

Slovenia's Location Attractiveness According to the IMD 2003	Slovenian Economic Mirror	IMAD
	No. 11/2003	p. 20

Sub-groups of location attractiveness in innovation and R&D activity derived from the IMD indicators of 2003										
IMD code	Sub-group	Slovenia		Lombardy		Bavaria		Austria		Leading EU members in the given sub-group
		1*	2**	1*	2**	1*	2**	1*	2**	
1.3	International investment	0.50	37.6	0.88	45.1	0.61	60.6	1.53	46.9	Netherlands, Portugal
2.2	Fiscal policy***	0.80	505.2	0.89	800.3	0.96	590.2	1.95	696.4	Sweden, Finland, Luxembourg, Denmark
2.4	Business openness	0.95	54.7	1.08	60.7	1.04	138.9	1.00	83.0	Finland, Denmark, Ireland, Austria
2.5	Societal framework	0.81	63.6	0.94	60.4	0.65	85.3	0.47	94.2	Sweden
3.2	Availability of skills	0.80	65.8	0.94	67.1	0.64	78.2	1.00	82.9	Finland, Luxembourg
3.5	Attitudes and values	0.86	71.7	0.78	77.0	1.36	70.1	1.24	87.0	Finland, Netherlands, Ireland
4.1	Basic infrastructure	0.91	29.0	1.02	30.2	0.50	66.6	1.10	61.9	Netherlands, Finland
4.2	Technological infrastructure	0.81	81.5	0.83	72.9	0.79	158.6	1.08	74.7	Finland, Netherlands, Sweden, Austria
4.3	Scientific infrastructure	0.73	29.4	0.69	52.4	0.37	95.4	0.99	52.4	Sweden, Finland, Netherlands
4.4	Health and environment	0.74	94.9	0.58	88.4	0.47	101.8	0.86	101.6	Belgium, Sweden, Austria
4.5	Education	0.90	46.7	0.99	49.8	1.24	54.4	0.88	73.8	Finland, Ireland, Denmark
Aggregate value of location attractiveness		0.80	57.5	0.87	60.4	0.78	91.0	1.10	68.5	
Ranking in location attractiveness among 29 countries and regions		22		21		14		11		
Ranking in global competitiveness		28		24		18		10		

Source of data: The World Competitiveness Yearbook 2003, International Institute of Management Development (IMD); author's calculations. *Notes:* * Ratio of the country's ranking in the given subgroup to its overall ranking in global competitiveness. The lower the coefficient, the better the country's position. ** Average percent achieved in comparison to the leading EU members in the given indicator. *** Indicators in this sub-group are: employee and employer social security contribution rates, effective personal income tax rate, and real personal taxes.

One of the ten factors playing a role in national competitiveness, as defined by the IMD, is a planned and foreseeable advancement of location attractiveness for foreign investment which, according to the IMD, encourages growth, investment and employment in the host country. Hence, up until 2001 the IMD developed and calculated the **location attractiveness index** using the indicators of quality infrastructure, availability of domestic professionals, level of technology, labour costs, taxes, scope of local markets, and institutional environment for manufacturing industries, services, and research and development. A list of representative indicators was developed for each group.

The IMD did not give any explanation why it stopped assessing location attractiveness. We have reconstructed the **location attractiveness index for innovation – research and development** – out of 63 IMD indicators for Slovenia and compared it to Lombardy and Bavaria, regions covered by the IMD for the first time this year, and Austria, which are important partners of Slovenia. Compared to its 28th place in global competitiveness among countries with less than 20 million people (see SEM 5/2003:17), Slovenia is ranked in a sound 22nd place in location attractiveness, right behind Lombardy, which is in 24th place in global competitiveness. In 2001, when this index was last calculated by the IMD, Slovenia was in 43rd place among 49 countries, four places behind its ranking in global competitiveness, and the value of the index was lower. The following indicators have improved since 2001: international investment (owing to foreign direct investment in particular), business openness, fiscal policy, basic infrastructure, and attitudes and values, while a slight improvement has been seen in education, and the societal framework. On the other hand, a decline has been recorded in health and environment, scientific as well as technological infrastructure. However, the latter three sub-groups (composed of selected indicators out of total) are assessed better than the same groups when they incorporate all indicators which make up global competitiveness. This confirms the assessment that the location attractiveness for innovation, research and development is better than the one for manufacturing and services.

In 2003, **Slovenia** only achieves 57.5% of the score of the best performing EU members in location attractiveness. Like in the two regions and Austria, this assessment ignores the influence of fiscal policy, which involves significantly lower taxation of production and a larger share of employees in social security contributions in the leading EU members (Sweden, Finland, Luxembourg and Denmark). Slovenia's attractiveness in fiscal policy is five times worse on average than that of the leading EU members, but still better than that of Lombardy, Bavaria and Austria. Slovenia draws closest to the leading countries in health and the environment (see the second column in the table) and lags behind most in basic and scientific infrastructure. Bavaria is placed 14th in the location attractiveness index and 18th in global competitiveness. Austria, which is ranked 11th in location attractiveness and 10th in global competitiveness, is maturing in terms of its attractiveness and enjoys the effects of synergy in global national competitiveness.

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	No. 11/2003	p. 21

Slovenia has **recently taken some measures** to help improve its location attractiveness. A new **draft law stimulating entrepreneurship** has been prepared and it regulates the development and operation of the institutions responsible for creating and transferring knowledge, conceiving and verifying business ideas, introducing new technologies, and building an environment conducive to investment in new high value-added products and services (technological parks, incubators, development centres, and centres of excellence). This and next year, increased **budget appropriations for R&D** will be channelled to promoting domestic comparative advantages primarily in areas where advanced know-how and technologies directly boost production. Funding from the **EU's regional development fund** will primarily be allocated to projects that support the development of industrial clusters, applied research, centres of excellence, and industrial estates. A programme that is particularly appealing to Slovenia is Interreg III for the Alpine region, which provides funding for promoting co-operation between countries and regions, as well as enterprises and institutions of EU members and accession countries. A call for projects has been launched by the **Ministry of the Economy**, which will give priority to projects that help narrow the widest gaps behind the leading EU members in basic and scientific infrastructure and education (see the above table). These measures may facilitate the transition from insufficiently profitable labour-intensive production to technologically-intensive production. This will be impossible without increasing international trade in knowledge-based products and services or stimulating production co-operation and new inward and outward investment, particularly in the area of Friuli-Venezia Giulia, Lombardy, Styria and Bavaria. Development can be significantly accelerated by planning and financing economic infrastructure and developing economic zones and technological parks which have a stock of know-how in the area of high technologies. This particularly goes for bordering areas where it is necessary to maintain settlement, strengthen regional identity and create cross-border regions that share the same development programmes for those activities which meet the needs of wider bordering areas. The phasing-out of borders will reduce some activities related to merchandise trade and they will have to be replaced by other activities, not only the economy and tourism, but also education. New economic and tourism initiatives may be put forward in these areas.

Finally, we can try to find the **reasons why the IMD abandoned** the assessment of **location attractiveness**, which was a very well received indicator among investors. Firstly, location attractiveness and national competitiveness overlap closely. The correlation (Spearman's rank correlation coefficient) between the location attractiveness of the innovation environment and national competitiveness is high and equals as much as 0.962 for 47 countries for 2000. Secondly, a particular investment involving varying technological and skill complexities brings together a wide range of factors, including those that are not necessarily part of the location attractiveness index. Thirdly, the shares of production factors required for a particular investment may differ from their respective shares in the location attractiveness index. This is why each investor makes their own assessment of attractiveness because it is theoretically possible that most IMD indicators used in calculating the location attractiveness index do not correspond to the technical and skill characteristics of an investment. The overall competitiveness is best and most complexly identified by the national competitiveness index itself.

Indicators of Slovenia's location attractiveness that most lag behind the leading EU member						
IMD code	Description of the indicator	Slovenia		Lombardy		Leading EU member
		1*	2**	1*	2**	3
1304	Direct investment stocks abroad – real growth	0.46	18.6	0.96	-0.1	Denmark
4305	Business expenditure on R&D per capita	0.64	7.9	0.63	29.5	Sweden
4317	Patents granted to residents	0.68	6.8	0.92	69.3	Netherlands
4302	Total expenditure on R&D per capita	0.71	12.1	0.63	33.7	Sweden
4308	Total R&D personnel in business enterprise	0.75	8.4	0.38	44.9	Netherlands
4306	Total R&D personnel nationwide	0.79	9.5	Netherlands
4304	Business expenditure on R&D, USD million	0.82	1.8	0.46	30.1	Sweden
2316	Bureaucracy hindering business activity	0.86	31.6	1.13	27.0	Finland
4301	Total expenditure on R&D, USD million	0.86	2.8	0.42	34.4	Sweden
4208	Computers in use, worldwide share	0.89	6.6	0.17	183.1	Netherlands
1305	Direct investment flows inward, USD million	0.93	1.0	0.79	5.9	Netherlands
4110	No. of passengers in air transportation, thousand	0.96	3.3	0.83	23.5	Netherlands
4513	Knowledge transfer between companies and universities – estimate	1.00	32.7	1.08	40.9	Finland

Notes: * Ratio of the country's ranking in the given subgroup to its overall ranking in global competitiveness. If it equals 1.00, this ranking equals that of national global competitiveness. ** Percent achieved in comparison to the leading EU member.

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IMAD

No. 11/2003

p. 22

