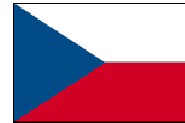


**OVERVIEW ON EAST EUROPE COUNTRIES
AND THEIR EDUCATION SYSTEM**

2005 april

By **Nicola Labianca**



Capital Prague

Population 10,264,212 (July 2001 est.)

Main cities

Praga 1.169.000

Brno 369.500

Ostrava 313.000

Plzen 164.200

REGIONS OF THE CZECH REPUBLIC

Abbreviation	Name of region	Abbreviation	Name of region
PHA	Hl. m. Praha	HKK	Královéhradecký
STČ	Středočeský	PAK	Pardubický
JHČ	Jihočeský	VYS	Vysočina
PLK	Plzeňský	JHM	Jihomoravský
KVK	Karlovarský	OLK	Olomoucký
ULK	Ústecký	ZLK	Zlínský
LBK	Liberecký	MSK	Moravskoslezský

Total Area 78,866.00 sq km (slightly smaller than South Carolina)

Estimated Population in 2050 8,015,315

Languages Czech

Religions atheist 39.8%, Roman Catholic 39.2%, Protestant 4.6%, Orthodox 3%, other 13.4%

Life Expectancy 71.23 male, 78.43 female (2001 est.)

Government Type parliamentary democracy

Currency 1 koruna (Kc) = 100 haleru

Industry metallurgy, machinery and equipment, motor vehicles, glass, armaments

Agriculture wheat, potatoes, sugar beets, hops, fruit; pigs, poultry

Arable Land 41%

Natural Resources hard coal, soft coal, kaolin, clay, graphite, timber

General Environment

*Driven by buoyant exports and strong private investment, **output growth** has gained momentum and **should reach about 4 per cent** previous year and also in 2005 and 2006.

*Employment growth is likely to be muted, but nevertheless allow for a slight decline in unemployment.

Inflation will remain close to 3 per cent.

* The momentum of fiscal reform needs to be boosted. A new budgeting framework has been introduced and needs to be effectively implemented. Also, concrete progress is needed on pension and healthcare reform.

*Monetary policy looks set to remain neutral in the near term although there are upside risks to inflation. Structural reforms to improve the business environment are needed to enable rapid real convergence.

* *source OECD 2004*

	TAV.1 - REPUBBLICA CECA – PRINCIPALI INDICATORI DELLA CRESCITA			
	Tassi di crescita %			
	2001	2002	2003	2004
PIL a prezzi costanti	3,2	2,0	2,8	3,9
Consumi privati	3,8	4,0	3,8	3,3
Consumi pubblici	5,3	5,7	0,7	0,9
Investimenti fissi lordi	5,5	0,6	4,4	6,8
Esportazioni (beni e servizi)	11,9	3,8	5,6	8,9
Importazioni (beni e servizi)	13,6	4,6	6,1	8,5
Contributo alla crescita del PIL	4,9	3,4	3,7	4,3
Domanda interna	0,7	-0,4	0,1	0,1
Scorte	-2,4	-1,1	-1,0	-0,6
Esportazioni nette				
Inflazione (a)	4,7	1,4	1,5	2,8
Occupazione	0,4	1,3	0,5	0,9
Disoccupazione (b)	8,1	7,3	7,0	6,3
Deficit statale (c)	-5,5	-6,5	-6,3	-5,9
Bilancia commerciale (c)	-5,5	-3,5	-4,0	-2,7
Bilancia partite correnti (c)	-4,7	-3,1	-4,1	-2,4
(a) indice prezzi al consumo				
(b) in percentuale della forza lavoro				
(c) in percentuale rispetto al PIL				

Fonte: *Economic Forecast for the candidate countries*, Enlargement papers, Commissione Europea, DG Affari economici e finanziari, Spring 2003

pil pro capite 14.720 us dollars

Pil 150.534 million us dollars

Estimate of Eurostat's prediction of the monthly rate of **unemployment** for the EU Member States (December 2004)

EU – 25	8.09
EU – 15 countries	8.00
EU – 12 countries (Eurozone)	8.09
Czech Republic	8.03
Italy	7.07
Germany	10.00
France	9.07

As in 2003 the rate of unemployment in the Czech Republic was below the average for all 25 EU Member States and was lower than the rates in 12 EU Member States.

Czech Republic: Demand, output and prices

	2001	2002	2003	2004	2005	2006
	Current prices billion CZK	Percentage changes, volume (1995 prices)				
Private consumption	1 192.3	2.8	4.9	3.5	3.6	3.6
Government consumption	513.0	4.5	2.2	-0.4	-0.2	0.5
Gross fixed capital formation	638.6	3.4	7.4	9.5	7.2	6.0
Final domestic demand	2 343.9	3.3	4.9	4.1	3.7	3.6
Stockbuilding ^a	30.0	0.1	-0.4	0.6	0.0	0.0
Total domestic demand	2 374.0	2.8	4.2	4.5	3.7	3.6
Exports of goods and services	1 539.3	2.7	6.2	16.7	12.0	10.4
Imports of goods and services	1 598.0	4.9	7.8	17.3	11.2	9.6
Net exports ^a	- 58.7	-2.2	-2.2	-2.8	-0.9	-0.7
GDP at market prices	2 315.3	1.5	3.1	3.9	4.2	4.1
GDP deflator	-	2.8	1.7	4.1	2.6	2.5
<i>Memorandum items</i>						
Consumer price index	-	1.8	0.1	2.9	3.1	3.0
Private consumption deflator	-	0.7	-0.7	2.1	2.8	2.6
Unemployment rate	-	7.3	7.8	8.4	8.3	8.2
General government financial balance ^{b,c}	-	-6.8	-12.6	-4.3	-4.6	-3.9
Current account balance ^b	-	-5.6	-6.2	-6.5	-6.6	-6.5

Note: National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see *OECD Economic Outlook: Sources and Methods*, (<http://www.oecd.org/eo/sources-and-methods>).

a) Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.

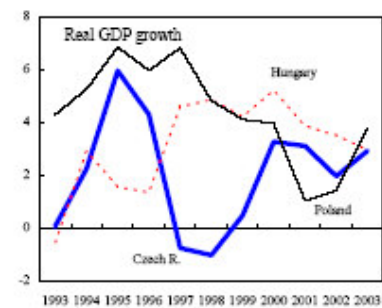
b) As a percentage of GDP.

c) Since the change in methodology in 2004, high-risk state guarantees are classified as capital transfers as soon as they are called for the first time. In 2003, the activation of guarantees issued mainly for the banking sector accounted for about 7.7 percentage points of the deficit.

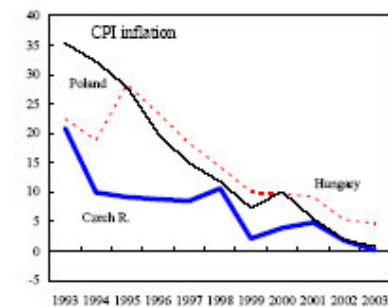
Source: OECD Economic Outlook 76 database.

Despite solid growth, unemployment—particularly long-term unemployment—has risen and stands at about 8 percent (Figure 1). While some unemployment is likely to be cyclical and may help contain wage pressures, the sustained increase may signal emerging structural problems.

Figure 1. Czech Republic and Other CE (In percent, unless of



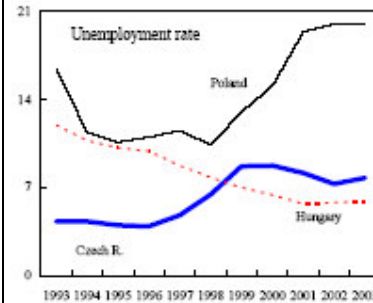
• Inflation has risen gradually after recovering in late 2003 from negative levels. Intense competition in the retail sector (due to growing penetration by large foreign retailers) combined with an earlier appreciation of the koruna generated price declines in most consumption categories during the first half of 2003. But rising consumer demand and more recent depreciation of the koruna brought a small upturn in inflation late in the year. Indirect tax increases in January and May 2004—driven in part by EU harmonization—pushed headline inflation above the bottom of the target band beginning early in the year. However, excluding the effects of administrative measures, underlying inflation has risen only modestly,



and remains below the target band.

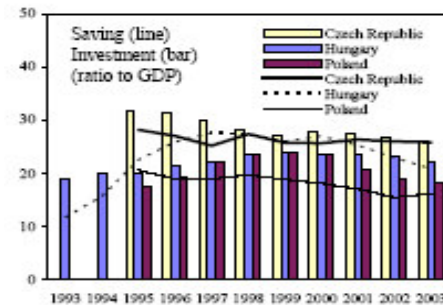
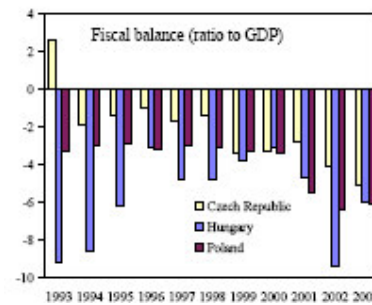
• Competitiveness has been improving.

Falling unit labor costs in manufacturing, koruna depreciation, and recovering export prices suggest increases in profit margins and strengthened competitiveness in the manufacturing sector (Figure 2). As a result, the Czech Republic made further inroads into EU-15 markets in 2003—though by less than some other CECs.



• Notwithstanding a narrowing trade deficit, the current account deficit widened marginally to 6¼ percent of GDP in 2003.

Healthy export volume growth and favorable terms of trade narrowed the trade deficit relative to GDP. But a secular decrease in the services surplus and a one-off drop in current transfers contributed to a widening of the current account deficit in 2003. Reflecting the large stock of FDI and its high profitability, dividends and reinvested earnings accounted for nearly two-thirds of the current account deficit. But with privatization slowing and one-off FDI outflows on account of a change in ownership structure at two large foreign-owned companies, non-FDI flows were the major source of financing for the current



Sources: Eurostat; IMF World Economic Outlook; and IMF staff calculations.
 1/ Unweighted average of Hungary, Poland, Slovak Republic, and Slovenia.

Education

spese per l'istruzione in % sul pil 4,4

Eurostat 2002

The 2000 R&D National Policy of the Czech Republic was based upon the government's commitment to attain **0.7 per cent of GDP** share of state budget expenditures on research and development **in 2002, the reality was 0.54 per cent of GDP.**

The amount of funds for research and development for 2004–2006 proceeds from the state budget by the end of 2006 with following target indicators for individual years:

2004: CZK 14 583 876 000 (0.58 % of GDP)

2005: CZK 15 814 297 000 (0.59 % of GDP)

2006: CZK 17 143 560 000 (0.60 % of GDP).

<i>Indicator</i>	1960/61	1970/71	1980/81	1990/91	2002/03
Nursery schools	4.732	5.582	7.396	7.335	5.552
<i>Classes</i>	7.147	10.195	15.974	16.198	12.304
Basic schools	8.418	6.994	4.247	3.961	3.961
<i>Classes</i>	48.171	47.615	44.172	47.020	46.329
<i>Children</i>	1.441.340	1.207.700	1.234.516	1.194.695	994.130
Grammar schools	297 ⁴⁾	216 ⁴⁾	212	228	343
<i>Classes</i> ⁵⁾	1.431	1.917	2.667	3.256	5.079
<i>Pupils</i> ⁵⁾	48.148	58.780	91.504	110.356	141.280
Secondary technical schools	514 ⁶⁾	493 ⁶⁾	375 ⁶⁾	402	800
<i>Pupils</i> ⁵⁾	102 886 ⁶⁾	135 850 ⁶⁾	157 176 ⁶⁾	166 880 ⁶⁾	198 318 ⁵⁾
<i>Industrial schools</i> ⁵⁾	152	140	137	141	.
<i>Agricultural schools</i> ⁵⁾	190	95	75	66	.
Universities	34	24	23	24	24
<i>Students - total</i>	45 153	62 260 ⁷⁾	91 409	96 379 ¹⁰⁾	174 486 ¹⁰⁾
<i>Females</i>	16 407 ¹⁰⁾	23 692 ¹⁰⁾	38 954 ¹⁰⁾	42 850 ¹⁰⁾	85 558 ¹⁰⁾

Source: Statistical Yearbook

¹⁾ sum total of basic schools both on lower and on upper educational level

²⁾ all secondary schools, not only grammar schools

³⁾ including secondary comprehensive schools and secondary schools for workforces

⁴⁾ secondary comprehensive schools and secondary schools for workforces only

⁵⁾ initial study

⁶⁾ secondary technical and technical schools

⁷⁾ including forestry technical schools

⁸⁾ including universities with classes conducted in foreign languages

I. Description of education system

1. Education population and language of instruction

In 2001 (the year of the last census), the number of people aged 29 or younger was 4 047 026 (39.6% of the population). The number of children of compulsory school age was 1 045 313 (10.2% of the population). The official language of instruction is Czech. In 2003/04 there are 21 basic schools teaching in Polish (plus 29 nursery schools and one *gymnázium*).

2. Administrative control and extent of public sector funded education

In 2003/04, most pupils in primary and secondary education attend public-sector schools.

Since 1st January 2003 the Czech education system works on the bases of new regulations that are set by the reform of public administration. Sectoral administration was abolished; schools are administered in the frame of general administration. It is distributed between the central government, regions (which are 14) and communities. Regions are provided by high degree of autonomy. The reform was implemented in several steps during two years.

Henceforward, the Ministry of Education, Youth and Sports, above all:

- decides on the conception, state and development of the education system;
- sets educational standards;
- approves curricular documents;
- is responsible for teachers' salaries and teaching aids;
- approves the appointment of directors of regional educational departments;
- is in charge of the school register;
- is an organizing body of pedagogical centers and detention homes for young people.

Regions are responsible for upper secondary and special schools, basic art schools and out-of-school activities (before 2001 all under responsibility of the Ministry). The governor of the region appoints a director of the educational department who becomes the main decision-maker in education.

The communities are responsible for compulsory schooling. They establish and administer pre-school institutions and basic schools. The community usually fulfils this task via the Education Commission (*Komise pro výchovu a vzdělávání*).

The funding of schools is realized from two sources: capital and running costs are funded by the organizing body (i.e. region or community), salaries and teaching aids are funded by the State via regional administration. Organizing bodies appoint school heads; those appointed by the community are approved by the region, those appointed by the region are approved by the Ministry.

All schools have the status of legal entities since 1st January 2003. School heads were given full responsibility for the quality of educational process, for financial management of the school, for appointing and dismissing teachers and for relations with the community and the public. By law, the school organizing body may establish a School Council (*rada školy*) enabling parents, pupils, staff, and the public to participate in the administration of the school.

Private schools have been established since 1990 (at university level, since 1999). Schools are mostly non-confessional; the usual legal form is a for-profit or non-profit-grant-aided organization. Private higher education institutions must be non-profit-making to be given a state grant. The funding of private schools is provided by the region. It is based on the same formula for funding of running cost, as are the public schools. Basic subsidies (50–80% of the amount of similar public institutions, according to the type) can be raised to 100% (for basic and special schools), to 90% (for upper secondary and post-secondary technical schools), or to 80% (for other type of institutions) if the school meets a set of criteria. Denominational schools receive the same funding as public schools. Both private and denominational schools represent 3.46% of the total number of basic schools and 0.97% of their pupils; for upper secondary schools it is 22% of schools and 14.9% of pupils; for universities it is 53.8% of institutions and 3.2% of students in 2003/04.

The Czech School Inspectorate (*Česká školní inspekce*) is a central control body under the direct supervision of the Ministry. It is responsible for monitoring education results, the quality of management, the efficiency of using funds and complying with binding regulations, at all levels except for higher education institutions.

3. Pre-primary education

Nursery school (*mateřská škola*) is a part of the education system. The basic age group is from 3 to 6. Attendance is not compulsory; nevertheless it covers near 88.7% of the age group, in the last preschool year it is almost general. Nursery schools are administered by communities. The majority of schools are free but parents can be asked to pay a maximum of 30% of the running costs.

4. Compulsory full-time education

School attendance is compulsory for nine years, usually from the ages of 6 to 15. All pupils start in a basic school (*základní škola*), on second stage it is possible to attend a *gymnázium*.

(a) Phases

Institution	Typical age	ISCED level
Základní škola (single structure; primary and lower secondary)	first stage: 6-10; second stage: 11-15	1+2
Gymnázium (general lower secondary)	11/13-15	2

(b) Admissions criteria

Catchment areas are defined, but the choice of school is free. Pupils can leave a *základní škola* at the end of the fifth year for the eight-year *gymnázium* or at the end of the seventh year for the six-year *gymnázium* after passing the entrance examination set by the school. There is 9.3% of the appropriate age group studying at *gymnázium*.

(c) Length of the school day/week/year

The school year begins on 1 September and ends on 31 August of the next year. In 2003/04, the school year comprises 195 days of teaching. Lessons of 45 minutes are spread over five days a week. There is 22-25 lessons at the first stage, 27-30 lessons at the second stage (gradually).

(d) Class size/student grouping

In 2003/04, the number of pupils per teacher was 14.6; the average class size was 21.3. The law defines the number of pupils per class as between minimum 17 and maximum 30. The co-educational classes are made up of pupils of the same age. At the first stage, the same teacher usually teaches all subjects whereas, at the second stage, teachers are specialized, generally in two subjects.

(e) Curricular control and content

The national teaching standards set the objectives and the basic curricula content. To achieve them various educational programmes can be employed when approved. There are three national programmes. Each establishment is free to use teaching methods and textbooks (from a list approved by the Ministry).

(f) Assessment, progression and qualifications

Pupils are assessed by teachers on the basis of written and oral work and homework on a scale of 5. The results of continuing assessment are summarized in a report at the end of each semester. Verbal assessment is authorized at the first stage of basic school and used by about 8% of teachers. Meetings with parents are organized to discuss their children's progress. Pupils in difficulty can be made to repeat the year.

5. Upper secondary and post-secondary education

(a) Types of education

Institution	Type of education	Length	ISCED level	Typical age
Gymnázium	General upper secondary	4	3A	15-19
Střední odborná škola (SOŠ)	Technical upper secondary	4	3A	15-19
		3	3C	15-18
Střední odborné učiliště (SOU)	Vocational upper secondary	2	3C	15-17
		3	3C	15-18
		4	3A	15-19
SOŠ + SOU	Post-secondary (<i>nástavbové studium</i>)	2	4A	19-21

(b) Admissions criteria

Prerequisites for acceptance in upper secondary education are completing a compulsory education and successfully meeting entrance requirements. Pupils can apply for one or more schools of their choice. The content of the entrance examination (written and oral) is determined by the school. Prerequisite for acceptance in a *nástavbové studium* is completing three-year study on a *střední odborné učiliště* and successfully meeting entrance requirements.

(c) Curricular control and content

The Ministry lays down educational standards determining the aims and content and approves the curricula with a big flexibility. At *gymnázium*, there are prescribed 29–21 lessons of the total 31

lessons. The school head determines the rest according to the school profile. At technical schools, the total number of lessons is 33, while the proportion of general subjects and vocational ones is about 40:60. Some lessons are optional. At the vocational schools, there are 33 lessons too; the proportion of general subjects, vocational subjects and practical training is varying. Practical training in the three-year courses (a prevailing type) can take 30–45 % of lessons. A *nástavbové studium* provides pupils with general and theoretical subjects of the studied area. The content of individual subjects at all levels may be altered by up to 30%.

(d) Assessment, progression and qualifications

All upper secondary schools organise their own final examination: *maturitní zkouška*, in four-year courses (ISCED level 3A) and in a *nástavbové studium*, *závěrečná zkouška* in three- and two-year courses (ISCED level 3C). At technical and vocational schools, a part of the examination is practical. The leavers of vocational school are awarded a *výuční list*.

6. Tertiary education

(a) Types of institution

Institute	ISCED level	Length	Typical age
Vyšší odborná škola (tertiary technical school)	5B	2-3.5	19-21/22
Vysoká škola (higher education institution)	5A	3/4/5/6	19-22/26
	6	3	-

Tertiary technical schools provide students with advanced technical knowledge. Their curriculum is prepared by the school and approved by the Ministry. The proportion of general, basic vocational and specific vocational subjects is about 20:40:30.

Higher education institutions are either university-type (in 2004 28 institutions – 24 public, 4 state) or non-university type (28 private institutions). The study programmes are prepared by individual institutions/faculties and approved by the Accreditation Commission.

(b) Access

The *maturitní zkouška* certificate is the minimum entrance qualification for all tertiary education. Each institution defines its own admission criteria and determines the content of the entrance examination.

(c) Qualifications

Tertiary technical schools finish with a final examination called *absolutorium*. The graduate of *vyšší odborná škola* is called the *diplomovaný specialista – DiS.* (specialist with a diploma).

The courses at higher education institutions finish with a state examination. Medium type courses are awarded the title *bakalář – Bc.* (bachelor), while long-type courses or courses continuing after bachelor are awarded mostly the title *magistr – Mgr.* (Master); for some branches, there are specific titles: *magister umění – MgA.* (Master of Art), *inženýr – Ing.* (for technical and economic branches), in medicine and veterinary medicine (and after the exam *státní rigorózní zkouška*) the title *doktor – MUDr., MVDr.* For holders of mastery, there is a possibility to be awarded the title *JUDr., PhDr., RNDr., PharmDr., ThDr.* after the exam *rigorózní zkouška*. Doctoral studies finish with a doctoral examination and the title *doktor – Ph.D. (Th.D. in theology).*

7. Special needs

Special schools exist from pre-school through to upper secondary level. Their curriculum and qualifications are as close as possible to those of mainstream schools; 3.6% of the population falls outside mainstream education. Attendance at a special school requires a recommendation from an appropriate authority and parental consent. The new policy for integration is relatively recent but progressing.

8. Teachers

Four-year teacher training for pre-compulsory education is organized in general at the upper secondary level; there are also university courses at a Bachelor or Master level (three or four years). Would-be teachers at other levels of education must obtain a university qualification, generally Master level (for which study lasts four or five years). Teachers do not have civil servant status.

II. Ongoing Reforms and Topics of Debate in Education

Ongoing reforms and discussions on the development of education system in the Czech Republic are based on the main document the National Programme of the Development of Education in the Czech Republic - White Paper, other national concepts and strategies and documents issued at the European and international level.

- After the Parliamentary election in June 2002 and the new Government establishment the work on the new acts for education has started again; the three acts were approved 24 September 2004. They come into effect 1st January 2005 with the exception of some articles. The **Education Act** will replace all current laws on pre-primary, basic, upper secondary, tertiary technical and extracurricular education and on the administrations of education system. The **Act on Educational Staff** and their Career Development is intended to encourage educational staff to and create the base for further education. The implementation of the proposed procedures will have an impact on the salaries of teachers in relation to their qualifications and specific tasks. The third approved act resumes changes in related 15 acts. Consequently, complementary regulations are prepared.

- In the sphere of **higher education** the main issues discussed are related with the Bologna and Lisbon processes and with the economic situation of HE:

Restructuralisation of the study programmes and support for doctoral studies;

Pathway through the system of education:

- permeability between tertiary technical schools (*vyšší odborné školy*) and higher education institutions,

- recognition of the previous education, gained outside HE (Lifelong learning provisions) for further study;

Closer links between educational and R&D activities of HE institutions;

Quality assurance;

Changing the system of HE financing:

- to strengthen the qualitative criteria in the formula funding,

- to support (beside formula funding) the allocations to strategic and R&D programmes,

- to support funding from private sources,

- to transfer financial support for student's meals and accommodation from institutions to students.

- The **curricular reform** at ISCED 1, 2 and 3 is in progress: framework educational programmes (FEP) that represent a central level of the curricular system and define educational goals and key competencies as well as educational contents necessary for their achievement, have been in different phases of development. On the basis of the FEP schools will prepare their own school educational programmes.

- The FEP for basic education was approved in August 2004. It includes a FEP for special education needs. The new Education Act supposes that schools will start teaching according to FEP from the school year 2007/08.

- The FEP for upper secondary general education: after the discussion on the first version the pilot project in 16 schools started in September 2004.

- The FEP for upper secondary technical and vocational education: the main discussion passed in 2001 and 2002. The first FEPs for eight branches were prepared and verified at chosen schools (September 2002 - June 2003). FEPs for other branches were prepared in 2004.

- The **reform of public administration** has brought substantial changes in education between 1st January 2001 and 31 December 2002. In 2003 the public discussion continues focussing on the division of competencies and responsibilities between the regions and central institutions and on the funding. Regions require for more autonomy, which is conditioned financially. That is why regions ask for larger share in taxes and their responsibility for funding of schools instead of the Ministry.

EURYDICE: November 2004

Ict

Computers used in the business sector: 31 December

Indicator	2000		2001	
	Number of PCs (thous.)	PCs per 100 employees	Number of PCs (thous.)	PCs per 100 employees
Personal computers, total¹⁾	474.537	26,20	558.582	30,50
<i>Portable PCs (notebooks)</i>	45.926	2,54	58.308	3,18
<i>PCs connected to LAN²⁾</i>	349.044	19,27	400.762	21,88
<i>PCs connected to Internet</i>	239.209	13,21	309.197	16,88

¹⁾ Desktop computers, portable computers (notebooks), workstations and terminals

²⁾ Local area computer network

Information technologies in households: 2002*

Indicator	Number (thous.)	%
Number of households, total	4.156	100,00
<i>Fixed telephone line</i>	2.903	69,85
<i>Mobile telephone</i>	2.686	64,62
<i>Satellite</i>	491	11,80
<i>Cable television</i>	1.039	24,99
<i>Desktop computer</i>	1.024	24,64
<i>Desktop computer with access to Internet</i>	624	15,00
<i>Portable computer</i>	130	3,14
<i>None of these above</i>	384	9,23

Computer and Internet users, e-commerce		
Number of persons, total¹⁾	8.646	100,00
<i>Computer users</i>	3.037	35,13
<i>Internet users</i>	1.873	21,66
<i>Persons who ever bought a product via Internet</i>	232	2,68

^{*)} Reference period: July to October 2002

¹⁾ Persons aged 15+

Percentage of pupils of 15 years that assert of having a computer and one Internet logon to house. 1999/2000.

	CZ	IT	DE	FR
computer	55,2	69,7	87	65,8
internet	14,7	32,7	40	27,1

source: OCSE, PISA 2000.

National organs people in charge of the supervision and/or the promotion of the national political on the use of the TIC in the instruction. 2002/2003.

CZ	IT	DE	FR
Ministry	Ministry	Ministry	Ministry

source: Eurydice.

Primary school. Approaches to the TIC defined in the obligatory minimal program. 2002/2003.

CZ	IT	DE	FR
Not comprised in the obligatory minimal program	Not comprised in the obligatory minimal program	Didactic instruments	Didactic instruments

Inferior secondary school. Approaches to the TIC defined in the obligatory minimal program. 2002/2003.

CZ	IT	DE	FR
Self being subject (?)	Not comprised in the obligatory minimal program	Both the approaches	Both the approaches

Advanced secondary school. Approaches to the TIC defined in the obligatory minimal program. 2002/2003.

CZ	IT	DE	FR
Self being subject (?) Fonte: Eurydice.	Not comprised in the obligatory minimal program	Both the approaches	Both the approaches

The annual minimum of hours recommended for the instruction of the TIC like Self being subject. 2002/2003.

Inferior secondary school

CZ	IT	DE	FR
Flexible timetable	(-)	Flexible timetable	59

Advanced secondary school

CZ	IT	DE	FR
14	(-)	Flexible timetable	36

Livelli di responsabilità in fatto di acquisto e manutenzione del materiale. Istruzione primaria e secondaria. Anno scolastico 2002/2003.

CZ	IT	DE	FR
Responsabilità a livello locale e/o dell'istituto	Responsabilità a livello locale e/o dell'istituto	Responsabilità a livello locale e/o dell'istituto	Responsabilità suddivisa secondo il compito e/o il livello di istruzione

Numero medio di alunni per computer in scuole frequentate da alunni di 15 anni. 1999/2000.

CZ	IT	DE	FR
19,6	15,3	22,8	12,3

Percentuale media di computer riservati esclusivamente agli insegnanti e al personale amministrativo, in scuole frequentate da alunni di 15 anni. 1999/2000

	CZ	IT	DE	FR
insegnanti	20,3	10,2	9,9	8,6
Amministr.	15,1	13,0	12,9	13,4

**Percentuale media di computer collegati a Internet
in scuole frequentate da alunni di 15 anni. Anno scolastico 1999/2000.**

	CZ	IT	DE	FR
	39,8	24,1	37,3	26,3

Source: OCSE, PISA 2000

**Numero medio di alunni per computer in scuole private e pubbliche frequentate da
alunni di 15 anni. Anno scolastico 1999/2000.**

	CZ	IT	DE	FR
Pubblico	20,2	15,6	22,8	12,2
privato	11,2	10,4	20,7	12,2

Source: OCSE, PISA 2000

**Percentuale di alunni che frequenta una classe con accesso ad almeno un computer
collocato dentro o fuori dalla classe Anno scolastico 2000/2001**

	CZ	IT	DE	FR
Computer nella scuola	62,3	62,8	61,3	82,6
Computer in classe	12,3	6,0	47,6	41,6
Computer fuori dalla classe	60,1	60,7	53,8	78,0

**Livello e durata minima della formazione iniziale
per gli insegnanti specializzati nelle TIC Anno scolastico 2002/2003.**

	CZ	IT	DE	FR
	4	6	4,5	4

**Integrazione delle TIC nella formazione iniziale di tutti gli insegnanti (eccetto quelli
specializzati nelle TIC). Istruzione secondaria generale. Anno scolastico 2002/2003.**

	CZ	IT	DE	FR
Formazione all'estero		Componente obbligatoria	Opzione del curriculum di base	Componente obbligatoria

Relazione tra numero di alunni per computer e PIL pro capite espresso in SPA. (1999/2000).

	CZ	IT	DE	FR
Numero di alunni per computer	19,6	15,3	22,8	12,3
PIL 2000	59,6	101,3	102,0	103,8

*The key words of ITC in European school
Bruxelles: Eurydice 2004*

Ministry of Education, Youth and Sport of the Czech Republic

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telephone: 257 193 111, e-mail1:info@msmt.cz, e-mail2:posta@msmt.cz

University (links)

- [Charles University, Prague](#)
- [Czech Technical University, Prague](#)
- [J. E. Purkyne University](#)
- [Liberec University of Technology](#)
- [Masaryk University](#)
- [Mendel University of Agriculture and Forestry](#)
- [Palacky University](#)
- [Palacky University Medical School](#)
- [Prague Institute of Chemical Technology](#)
- [Silesian University](#)
- [South Bohemia University](#)
- [Technical University of Brno](#)
- [University of Economics, Prague](#)
- [University of Education Hradec Kralove](#)
- [University of Ostrava](#)
- [University of Pardubice](#)
- [University of West Bohemia](#)

Principal mathematic Istitutions (links)

Union of Czech Mathematicians and Physicists <http://www.jcmf.cz/toASCII.en/jcmf.html>

Math society of CeKia <http://cms.jcmf.cz/index.html.en>

Faculties and Departments (links)

- [Matematický ústav, Praha](#)
- [Ústav teorie informace a automatizace, Praha](#)
- [Ústav informatiky, Praha](#)

Univerzita Karlova v Praze

- [Matematický ústav](#)
- [Matematická sekce, Matematicko-fyzikální fakulta](#)
- [Informatická sekce, Matematicko-fyzikální fakulta](#)
- [Ústav aplikací matematiky a výpočetní techniky, Přírodovědecká fakulta](#)
- [Katedra matematiky a didaktiky matematiky, Pedagogická fakulta](#)
- [Katedra logiky, Filosofická fakulta](#)

České vysoké učení technické v Praze

- Katedra matematiky, Stavební fakulta
- Ústav technické matematiky, Strojní fakulta
- Katedra matematiky, Fakulta elektrotechnická
- Katedra matematiky, Fakulta jaderná a fyzikálně inženýrská
- Katedra aplikované matematiky, Dopravní fakulta

Masarykova Univerzita v Brně

- Sekce matematiky, Přírodovědecká fakulta
- Katedra matematiky, Pedagogická fakulta
- Katedra aplikované matematiky a informatiky, Ekonomicko-správní fakulta
- Fakulta informatiky

Vysoké učení technické v Brně

- Ústav matematiky, Fakulta elektrotechniky a komunikačních technologií
- Ústav matematiky a deskriptivní geometrie, Stavební fakulta
- Ústav matematiky, Fakulta strojního inženýrství

Univerzita Palackého v Olomouci

- Katedra matematické analýzy a aplikací matematiky, Přírodovědecká fakulta
- Katedra algebry a geometrie, Přírodovědecká fakulta
- Katedra matematické informatiky, Přírodovědecká fakulta
- Katedra matematiky, Pedagogická fakulta

Praha

- Katedra matematiky, Technická fakulta České zemědělské univerzity, Praha
- Katedra statistiky, Provozně ekonomická fakulta České zemědělské univerzity, Praha
- Ústav matematiky, Fakulta chemicko-inženýrská, Vysoká škola chemicko-technologická, Praha
- Katedra matematiky, Fakulta informatiky a statistiky, Vysoká škola ekonomická, Praha
- Katedra statistiky a pravděpodobnosti, Fakulta informatiky a statistiky, Vysoká škola ekonomická, Praha

Čechy

- Katedra matematiky, Fakulta aplikovaných věd Západočeské univerzity, Plzeň
- Katedra matematiky, Pedagogická fakulta Západočeské univerzity, Plzeň
- Katedra matematiky, Pedagogická fakulta Jihočeské univerzity, České Budějovice
- Katedra matematiky, Pedagogická fakulta, Univerzita Jana Evangelisty Purkyně v Ústí nad Labem
- Katedra matematiky a statistiky, Fakulta sociálně-ekonomická, Univerzita Jana Evangelisty Purkyně v Ústí nad Labem
- Katedra aplikované matematiky, Pedagogická fakulta Technické univerzity, Liberec
- Katedra matematiky a didaktiky matematiky, Pedagogická fakulta Technické univerzity, Liberec
- Katedra matematiky, Pedagogická fakulta Univerzity Hradec Králové
- Ústav matematiky, Fakulta ekonomicko-správní, Univerzita Pardubice

Morava a Slezsko

- Matematický ústav Slezské univerzity, Opava
- Katedra matematiky, Přírodovědecká fakulta, Ostravská univerzita
- Katedra matematiky s didaktikou, Pedagogická fakulta, Ostravská univerzita
- Katedra aplikované matematiky Fakulta elektrotechniky a informatiky, Vysoká škola báňská - Technická univerzita, Ostrava
- Katedra matematiky a deskriptivní geometrie, Vysoká škola báňská - Technická univerzita, Ostrava
- Ústav matematiky, Lesnická a dřevařská fakulta, Mendelova zemědělská a lesnická univerzita, Brno

SOURCES

Czech Statistical Office

European Commission

Eurydice

Ministry of Education, Youth and Sport of the Czech Republic

MFI: quaterly report III 2004

OECD Economic outlook n° 76

Eurostat

The Republic of Croatia



Location: situated on the cross-roads between Central Europe and the Mediterranean.

Government Republic

Administration

The Republic of Croatia is administratively subdivided into 20 counties [županije] plus the city of Zagreb [Grad Zagreb], also at the county level. The counties combine self-government with executive powers and a decentralized state administration. At the local level small communes [općine] exert local self-government.

Regional co-operation

Croatia has applied for EU membership. It co-operates also in the Working Community Alps-Adriatic, in the Working Community of the Danubian Regions and in the Adriatic-Ionian Initiative. The counties Koprivnica-Krizevci [Koprivničko-Krizevačka županija], Virovitica-Podravlje [Virovitičko-Podravska županija] and Osijek-Baranja [Osječko-Baranjska županija] co-operate with Hungarian counties in the Danube-Drava-Sava Euro-Region.

Official language Croatian

Alphabet Latin

Currency Kuna (100 lipa)

Population (1991.) 4,535,054

Number of islands 1,185 (66 inhabited)

Capital Zagreb (nearly 1 million inhabitants)

Main cities and inhabitants

Abbazia (*Opatija*) 12.719

Fiume (*Rijeka*) 144.000
Karlovac 49.000
Osijek 90.500
Pola (*Pula*) 58.500
Ragusa (*Dubrovnik*) 31.756.
Sebenico (*Šibenik*) 37.060
Sesvete 45.000
Sisak 36.785
Slavonski Brod 58.500
Spalato (*Split*) 175.000
Varaždin 41.000
Velika Gorica 33.339.
Vinkovci 33.239
Zagabria (*Zagreb*) 692.000
Zara (*Zadar*) 69.500

Religions:

Roman-catholics, orthodox, muslim, jews, protestants, others

economics

Economic growth level

When Croatia achieved its independence and started the transition to a market economy, Croatia created important preconditions for rapid growth. At the same time, rapid growth requires further structural changes so as to decrease unemployment and resolve fiscal problems. At present, growth is to a great degree the result of growth in domestic consumption and growth in tourism. Of the 3.9% growth achieved in 2000 and 2001, it is estimated that as much as 2.9% came from the expansion of tourism. This means that growth in the rest of the economy amounted to only 1%. Further expansion of tourism at the current tempo is possible only through more rapid privatisation and investment to improve the quality of services. Growth in exports is key to rapid growth in Croatia. However, at the moment one can only see this in the ship building sector, which has been heavily subsidized by the government. Without shipbuilding, export growth was negative since 1996, amounting to -1.4% annually. Thus, at the present, economic growth based on domestic consumption, tourism and subsidized ship- building exports, hides the weak competitiveness of Croatia. Weak competitiveness in foreign trade is an expression not only of the weak competitiveness of the exporters themselves but also of internal competitiveness. The comparatively high level of prices and wages ,i.e. labour costs, are visible and direct expressions of the weak competitiveness of Croatia. The source of growth up to now, domestic consumption and tourism, are not strong enough motors to create high growth rates and improve competitiveness.

GDP per capita 8,125 dollars

Deficit and GDP

Last year **Croatia's trade deficit reached 8.5 billion dollars (6.3 billion euros)** and its **foreign debt exceeded 30.2 billion dollars, or 80.5 percent of gross domestic product. Croatia's per capita GDP last year amounted to 8,125 dollars** while average salaries stood at some 600 euros. And it already enjoys substantial trade with the EU. In 2004, the EU bought some 65 percent of Croatia's exports and contributed 70 percent of its imports. Under an association agreement signed in 2001, seen as the first step towards membership in the bloc, the EU opened its market to most Croatian products, while Croatia agreed to gradually reduce customs duties on EU products. EU pre-accession funds to which Croatia is entitled as a candidate amount to 245 million euros in 2005-06.

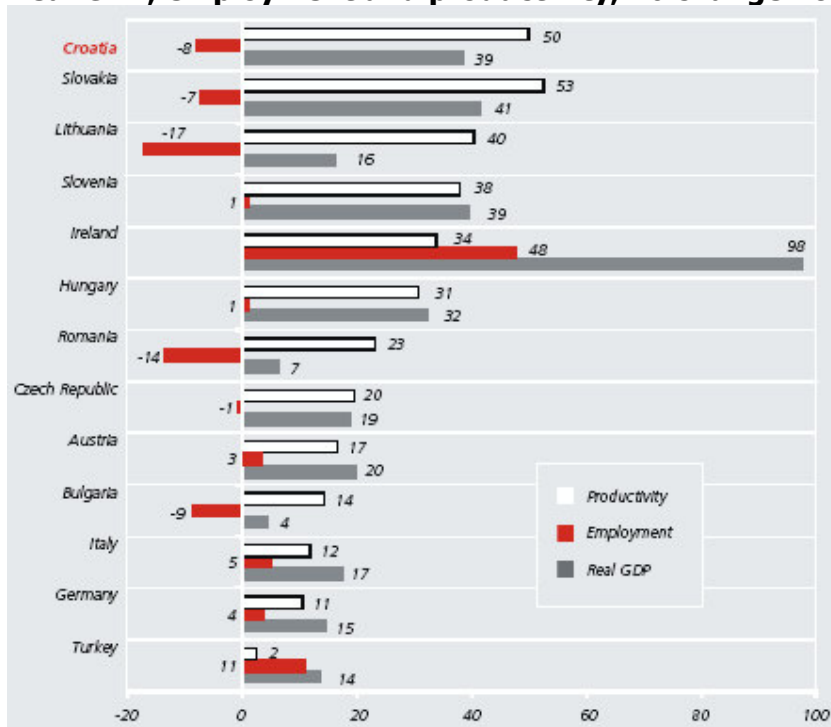
The Human Development Index

The human development index (HDI) focuses on three measurable dimensions of human development: living a long and healthy life, being educated and having a decent standard

of living. Thus it combines measures of life expectancy, school enrolment, literacy and income to allow a broader view of a country's development than does income alone.

Although the HDI is a useful starting point, it is important to remember that the concept of human development is much broader and more complex than any summary measure can capture, even when supplemented by other indices. The HDI is not a comprehensive measure. It does not include important aspects of human development, notably the ability to participate in the decisions that affect one's life and to enjoy the respect of others in the community.

Real GDP, employment and productivity, % change 2001/1993



Source: Economic Survey of Europe 2002 No.2., UNECE.

Education

Educational environment

General information on the education system in the Republic of Croatia.

Education is organized in 1.886 facilities (not including branch schools or adult education institutions) with the participation of 850.722 children (pupils and students) and 62.499 teachers (educators, professors).

- Over 20% of the population is directly involved in the education system.
- The numbers associated with the adult education institutions - 372 legal entities, 23.000 students and their 1.300.000 parents and guardians, contribute to the evaluated 50% of the citizens of the Republic of Croatia who have a direct interest in quality formal education.
- Education is identified as the largest system, but in addition to this, the developed countries also identify it as the most crucial for the future of a nation.

Institutions, students and teachers involved in the education system 2001-2002

Area of Education	Number of Institutions	Number of Students	Number of Staff
Pre-elementary Education	329 kindergartens	133.260 children	7.190 kindergarten teachers
Elementary Education	825 central and 1270 branch schools	398.459 pupils	30.766 teachers
	52 music schools	10.347 students	1.297 teachers
	16 schools for children with special needs	2.960 students	556 teachers
Secondary Education	363 schools (incl. 7 specialized and 22 schools of music and dance)	192.402 students	14.644 teachers
	53 dormitories	6.303 students	346 teachers (carers)
Higher Education	90 higher education institutions	99.343 students	7.700 professors
Private Education	125 kindergartens	3.580 children	
	6 elementary schools	512 pupils	
	14 secondary vocational schools and <i>gymnasiums</i>	1.379 students	
	10 catholic gymnasiums	2.016 students	
	2 high schools of other denominations	161 student	
Total	1.886 (excluding branch schools)	850.722	62.499 (excluding the private sector)

Source REPUBLIC OF CROATIA MINISTRY OF EDUCATION AND SPORTS
EDUCATION ADVISORY COUNCIL

Compulsory education model
(3+3+3+1) or (6+3+1)

1	ELEMENTARY SCHOOL										compulsory	
2												
3	-----											
4												
5												
6												
7	1											compulsory
8	2	JUNIOR HIGH SCHOOL										
9	3											
10	1	(GRADE TEN)										(compulsory)
11	2											Non-compulsory
12	3	SENIOR HIGH SCHOOL										
13	4											

Compulsory education lasts nine years and is divided into three 3 year cycles. Each cycle is viewed as independent and complete in terms of organization, content and methodology.

The first two thirds (Grades 1 through 6, i.e. the primary level) are called *elementary school*, while the last third is called *junior high school* (Grades 7, 8 and 9). Each compulsory education cycle provides for an easy progress and integration into the higher level. All three cycles as a whole, and especially the third cycle, provide for the continuation of education toward the acquirement of the principal occupation or the advanced studies at colleges and universities.

Higher education. *A strategic goal of Croatia is to evolve into a knowledge based society, to create a basis for the prosperity of Croatian people and to bring its economic development as close as possible to the standards of the developed countries of the world. The present state of higher education in Croatia partly facilitates but partly also impedes these processes. Croatian higher education is characterized by the following paradox: on the one hand, the newly established state with barely 4.5 million inhabitants is in the process of setting up its sixth university, at the moment there are also 13 'polytechnics' in Croatia and 6 private schools of professional higher education. Out of about 4,000 university professors, some 15 percent are internationally recognized, and about 5 percent regularly contribute to internationally renowned professional publications and take an active part in international research projects.*

On the other hand, Croatia is at the lower end of European qualifications scale, with only 13 percent of working population with a higher education degree. To make things worse, the period spent studying is unjustifiably long resulting in a costly and inefficient studying process.

In order to realize its strategic goal Croatia has taken it upon itself to promote education intensively, with an emphasis on higher education: (a) The acceptance of European standards in the area of scientific research and higher education has initiated significant changes within Croatian science and higher education, the aim of which is to

raise a level of efficiency in these areas and thus facilitate Croatian integration into ERA – European Research Area and EHEA – European Higher Education Area; (b) An increase in the number of students will alter the percentage of university and college educated citizens and thus provide Croatia with human resources necessary for its development; (c) The planned changes will be made feasible by financially strengthened science and higher education. For this purpose, following the Government's decision of the 28th November 2002, in the next eight years **the budgetary investment into these areas should increase by at least 10 percent annually, as compared to each preceding year.**

The University

Today Croatia has five universities: the University of Osijek, Rijeka, Split, Zadar and Zagreb, and the sixth, the University of Dubrovnik is going to start working soon. The University of Zagreb is the oldest and the largest. It has 60,000 students, about 3,500 teachers and teaching assistants as well as 2,000 administrative staff. It consists of more than 30 faculties, 3 art academies and one university study programme. The University of Zadar is the most recently established and the smallest. The five universities include 59 faculties (30 in Zagreb, 10 in Rijeka, 9 in Split, 9 in Osijek, a departmental organization in Zadar), 4 academies of arts (3 in Zagreb, 1 in Split), 3 university departments at traditional universities (1 in Osijek, 2 in Split), one university study programme (Zagreb), and one professional school within the university. Vocational studies are carried out by 7 'polytechnics', including 25 departments, 6 independent higher schools of vocational training, 1 teacher training college and 8 teachers' schools of professional higher education, as well as 11 private higher schools of vocational training. Altogether, Croatian higher education system has a total of 88 public higher education institutions. The annual enrolment is about 35,000 students, which makes more than a half of all high school graduates. There are actually about 140,000 students: approximately 105,000 at the university, 23,000 at 'polytechnics' and 12,000 at private and public higher schools..

Source REPUBLIC OF CROATIA MINISTRY OF SCIENCE AND TECHNOLOGY

Financial resources in education

In finances, the main issues are:

- The overall size of the education budget, budgeting and allocation mechanisms, and structure of expenditures;
- The role of municipalities and private resources in financing education; and
- The impact of distortions in finance on equity, transparency and adequacy of provision.

The share of education in GDP is around 3.4 percent, less than the European average. During the 1990s, this share went down during the war years and is now gradually increasing. The current level, however, is still insufficient to fulfil the needs of schooling, rehabilitation of infrastructure or development of modern educational instruments. Moreover, there are no incentives for private and other non-state financing. As a result, non-state finance remains mostly informal limiting transparency.

The share of education expenses from the state budget is just below 12 per-

cent. Relatively little additional municipal funding and insignificant private investment supplement this. The share of education from municipal budgets has decrease to roughly 10 percent of total public education spending over the last few years.

Finance is divided between the MES (87 percent) and the municipalities (13 percent) by giving the MES the authority to allocate funding for basic, secondary and higher education and giving the municipalities the responsibility of financing pre-primary education. Capital investments are shared between central and local authorities. As pre-primary education, covering roughly 30 percent of the age cohort, is financed locally and funding is not secured in all regions, pre-primary educational services are allocated unequally.

The division of financial responsibilities does not reflect a clear policy perspective for either side. By focusing on recurrent expenses at the central level, the government may not be able to introduce incentives for efficient service delivery. Meanwhile, the split of capital investments between local and central offices fragments the already constrained opportunities to follow central or local priorities or implement development projects on either level. At the central level, no adequate management information system exists to assist in developing an appropriate investment strategy. Croatia faces lack of space in some schools and inefficient space use in others. Educational facilities are often inadequate. Many school buildings were damaged in the war and others are old or in disrepair. Although there is no systematic information on regional differences, to the extent there are such differences, the funding mechanisms would be able to do little to address this. Budgeting is incremental and relies on the previous years 'allocation without medium-term planning and without strategic investment targets. The central budgetary allocation mechanism is rigidly based on central control of inputs, providing limited incentives for efficient service delivery at the local level.

The MES appears to discourage the existence of independent private schools. Some private schools are State subsidized and have little more autonomy than public schools. Such a policy stifles the development of healthy alternatives in curriculum and methods and does not provide a desirable model for diversity. Private schools can also be useful in reducing overcrowding problems in public schools. As a result of the above factors, equity and transparency concerns may not be adequately addressed. With limited public finances and no significant incentives for non-public investment, no new priorities may be efficiently supported or sustained. Without a clear sense of the relationship of current expenditures relative to the cost of an adequate education system, policy makers may hold unrealistic expectations the ability of schools to produce desired outcomes.

Source: The World Bank.

ITC

General ITC Environment

Internet: The larger towns on the main islands have Internet points, but most of the smaller islands do not. The typical system is to pre-pay for time. One is given a card with a PIN to type into the computer, with unused time transferable to the next session. Time cards come in varying denominations from 15 minutes to 5 hours. The larger cards often cost less per minute, so if one is planning on multiple sessions, the initial purchase of a larger card makes sense.

Indicators of the use of information and communication technology by country (per 1000 population) 2001

	Number of Internet users servers	Number of personal computers lines	Number of secure Internet lines	Number of main telephone in total subscribers	Number of mobile subscribers of total phone subscribers	Share of phone subscribers	Number of telephone lines and mobile subscribers
	2001	2001	2001	2000	2001	1999	2001
Austria	31,9	310	82,3	466,8	807	..	127,5
Bulgaria	7,5	49	2,2	350,3	191	11,6	55,1
Czech Republic	13,6	136	26,6	377,9	659	50,2	103,3
Croatia	11	142	13,9	375,8	395,1	19,9	74,2
Ireland	23,3	390	91,3	419,8	729	..	121,4
Italy	27,6	190	18	473,8	839	..	131
Lithuania	9,8	71	12,3	321,1	253	30	56,6
Hungary	14,8	100	12,5	372,4	498	44,9	87,2
Germany	36,4	350	62,7	610,5	683	..	131,8
Romania	4,5	36	2,4	174,6	172	39,8	35,5
Slovenia	30,1	275	51,3	386,3	758	82,4	116,1
Turkey	3,8	41	3,3	279,9	302	..	58,7
EU 15	32	310	40	544	724
World	8,1	163,1	32,3

Source: World Bank Development Indicators, Eurostat, Central Bureau of Statistics.

Costs of business in sample countries (2001)

	Cost of domestic telephone conversations -calls to the USA (2000)	Costs of telephone conversations -calls to the USA (2000)	Use of the Internet (2001)	Costs of diesel fuel	Costs of electric energy	Costs of natural gas	Differences in Interest rates
	\$/3 min	\$/3 min	\$/30 hours, lower tariff/rate	\$/l	€/100 Kwh	€/GJ	%
Average 12	0,1	1,676	17,89	0,59	7,69	6,53	5,15
Austria	0,15	-	17,21	0,49	10,34	10,91	3,56
Bulgaria	-	-	7,77	0,58 ²	5,21	5,1	8,23
Czech Republic	0,13	0,972	11,6	0,55	6,19	5,56	4,09
Slovakia	0,1	1,131	9,05	0,68	6,71	3,66	-
Ireland	-	-	16,45	0,72	6,95	8,59	4,74
Italy	0,12 ¹	-	17,62	0,68	14,2	12,11	4,57
Lithuania	0,06	3,098	45,38	0,55 ²	6,14	5,42	6,63
Hungary	0,09	1,276	26,33	0,62	6,27	3,63	2,85
Germany	0,09	0,338	13	0,64	9,91	7,06	6,45
Romania	0,11	2,487	15,37	0,33	5,03	3,22	-
Slovenia	0,04	0,809	29,5	0,66 ²	-	-	5,24
Turkey	0,11	3,299	5,45	0,62	-	-	-
Croatia	0,1	1,54³	20,83	0,62	5,62	6,24	6,32

Source: World Bank Development Indicators, Euro stat, National Energy Regulators (costs of energy, natural gas in transition countries) Croatian Telecom. Notes: 1-1999; 2-2000; 3-costs of telephone calls are prices in 2003, deflated by 2000 prices.

Teaching technology

- In the first cycle of compulsory education ((first three grades)class activities should be organized outside classrooms, in schoolyards or in the vicinity of the school
- The students--oriented teaching methods should prevail over commonly practiced direct lecturing in primary and junior high school. In this way, lectures will be enriched by panel discussions or presentations of individual research or project results
- In stead of an accentuated subject--oriented system, in the second and third cycle of compulsory education schools may introduce epoch-based lecturing. That means that instead of one hour of a particular subject per week throughout the school year, students will be given a concentrated learning schedule of that subject in a period of one or two months in total by having two to three hours per week. In the second and third cycle, schools can include more so- called block-hours into their timetable.
- One of the main characteristics of the teaching technology and teaching communication in the near future will be the use of personal computers as well as multimedia and Internet, for both learning and tutoring.
- In the first grades of primary school, students will acquire basic knowledge of computers and Internet through mathematics, Croatian and foreign languages as well as other subjects.
- The entire school atmosphere will be enriched by half--or whole day trips, classes in nature, joint winter or summer camps and weekend camping trips.

Teaching equipment. *Under the term teaching equipment we assume teaching material and aids that are not sources of new information on their own but rather serve as an agent in transferring scientific information in the teaching procedure and facilitate the learning process.*

They are: computers (computer classrooms),TV sets, video-projector, audio-players, applications, didactic posters, components of physical, chemical, electrical-engineering, medical and other vocational laboratories, cabinets, practicums and workshops for practical training, as well as school boards, school furniture, sports hall equipment, etc. In line with new curricula, furnishing standards for all school areas will be imposed and applied to all schools.

Source REPUBLIC OF CROATIA MINISTRY OF EDUCATION AND SPORTS.
EDUCATION ADVISORY COUNCIL

Basic indicators of R&D, 2000

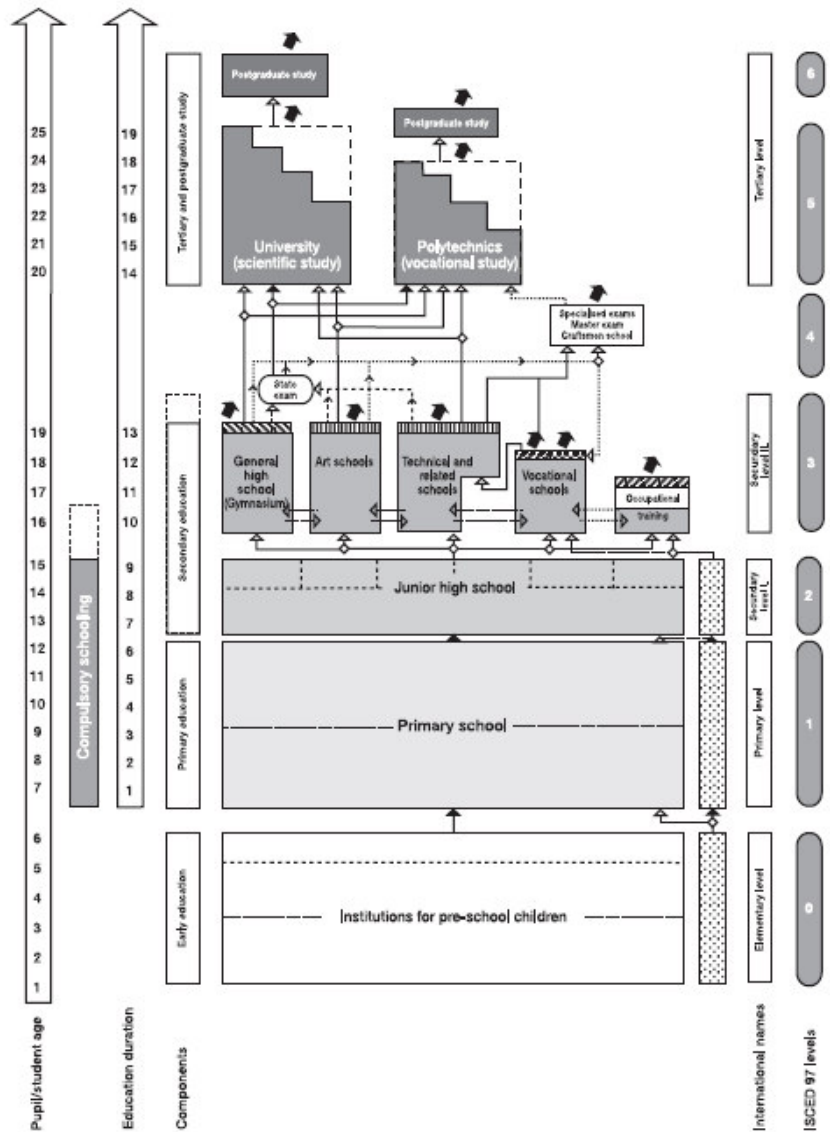
	R&D expenditures (mil €)	R&D expenditures per capita	R&D expenditures % GDP	% R&D in the business sector	Number of researchers per 10,000 employees	Patent filings of residents per mill inhabitants (99)
<i>EU-15</i>	141,2	374	0,90	66	52	-
<i>Germany</i>	50,316	612	2,46	70	60	904
<i>Austria</i>	3,687	455	1,79	56	34	380
<i>Ireland</i>	1,076	283	1,21	74	51	327
<i>Italy</i>	11,524	200	1,04	54	33	167
<i>Slovenia</i>	297	149	1,52	56	21	147
<i>Czech Republic</i>	744	72	1,33	60	26	60
<i>Hungary</i>	405	40	0,8	44	31	77
<i>Lithuania</i>	73	21	0,6	22	-	24
<i>Turkey</i>	851	13	0,6	38	8	5
<i>Bulgaria</i>	71	9	0,52	21	13	37
<i>Romania</i>	149	7	0,37	69	-	48
<i>Croatia (2001)</i>	276	63	1,25	42	37	61

Source: Eurostat, Statistics in focus, Theme 5-1/2003 "Research and development 2000" Central Bureau of Statistics.

Note: Indicators of R&D intensity are calculated as percentage shares in GDP of gross expenditures on research and development.

appendix

STRUCTURE OF NEW EDUCATION SYSTEM IN THE REPUBLIC OF CROATIA



Names of ISCED levels:

- 0 Pre-primary education
- 1 Primary education or first stage of basic education
- 2 Lower secondary or second stage of basic education
- 3 (Upper) secondary education
- 4 Post-secondary non-tertiary education
- 5 First stage of tertiary education
- 6 Second stage of tertiary education

EXPLANATION OF THE SCHEME OF NEW EDUCATION SYSTEM IN THE REPUBLIC OF CROATIA

The scheme displays the structure of education system in a simplified way, respecting the International Standard Classification of Education (ISCED '97).

Due to being simplified, as specific for the schematic reviews, the scheme is consequently incomplete in terms of complexity of the structure of the system, number and characteristics of the process run through it as well as links between its subsystems. Therefore, in order to understand it in the whole it is necessary to have in mind wider explanations from the previous sections of this document. Adult education subsystem is briefly indicated while the programs of informal education are omitted in whole.

0. Early childhood education and nurturing

0.1 Early childhood education (ECE) covers the period from the child's birth to his admission to primary school.

0.2 ECE programs are carried out in kindergartens, ECE centers, groups organized at primary schools, children's homes, libraries, play-groups, hospitals...

0.3 ECE in kindergartens is divided into programs for children from six months to three years of age, and children from three to six years of age. Programs can be organized on a whole day, halfday basis or shorter, and may be integral and /or specialized ones.

0.4 In the year before that proceeds the admission to primary school, the entire population is invited to participate in the program called "pre-school" (250 hours).

0.5 Special programs are designed for children with difficulties in development when they are not integrated into "standard" ECE programs.

0.6 Participation in ECE institutional programs is not compulsory and is not a condition for admission to primary school.

1. Primary school

1.1 Primary school takes six years and is the first part of compulsory education (that includes also lower grades of secondary schools).

1.2 Admission to primary school is allowed for children who turned six years of age.

1.3 Primary education is divided in two cycles of three years each that are separated organizational, compositional and methodological units; they are designed to alleviate the transition from class to subjects-oriented teaching and to enable continuation of compulsory education.

1.4 Student success at the end of primary school will not effect continuation of his/her education, and eventual evaluation of educational outcomes at the end of primary school and the end of compulsory education has information and advisory role for students and their parents.

1.5 For children who are not included into "regular" primary school, there is specially designed primary education with adjusted programs.

2. Lower secondary school (Junior high school)

2.1 Educational cycle of three years completes compulsory education.

2.2 In lower secondary school, besides general core subject, acquisition of knowledge and skills required at life-long education and learning processes (ICT, foreign languages, social skills) are encouraged along with providing professional information system and counseling services.

2.3 Lower secondary school, particularly at its final grade, provides individualization of teaching and internal differentiation to the large extent by offering various optional educational modules.

2.4 Students who will not proceed with their education in three-years or four-years schools are obliged to attend the 10th year of education during which they will acquire skills for their first, more simple education.

2.5 At this level, children with difficulties in development will be included in integrated classes or will attend special, adjusted programs.

3. (Higher) secondary education (Senior high school)

3.1 Education at this level enables students to continue their education or "to exit" to labor market.

3.2 Admission to (higher) secondary education assumes completion of compulsory education, and is divided into:

- gymnasium education,
- art education,
- vocational education.

3.3 At this level of education it is possible to transfer from one educational program to another under the certain conditions (comprehension of differential subjects).

3.4 Gymnasium education (four years) is general, and teaching subjects are formed in modular way and allow preference in terms of higher participation of particular teaching topics/fields (social, natural science, language, mathematics, information, technical ...), thus the selection of individual educational path, at the beginning of this level or even later.

3.4.1 Admission to gymnasium is based upon achievements/grades from the lower secondary school

and grades of a project task from the final year of compulsory education.

3.4.2 Gymnasium education ends up with school or state school leaving exam.

School leaving exam is compulsory for students who will not take state exam and does not allow direct admission to higher school education.

State school leaving exam (adjusted to requirements of related higher education institutions) is optional and replaces entrance exam to faculties. State exam is available to vocational school graduates (after four-year artistic or vocational education).

3.4.3 Students who will not continue their education at higher education institutions "exit" to labor market either directly or by being trained (apprentice exam).

3.5 Art education includes the fields of fine arts, music and dance as well as (eventually) drama. Educational cycle at this level takes four years except for fine arts program that may last even five years.

3.5.1 Admission to art schools is based on assessment of student's skills and capabilities and grades from certain subject from the previous education.

3.5.2 Art education at this level ends up with final exam - vocational school leaving exam, after which - under certain terms - students are allowed to apply for admission at related (art) academies or universities.

3.5.3 Students who will not proceed with their education at higher education level "exit" to labor market directly, though they can be trained for any other vocation (by passing apprentice exam).

3.6 Secondary school vocational education is different in terms of teaching topics and duration.

3.6.1 Four-year program consist of general core and vocational (theoretic and practical) subjects, modular-programmed teaching topics, where the ratio between theory and practical experience is 70:30 (alternatively 60:40).

3.6.1.1 Admission to this program is based upon the success from the lower secondary school and the success achieved in project task from the last year of compulsory education.

3.6.1.2 Four-year vocational education ends up with vocational exam which consists of project task and the assessment of knowledge from three vocational core subjects, after which student may enroll to related faculties under conditions determined by higher education institution.

3.7 In vocational education that takes three or three-and-half years training for practical vocations (crafts) is more emphasized. General core subjects are adjusted to the needs of an occupation, and the ratio between vocational theory and practice is 30:70. Practice-based learning is implemented not only in school workshops but also in workshops at commercial companies who hold the license to conduct practical teaching.

3.7.1 Training for particular occupations terminates with final exam (that includes also general education core subjects) or with apprentice exam (providing only professional qualification). They "open" the door to labor market assuming also that students who passed final exam may continue their education in many ways, for example by being prepared for craftsmanship exam after termination of practical work or craftsman school, i.e. after having accomplished a part of four-year vocational school program (1.5 - 2 years).

3.8 Programs that last up to two years student provide qualification for more simple occupations (lower qualification).

One-year training programs are compulsory for all those students who did not manage from whatever reason to enroll to the first grade of secondary education at this level.

4. Education after secondary school that is not higher education

4.1 With the exception of craftsman school, this level of education is not included in the scheme. This is relevant to various forms of formal and informal education mostly referring to training and upgrading the skills of adults, with the purpose of retaining their employment, i.e. becoming employable (self-employment and employment).

5. Higher school (undergraduate) education

5.1 Higher education is divided into scientific study (5A, minimum three years) and professional study (5B, two years at least).

5.2 State exam enables direct admission to the majority of higher education institutions.

5.3 Transfer from scientific to professional study and vice versa is possible under certain terms.

5.4 Higher education ends up with diploma exam.

6. Higher school (postgraduate) education

6.1 Postgraduate education may be:

6.1.1 after scientific study - specialized study for particular very complex professions or education directed to Masters or Ph.D. degree,

6.1.2 after scientific study - highly professional specialization in the particular area.

The Republic of Poland



Country (long form) Republic of Poland

Capital Warsaw

Total Area 120,728.35 sq mi V 312,685.00 sq km (slightly smaller than New Mexico)

Religions Roman Catholic 95% (about 75% practicing), Eastern Orthodox, Protestant, and other 5%

Government Type The Republic of Poland is a state with a republican political system in which the supreme power is vested in the Nation (viz. its citizens)

Population Poland has been situated to the eighth place in Europe with a population of **38.800.000 inhabitants**, 51% of which is women.

More of 62% it lives in the cities.

The force job of Poland is one of young in Europe: 60% are under the 40 years (approximately 23.000.000).

Local Authorities

One of the five guiding principles of the Constitution adopted on April 2nd 1997 outlining the legal basis of Poland's political system is the principle of elected local government. The Constitution states that local government participates in the exercise of power.

Local government structures were revived in Poland in 1990. The basic (lowest) organisational unit of local government is the gmina - a municipal (urban) or rural administrative district. The group of all the gmina districts in a given voivodeship (the major territorial division; alternative spelling voivodship) convene at their sejmik or regional council.

In 1999 a new three-tier division of local government was introduced. The three tiers in local government are the gmina (basic level), an intermediate level called the powiat (alternative spelling powiat), and the major territorial unit, called the voivodeship (Polish województwo). There are 16 voivodeships.

Local government's decision-making and supervisory bodies are the councils (rada), which operate at all three levels. The councils make basic decisions on matters affecting their respective jurisdictions. They set local by-laws, pass budgets and inspect their execution, set local taxes and charges (on the grounds of existing legislature) and adopt resolutions on matters of property rights. The councils appoint and dismiss the following local administrative officers: the wójt, the chief administrator in a gmina; the mayor (burmistrz in small boroughs and prezydent miasta in large municipalities); the starosta or starost, the chief administrative officer at powiat level; and the marszałek sejmiku, the speaker of the sejmik voivodeship council. Council members are elected in general, direct elections on the secret ballot and "one person-one-vote" principle.

economy

General information on the polish economy

Since the turning point of 1989, Poland has undergone great political, social and economic changes. The introduction of democratic structures, the shift from a command economy to the free market and wide-ranging systemic reforms are all achievements of which Poles can be proud.

The start of the economic reform process was extremely tough. During the period of transformation, the Polish economy was still therefore in an awful state and radical reform was selected as the only solution to save it. To this day, Polish opinion is still divided as to the effects of this decision. But there is not little doubt about one thing: without such reforms the costs of the transformation would have been significantly higher and Poland would not have come as far down the road towards the EU as it has.

In January 1990, state-controlled prices were lifted and from then on food and trade margins were largely shaped by market forces. The market reform plan assumed that prices would rise on average by 50%. In fact, they rose at the time by 78% and some goods and services by even as much as 600%. But this was a first step towards prices as they operate in developed capitalist economies. Furthermore, demand and supply were again activated.

Real GDP growth rate of GDP - Growth rate of GDP at constant prices (1995=100) - Percentage change on previous year

	2001	2002	2003	2004	2005
eu25 EU	1.07	1.01	0.09	2.03	2.3 f
eurozone 12	1.06	0.09	0.05	2.00	2.0 f
de Germany	0.08	0.01	-0.1	1.06	1.5 f
it Italy	1.08	0.04	0.03	1.02	1.8 f
pl Poland	1.00	1.04	3.08	5.03	4.9 f

Eurostat 2005

GDP per capita in PPS - GDP per capita in Purchasing Power Standards (PPS), (EU-25=100)

	2000	2001	2002	2003	2004	2005
eu25	100	100	100	100	100	100
eurozone12	108,5	108	107,4	106,9 f	106,4 f	106,0 f
de	112	110,1	108,7	108,1	107,5 f	106,7 f
it	111,3	111,4	109	106,9 f	105,4 f	104,8 f
pl	46,3	45,9	45,6	46	47,5 f	48,7 f

Eurostat 2005

Economic growth level

The reforms of the transition period and subsequent hard and consistent monetary policy gave the Polish economy solid foundations: a strong currency and permanently falling inflation (currently at about 1%). The implementation of systemic reforms and responsible government policies, as well as improved global competitiveness, mean that expectations of a return to fast-track economic growth are justified.

Inflation rate - Annual average rate of change in Harmonized Indices of Consumer Prices (HICPs)

	2001	2002	2003	2004	2005
eu25	2.05	2.01	1.09	2.01:	
eurozone	2.03	2.03	2.01	2.01:	
de Germany	1.09	1.03	1.00	1.08:	
it Italy	2.03	2.06	2.08	2.03:	
pl Poland	5.03	1.09	0.07	3.06:	

Eurostat 2005

Poland and the European Union.

Poland, that from 1994 is a country associated with the European Union, is being approached the great historical moment of its adhesion to the UE. In fact in December 2002, during apex UE of Copenhagen, Poland, with to other countries candidates, has closed the negotiations - opening the way to the writing of the Treaty of Adhesion, that it establishes the conditions based on the which Poland will become a future member of the European Union. It's important to remember that the trades exchange between Poland and the UE has been completely liberalized. In fact, except that for the agricultural products, customs duties do not exist.

The main economic partners of Poland are the states members of the UE. In fact approximately 70% of the exchanges are directed with the countries of the UE (in spite of the recession economic the Germany is asserted the first partner, followed from France and Italy).

Employment

The impetuous development of the young nation, and the abrupt passage to a various management of the economy and the way of production, has determined a particularly heavy period in terms of indirect labor costs. The leading indicator to observe, in these circumstances, is the course of the employment. The actual data is showing that, in front of a situation sufficiently controlled in the area of the euro, Polish trend of employment still remains with the negative sign. However, all the other pointers promise to a reorganization enough speedy of the situation.

Total employment growth - Annual percentage change in total employed population

	2001	2002	2003	2004	2005
eu25 EU	1.01	0.03	0.02	:	:
eurozone	1.04	0.05	0.01	:	:
de Germany	0.04	-0.6	-1.0	:	:
it Italy	2.00	1.08	1.02	:	:

pl Poland	-0.6	-2.2	-1.2	:	:
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Eurostat 2005

Other pointers of particular interest for one corrected appraisal of the general course of the economy

Public balance - Net borrowing/lending of consolidated general government sector as a percentage of GDP

	2001	2002	2003	2004	2005
eu25	-1.2	-2.3	-2.9	-2.6	:
eurozone	-1.7	-2.4	-2.8	-2.7	:
de Germany	-2.8	-3.7	-3.8	-3.7	:
it Italy	-3.0	-2.6	-2.9	-3.0	:
pl Poland	-3.9	-3.6	-4.5	-4.8	:

Eurostat 2005

comparative price levels of final consumption by private households including indirect taxes (EU-25=100)

	2000	2001	2002	2003	2004	2005
eu25	100	100	100	100	:	:
eurozone	:	:	:	:	:	:
de Germany	105,6	107,1	107,5	108,9	:	:
it Italy	94	95,5	97,9	102,2	:	:
pl Poland	56,3	63	59,5	53,3	:	:

Eurostat 2005

Price of telecommunications - local calls

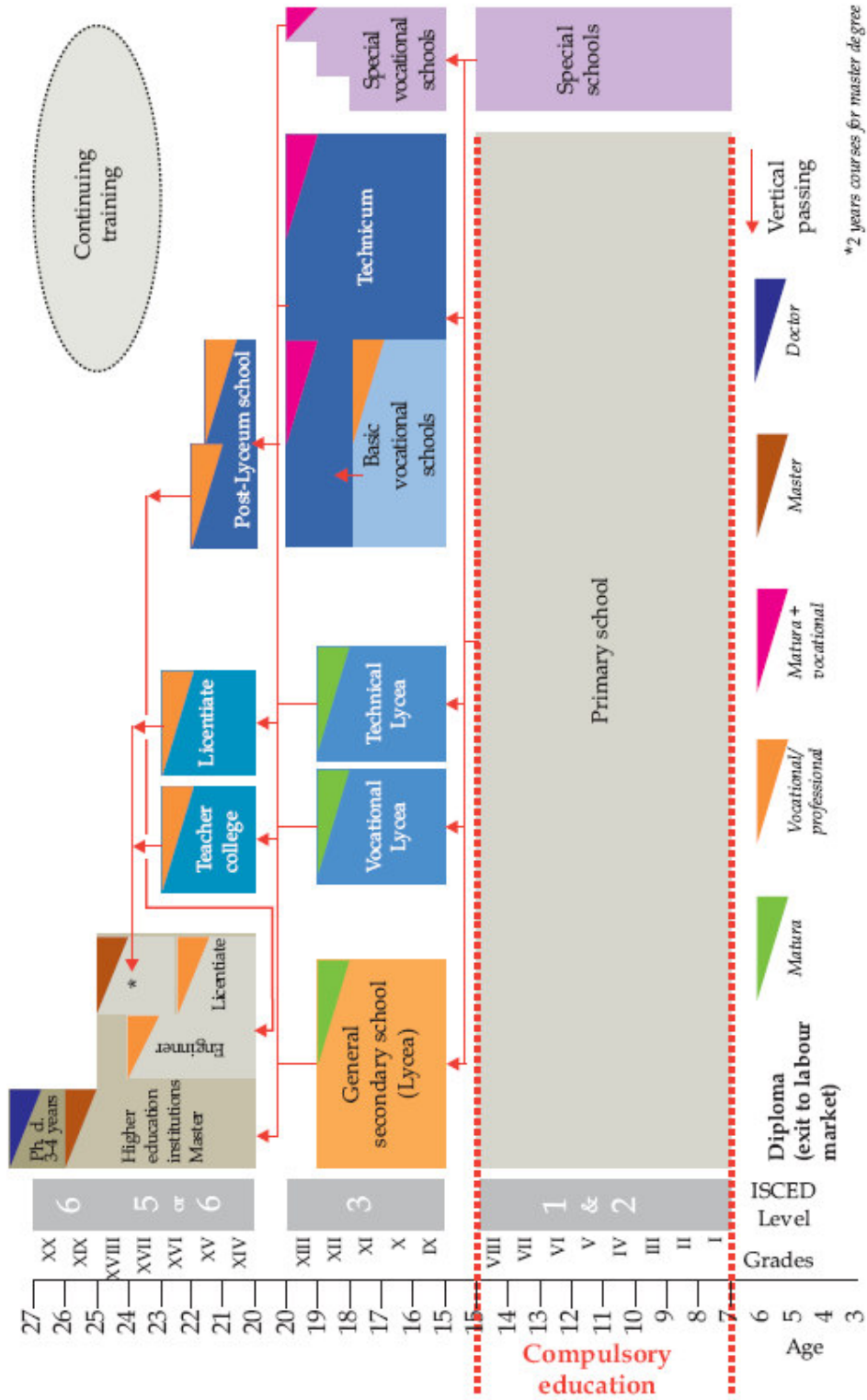
Price level and evolution in the telecommunications market (in Euro per 10 min call)

	2000	2001	2002	2003	2004	2005
eu25	:	:	0,38	0,38	0,37	:
eurozone	0,36	0,36	0,36	0,36	0,36	:
de Germany	0,43	0,43	0,42	0,42	0,42	:
it Italy	0,25	0,25	0,25	0,25	0,25	:
pl Poland	0,32	0,32	0,32	0,32	0,32	:

Eurostat 2005

education

Education system in Poland



This diagram represents the first stage in the ongoing development of a standard graphical model for vocational education and training systems. Future refinement may include the further alignment of terms, student enrolment and drop-out figure, and local language terms.

School structure

The Polish educational system consists of elementary (primary) schools, middle schools, secondary schools (general grammar schools, technical grammar schools, and vocational schools), and universities and other institutions of higher education. Tuition in the state schools is free and mandatory until the age of 18.

Exams

The 3-year period at middle school concludes with an examination divided into a humanities paper, and a mathematics and natural science paper. They select their secondary school on the basis of the results of this examination. Students choose from 3-year general education grammar schools (*liceum*), 4-year technical grammar schools (*technikum*), or 2-3 year vocational schools (*szkoła zasadnicza*).

Education at a vocational school concludes with a professional examination, which will be of an external type until 2004 (i.e. it will be graded by an independent, external examiners' board).

General and technical grammar school concludes with the *matura*, a school-leaving examination, which is currently predominantly internal in character, i.e. it is held at the student's school and is marked by a board of examiners consisting of members of the teaching staff from the same school.

Some grammar schools have already introduced examinations which meet the external examination criteria - *matura* papers are coded and marked by external examining boards.

The new *matura* examinations are marked according to a national set of criteria, which allows for university admissions without the need for additional entrance examinations. Due to the small numbers of students currently opting for the new *matura* examination, not all universities exempt holders from entrance examinations as yet.

After 2005, the new *matura* system will be the mandatory scheme.

The new *matura* school-leaving examination will consist of an oral examination at the candidate's school, and an external written paper, marked by an external board of qualified examiners.

On passing the *matura* school-leavers examination, students may continue their education at an institution of tertiary education (a university or college).

Depending on its type, field of study and the duration of study, students read for the licentiate (usually 3 years of study) or a master's degree (5-6 years of study).

Private schools

Non-public schools, together with community and private schools, are becoming more and more popular at all levels - from elementary to higher education. However, non-public schools are fee-paying. The advantage of such schools lies in their smaller student/staff ratio, thanks to which teachers have better opportunities to monitor students progress and can follow more advanced curricula. Students access to modern teaching aids varies depending on the size of the school budget. The situation is better in large cities and worse in small localities. Naturally enough, non-public schools are lucky in having the best equipment, thanks to which their students enjoy a broad spectrum of education and opportunities for individual development.

Teachers

They are promoted through successive grades of professional qualifications: from **trainee teacher**, **contractual teacher**, to **appointed teacher**, and **diploma-holding teacher**. The highest level is **professor of education**, awarded only to the very best tutors.

Gross domestic expenditure on R&D (GERD) - As a percentage of GDP

	2000	2001	2002	2003	2004
eu25	1,88	1,92	1,93	1,95	:
eurozone	1,89	1,9	1,93	1,9	:
de Germany	2,49	2,51	2,53	2,5	:
it Italy	1,07	1,11	1,16	:	:
p/ Poland	0,66	0,64	0,59	0,59	:

Eurostat 2005

Spending on Human Resources (public expenditure on education) as a percentage of GDP

	2000	2001	2002	2003	2004
eu25	4,94	5,10	::	:	:
eurozone	:	:	::	:	:
de Germany	4,53	4,57	::	:	:
it Italy	4,57	4,98	4,75:	:	:
p/ Poland	4,99	5,56	5,41:	:	:

Eurostat 2005

State Accreditation Commission (SAC)

In 2001, the State Accreditation Commission (SAC) was established, which is a statutory body for higher education acting to the benefit of the quality of education in all Polish schools of higher education both state-owned, private, academic and vocational ones. SAC responsibilities include, among others, consulting applications for the establishment of new directions of studies, awarding right to the higher education institution to award the master- degree level, evaluation of the quality of education and control the fulfilment of requirements for running higher education studies. Improvement of teachers qualifications: implementation of a system of professional promotion of teachers and a new remuneration system and promotion of forms of in-service teacher training. Modernisation of life-long learning and the counselling system, including vocational counselling.

higher education and research

Poland has a long tradition of university education. The oldest Polish university is the Jagiellonian University in Krakow founded in 1364 by King Kazimierz Wielki (Casimirus the Great). The other old universities are the University of Vilnius (1578) founded by King Stefan Batory and the University of Lvov founded in 1661 by King Jan Kazimierz (these universities are currently the oldest universities in Lithuania and Ukraine respectively.)

Before the Second World War there were six state universities in Poland (Krakow, Vilnius, Lvov, Warsaw, Wroclaw (Breslau) and Poznan), and three universities of technology: the Warsaw and Lvov Politechnikas and the Academy of Mining and Metallurgy in Krakow. A seventh university, founded in 1918, is the Catholic University of Lublin, which belongs to the church. In addition to the institutions mentioned above there were several artistic academies in the larger cities.

In September 1990, a new Higher Education Act was ratified in the Polish Parliament (Sejm) and paved the way for a free, liberal and autonomous higher education system in the country. The main characteristics of this new act were the enhanced autonomy of higher education institutions, and the new, quite liberal, rules defining the establishment of non-state (private) higher education institutions.

This has led to a substantial expansion of the system

Higher education institutions in Poland

Year	State HEIs	Non- State HEIs	Total Number of students
1990	88	3	385,000
1991	91	3	408,000
1992	91	11	474,000
1993	90	30	561,000
1994	90	50	658,000
1995	90	75	770,000
1996	90	115	904,000
1997	91	148	1,068,000
1998	101	158	1,252,000
1999	105	181	1,403,000
2000	118	206	1,568,000
2001	126	239	1,698,000

Characteristics of state higher education institutions (2001/02)

Type of Institution	Students (x 1000)	Full-time (x 1000)	Academic staff	Fields of study offered	No of HEIs
Universities	498	254	25,600	83	17
Univ. of Technology	325	203	18,000	42	18
Agriculture Academies	90	53	5,500	31	8
Academies of Economics	76	32	3,100	10	5
Educational Academies	92	37	4,700	29	6
Medical Academies	33	27	8,800	13	11
Academies of Arts	12	8	2,700	24	18
Acad. of Physical Culture	23	12	1,600	5	6
Maritime Academies	12	5	600	8	2
Vocational HE Schools	43	27	1,800	66*	25
Army and Police Acad.	12	6	1,900		10
Total	1,216	655	73,000		126

*Number of specialisations offered

New entrants in state higher education schools (x 1000)

	1990/1991		1992/1993		1994/1995		1996/1997		1999/2000		2001/2002	
	stud	ft	stud	ft	stud	ft	stud	ft	stud	ft	stud	ft
Universities	32.6	23.9	53.9	30.0	69.7	33.7	79.8	35.2	97.2	45.5	112.9	61.0
Univ. of Technology	21.5	18.8	42.0	33.0	57.0	40.5	67.3	43.0	81.5	50.7	89.1	60.6
Agriculture Acad- emies	9.1	7.1	13.8	9.7	17.1	11.5	21.0	12.7	20.9	12.0	25.	4.6
Acad. of Economics	6.0	4.4	11.4	5.2	15.7	5.7	14.9	5.4	13.9	5.9	12.9	6.7
Educational Acad- emies	11.1	7.1	12.2	6.8	15.6	6.9	22.2	8.7	24.4	10.1	24.0	11.2
Medical Academies	6.7	6.7	4.5	4.5	4.6	4.3	5.3	4.4	5.6	4.1	8.8	6.4
Academies of Arts	1.7	1.4	1.8	1.5	1.8	1.5	2.1	1.5	2.0	1.5	2.7	1.6
Acad. of Phys. Culture	3.9	2.8	3.7	2.7	3.8	2.5	4.4	2.4	5.0	2.7	5.8	3.3
Maritime Academies	0.7	0.6	0.9	0.6	1.9	0.8	2.0	1.0	2.5	1.2	3.1	1.5
Vocational HE Schools	-	-	-	-	-	-	-	-	7.9	4.9	22.6	14.5
Total	93.3	72.8	144.2	94.0	187.2	107.4	219.0	114.3	260.9	138.6	307.5	181.4

FT: NEW ENTRANTS ENROLLED AS FULL-TIME STUDENTS

Science and technology graduates - total - Tertiary graduates in science and technology per 1000 of population aged 20-29

	2000	2001	2002	2003	2004
eu25 EU	10,2	10,9	:	:	:
eurozone	:	:	:	:	:
de Germany	8,2	8	8,1	8,4	:
it Italy	5,7	6,1	7,4	:	:
p/ Poland	6,6	7,4	8,1	9	:

Eurostat 2005

The Research Infrastructure

Research in Poland is funded and supervised by a separate ministry called the State Committee for Scientific Research (KBN). State expenditure for research is 0.6% GDP. Research is carried out by higher education institutions, various branches of the institutes of the Polish Academy of Science, Research and Development Units, and industrial research laboratories. The academic higher education institutions play a leading role in research in the country.

The average research budget in an average state academic higher education institution is only about 16% of the whole budget (teaching accounts for nearly 80%). The highest share of research money goes to Technical Universities – about 25% of the overall budget. The average structure of research in a state higher education institution shows that 39% of the funds for statutory research come from the State Committee for Research, 15% are the institution's own research funds, 18.6% comes from grants, and 24% is from contracted research for business and industry. The highest share (approximately 30%) of the contracted research in the entire research budget takes place in technical universities and medical academies.

Statutory research funds, which come to higher education institution from the State Committee for Scientific Research, depend on the research category of the unit (most often it is a faculty or institute)

R&D resources (in million Zloty – one zloty = Euro 0.25)

R&D resources spent by:	1994	1995	1996	1997	1998	1999	2000
Business enterprise	710	826	1,130	1,325	1,661	1,897	1,730
Government (research institutes)	603	745	859	1,074	1,234	1,4132	1,546
Higher education	407	561	768	961	1,106	1,2743	1,512
Private non-profit sector			3		2	5	6
Total	1,721	2,132	2,761	3,361	4,0051	4,590	4,796

It seems a good issue on actual situation and may be useful for an overview of future scenarios

Trends and Policy Issues

New legislation

Work has currently started on new legislation concerning the higher education system in Poland. This new legislation is designed to replace the 1990 Higher Education Act and its amendments. Because this is a presidential initiative, the efforts are carried out by a team appointed by the President of the State. The following main issues are expected to be covered in this legislation:

- *integration of the various Acts that concern higher education issues (academic institutions, vocational schools, state and non-state institutions, student loans and grants, accreditation and quality assurance, elements resulting from the Bologna process);*
- *simplification and update of the law, shorter and more general regulations, more space should be left for decisions in terms of the statutes of institutions leading to more autonomy for the institutions;*
- *resolution of problems that are unclear and unfair in state – non-state relations;*
- *simplification of the rules covering student fees.*

The Act should be ratified by the end of 2003.

Financing HE from the state budget

There is sufficient evidence to claim that state schools are insufficiently financed from the state budget. This became obvious after an analysis of the state expenditure per student showed a dramatic decline over the preceding ten year period. In 2003 many schools have been faced with serious

financial problems which have forced rectors to undertake drastic measures that include the limitation of enrolment. The opinion that tuition fees should be introduced uniformly for all students is spreading but this would require changes to the Constitution of the Polish State. Additionally some non-state institutions could apply for public money to be granted to their students.

Qualified staff problems

The number of high rank teaching staff (professors, habilitated doctors) is too small and this group of teachers is getting older. Precise data concerning aging problems is not available but it is a common shortcoming experienced by numerous universities in the country.

There is considerable discussion about simplifying the academic degree structure by dropping the habilitated doctoral degree and leaving the PhD. only. However, strong opposition to that kind of change prevails with the argument that this change could reduce the academic quality of the staff

Study programmes offered

There is a problem of harmonization or of achieving a balance between the needs of the market and job perspectives with the study programmes offered by the higher education institutions. In the last few years it appears that in most popular study programmes the number of graduates was much too large. This concerns mainly management, law, economics and educational studies. Many schools offered these programs and a great number of entrants were admitted. Now the notion prevails that the minister should control admission levels in order to reach a state of equilibrium. Opponents argue that ministerial centralization and limitations were never good and were always too late to prevent problems, and that these would risk spoiling a liberal system in which balance is sought and reached. The Ministry has stressed, in any case, that it will promote studies in the sciences and technology.

Demographic changes and growing competition.

The demographic decline that has come slowly to the higher education institutions means the end of the educational boom; many signs of growing competition between schools, especially between the state and non-public sector, can be discerned. The beginning of the collapse of many non-public schools with low enrolment has occurred as a result of their low status and very limited offer of study programs. The competition is reflected in various rankings of higher education institutions in popular periodicals and magazines (Newsweek, Perspektywy Rzeczpospolita, Wprost) that have been published over the last five years. At the beginning, institutions and their rectors kept some distance; viewing this new ranking phenomenon with suspicion. Later, however, those that occupied the top of the list became very involved and gave their full support to this publicity. What is typical for these classifications is that some, but not very many, non-state schools permeate the 'open' or 'general' category and year after year climb up the lists, protecting their future position on the market.

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ITC

General ITC environment

Positive development trends initiated during the profound systemic changes at the beginning of the 1990s continue. Indicators describing general access to education, society education attainment level, the provision of computer equipment to schools and internet access have increased. Indices relating to society level of education in the 25-64 age group and the provision of computer equipment to schools differ from the standards of highly developed countries and, therefore, action aimed at their improvement will be intensified. It should be concluded, however, that during the period from 1999 (the 4th quarter) to 2003 (the 1st quarter), the educational level in the 25-34 age group increased by 5,7 percentage points € from 13,5% to 19,2%.

Development of IT education

In November 2000, the Council of Ministers adopted a document on the Objectives and Directions of Development of the Information Society in Poland, which defines priorities for the development of the information society in Poland and measures necessary for their attainment. Priorities include inter alia general access to information and IT education. An important document concerning the information society is also the governmental document adopted by the Council of Ministers in 2001

The Action Plan for the Information Society Development in Poland for the years 2001-2006.

Due to the need to precisely define the legislative, institutional and structural measures to develop that area, a new priority has been included in the National Program of Preparation for Membership in the European Union, (2001), namely: Development of the Information Society in Poland.

The above objective is pursued in the educational system inter alia through computerization of schools and providing access to the Internet.

Source REPUBLIC OF POLAND NATIONAL REPORT ON STRUCTURAL REFORMS ON THE PRODUCTS AND SERVICES MARKET AND ON CAPITAL MARKET

Computer assets in schools

Urban/Rural areas	<i>Indicator</i>							
	I		II		III		IV	
	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03
Urban areas	41.93	40.87	39.27	32.46	3	3	52.55	43.18
Urban areas (5 thous. inhabitans)	52.20	49.64	37.49	30.98	3	3	46.36	38.37
Rural areas	48.44	55.93	29.47	22.49	3	4	43.78	35.04
Total	44.86	46.99	36.01	28.96	3	3	49.63	40.47

Source OCSE

Computer assets in schools by level

Level of education	<i>Indicator</i>							
	I		II		III		IV	
	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03
Primary education	51.81	60.83	42.40	32.03	2	3	75.27	58.07
Lower secondary education (gymnasia)	71.43	74.24	34.71	27.79	3	4	36.61	31.69
General secondary education	51.76	44.53	30.20	25.65	3	4	37.80	30.83
Vocational secondary education	21.54	19.02	31.37	27.28	3	4	45.00	37.00

Indicators:

I. a percentage share of schools having computer laboratory in relation to a total number of schools

II. a number of pupils per 1 computer

III. a number of computers per 100 pupils

IV. a number of pupils per 1 computer with Internet access

Source OCSE

ICT expenditure - IT expenditure - Expenditure on Information Technology as a percentage of GDP

	2000	2001	2002	2003	2004
<i>eu25</i>	:	3,1	2,9	2,9	2,9
<i>eurozone</i>	3,0	2,9	2,7	2,6	2,6
<i>de Germany</i>	3,4	3,3	3	3	2,9
<i>it Italy</i>	2	2,1	2	1,9	1,8
<i>pl Poland</i>	1,8	1,6	1,8	2,5	2,8

Eurostat 2005

Patents EPO - Number of patent applications to the European Patent Office (EPO) per million inhabitants

	2000	2001	2002	2003	2004
<i>eu25</i>	133,61	141,96	133,59	:	:
<i>eurozone</i>	:	:	:	:	:
<i>de Germany</i>	305,14	320,36	300,95	:	:
<i>it Italy</i>	76,82	80,60	74,73	:	:
<i>pl Poland</i>	3,05	3,2	2,72	:	:

Eurostat 2005

Broadband penetration rate - Number of broadband lines subscribed in percentage of the population

	2000	2001	2002	2003	2004
<i>eu25 EU</i>	:	:	:	:	6,5
<i>eurozone</i>	:	:	:	:	:
<i>de Germany</i>	:	:	3,2	4,8	6,7
<i>it Italy</i>	:	:	1	2,8	6,1
<i>pl Poland</i>	:	:	:	:	0,5

Eurostat 2005

Level of Internet access - households - Percentage of households who have Internet access at home

	2000	2001	2002	2003	2004
<i>eu25</i>	:	:	:	:	42
<i>eurozone</i>	:	:	37	40	43
<i>de Germany</i>	13,6	37,9	46	54	60
<i>it Italy</i>	19,2	32,9	34	32	34
<i>pl Poland</i>	5,1	7,7	:	:	26

Eurostat 2005

APPENDICI

The most important educational institution in Poland

- Ministry of Education and Sport
- Ministry of Scientific Research and Information Technology
- Conference of Rectors of Academic Schools in Poland
- Stefan Batory Foundation
- The Polish Robert Schuman Foundation

Universities in Poland

- Academy of Economics in Cracow
- Academy of Economics in Katowice
- Academy of Economics in Poznan
- Academy of Economics in Wroclaw
- Adam Mickiewicz University of Poznan
- Agricultural University of Cracow
- Agricultural University of Lublin
- Agricultural University of Poznan
- Agricultural University of Szczecin
- Agricultural University of Wroclaw
- Agricultural-Technical Academy in Bydgoszcz
- Agricultural-Technical Academy in Olsztyn
- Akademia Podlaska
- Cardinal Stefan Wyszynski University in Warsaw
- Catholic University of Lublin
- Christian Theological Academy in Warszawa
- Fine Arts Academy "Wladyslaw Strzeminski" in Lodz
- Fine Arts Academy in Gdansk
- Fine Arts Academy in Poznan
- Fine Arts Academy in Wroclaw
- Fine Arts Academy Jan Matejko in Cracow
- Gdynia Maritime Academy
- Jagiellonian University Cracow
- Ludwik Solski State Academy of Theatre in Cracow

- [Maria Curie-Sklodowska University Lublin](#)
- [Maria Grzegorzewska College for Special Education](#)
- [Maritime University in Szczecin](#)
- [Medical Academy "Karol Marcinkowski" in Poznan](#)
- [Medical Academy "Ludwik Rydygier" in Bydgoszcz](#)
- [Medical Academy in Bialystok](#)
- [Medical Academy in Gdansk](#)
- [Medical Academy in Lodz](#)
- [Medical Academy in Lublin](#)
- [Medical Academy in Warszawa](#)
- [Medical Academy in Wroclaw](#)
- [Music Academy Felix Nowowiejski in Bydgoszcz](#)
- [Music Academy Fryderyk Chopin in Warszawa](#)
- [Music Academy Ignacy Jana Paderewski in Poznan](#)
- [Music Academy in Cracow](#)
- [Music Academy in Lodz](#)
- [Music Academy Stanislaw Moniuszko in Gdansk](#)
- [Nicolaus Copernicus University of Torun](#)
- [Pedagogical University of Bydgoszcz](#)
- [Pedagogical University of Czestochowa](#)
- [Pedagogical University of Kielce](#)
- [Pedagogical University of Krakow](#)
- [Pedagogical University of Rzeszow](#)
- [Pedagogical University of Slupsk](#)
- [Pedagogical University of Zielona Gora](#)
- [Physical Education Academy Eugeniusz Piasecki in Poznan](#)
- [Physical Education Academy in Cracow](#)
- [Physical Education Academy in Wroclaw](#)
- [Physical Education Academy Jozef Pilsudski in Warsaw](#)
- [Pomeranian Academy of Medicine in Szczecin](#)
- [Poznan School of Banking](#)
- [Ryszard Lazarski University of Commerce and Law in Warsaw](#)
- [Silesian Academy of Medicine in Katowice](#)
- [Silesian Technical University of Gliwice](#)
- [Technical University of Bialystok](#)
- [Technical University of Cracow](#)
- [Technical University of Czestochowa](#)
- [Technical University of Gdansk](#)
- [Technical University of Kielce](#)
- [Technical University of Koszalin](#)
- [Technical University of Lodz](#)
- [Technical University of Lublin](#)
- [Technical University of Opole](#)
- [Technical University of Poznan](#)
- [Technical University of Radom](#)
- [Technical University of Rzeszow](#)
- [Technical University of Szczecin](#)
- [Technical University of Warsaw](#)
- [Technical University of Wroclaw](#)
- [Technical University of Zielona Gora](#)
- [University of Bialystok](#)
- [University of Gdansk](#)
- [University of Lodz](#)
- [University of Management and Marketing](#)

- [University of Mining and Metallurgy Stanislaw Staszic](#)
- [University of Opole](#)
- [University of Silesia](#)
- [University of Szczecin](#)
- [University of Warsaw](#)
- [University of Wrocław](#)
- [Warsaw School of Economics](#)

Mathematical and scientific institution in Poland

[Polish Academy of Sciences](#) - <http://www.impan.gov.pl/> Institute of Mathematics.

[Warsaw University of Technology](#) - <http://www.mini.pw.edu.pl/eng/>

Faculty of Mathematics and Computer Science.

[Technical University of Gdansk](#) - <http://www.mif.pg.gda.pl/>

Faculty of Applied Physics and Mathematics.

[Wrocław University of Technology](#) - <http://www.im.pwr.wroc.pl/>

Institute of Mathematics.

[Nicholas Copernicus University, Torun](#) - <http://www.mat.uni.torun.pl/en/>

Faculty of Mathematics and Computer Science.

[Jagiellonian University, Kraków](#) - <http://www.im.uj.edu.pl/en/>

Institute of Mathematics.

[Adam Mickiewicz University, Poznań](#) - <http://www.wmid.amu.edu.pl/en/welcome.html>

Faculty of Mathematics and Computer Science.

[University of Łódź](#) - <http://www.math.uni.lodz.pl/main/english/>

Faculty of Mathematics.

[Jagiellonian University, Kraków](#) - <http://www.mat-inf.uj.edu.pl/index.en.html>

Faculty of Mathematics and Computer Science.

[Wrocław University](#) - <http://www.math.uni.wroc.pl/~mathbank/indexang.html>

Institute of Mathematics.

[University of Warsaw](#) - <http://www.mimuw.edu.pl/imat/instytut.e.html>

Institute of Mathematics.

[Poznan University of Technology](#) - <http://www.math.put.poznan.pl/>

Institute of Mathematics.

Milano, 6 aprile 2005

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