4.26	69

Source: World Economic Forum (2006, Table 4)

FLANDERS 5.66

Table 3. Summary of Calculated Pillar Item Values for Flanders ^a

WEF Question	Item	Weight	Data Type	Belgium Score	Flanders Score	Flanders Premium ^b
	Institutional investor country credit rating (counts 1/4)	1/16	Hard	6.61	7.0	5.90%
	Macroeconomic stability sub-index (counts 1/2)		Likert	4.56	4.56	0.00%
3.01	What is your country's position in technology relative to world leaders'?	1/64	Likert	5.70	7.0	22.81%
3.02	Are companies in your country unable/aggressive in absorbing new technology?	1/64	Likert	5.10	5.97	17.06%
3.06	How much do companies in your country spend on R&D relative to other countries?	1/64	Likert	4.07	4.23	3.93%
3.07	What is the extent of business collaboration in R&D with local universities?	1/64	Likert	4.60	5.09	10.65%
3.11	How extensive is Internet access in schools?	1/60	Likert	5.50	7.0	27.27%
3.12	Is there sufficient competition among Internet service providers in your country to ensure high quality, infrequent interruptions and low prices?	1/60	Likert	5.50	5.50	0.00%
3.13	Is ICT an overall priority for the government?	1/60	Likert	4.30	3.63	-15.58%
3.14	Are government programs successful in promoting the use of ICT?	1/60	Likert	3.90	4.52	15.90%
3.15	Are laws relation to ICT (electronic commerce, digital signatures, consumer protection) well developed and enforced?	1/60	Likert	4.50	4.53	0.67%
3.17	US utility patents granted per million population	3/32	Hard	2.2563	3.1868	41.24%
3.18	Cellular mobile subscribers per 100 inhabitants	1/30	Hard	5.1693	5.6220	8.76%
3.19	Internet users per 10,000 inhabitants	1/30	Hard	4.4272	4.8081	8.60%
3.20	Internet hosts per 10,000 inhabitants	1/30	Hard	1.2179	1.2406	1.86%
3.21	Personal computers per 100 inhabitants	1/30	Hard	3.5622	3.8784	8.88%
4.17	Gross tertiary enrolment rate	3/32	Hard	5.1814	5.4914	5.98%
5.08	Main telephone lines per 100 inhabitants	1/30	Hard	4.6755	5.0830	8.72%
6.01	Is the judiciary in your country independent from political influences of members of government, citizens or firms?	1/32	Likert	5.10	5.35	4.90%
6.03	Are financial assets and wealth clearly delineated and well protected by law?	1/32	Likert	5.60	5.87	4.82%
6.06	Is the composition of public spending in your country wasteful, or does it provide necessary goods and services not provided by the market?	1/16	Likert	3.33	3.4532	3.70%
6.08	Is your government neutral among bidders when deciding among public contracts?	1/32	Likert	3.80	3.99	5.00%
6.16	Does organized crime impose significant costs on business?	1/32	Likert	5.90	6.19	4.92%
6.19	How commonly are bribes paid in connection with import and export permits?	1/24	Likert	5.40	5.66	4.81%
6.20	How commonly are bribes paid when getting connected with public utilities?	1/24	Likert	6.0	6.29	4.83%
6.21	How commonly are bribes paid in connection with annual tax payments?	1/24	Likert	5.60	5.87	4.82%

^a For Belgium calculations see Bowen, Moesen and Sleuwaegen (2006).

^b (Flanders Score/ Belgium's Score) - 1

Appendix

Growth Competitiveness Data Information Sheet

This Appendix presents summary results and detailed data sheets giving sources of data and the calculations that map data on Flanders into the categories underlying the sub-components of the World Economic Forum's Growth Competitiveness Index. The Growth Competitiveness Index is composed of three main sub-indexes: the Technology Index, the Public Institutions Index and the Macroeconomic Environment index. These indexes are calculated on the basis of both 'hard' data and 'soft' survey data. The following gives basic information on the data underlying each of the three main component indexes together with the weights the WEF uses to aggregate the three sub-index values obtained for each country (see WEF (2005) p. 38-51 for additional details).

1) Technology index (counts 1/2)

a) Innovation sub-index (counts 1/2)

Innovation survey questions (counts 1/4)

- 3.01 What is your country's position in technology relative to world leaders'?
- 3.02 Are companies in your country unable/aggressive in absorbing new technology?
- 3.06 How much do companies in your country spend on R&D relative to other countries?
- 3.07 What is the extent of business collaboration in R&D with local universities?

Innovation hard data (counts 3/4)

- 3.17 US utility patents granted per million population
- 4.17 Gross tertiary enrolment rate

b) Information and Communication technology sub-index (counts 1/2)

Information & communication technology Survey questions (counts 1/3)

- 3.11 How extensive is Internet access in schools?
- 3.12 Is there sufficient competition among Internet service providers in your country to ensure high quality, infrequent interruptions and low prices?
- 3.13 Is ICT an overall priority for the government?
- 3.14 Are government programs successful in promoting the use of ICT?
- 3.15 Are laws relation to ICT (electronic commerce, digital signatures, consumer protection) well developed and enforced?

Information & communication technology hard data (counts 2/3)

- 3.18 Cellular mobile subscribers per 100 inhabitants
- 3.19 Internet users per 10,000 inhabitants

- 3.20 Internet hosts per 10,000 inhabitants
- 5.08 Main telephone lines per 100 inhabitants
- 3.21 Personal computers per 100 inhabitants
- 2) Public institutions index (counts 1/4)**
 - a) Contracts and law sub-index (counts 1/2)**
 - 6.01 Is the judiciary in your country independent from political influences of members of government, citizens or firms?
 - 6.03 Are financial assets and wealth clearly delineated and well protected by law?
 - 6.08 Is your government neutral among bidders when deciding among public contracts?
 - 6.16 Does organized crime impose significant costs on business?
 - b) Corruption index (counts 1/2)**
 - 6.19 How commonly are bribes paid in connection with import and export permits?
 - 6.20 How commonly are bribes paid when getting connected with public utilities?
 - 6.21 How commonly are bribes paid in connection with annual tax payments?
- 3) Macroeconomic environment index (counts 1/4)**
 - a) Macroeconomic stability sub-index (counts 1/2)**
 - Macroeconomic stability survey questions (counts 5/7)*
 - 2.01 Is your country's economy likely to be in a recession next year?
 - 2.07 Has obtaining credit for your company become easier or more difficult over the past year?
 - Macroeconomic stability hard data (counts 2/7)*
 - 2.13 Government surplus/deficit
 - 2.14 National savings rate
 - 2.15 Real effective exchange rate
 - 2.16 Inflation
 - 2.17 Lending-borrowing Interest rate spread
 - 2.20 Government debt
 - b) Institutional investor country credit rating (counts 1/4)**
 - c) Government waste variable (counts 1/4)**
 - 6.06 Is the composition of public spending in your country wasteful, or does it provide necessary goods and services not provided by the market?

Table A1 summarizes the details of our calculation of a WEF Growth Competitiveness Index value for Flanders. Since the WEF places Belgium (and hence Flanders) in the group of core innovator countries (countries with more than 15 US utility patents registered per million population), we use the weightings as described in Appendix A of the Global Competitive Report 2005-2006 (WEF, 2005).

Referencing Table A1, a Growth Competitiveness Index value for Flanders was calculated as follows. First, for Belgium, we computed our own value for each of the three main Growth Competitiveness Index sub-indices. These own value calculations for Belgium were then compared with the WEF's value for Belgium on each of the sub-indices and the relative difference (in percent) was calculated. For example, as shown in Table 3, for the Technology sub-index we computed a value of 4.01 for Belgium while the WEF reported a value of 4.2. The relative difference between these two numbers is therefore 4.84% ($= (4.2 - 4.01)/4.01$). After calculation of the value of each sub-index for Flanders (using the Flemish data), a Flemish value was computed by multiply the relative difference in Belgium's values times the calculated value for Flanders.

Table A1. Details of calculating sub-index values for Flanders

Growth Competitiveness Index Sub-Indexes (weight)	Components Items (weight)	Author's Calculated Value		WEF Value for Belgium	Relative Difference (author's calculation relative to WEF value for Belgium)	Flanders' Value (author's calculation times relative difference for Belgium)
		<i>Belgium</i>	<i>Flanders</i>			
Technology (1/2)	Innovation (1/2)	4.01	4.65	4.20	4.84 %	4.87
	ITC (1/2)	4.12	4.43	4.17	1.21 %	4.48
Public Institutions (1/4)	Contracts and law (1/2)	5.10	5.35	5.11	0.20 %	5.36
	Corruption (1/2)	5.67	5.94	5.65	-0.29 %	5.92
Macroeconomic Environment (1/4)	Macroeconomic stability (1/2)	4.56	4.56	4.56	0.00 %	4.56
	Credit rating (1/4)	6.61	7.00	6.61	0.00 %	7.00
	Government waste (1/4)	3.33	3.45	3.33	0.00 %	3.45

Table A2 below gives detailed information on the calculation of each sub-item of the Growth Competitiveness Index.

Table A2. Details of computed values for each competitiveness index component

Technology Index Components

Innovation Sub-index

A) Innovation survey questions

3.01 What is your country's position in technology relative to world leaders'?

	Rank	Likert score	Original data
Belgium	23	5.0	5.7
Flanders	1	7.00	8.13

Details: Indicator is a proxy

Source:

- Indicator: Tewerkstelling in hoge en mediumhoge technologische industriële sectoren als procent van de totale tewerkstelling
- Document: sociaal economisch rapport Vlaanderen
- Jaargang: 2005
- Pagina: 161

Computation: Flemish score / Belgian score = $8.13/5.7 = 1.426$

$1.426 * 5 = 7.13 \rightarrow 7.13$ is capped at 7.00

3.02 Are companies in your country unable/aggressive in absorbing new technology?

	Rank	Likert score	Original data
Belgium	33	5.1	1.4
Flanders	6	5.97	1.64

Details: Indicator is a proxy

Source:

- Indicator: O&O intensiteit bedrijven
- Document: Vrind, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 72

Computation: Flemish score / Belgian score = $1.64/1.4 = 1.171$

$1.171 * 5.1 = 5.97$

3.06 How much do companies in your country spend on R&D relative to other countries?

	Rank	Likert score	Original data
Belgium	15	4.07	1.25
Flanders	21	4.23	1.30

Details: Indicator is a proxy

Source:

- Indicator: O&O-personeel in international perspectief (2001)
- Document: VRIND, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 92

Computation: Flemish score/Belgian score = $1.30/1.25 = 1.04$
 $1.04 * 4.07 = 4.23$

3.07 What is the extent of business collaboration in R&D with local universities?

	Rank	Likert score	Original data
Belgium	14	4.6	1.40
Flanders	5	5.09	1.55

Details: Indicator is a proxy

Source:

- Indicator: Business Expenditures on R&D (BERD), 2003
- Document: Flanders: Vrind (2006), p. 91
- Belgium: Innovation scoreboard 2005, <http://trendchart.cordis.lu>

Computation: Flemish score / Belgian score = $1.55/1.40 = 1.107$
 $1.107 * 4.6 = 5.09$

B) Innovation Hard data

3.17 US utility patents granted per million population

	Rank	Likert score	Original data
Belgium	17	2.256	59.4 (70.35)
Flanders	9	3.187	103.40 (122.45)

Details: Indicator is exact

Source:

- Indicator: aantal USPTO octrooien per miljoen inwoners 2002
- Document: sociaal economisch rapport Vlaanderen
- Volume: 2005
- Page: 169

Remark: Gegevens voor het Vlaamse Gewest voor 1998

Computation: hard data in brackets from source: 70.34 corresponds with 59.4, hence 122.54 corresponds to 103.40

Re-computation to a 7 point Likert value gives:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
59.4	103.4	283.7	0	2.256	3.187

4.17 Gross tertiary enrollment rate

	Rank	Likert score	Original data
Belgium	20	5.181	61.1
Flanders	40	5.491	65.6

Details: Indicator is exact

Source:

- Indicator: werkgelegenheid in de tertiaire sector volgens de klassieke benadering
- Document: Vrind, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 104

Computation: hard data, no calculations needed. Re-computation to 7 point Likert scale gives:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
61.1	65.6	87.5	0.4	5.181	5.491

Technology Index Components

Information and Communication technology (ITC) sub-index (counts 1/2)

A) Information and communication technology Survey questions (counts 1/3)

3.11 How extensive is Internet access in schools?

	Rank	Likert score	Original data
Belgium	22	5.5	70
Flanders		7.00	89.2

Details: Indicator is a proxy

Source:

- Indicator: Internet access in primary schools (for Flanders: 2003-2004) (for Belgium 1999-2000)
- Document: European Schoolnet, ICT monitor 2004
- Volume:
 - for Flanders:
http://www.ond.vlaanderen.be/ict/english/insight_country_report_Vlaanderen.pdf
 - For Belgium: <http://insight.eun.org>

Computation: Flemish score / Belgian score = $89.2 / 70 = 1.274$

$$1.274 * 5.5 = 7.00$$

3.12 Is there sufficient competition among Internet service providers in your country to ensure high quality, infrequent interruptions and low prices?

	Rank	Likert score	Original data
Belgium	17	5.5	Same
Flanders		5.5	same

Details: Indicator is a proxy

Source:

- Document: The Global competitiveness report
- Volume: 2005 - 2006

3.13 Is ICT an overall priority for the government?

	Rank	Likert score	Original data
Belgium	66	4.3	21.3
Flanders	98	3.63	18

Details: Indicator is a proxy

Source:

- Indicator: E-government: Percentage van de individuen dat de voorbije drie maanden het internet gebruikte om met de overhead in contact te komen (voor 2005)
- Document: Vrind, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 256

Computation: Flemish score / Belgian score = $18 / 21.3 = 0.845$
 $0.845 * 4.3 = 3.63$

3.14 Are government programs successful in promoting the use of ICT?

	Rank	Likert score	Original data
Belgium	56	3.9	48.3
Flanders	26	4.52	56

Details: Indicator is a proxy

Source:

- Indicator: Internetpenetratie (in 2005)
- Document: Vrind, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 255

Computation: Flemish score / Belgian score = $56 / 48.3 = 1.16$
 $1.16 * 3.9 = 4.52$

3.15 Are laws relation to ICT (electronic commerce, digital signatures, consumer protection) well developed and enforced?

	Rank	Likert score	Original data
Belgium	32	4.5	20.25
Flanders	32	4.53	20.4

Details: Indicator is a proxy

Source:

- Indicator: ICT-beveiligingsproblemen: uit Europese vergelijking van het aandeel van de bedrijven met minstens tien werknemers dat geconfronteerd werd met ICT-beveiligingsproblemen.
- Document: Vrind, Vlaamse Regionale Indicatoren
- Volume: 2006
- Page: 257

Computation: Flemish score / Belgian score = $20.4 / 20.25 = 1.01$
 $1.01 * 4.5 = 4.53$

B) Information and communication technology hard data (counts 2/3)

3.18 Cellular mobile subscribers per 100 inhabitants

	Rank	Likert score	Original data
Belgium	20	5.169	83
Flanders	9	5.622	92

Details: Indicator is a proxy

Source:

- Indicator: Average of 3.19, 3.20 and 3.21
- Document: FOD Economie: Eerste officiële cijfers over de digitale kloof in België
- Volume: November 8, 2006

Computation: see 3.19, 3.20 and 3.21: average is 1.11

Re-computation to Likert value:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
83	92	119.4	0.1	5.169	5.622

3.19 Internet users per 10,000 inhabitants

	Rank	Likert score	Original data
Belgium	24	4.427	3856 (54%)
Flanders	19	4.808	4284 (60%)

Details: Indicator is a proxy

Source:

- Indicator: Percentage of population with internet access
- Document: FOD Economie: Eerste officiële cijfers over de digitale kloof in België
- Volume: November 8, 2006

Computation: 3856 is 54%, as 60% of population uses the internet, this makes 4284 users per 10,000 inhabitants.

Re-computation to Likert value:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
3856	4284	6747	5	4.427	4.808

3.20 Internet hosts per 10,000 inhabitants

	Rank	Likert score	Original data
Belgium	33	1.218	202.6 (48)
Flanders	28	1.241	223.7 (53)

Details: Indicator is a proxy

Source:

- Indicator: Broadband connection (%)
- Document: FOD Economie: eerste cijfers over de digitale kloof in België
- Volume: November 8, 2006

Computation: 202.6 corresponds to the 48% of broadband connections, hence Flanders is 53% of Belgian population with broadband connection, this corresponds to 223.7.

Re-computation to a Likert value:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
202.6	223.7	5577.8	0	1.218	1.241

5.08 Main telephone lines per 100 inhabitants

	Rank	Likert score	Original data
Belgium	21	4.675	48.9
Flanders	17	5.083	54.3

Details: Indicator is a proxy

Source:

- Indicator: Average of 3.19, 3.20 and 3.21
- Document: FOD Economie: Eerste officiële cijfers over de digitale kloof in België
- Volume: November 8, 2006

Computation: see 3.19, 3.20 and 3.21: average is 1.11

Recomputation to a Likert value

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
48.9	54.3	79.7	0.2	4.675	5.083

3.21 Personal computers per 100 inhabitants

	Rank	Likert score	Original data
Belgium	25	3.562	31.8 (57)
Flanders	24	3.878	35.7 (64)

Details: Indicator is a proxy

Source:

- Indicator: Percentage of households with personal computer
- Document: FOD Economie: eerste cijfers over de digitale kloof in België
- Volume: November 8, 2006

Computation: as the 31.8 corresponds to the 57% of population with pc, 64% in Flanders corresponds with 35.7.

Re-computation to a Likert value:

Belgium	Flanders	Sample Max	Sample Min	Conversion B	Conversion F
31.8	35.7	74.2	0.2	3.562	3.878

Public institutions index components (counts 1/4)

Contracts and law sub-index (counts 1/2)

6.01 Is the judiciary in your country independent from political influences of members of government, citizens or firms?

	Rank	Likert score	Original data
Belgium	28	5.1	476.44
Flanders	22	5.35	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 5.1 = 5.349$

6.03 Are financial assets and wealth clearly delineated and well protected by law?

	Rank	Likert score	Original data
Belgium	24	5.6	476.44
Flanders	19	5.87	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 5.6 = 5.873$

6.08 Is your government neutral among bidders when deciding among public contracts?

	Rank	Likert score	Original data
Belgium	28	3.8	476.44
Flanders	25	3.99	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 3.8 = 3.985$

6.16 Does organized crime impose significant costs on business?

	Rank	Likert score	Original data
Belgium	24	5.9	476.44
Flanders	17	6.19	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 5.9 = 6.188$

Public institutions index components (counts 1/4)

Corruption index (counts 1/2)

6.19 How commonly are bribes paid in connection with import and export permits?

	Rank	Likert score	Original data
Belgium	37	5.4	476.44
Flanders	30	5.66	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 5.4 = 5.664$

6.20 How commonly are bribes paid when getting connected with public utilities?

	Rank	Likert score	Original data
Belgium	31	6.0	476.44
Flanders	21	6.29	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 6.0 = 6.293$

6.21 How commonly are bribes paid in connection with annual tax payments?

	Rank	Likert score	Original data
Belgium	41	5.6	476.44
Flanders	31	5.87	499.70

Details: Indicator is a proxy

Source:

- Indicator: Weighted average of European Social Survey questions: (1) trust in country's parliament; (2) trust in legal system; (3) trust in the police; (4) trust in politicians; (5) trust in political parties
- Document: European Social Survey 2004/2005 (Round 2), Norwegian Social Science Data Services

Computation: Flemish score / Belgian score = $499.70 / 476.44 = 1.0488$
 $1.0488 * 5.6 = 5.873$

Macroeconomic environment index components (counts 1/4)

Macroeconomic stability sub-index (counts 1/2)

A) *Macroeconomic stability survey questions (counts 5/7)*

2.01 Is your country's economy likely to be in a recession next year?

2.07 Has obtaining credit for your company become easier or more difficult over the past year?

B) Macroeconomic stability hard data (counts 2/7)

2.13 Government surplus/deficit

2.14 National savings rate

2.15 Real effective exchange rate

2.16 Inflation

2.17 Lending-borrowing Interest rate spread

2.20 Government debt

Macroeconomic environment index components (counts 1/4)

2.21 Institutional investor country credit rating (counts 1/4)

	Rank	Likert score	Original data
Belgium	16	6.61	89.0
Flanders		7.00	

Details: Indicator is a proxy

Source:

- Indicator: Credit rating
- Document: Moody's – Sub-sovereign debt → Belgium has credit rating of Aa1, while Flanders has credit rating of Aaa

Computation: Aaa is highest credit rating possible, hence Likert score of 7.00.

Macroeconomic environment index components (counts 1/4)

Government waste variable (counts 1/4)

6.06 Is the composition of public spending in your country wasteful, or does it provide necessary goods and services not provided by the market?

	Rank	Likert score	Original data
Belgium	50	3.3	
Flanders	44	3.45	

Details: Indicator is a proxy

Source:

- Indicator: performance indicator of the Belgian versus Flemish government: Flemish government is 3.7% more efficient.
- Document: Moesen, W. (2004) 'De kwaliteit van de overheid te lande en in euroland', KU Leuven

Computation: Belgian score * 1.037 = 3.3 * 1.037 = 3.4532