

KURT SCHMID / HELMUT HAFNER

Human capital in the Central and Eastern European countries

International benchmarking on the basis of the *ibw*'s human resources indicator

The enlargement of the EU towards the East has brought about much better opportunities and chances for investment for the Austrian economy. This holds for the new EU member states as well as for those that will become members in the near future. Yet, we can expect a simultaneous boost of competition among these countries that will also affect Austria, also thanks to its geographical location.

For these reasons, we should be better able to assess the quality of locations in these new markets as well as in Austria. Human capital, i.e., the educational status quo of the population, plays a central role for this assessment. The *ibw*'s human resources indicator provides a first comparative overview of a country's human capital.

Methodological annotations to the *ibw* HR indicator

A country's human capital can not easily be 'measured'. It is impossible to list the competence of a population as a whole at a macro-level and to assess it with regard to its relevance for the labour market. What is possible, though, is to compare the qualifical structure of the respective countries on the basis of formal education. The *ibw*'s human resources indicator works like this.

The ISCED classification of completed education serves as a starting point for the *ibw*'s HR indicator. It subsumes the former under a single classification figure. The indicator provides a first comparative overview of the human capital in various countries. The present issue covers the Central and Eastern European countries compared to Austria. Due to the *ibw* indicator focusing on formal qualification (initial education), further qualifications gained in further trainings, as well as quality and relevance of education and training, or vocational foci, cannot be taken into account – like informal competences acquired on the job, too. Fuzziness of definition regarding the classification of national education into ISCED levels also remains in the HR indicator.

The HR indicators of selected Central and Eastern European countries will be presented in this paper and they

will also be compared to Austrian figures. The following is a list of the countries compared:

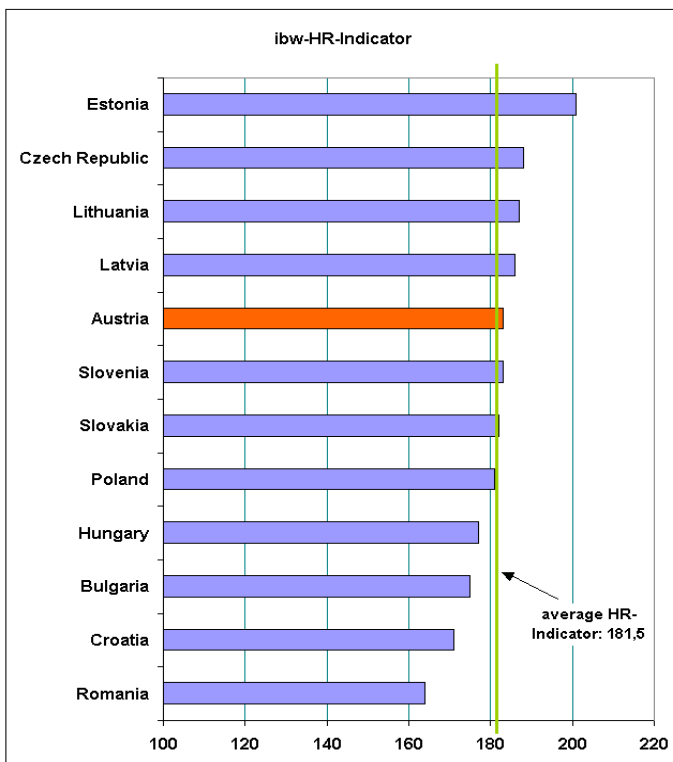
- Bulgaria
- Estonia
- Croatia
- Latvia
- Lithuania
- Romania
- Slovakia
- Slovenia
- the Czech Republic
- Hungary
- Poland

The higher the HR indicator's value, the higher qualified the population is in terms of formal qualification. The HR indicator may be between 100 (meaning that the whole resident population's formal education is not above compulsory schooling) and 300 (meaning that the whole resident population holds a university degree or comparable qualification).

International benchmarking

In an international comparison, Austria performs averagely among the countries under discussion here¹ (see figure 1). Estonia heads the table with the highest value (201) of the ibw HR indicator. The Czech Republic, Lithuania and Latvia come next. The third block is made up by Slovenia, Austria, Slovakia, and Poland. After Hungary and Bulgaria, Croatia and Romania come last. The absolute deviation between the countries with the highest and lowest indexes is 37 points; this shows that there exist distinct differences between the countries. Therefore, the human capital in these countries diverges significantly!

Figure 1: *ibw* HR indicator on country level



Source: Eurostat, *ibw*'s own calculations

The leading position of the Baltic States and the Czech Republic is eye-catching. Austria, by contrast, lags behind, also due to its education system being different from others. It is positioned similarly to its neighbouring countries Slovakia and Slovenia, also on the same level with Poland. Interestingly enough, Austria lacks 18 points to catch up with Estonia; similarly, it is 19 index points ahead of Romania, which comes last.

Regional benchmarking

The region of Prague tops the regional table, reaching 208 index points. Estonia, Bratislava, and the Sofia region follow. Vienna and Budapest come fourth, closely followed by Bucharest and the Brno region. Please find all other values in the following table.

Table: regional ranking

NUTS-Region	NUTS-Code	HR-Indicator	Ranking
<i>Praha</i>	CZ01	208	1.
<i>Estland</i>	EE	201	2.
<i>Bratislavský</i>	SK01	201	2.
<i>Yugozapaden</i>	BG21	193	3.
<i>Közép-Magyarország</i>	HU1	192	4.
<i>Közép-Magyarország</i>	HU10	192	4.
Wien		192	4.
<i>Bucuresti</i>	RO08	190	5.
<i>Jihovýchod</i>	CZ06	189	6.
<i>Litauen</i>	LT	187	7.
<i>Severovýchod</i>	CZ05	187	7.
<i>Jihozápad</i>	CZ03	187	7.
<i>Mazowieckie</i>	PL12	187	7.
Salzburg		187	7.
<i>Lettland</i>	LV	186	8.
<i>Střední Morava</i>	CZ07	185	9.
<i>Moravskoslezsko</i>	CZ08	185	9.
Kärnten		184	10.
<i>Slaskie</i>	PL22	184	10.
<i>Střední Čechy</i>	CZ02	184	10.
<i>Malopolskie</i>	PL21	184	10.
<i>Pomorskie</i>	PL63	183	11.
<i>Slowenien</i>	SI	183	11.
Tirol		182	12.
<i>Wielkopolskie</i>	PL41	182	12.
<i>Středné Slovensko</i>	SK03	182	12.
Niederösterreich		181	13.
<i>Dolnoslaskie</i>	PL51	181	13.
<i>Lubuskie</i>	PL43	180	14.
Steiermark		180	14.
<i>Západné Slovensko</i>	SK02	179	15.
<i>Opolskie</i>	PL52	179	15.
<i>Východné Slovensko</i>	SK04	179	15.
<i>Kujawsko-Pomorskie</i>	PL61	179	15.
<i>Zachodniopomorskie</i>	PL42	178	16.
<i>Swietokrzyskie</i>	PL33	178	16.
<i>Severozápad</i>	CZ04	178	16.
Oberösterreich		178	16.
<i>Lódzkie</i>	PL11	177	17.
Vorarlberg		176	18.
<i>Nyugat-Dunántúl</i>	HU22	176	18.
<i>Közép-Dunántúl</i>	HU21	176	18.
<i>Lubelskie</i>	PL31	176	18.
<i>Podkarpackie</i>	PL32	176	18.
<i>Severozápad</i>	BG12	174	19.
<i>Podlaskie</i>	PL34	173	20.
<i>Warminsko-Mazurskie</i>	PL62	173	20.
<i>Észak-Magyarország</i>	HU31	171	21.
Burgenland		171	21.
<i>Dél-Dunántúl</i>	HU23	170	22.
<i>Észak-Alföld</i>	HU32	170	22.
<i>Severozapaden</i>	BG11	169	23.
<i>Severozápad</i>	BG13	169	23.
<i>Dél-Alföld</i>	HU33	169	23.
<i>Yuzhen tsentralen</i>	BG22	166	24.
<i>Yugoiztochen</i>	BG23	166	24.
<i>Centru</i>	RO07	166	24.
<i>Vest</i>	RO05	165	25.
<i>Sud-Vest</i>	RO04	163	26.
<i>Nord-Vest</i>	RO06	162	27.
<i>Sud-Est</i>	RO02	161	28.
<i>Sud</i>	RO03	159	29.
<i>Nord-Est</i>	RO01	157	30.

Source: Eurostat, *ibw*'s own calculations

Annotation: Croatia was not considered here due to its diverse regional structures.

If we compare the *ibw*'s HR indicators of the respective regions (figure 2), one sees first that capitals, other urban agglomerations and Estonia display the highest values. Moreover, trans-regional clusters can be identified, with a tendency of West to East.

Another interesting point is that the range (i.e., the difference between the regions with the highest and lowest index values) is 51 points. This is a much greater divergence than the one in national comparison (37 index points). Thus, regional variation of human capital is rather distinct; and, there must be at least some countries that have high internal / regional variation of human capital. In the same way, this means that location potential regarding human capital depends heavily on regional circumstances.

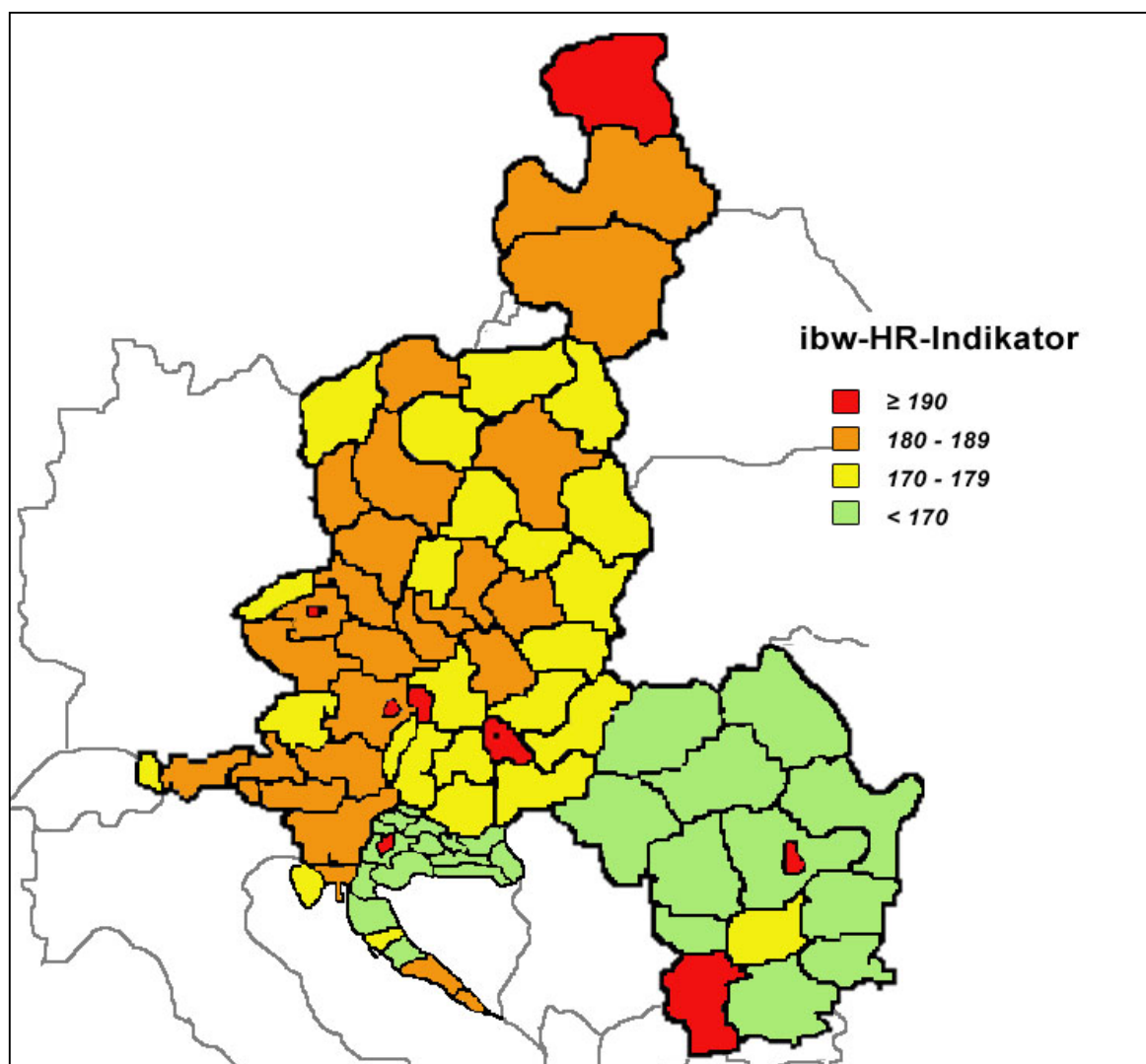
Which countries are homogenous as regards the regional distribution of human capital, and which ones are hetero-

geneous? Croatia displays the highest range between its regions (48 index points). This is a lot higher than the range within Romania (33 index points), or the Czech Republic (30 index points). Here, Austria is embedded in a group together with Hungary, Slovakia, and Bulgaria (all reaching around 20 index points). Poland displays a difference of 14 index points.

As for the Baltic States and Slovenia, no regional differentiation could be carried out due to the sheer size of the countries. Thus it is even more astounding that the Baltic States take top positions in international benchmarking.

It is always the urban regions that reach the top index values within the respective countries. Yet some countries have regions other than these that keep pace (the Krakow and Katowice regions in Poland, for example).

Figure 2: regional distribution of the *ibw* HR indicator



Data source: Eurostat (the national Statistic Department for Croatia²), *ibw*'s own calculations

The HR indicator's informational value

The *ibw's* HR indicator is a crude measuring tool of the education of a country's population or region respectively. When interpreting it, one thus has to consider that it aims at formal qualification (one's first education) and that it does not take into account any higher qualification gained from further training, or the quality of education and training.

Moreover, vocational variants of education cannot be assessed due to restricted data (school leaving exams in advanced general secondary schools are rated the same as apprenticeship trainings or vocational secondary school leaving exams in Austria, for example). Especially education systems that are oriented towards vocational qualification (as it is the case in Austria, too) are therefore underrated. These systems put great emphasis on full job qualification on upper secondary level (immediately after compulsory schooling), and the majority in this age group go through these full job education variants³. As far as employability and qualifications to enter the labour market are concerned, graduates of vocational trainings can be assumed to be better adapted to the structure of the demand the labour market shows; lower youth unemployment in these qualification oriented systems is also an indicator for this.

As the *ibw's* HR indicator is based on allocating educational certificates according to ISCED classification, also the general grouping of the diverse education variants in this system plays an important role in assessing the countries. This is especially relevant when it comes to assigning education variants to the tertiary level. The relatively low percentage of university graduates in Austria, which is bemoaned again and again, is also a result of our specific education system: graduates from secondary vocational schools, pedagogical academies etc. are not grouped among tertiary level in ISCED – yet their qualification can be compared to that of graduates in other countries who completed tertiary education.

For the reasons just mentioned one can safely assume that the *ibw's* HR indicator has a tendency towards evaluating education systems higher (i.e., ranking them higher and giving them more points) that supply more university graduates and advanced secondary school leavers. These percentages also depend on the general structure of the education system.

The *ibw's* HR indicator is an stock figure and no change / flow ratio. Therefore it does not say anything about future changes in the qualification structures across Europe, or, generally speaking, the human capital of a country or a region. Such changes depend among other things on the demographic development, aspects of educational expansion, the quality of training, and, last but not least, on quality assurance and development of the national education systems.

If we adhere to humancapital views, education is a society's resource. A country's future economic development is largely dependent on it (both regarding individual opportunities and society's chances as a whole). Thus there can never be too much education. This aspect is of importance especially for countries where major political and/or economic changes are under way, for we can assume that higher formal education results in higher adaptability. Moreover, the will to do further training, as shown in numerous empirical, internationally approved findings, is heavily influenced by the achieved level of one's initial education: The higher one's initial education is, the more further training one will do – and the higher *ceteris paribus* is the adaptability of such societies.

Despite all these necessary differentiations when interpreting the *ibw's* HR indicator, it nonetheless is an important tool to give a first impression regarding the qualification status quo of the population in the Central and Eastern European countries.

This research brief is a short version of a study carried out by Kurt Schmid and Helmut Hafner: „Die nationale und regionale Qualifikationsstärke ausgewählter neuer EU-Mitglieder und osteuropäischer Nicht-EU-Staaten. Ein internationales Benchmarking anhand des *ibw*-Human-Resources-Indikators.“ *ibw-Reihe Bildung & Wirtschaft* Nr. 35, 2005. Download it at : <http://www.ibw.at/html/buw/BW35.pdf> (only in German available).

- ¹ Let us add an important note as regards the ranking. Countries or regions with similar index values display practically the same qualification level. Only at a difference of 7 or more points can we speak of significant differences between the countries.
- ² The data for Croatia is based on information gained from its National Statistics Department and have to be seen as guide values. The regional structuring does not correspond to NUTS regions, but to the Croatian administration.
- ³ Unlike in qualification-oriented education systems, systems that are governed by organisation focus on general (basic) qualification. Work-related skills are overwhelmingly taught at the workplace.

Editor

ibw – Institute for Research on Qualification and Training for the Austrian Economy
Rainergasse 38, A-1050 Vienna
Tel.: +43/1/545 16 71-0, Fax: +43/1/545 16 71-22
E-Mail: info@ibw.at, Homepage: www.ibw.at