

Progress Report

on the Czech Republic Sustainable Development Strategy

Government Council for Sustainable Development
Ministry of the Environment
Prague 2009



PROGRESS REPORT

ON THE CZECH REPUBLIC

SUSTAINABLE DEVELOPMENT STRATEGY

Government Council for Sustainable Development
Ministry of the Environment

Prague 2009

Reviewed by: Iva Ritschelová and Pavel Nováček

Progress Report on the Czech Republic Sustainable Development Strategy

Government Council for Sustainable Development

Ministry of the Environment

Edited by: Jan Kovanda and Tomáš Hák

Translation: Petr Kurfürst

Typography: EnviTypo®

Cover: Formata v.o.s.

TABLE OF CONTENTS

List of charts	5
List of tables	8
INTRODUCTION	9
<i>Bedřich Moldan</i>	
I. ECONOMIC PILLAR: STRENGTHENING THE COMPETITIVENESS OF THE ECONOMY	19
I.A GROSS DOMESTIC PRODUCT PER CAPITA	21
<i>Slavoj Czesaný</i>	
I.B SHARE OF GOVERNMENT DEFICIT/SURPLUS IN GDP AND SHARE OF GOVERNMENT DEBT IN GDP	26
<i>Petr Hovorka and Ladislav Havlíček</i>	
I.C CURRENT ACCOUNT OF BALANCE OF PAYMENTS/GDP RATIO	34
<i>Evžen Woller</i>	
I.D LABOUR PRODUCTIVITY	38
<i>Slavoj Czesaný</i>	
I.E TRANSPORT INTENSITY	41
<i>Vladimír Adamec, Jiří Jedlička and Miroslav Vančura</i>	
I.F ENERGY INTENSITY OF GDP	47
<i>Miroslav Havránek</i>	
I.G TOTAL PRIMARY ENERGY SUPPLY	51
<i>Miroslav Havránek</i>	
I.H SHARE OF ENERGY FROM RENEWABLE SOURCES	56
<i>Miroslav Havránek</i>	
II. ENVIRONMENTAL PILLAR: PROTECTING NATURE, THE ENVIRONMENT, NATURAL RESOURCES AND THE LANDSCAPE, ENVIRONMENTAL LIMITS	61
II.A GREENHOUSE GAS EMISSIONS PER CAPITA	63
<i>Jan Mertl</i>	
II.B GREENHOUSE GAS EMISSIONS PER UNIT OF GDP	68
<i>Jan Mertl</i>	
II.C MATERIAL CONSUMPTION	72
<i>Jan Kovanda</i>	
II.D MATERIAL USE OF WASTE	78
<i>Petra Bradnová and Jiří Valta</i>	
II.E CONSUMPTION OF BASIC NUTRIENTS IN MINERAL FERTILISERS	82
<i>Martin Leibl</i>	
II.F CONSUMPTION OF PESTICIDES	85
<i>Martin Leibl</i>	
II.G INDEX OF COMMON SPECIES OF WILD BIRDS	87
<i>Lenka Vrtišková</i>	
II.H DEFOLIATION	92
<i>Zdeňka Podhajská, in collaboration with FGMRI</i>	
II.I SHARE OF ORGANIC FARMING IN TOTAL FARMLAND	97
<i>Martin Leibl</i>	
II.J ENVIRONMENT PROTECTION EXPENDITURES AND PUBLIC ENVIRONMENT PROTECTION EXPENDITURES	100
<i>Jan Šůsa, Alena Krejčová and Jan Pokorný</i>	

III. SOCIAL PILLAR: STRENGTHENING SOCIAL COHESION AND STABILITY	107
III.A LIFE EXPECTANCY <i>Michala Lustigová</i>	109
III.B MORTALITY <i>Michala Lustigová</i>	112
III.C GENERAL UNEMPLOYMENT RATE <i>Eva Procházková</i>	115
III.D REGISTERED UNEMPLOYMENT RATE <i>Eva Procházková</i>	119
III.E EMPLOYMENT OF OLDER PEOPLE <i>Eva Procházková</i>	122
III.F REGIONAL DISPERSION OF THE EMPLOYMENT RATE <i>Eva Procházková</i>	126
III.G POPULATION LIVING BELOW THE POVERTY LINE BEFORE AND AFTER SOCIAL TRANSFERS <i>Lucie Malíková</i>	130
IV. RESEARCH AND DEVELOPMENT, EDUCATION	133
IV.A HIGHEST LEVEL OF EDUCATION ATTAINED <i>Michaela Kleňhová</i>	135
IV.B RESEARCH & DEVELOPMENT EXPENDITURES <i>Michaela Kleňhová</i>	139
IV.C ACCESS TO THE INTERNET <i>Martin Mana</i>	143
V. EUROPEAN AND INTERNATIONAL CONTEXT	149
V.A TOTAL INTERNATIONAL DEVELOPMENT CO-OPERATION <i>Vladimír Hejduk and Karel Mroček</i>	151
VI. GOOD GOVERNANCE	155
VI.A CORRUPTION PERCEPTIONS INDEX <i>Stanislav Beránek</i>	157
VI.B AVAILABILITY OF PUBLIC CULTURAL SERVICES <i>Alena Mockovčíaková</i>	163
VI.C AVERAGE DURATION OF COURT PROCEEDINGS <i>Vlastimil Rajnošek</i>	168
VI.D COVERAGE OF THE TERRITORY OF THE CZECH REPUBLIC BY APPROVED TOWN AND COUNTRY PLANNING DOCUMENTATION OF MUNICIPALITIES <i>Petr Lepeška</i>	173
VI.E CIVIL SOCIETY <i>Petra Rakušanová</i>	177
Summary of indicators and responsible institutions	179
Authors' addresses	180
Abbreviations	182

LIST OF CHARTS

Chart I.A.1:	Gross domestic product (2000 co. p.) and exchange relations (annual change), Czech Republic, 2000–2007	22
Chart I.A.2:	Contributions to GDP growth by demand components (2000 co. p.), Czech Republic, 2001–2007	23
Chart I.A.3:	Contributions to gross added value by all manufacturing industries – selected industries (cu. p.), Czech Republic, 2000, 2006	23
Chart I.A.4:	Gross domestic product (2000 co. p., annual change), international comparison, 2000–2007	24
Chart I.A.5:	Gross domestic product as PPP per capita (EU-27 = 100), international comparison, 2000–2007	24
Chart I.B.1:	Governmental sector balance, Czech Republic, 1999–2007	29
Chart I.B.2:	Governmental sector debt, Czech Republic, 1999–2007	29
Chart I.C.1:	Current account of balance of payments to GDP ratio, Czech Republic, 1995–2007	35
Chart I.C.2:	Balance of payments current account and its components, Czech Republic, 1993–2007	36
Chart I.C.3:	Current account to GDP ratio, international comparison, 2001–2007	37
Chart I.D.1:	Contributions of production factors to GDP growth (2000 co. p.), Czech Republic, 2000–2007	39
Chart I.D.2:	Labour productivity – GDP as PPP per employed person (EU-27 = 100), international comparison, 2000–2007	40
Chart I.D.3:	Labour productivity – GDP as PPP per hour worked (EU-15 = 100), international comparison, 2000–2007	40
Chart I.E.1:	Passenger transport intensity, Czech Republic, 1995–2006	42
Chart I.E.2:	Passenger transport performance and GDP, Czech Republic, 1995–2006	43
Chart I.E.3:	Freight transport intensity, Czech Republic, 1995–2006	44
Chart I.E.4:	Freight transport performance and GDP, Czech Republic, 1995–2006	44
Chart I.E.5:	Passenger transport intensity (in 1995 constant prices in '000 EUR), international comparison, 2004	45
Chart I.E.6:	Freight transport intensity (in 1995 constant prices in '000 EUR), international comparison, 2006	45
Chart I.F.1:	Energy intensity of GDP, Czech Republic, 1995–2007	48
Chart I.F.2:	TPES and GDP, Czech Republic, 1995–2007	48
Chart I.F.3:	Energy intensity of GDP, international comparison, 2005	49
Chart I.G.1:	Primary sources of energy, Czech Republic, 1995–2007	52
Chart I.G.2:	Total final consumption and primary sources of energy, Czech Republic, 1995–2006	53
Chart I.G.3:	Total primary energy supply, international comparison, 2005	53
Chart I.H.1:	Renewable energy sources, Czech Republic, 1995–2006	57
Chart I.H.2:	Renewable sources of electricity, Czech Republic, 2003–2007	57
Chart I.H.3:	Share of renewable sources in total primary energy supply, international comparison, 2005	58
Chart I.H.4:	Share of renewable sources in electricity generation, international comparison, 2004	58
Chart II.A.1:	CO ₂ and CO ₂ equivalent emissions per capita (average), Czech Republic, 1990–2006, including 2020 target value and forecast further development	64
Chart II.A.2:	CO _{2eq.} emissions per capita – constituent greenhouse gases, Czech Republic, 1990–2006	65
Chart II.A.3:	CO _{2eq.} emissions per capita, international comparison, 1990, 1995, 2000, and 2005	66
Chart II.B.1:	Development of CO _{2eq.} and CO ₂ emissions per GDP, Czech Republic, 1995–2006	70
Chart II.B.2:	CO _{2eq.} and CO ₂ emissions per GDP, Czech Republic, 1995–2006, including 2020 target value and forecast of further development	70
Chart II.B.3:	CO _{2eq.} emissions per GDP, international comparison, 1990, 1995, 2000, and 2005	71

Chart II.C.1: Domestic material consumption, Czech Republic, 1990–2006	75
Chart II.C.2: Material intensity (2000 co. p.), Czech Republic, 1995–2006	75
Chart II.C.3: Domestic material consumption (DMC) and GDP per capita, international comparison, 2004	76
Chart II.D.1: Material use of waste and its target value, Czech Republic, 2000–2006	80
Chart II.E.1: Consumption of mineral fertilisers, Czech Republic, 1986–2007	83
Chart II.E.2: Consumption of mineral fertilisers, international comparison, 2000	83
Chart II.F.1: Consumption of pesticides, Czech Republic, 1986–2007	85
Chart II.F.2: Consumption of working substances in pesticides, international comparison, 2001	86
Chart II.G.1: Index of common species of wild birds, Czech Republic, 1982–2005	88
Chart II.G.2: Breakdown of the index according to major environment types, Czech Republic, 1982–2005	89
Chart II.G.3: Index of farmland bird species, international comparison, 1999, 2001, 2003	90
Chart II.G.4: Population trends for selected farmland bird species, EU-25, 1992–2003	90
Chart II.H.1: Defoliation in coniferous trees (60 years and older), Czech Republic, 1986–2007	93
Chart II.H.2: Defoliation in deciduous trees (60 years and older), Czech Republic, 1991–2007	94
Chart II.H.3: Defoliation in coniferous and deciduous trees (60 years and older), Czech Republic, 1998–2007	95
Chart II.H.4: Classification of all tree species into defoliation classes, international comparison, 2006	95
Chart II.I.1: Organic farming, Czech Republic, 1989–2008	97
Chart II.I.2: Categories of organic farmland depending on soil type, Czech Republic, 2008	98
Chart II.I.3: Share of organic farmland in total farmland, international comparison, 2007	98
Chart II.J.1: Investment environment protection expenditures by focus, Czech Republic, 1990–2006	101
Chart II.J.2: Investment environment protection expenditures by institutional sector, Czech Republic, 1995–2006	102
Chart II.J.3: Proportion of investment environment protection expenditures to the GDP, Czech Republic, 1990–2006	102
Chart II.J.4: Non-investment environment protection expenditures by target area, Czech Republic, 2006	103
Chart II.J.5: Proportion of private and public environment protection expenditures to the GDP, international comparison, 1995, 2000, 2005 (or nearest available years)	104
Chart III.A.1: Life expectancy at birth, Czech Republic, 1945–2006	110
Chart III.A.2: Life expectancy at birth, international comparison, 2006	110
Chart III.B.1: Standardised mortality, Czech Republic, 1980–2006	113
Chart III.B.2: Overall standardised mortality, international comparison, 1980–2005	113
Chart III.C.1: General unemployment, males and females, Czech Republic, 2000–2007	116
Chart III.C.2: General unemployment rate, males and females, international comparison, 2007	118
Chart III.D.1: Registered unemployment rate – annual average values, Czech Republic, 1991–2007	120
Chart III.D.2: Registered unemployment rate – monthly values, Czech Republic, 1991–2008	121
Chart III.E.1: Employment of older people between 55 and 64 years of age, Czech Republic, 1998–2007	122
Chart III.E.2: Employment of older people between 55 and 64 years of age, international comparison, 2007	123
Chart III.F.1: Employment rate of persons between 15 and 64 years of age, by region, Czech Republic, 2007	127
Chart III.F.2: Variance index of regional employment rate at NUTS 2 level, international comparison, 2006	128
Chart IV.A.1: Share of population between 20 and 24 years of age with at least upper secondary education, Czech Republic, 1998–2006	136
Chart IV.A.2: Share of population in the age categories of 20–24, 25–34 and 25–64 years with at least upper secondary education, Czech Republic, 2002–2006	137
Chart IV.A.3: Share of population between 20 and 24 years of age with at least upper secondary education, international comparison, 1999–2006	138

Chart IV.B.1: R&D expenditures (% of GDP) by funding source, Czech Republic, 1995–2006	140
Chart IV.B.2: Expenditure on R&D (% of GDP), international comparison, 1995–2006	141
Chart IV.B.3: Expenditure on R&D by sources of financing (% of GDP), international comparison, 2000–2006.	141
Chart IV.C.1: Broadband Internet subscribers, percentage of population, by connection type, Czech Republic, 2003–2007	144
Chart IV.C.2: Proportion of households with a personal computer at home, Czech Republic, 1989–2007	144
Chart IV.C.3: Proportion of households with and without children with an Internet connection, Czech Republic, 2007	145
Chart IV.C.4: ICT users, Czech Republic, 2003, 2005–2007	145
Chart IV.C.5: Internet users by socio-demographic characteristics, Czech Republic, 2003, 2005, 2007	145
Chart IV.C.6: Selected activities of individuals while on the Internet, by gender and age, Czech Republic, 2007	146
Chart IV.C.7: Numbers of broadband Internet subscribers per 100 inhabitants by type of connection, international comparison, 2007	147
Chart IV.C.8: Proportion of households with a computer and Internet connection, international comparison, 2007	148
Chart IV.C.9: Proportion of computer and internet users, international comparison, 2007	148
Chart V.A.1: Level of ODA/GDI, international comparison, 2007	153
Chart VI.C.1: Length of criminal proceedings before district and regional courts, Czech Republic, 1995–2007	170
Chart VI.C.2: Length of court proceedings in civil cases before district and regional courts, Czech Republic, 1995–2007	170
Chart VI.C.3: Length of court proceedings in commercial cases before regional courts, Czech Republic, 2002–2007	171
Chart VI.C.4: Length of criminal proceedings before district and regional courts, Slovakia, 2001–2007	171
Chart VI.C.5: Length of court proceedings in civil cases before district and regional courts, Slovakia, 2001–2007	171
Chart VI.D.1: Development of the coverage of territory by approved TCPD (in %), Czech Republic, 1995–2007	174

LIST OF TABLES

Table I.	Summary assessment of indicators (assessment for 2006 and 2007 adopted from the First and Second Progress Reports)	17
Table I.A.1:	Contributions to gross added value by industries (cu. p.; %), Czech Republic, 2000–2007	24
Table I.B.1:	Government balance and government debt under ESA 95 (in % of GDP), Czech Republic, 1997–2007	28
Table I.B.2:	Amount of surplus/deficit (% GDP), international comparison, 2004–2007	30
Table I.B.3:	Amount of debt (% of GDP), international comparison, 2004–2007	31
Table I.C.1:	Source data for calculation of the indicator Current account of balance of payments to GDP ratio, Czech Republic, 1995–2007	36
Table I.E.1:	Background data for calculation of Passenger transport intensity, Czech Republic, 1995–2006	42
Table I.E.2:	Background data for calculation of Freight transport intensity, Czech Republic, 1995–2006	43
Table I.F.1:	Background data for calculation of Energy intensity of GDP, Czech Republic, 1995–2007	48
Table I.G.1:	PSE composition and NEP targets; Czech Republic, trend in 2000–2007 and state of 2007	54
Table II.C.1:	Domestic material consumption by group of materials (mil. tonnes), Czech Republic, 1990–2006	74
Table II.J.1:	Total public environment protection expenditures, Czech Republic, 1997–2007	103
Table III.C.1:	General unemployment rate, international comparison, 2000–2007	117
Table III.E.1:	Employment of older people between 55 and 64 years of age (in %), international comparison, 1998–2007	124
Table III.F.1:	Variance index in NUTS 2 and NUTS 3 regions, Czech Republic, 1993–2007	127
Table III.F.2:	Dispersion of regional employment rate, international comparison, 1999–2006	128
Table III.F.3:	Variance index of regional employment rate at NUTS 2 level, international comparison, 2006	129
Table III.G.1:	Population living below the poverty line before and after social transfers by age categories (in %), international comparison, 2005	132
Table V.A.1:	Amounts expended in IDC during the 2002–2004 period and an estimate for 2005–2008 (in million CZK), Czech Republic, 2006–2007, and a projection for 2008–2011	152
Table VI.A.1:	Corruption Perceptions Index, Czech Republic, 1998–2007	159
Table VI.A.2:	Corruption Perceptions Index, international comparison – EU Member States, Iceland, Norway, Switzerland, 2007	160
Table VI.A.3:	Corruption Perceptions Index, international comparison (selected countries), 2007	161
Table VI.B.1:	Public budget expenditures on culture (billion CZK) and their proportion to GDP, Czech Republic, 2000–2007	164
Table VI.B.2:	Public budget expenditures on culture (billion CZK) and their proportion to the total public budget expenditures, Czech Republic, 2000–2007	165
Table VI.D.1:	Development of the coverage of territory by approved TCPD (in %), Czech Republic, 1995–2007	174
Table VI.E.1:	Civil and political participation, Czech Republic, 1998/2000–2004/2006	177

INTRODUCTION

Bedřich Moldan

The Czech Republic Strategy for Sustainable Development was adopted under Czech Government Resolution no. 1242 of 8 December 2004. Article II/2 of the Resolution commissioned the Vice Prime Minister for Economics and the Chairman for the Government Committee for Sustainable Development (GCSD) to present a draft update of the Czech Republic Strategy for Sustainable Development by 30 November 2007. Under Government Resolution no. 1434 of 14 December 2007, however, the update developed by then was merely acknowledged by the Government as "The Principles, Instruments and Proposed Priorities for the Finalisation of an Updated Czech Republic Strategy for Sustainable Development", postponing the deadline for the presentation of the updated Strategy to 30 November 2009.

This Progress Report (third in the series) is presented pursuant to Article II/2 of Government Resolution no. 1242 of 8 December 2004. In line with the conclusions of a joint session of the Government Council Committee on Sustainable Development and the Working Group on Sustainability Development Indicators on 13 February 2008, the Third Progress Report is published in a format similar to the 2005 and 2006 Progress Reports (Government Administration, 2006; GCSD, 2007). The Third Progress Report was approved at the 16th session of the Government Council Committee on Sustainable Development on 9 October 2008 and is presented as information to the Government.

The 2004 Strategy defines the principal (strategic) goals, as well as partial goals and instruments, formulated so as to eliminate, to the maximum extent possible, imbalances in relations between the economic, environmental and social pillars of sustainability. They are designed to achieve the best attainable quality of life for the present generation and to create conditions for a high quality of life for future generations. Strategic goals are defined for individual themes of social development:

- Economic pillar: strengthening the competitiveness of the economy;
- Environmental pillar: protecting nature, the environment, natural resources and the landscape, environmental limits;
- Social pillar: strengthening social cohesion and stability;
- Research and development, education;
- European and international context;
- Good governance.

The present Progress Report is based on a set of indicators defined by the three pillars of the Strategy (the economic, environmental and social pillars) and complemented by an additional three areas stated in the Strategy (Research and development and education, European and international context, and Good governance). In line with this categorisation, the Report itself is organised in six sections. Time series for all the indicators cover until the latest available year, which is typically 2007; however, it is the year 2006 in some cases. There is slight difficulty in the fact that the entire sustainable development concept is based on the seeking of an accord among the three fundamental pillars (possibly complemented with other cross-sectoral subject areas, as is the case with the Czech strategy). Therefore, not only are the pillars as such of high importance, but their interconnections and interactions as well. The importance of such interactions, however, seems to be somewhat blurred by dividing the Report into the six areas. The below summary assessment of each pillar and the other subject areas highlight the interconnections by not building strictly on the indicators included in the section, but possibly also on others categorised elsewhere. In addition to the actual

assessment of the indicators, the Introduction also contains recommendations for further development of the indicator set employed by the Progress Reports.

The Report contains 34 indicators in total, aggregated based on official data and authenticated methodology. The selected indicator set, in expert opinion, covers the most important topics and objectives of the Czech Republic Sustainable Development Strategy. The aim of the Report is not always explicitly to rate indicator values obtained as 'good' or 'bad'. The indicators provide information on significant facts related to sustainable development in several ways:

- Where an explicit target (e.g. expenditures on international development aid, greenhouse gas emissions, etc.) is set, the indicators inform of its achievement, or alternatively, the approximation or recession of the given quantitative target.
- Where no explicit target is set, it may be compensated for by experience from countries (cities, companies, etc., depending on the respective level) against which the level achieved can be benchmarked (pesticide consumption, life expectancy, etc.).
- Where data exist and indicators are constructed following identical methods for longer time periods, time series can be obtained. The assessment can then be complemented with a trend analysis, improving the expressive value of the indicator, but not sufficient on its own. Detailed assessment must always be made in a broader data (information), time, and space context.

I. THE ECONOMIC PILLAR

The first strategic objective of the Strategy is to maintain the stability of the Czech economy and safeguard its resistance to external and internal adverse effects. This objective is complemented by a number of secondary goals aiming at selected subject areas:

- macroeconomic issues;
- fiscal issues;
- energy industry;
- raw material policy, agriculture, forestry;
- regional development.

The second strategic objective is to create conditions for economic growth which is capable, with minimum environmental impact, of ensuring an optimum rate of employment, public service financing (especially in the social sphere) and a progressive reduction in the public and "internal" debt. This objective is complemented by a number of secondary goals aiming at selected subject areas.

The third strategic objective is to create conditions for a flexible economy based on knowledge and skills, and increase the competitiveness of industry, agriculture and services.

Trends under the economic pillar are characterised by indicators from several spheres, including first and foremost the macroeconomic and fiscal sphere; it is described by the following indicators:

- I.A Gross Domestic Product per capita
- I.B Share of government deficit/surplus in GDP
Share of government debt in GDP
- I.C Current account of balance of payments/GDP ratio
- I.D Labour productivity

The overall trend in the area has been positive, particularly characterised by a rapidly growing GDP (both in historical and international context). Some factors, however, give ground to certain concern. Above all, the sectoral structure of the economy is worrying because the desirable share of the tertiary sector is not growing, while the secondary sector (including massive car manufacturing) is consolidating its dominant position. Another factor is the negative development of the global economics, triggered by the US mortgage crisis in the latter half of 2007 and continuing to this day. The third factor comprises the rapidly growing exchange rate of the Czech crown, the unclear perspective of the shift to the euro, and the unpredictable implications of the response to the changing globalised situation.

The presented indicators are good at characterising the given area; indicator I.C (Current account of balance of payments/GDP ratio) is probably redundant.

Another area comprises sectors that express the explicit connection of this pillar to the environmental one. The transportation sector is cardinal; it is described by a single indicator:

- I.E Transport intensity

Its purpose is to identify whether the economic performance in transportation is decoupling from the environmental burden. The recent development of the indicator suggests that some decoupling is admittedly occurring, but the situation is in fact worsening in absolute terms. Given the crucial environmental relevance of transportation, the indicator set requires reasoned extension (with indicators such as Total traffic volume – since transiting traffic is not reflected in any way; modal split; infrastructure issues; traffic safety). Various signals suggest that transportation is a serious social problem, not only in environmental terms; however, the presented indicator does not reflect these concerns.

Another important area is agriculture and forestry, characterised by several indicators classified under the environmental pillar:

- II.E Consumption of industrial fertilisers
- II.F Consumption of pesticides
- II.I Share of organic farming in total farmland
- II.H Defoliation

The composition of the indicator set in this area will also have to be reconsidered. In agriculture, there is likely a need for reflecting the issues of soil quality (erosion), use of agricultural products for non-food purposes (e.g., biofuels), as well as landscape maintenance (agroenvironmental schemes). Regarding forestry, there is a whole complex of issues related to forest composition and degradation (e.g., by disasters).

Both the presented indicators and other signals, ignored herein, indicate that the overall development in this area is not positive, although the rapidly growing share of organic farming is a plus.

The power industry is the third area concerning strategy. The existing indicators are as follows:

- I.F Energy intensity of GDP
- I.G Total consumption of primary energy supply
- I.H Share of energy from renewable sources

This set performs quite well to characterise the situation in the power industry in respect of sustainable development. There is likely a need to reflect the additional issues of energy security and refine the data in order to improve the transparency of imports and exports of energy resources, products and services.

The indicators show that the overall situation is not worsening, but at the same time, it is basically not improving (or it is improving but very slowly). The international comparison still yields highly unenviable results for the Czech Republic.

II. THE ENVIRONMENTAL PILLAR

The first strategic objective is to ensure that the territory of the Czech Republic benefits from the best possible quality of all components of the environment (including the sound functioning of their basic mutual relations), and subsequently improve their quality, thus creating conditions for the progressive regeneration of the landscape, for the minimisation – or even elimination – of risks to human health, and for the regeneration of wildlife, at the same time preserving the Czech Republic's natural resources (non-renewable resources, biological diversity and diversity of the landscape) to the highest extent economically and socially acceptable.

The second strategic objective is to minimise conflicts of interests between economic activities and environment protection, and gradually decouple environmental pressures from economic growth. Educating individuals as well as social segments is of prime importance, aiming at an alteration in behaviour, production, and consumption patterns toward sustainability. To enable this, the public has to have access granted to relevant information, and environmental education has to be actively promoted at all levels of education and environmental information. In addition, voluntary business activity in the area of the environment has to be supported.

The third strategic objective is to make a contribution, commensurate to the possibilities and significance of the Czech Republic, towards the solution of European and global environmental issues (specifically the threat of climatic changes and depletion of the Earth's ozone layer, as well as the loss of biodiversity).

The first strategic objective (environmental quality) is only characterised by the presented indicators to a very limited extent, rather indirectly in other areas (specifically, in agriculture and forestry as mentioned above). The indicator set perhaps needs extending with additional specific indicators, related to the strategic objective (e.g., air quality, water quality). The important issue of waste is characterised by

- II.D Share of reused waste in total waste streams

Given the inexact definition (derived from the law in force), the information capacity of the indicator is absolutely minimal.

As concerns the second strategic objective (to minimise conflicts of interests between economic activities and environment protection), the crucial indicators have already been mentioned in the section on the economic pillar above. They are complemented by

- II.C Material consumption

This indicator can be interpreted in a similar way to the power industry: the situation is improving moderately, but continues to be unsatisfactory.

The meeting of the second strategic objective may also be described by

- II.J Expenditures on environment protection and public budget expenditures on environment protection

The recent trend of moderately growing expenditures on environment protection, representing a positive development, is likely to continue, particularly in the context of the flow of resources from EU cohesion funds. It is necessary to refine the method of calculation of this indicator in order to reflect the new issues.

The third strategic objective concerns global issues, namely climate change, ozone layer protection, and biodiversity protection. Climate change is described by

- II.A Greenhouse gas emissions per capita
- II.B Greenhouse gas emissions per unit of GDP

Greenhouse gas emissions are closely related to the power industry; the information provided by the presented indicators is similar to that from the above mentioned indicators for this area. Greenhouse gas emissions in the Czech Republic are very large in absolute terms, the situation is not favourable and only improving slowly.

The Czech Republic occupies a much better position in relation to ozone layer protection; however, no such information is presented herein.

Biological diversity is characterised by a single indicator:

- I.G Index of common species of wild birds

The indicator shows a rather bad situation, similar to elsewhere in Europe.¹⁾

Information on the state of and changes in ground cover and land use (including, e.g., extent of protected areas, built-up areas, etc.) is crucial to the characterisation of the environmental pillar. However, no specific indicator is dedicated to these issues.

III. THE SOCIAL PILLAR

The first strategic objective is to support human resource development with a view to maximising social cohesion.

The second strategic objective is to continuously reduce unemployment to a rate where people are economically and socially motivated to engage in gainful activities.

The third strategic objective is to maintain a stable number of inhabitants in the Czech Republic, increase the population over time and improve its age structure.

The strategic objectives in the social pillar are characterised mainly by four indicators related to employment:

- III.C General unemployment rate
- III.D Registered unemployment rate
- III.E Employment of elderly workers
- III.F Regional dispersion of the employment

¹⁾ No new data were available for the indicator; the text is therefore identical to that published in the 2007 Progress Report.

The development in this area in the Czech Republic is moderately positive in both the historical and the international context.

It is questionable whether the number of selected indicators is not somewhat over-abundant at the expense of possible additional types of information that would complement the depiction of the pillar (such as the Gini Index, data on personal income, data on household consumption patterns).

Another crucial indicator is

- III.G Population living below poverty line before and after social transfers

Evidence suggests that the Czech Republic's situation in this respect is stabilised and very good in the international context (which is hardly the case with any other indicator).

The social pillar encompasses issues of public health and demographics. The following are the aggregate indicators of the health of the population:

- III.A Life expectancy
- III.B Mortality

Both the above indicators attest to a moderately improving situation in the Czech Republic; however, it is still unfavourable in comparison to the most advanced countries of the world (including the EU-15), although country is doing well compared to the newly acceded EU Member States. It is a question whether indicator III.B is not somewhat redundant, because it provides very similar information to the basal indicator III.A. At the same time, information on the demographic situation, population ageing, immigration as well as on social and healthcare systems (old age security, pension schemes) is missing; these data would contribute to a more thorough characterisation of the social pillar.

IV. RESEARCH AND DEVELOPMENT, EDUCATION

The strategic objective in the area of research and development and education is to attain a high level of education in society, and thus ensure the competitiveness of Czech society and develop ethical values in accordance with European cultural traditions.

This cross-section area is characterised by two basic indicators:

- IV.A Highest level of education attained
- IV.B Gross Research & Development expenditures

The above indicators characterise the Czech situation quite well. It is obvious that difficulties in both the research and education areas continue; in particular, support to research and development (and innovation) is still inadequate (although, of course, financial indicators are not the only relevant ones).

The data are complemented by

- IV.C Internet access

The data provided by this indicator are typical of the Czech Republic, like in many other areas: the country is performing rather well within the post-communist bloc, but lags behind the most advanced countries; the situation is improving moderately, but very slowly.

V. EUROPEAN AND INTERNATIONAL CONTEXT

The first strategic objective in the international context is to advocate and promote the principles of sustainable development in the framework of the broadest international relations, in international global and regional organisations, and as part of bilateral relations. This involves co-operation and initiative at all international levels and, in particular, efforts towards overcoming ethnic, economic, ecological and social conflicts between different cultural communities.

The second strategic objective is to be an active member of the EU and contribute to the EU's becoming a functioning and prosperous community, provided that the prosperity of the EU increases the living standard of Czech citizens and improves the quality of their lives, security and freedom.

In spite of the growing importance of this area in the rapidly globalising world (all the more to the Czech Republic, having been an EU Member State for four years), only one indicator is presented herein:

- V.A Total international development co-operation

The values shown suggest that the defined targets are not being met, although it is (mildly) reassuring to see that the situation is not very different in the EU, even in the advanced countries.

VI. GOOD GOVERNANCE

The first strategic objective is to ensure the gradual approximation of the constitutional system to the needs of society for purposes of transition to a trajectory of sustainable development.

The second strategic objective is to ensure that regions/municipalities are granted a status corresponding to their prospective functions in ensuring an equilibrium between the pillars of sustainable development.

The third strategic objective is to improve conditions for the participation of the public in decision-making in matters concerning sustainable development, and create the broadest possible consensus in respect of the transition to sustainable development.

The fourth strategic objective is to set up and develop institutions and forms of work of the public administration in accordance with the requirements of sustainable development.

The fifth strategic objective is to ensure that measures taken in order to maintain external and domestic security reflect the requirements of protection from international conflict and the continually transforming forms of crime, including international crime, and especially terrorism.

The first strategic objective is formulated very vaguely. No appropriate indicator has been found to characterise the issue.

The following indicator was chosen to provide information on the second objective:

- VI.D Coverage of the Czech Republic's territory by approved town and country documentation of municipalities

Positive development has been identified here, representing an important contribution to the fulfilment of the sustainable development concept.

The third strategic objective is characterised by

- VI.E Civil society

The data indicate that the development in the area is positive. Unfortunately, international comparison is missing, which is why it is desirable to harmonise the method of calculation of this (or another similar) indicator with international practice.

Relevant information on the fourth strategic objective is provided by

- VI.A Corruption Perceptions Index

Unfortunately, the position of the Czech Republic in this respect is very poor in international comparison. The poor values of the indicator pose a very serious challenge to the public administration and the entire society.

The fifth strategic objective is difficult to characterise; the following indicator is of some relevance (being important by itself):

- VI.C Average duration of court proceedings

In spite of some moderate improvement, the situation continues to be unsatisfactory.

The last indicator in this cross-section area is

- VI.B Availability of public cultural services

The above indicator is of no direct relevance to any of the strategic objectives; its interpretation is unclear (vague definition of “public cultural services”).

Table I. Summary assessment of indicators (assessment for 2006 and 2007 adopted from the First and Second Progress Reports)

	Indicator	Target achievement (assessment of trend)			International comparison		
		2006	2007	2009	2006	2007	2009
I. Economic pillar: strengthening the competitiveness of the economy							
a	Gross Domestic Product per capita	+	+	+	+/-	+	+/-
b	Share of government deficit/surplus in GDP	+/-	-	+	+/-	+/-	+/-
	Share of government debt in GDP	-	-	+	+/-	+/-	+/-
c	Current account of balance of payments/GDP ratio	+/-	+/-	+/-	-	-	+/-
d	Labour productivity	+	+	+	+/-	+/-	+/-
e	Transport intensity	+/-	+/-	+	+/-	+/-	+/-
f	Energy intensity of GDP	-	+/-	+	-	-	-
g	Total consumption of primary energy supply	-	+/-	+/-	-	+/-	+/-
h	Share of energy from renewable sources	-	+/-	+/-	-	-	+/-
II. Environmental pillar: protecting nature, the environment, natural resources and the landscape, environmental limits							
a	Greenhouse gas emissions per capita	+/-	+/-	-	-	-	-
b	Greenhouse gas emissions per unit of GDP	+/-	+/-	+	-	-	-
c	Material consumption	+	+/-	-	-	-	-
d	Share of reused waste in total waste streams	+	+	+	n.a.	+	+
e	Consumption of industrial fertilisers	+	+	-	+	+	+
f	Consumption of pesticides	+	+	-	+	+	+
g	Index of common species of wild birds	-	-	-	+/-	+/-	+/-
h	Defoliation	n.a.	-	+/-	n.a.	+/-	-
i	Share of organic farming in total farmland	+	+	+	+	+	+
j	Expenditures on environment protection	-	-	+/-	+/-	+/-	+/-
	Public budget expenditures on environment protection	-	-	+/-	+/-	+/-	+/-
III. Social pillar: strengthening social cohesion and stability							
a	Life expectancy	+	+/-	+	-	-	+/-
b	Mortality	+	+/-	+	-	-	+/-
c	General unemployment rate	-	-	+/-	+/-	-	+/-
d	Registered unemployment rate	-	-	+	+/-	-	n.a.
e	Employment of elderly workers	+	+/-	+/-	+/-	+/-	+/-
f	Regional dispersion of the employment	-	+/-	+/-	+/-	n.a.	+/-
g	Population living below poverty line before and after social transfers	n.a.	+/-	+/-	+	+	+
IV. Research and development, education							
a	Highest level of education attained	+	+	+/-	+	+	+/-
b	Gross Research & Development expenditures	+/-	+/-	+/-	-	-	-
c	Internet access	+/-	+/-	+/-	-	-	-
V. European and international context							
a	Total international development co-operation	+/-	+/-	+/-	+/-	-	-
VI. Good governance							
a	Corruption Perceptions Index	-	-	-	-	-	-
b	Availability of public cultural services	-	-	-	n.a.	n.a.	n.a.
c	Average duration of court proceedings	-	+/-	+/-	n.a.	n.a.	+/-
d	Coverage of the Czech Republic's territory by approved town and country documentation of municipalities	+/-	+	+	n.a.	n.a.	n.a.
e	Civil society	+	+/-	+	+/-	+/-	n.a.

Legend:

+ drawing near the target; values at the level of leading countries

+/- varying values, or values that are stable but without progress towards the goal; values at the average level of countries being compared

- receding from the target; values at the level of the last of the countries

n.a. no data available

I.

ECONOMIC PILLAR: STRENGTHENING THE COMPETITIVENESS OF THE ECONOMY

I.A GROSS DOMESTIC PRODUCT PER CAPITA

Slavoj Czesany

1. Meaning and context of the indicator

The macroeconomic performance of an economy is typically indicated by means of a gross domestic product indicator. It is a basic aggregated indicator, used for a relatively long time and allowing international comparison. It is defined as an aggregate of gross value added in various sectors and industries of a national economy. The indicator disregards certain aspects; namely, it (i) excludes the cost of domestic labour, (ii) ignores the distributional processes in the use of a product, (iii) ignores losses caused by environmental burden, and (iv) registers military expenditures as positive contributions to growing wealth.

The gross domestic product is also used as a proportional reference value for assessment of the rates of internal and external imbalance. The share of investment savings and the current account balance in the GDP can serve as an example. The GDP is also used in international comparison of the supply and demand components of the GDP in its total (such as the shares of education, health-care, or social expenditures).

Assessing of the GDP dynamism against social and environmental indications illustrates the rate of accord among the developments of the main pillars of sustainable development. Growth in the GDP can either be attained by expanding employment and investment activity or by increasing labour and capital productivity. The gross domestic product per capita is an approximative indication of the standard of living. Each country estimates its GDP in its domestic currency.

2. Method of calculation of the indicator

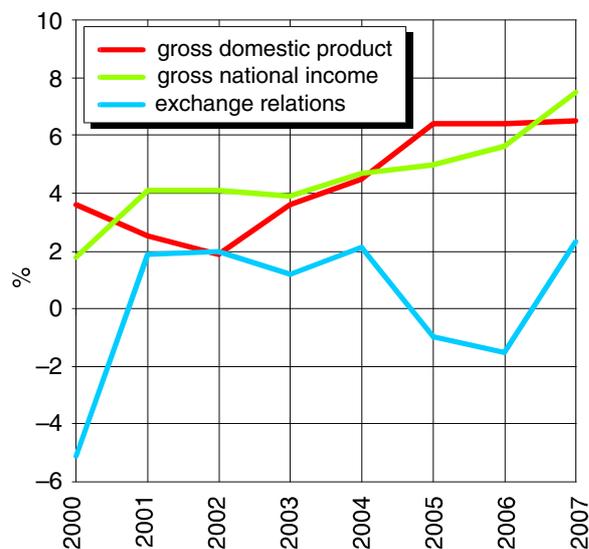
This indicator is a productivity indicator (production performance of the economy), expressed as the gross added value of resident units (including undertakings under foreign control). Conversion to constant prices is done using the double deflation method (consumption of inputs converted to constant prices is deducted from total production converted to constant prices, or imports converted to constant prices is deducted from total final use converted to constant prices). For the purpose of comparing the economic level of different countries per capita GDP in purchasing power parity is used to eliminate any differences in pricing levels. The purchasing power parity is, as a rule, measured in an international monetary unit that is based on the average price level in the countries being compared, such as the PPS – purchasing power standard for EU countries, expressing the average price level in the EU-25 on the basis of EUR. The OECD uses the “international dollar” reflecting the average price level of the current thirty OECD members.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The GDP recorded a real growth by 6.5% in 2007, achieving the fastest pace of growth in the modern history of the Czech Lands. Yet the conditions for economic growth in 2007 were not as favourable as the year before. Credit interest rates were growing, the cost competitiveness was decreasing due to the strengthening Czech crown, and the prices of energy sources were increasing. On the other hand, the favourable preconditions for economic growth included primarily the recovery of exchange relations to positive figures and the realisation of positive effects of the flow of foreign

Chart I.A.1: Gross domestic product (2000 co. p.) and exchange relations (annual change), Czech Republic, 2000–2007



Data source: Czech Statistical Office

capital. The year 2007 saw a positive shift between the growing GDP and gross domestic income (GDI). The positive development in the exchange relations resulted in the GDI showing a real growth by 7.5%, which was 1 p. p. above the GDP growth rate. Gross domestic disposable income grew by 5.2% in 2007. Its growth was lower compared to the economic indicators of GDP and GDI, largely due to the larger outflow of net primary incomes from the Czech Republic abroad.

The components of the domestic demand grew at different paces in 2007, thus making different contributions to the GDP growth. The household consumption growth accelerated from 5.4% in 2006 to 5.7% in 2007; in addition, it exceeded noticeably the 2001–2006 average by 2.2 p. p. It also made a dominant contribution to the GDP growth (2.7 p. p.). The household consumption growth was supported by a 4.4% growth in real wages,

the population's more intensive utilisation of savings, and increased provision of consumer loans. It seems that the population was not anticipating any worsening in the economic situation in the coming years. Household indebtedness grew by more than one third annually, while mortgage loans were growing faster than consumer loans. These processes can be explained both by the population's desire to own a home and the existence of negative interest rates on their bank deposits, devaluing their savings.

Investment activity grew over the last three years. The generation of gross fixed capital grew by 6.1% in 2007, exceeding the 2001–2006 average by 2.1 p. p. There were multiple reasons for this. One of them was the favourable investment climate in Europe, Germany in particular, where investment and exports grew by 4.9% and 8.5% in 2007, respectively, and the Czech Republic was able to benefit from the investment and export wave. Additional causes of the accelerated investment process included the considerable increase in the growth of profits, which exceeded the previous year by one third in a number of industries. The inflow of foreign direct investment was a major determinant: it amounted to CZK 185 billion in 2007, which was the third highest figure achieved between 2000 and 2007. The scope of the inflow of foreign direct investment created a basis for growing future potential product.

Despite a certain increase, the interest rates were not as high as to prevent companies from reaching them, including small and medium-sized Czech businesses. The fact that the interest rates on credit were lower than in the Eurozone was a contributing factor. The factual structure of the fixed capital remained stable in 2003–2007. The 50.5% share of machinery in the total investment was only a little above the share of construction. The proportion of machine and vehicle investment within the machinery category changed little, and so did the proportion of investment in housing and other buildings and structures.

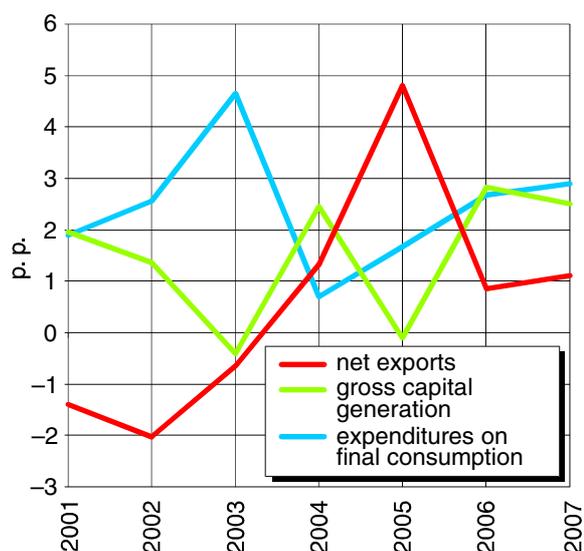
The contribution by the fixed capital generation to the GDP growth was increasing in 2005–2007 and reached 1.5 p. p. in 2007. The investment efficiency also grew (with a simultaneous decrease

in the amount of units when converted to unit GDP growth) from 16.1 in 2002 to 4.5 in 2007. The excess of the investment in relation to the gross national income decreased, which led to an improvement in the external economic imbalance.

The contribution by the net exports to the GDP achieved the record level of 4.8 p. p. in 2005. It was 1.1 p. p. in 2007, which was still above the long-term average of 2001–2006, amounting to 0.5 p. p. The creditable achievement was helped by three consecutive years of growing performance in exports of goods and services. The exports of goods and services grew by 14.5% in 2007.

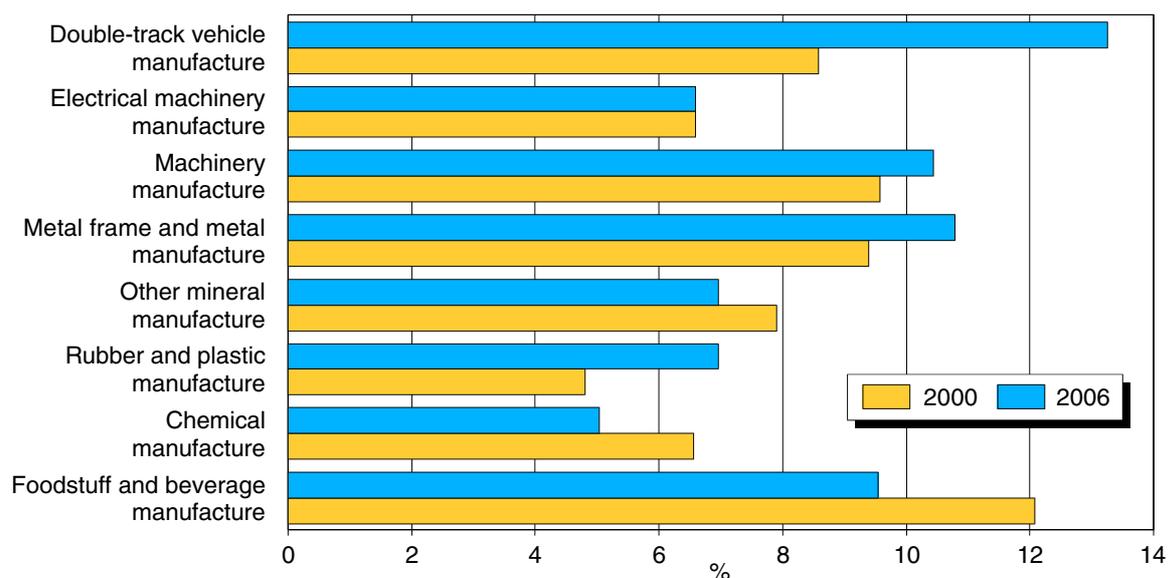
The sectoral structure of the economy (measured as the share in the total gross added value in current prices) proved to be volatile between 2000–2007. The position of the primary sector (agriculture and fishery) improved by 0.2 p. p. in 2007 compared to 2006. However, compared to the 2001–2006 average of 3.2%, its significance decreased after 2005. The share of the secondary sector (industry and construction) grew to 38.4% in 2007 following two years of decline, consolidating its position even when compared with the medium-term average of 37.5%. The tertiary, service sector decreased by 0.5 p. p. compared to 2006; its average in 2001–2006 was 59.3%. In the medium term, the secondary sector was gaining the upper hand over the primary and tertiary sectors.

Chart I.A.2: Contributions to GDP growth by demand components (2000 co. p.), Czech Republic, 2001–2007



Data source: Czech Statistical Office

Chart I.A.3: Contributions to gross added value by all manufacturing industries – selected industries (cu. p.), Czech Republic, 2000, 2006



Data source: Czech Statistical Office

Table I.A.1: Contributions to gross added value by industries (cu. p.; %), Czech Republic, 2000–2007

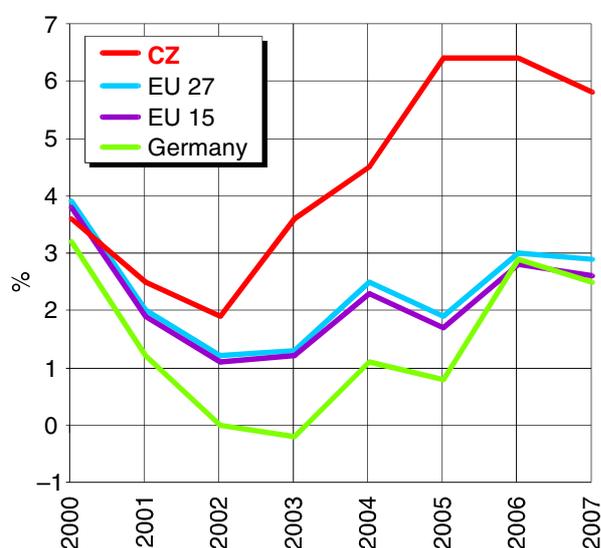
Sector	2000	2001	2002	2003	2004	2005	2006	2007
Agriculture, fisheries	3.9	3.9	3.3	3.1	3.3	2.9	2.6	2.8
Industry, construction	38.1	37.7	36.7	35.9	38.6	38.2	38.1	38.4
Services	58.0	58.4	60.0	61.0	58.1	58.9	59.3	58.8

Data source: Czech Statistical Office

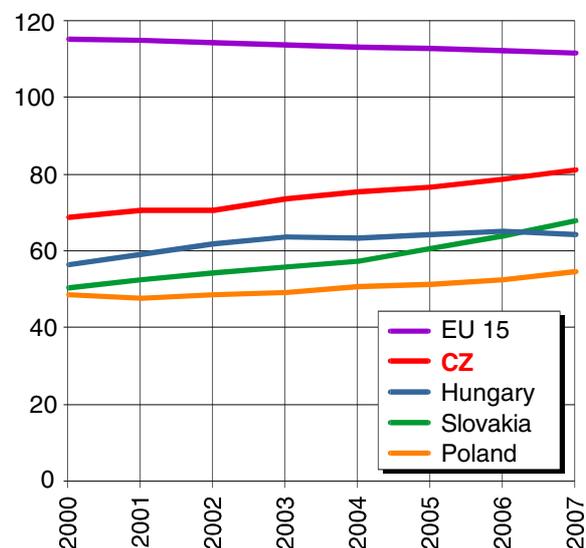
The manufacturing industries grew by an average 7.9% annually between 2001 and 2006; the growth rate was an above-average 11% in 2007. The rapid growth trend started in 2004; the fastest annual growth by over 18% occurred in 2006. The fast growth in the performance (gross added value) of the manufacturing industries was influenced by growing capacities, labour productivity and capital; the labour force increased in 2005–2007.

b) International comparison

For three years in a row, the economic growth rate has been stabilised at 6.4% annually, ranking the Czech Republic among the fast-growing countries. Since the GDP growth rate in the Czech Republic was 3.6 p. p. above that in the EU-27, the distance between the Czech Republic and the EU-27 average economic level was reduced. Based on an extrapolation, the Czech Statistical Office estimates that the Czech Republic achieved 82% of the EU-27 level in its GDP per capita as purchase power parity in 2007.

Chart I.A.4: Gross domestic product (2000 co. p., annual change), international comparison, 2000–2007


Data source: Eurostat

Chart I.A.5: Gross domestic product as PPP per capita²⁾ (EU-27 = 100), international comparison, 2000–2007


Data source: Eurostat

The international comparison of the added value composition indicates differences in the main sectors involved in the Czech Republic and the advanced countries. The greatest difference is in the proportion between the industries, including construction, and the service sector. While in the advanced

²⁾ 2007 data are a preliminary estimate.

countries the services contribute by approx. 70% and that figure continues to grow, the highest share of services in the Czech Republic occurred in 2003 (61%) and has been decreasing since then, amounting to 58.8% in 2007. Thus, the imitation of the trend in advanced countries in the last two decades has been interrupted: the structure of the supply was changing towards the services along with the growing economic level. Development in this direction is significant in several respects. Not only does it correspond to changes in a population's consumption towards high-demand services such as education, healthcare, and research and development; what is more, the service sector is less energy and material demanding and less sensitive to the descending phase of the economic cycle.

International comparison shows that the share of household consumption on the GDP has been around 50% for a number of years, lagging behind the EU average of approx. 60% of the GDP. The international comparison shows that investment is nearly one third higher than the average investment in the Eurozone, which is largely stable around 20% of the GDP. The distance in investment rates between the Czech Republic and the advanced countries can thus be largely explained by convergence processes, in which medium-advanced countries' economies reduce their distance from the economic levels in advanced countries.

4. Main findings

- A shift toward maximum utilisation of the great production potential due to the gradual arrival of foreign direct investment.
- The industry was the crucial driving force behind the accelerated economic growth, further advancing in specialising its profile, now dominated by vehicles, machines, and computer technology.
- The growing employment and decreasing unemployment grew, implying greater productive use of the labour force capacity.
- The reinforced macroeconomic stability, or decreased internal and external imbalance, played a positive role. The gap between economies and investment diminished, leading to lower deficit of the current account of the balance of payments, with a positive effect on the growth of GDP.
- A deceleration of economic growth is anticipated. The causes include the slackening of the global boom, high inflation rates, and deepening global financial instability.

I.B SHARE OF GOVERNMENT DEFICIT/SURPLUS IN GDP AND SHARE OF GOVERNMENT DEBT IN GDP

Petr Hovorka and Ladislav Havlíček

1. Meaning and context of the indicators

a) Macroeconomic context

The overall balance of public finance is equal to the difference between aggregate incomes and aggregate expenditures of public budgets. Quantification of both variables may differ depending on the delimitation of the government sector and the methodology used, i.e. the accruals vs. cash approach – for details see “Method of calculation of the indicators”.

Public budgets comprise all income and expenditure activities of the government. Public budgets include the financial management of³⁾:

- the state budget, the National Fund and state extra budgetary funds (the State Fund of Culture, the State Environmental Fund, the State Land Cultivation Fund⁴⁾, the State Fund for the Support and Development of Czech Cinematography, the State Fund for Transport Infrastructure, the State Fund for Housing Development, the State Agricultural Intervention Fund);
- the National Property Fund⁵⁾;
- the Land Fund of the Czech Republic;
- health insurance companies;
- self-governed territorial units (budgets of municipalities and regions).

A budget deficit means that the amount of public expenditures of a budget exceeds the amount of public incomes. When quantifying a deficit it is necessary to respect certain more general criteria that perceive fiscal policy as an effective tool in influencing the macroeconomic situation.

From the perspective of sustainability, relevant is the share (relation) of the budget deficit, or public debt, to GDP, and not its absolute amount.

An analysis of the impacts of government deficit on the sustainable development of the economy can be characterised by the following macroeconomic formula:

$$BS = G - T = S - (I + NX)$$

where: BS government budget deficit (BS positive), or surplus (BS negative);
 G government expenditures on goods and services;
 T net taxes, i.e. taxes net of transfers;
 S private domestic savings;
 I private domestic investment expenditures;
 NX net exports.

³⁾ This narrower definition is consistent with the GFS 1986 methodology. The ESA 95 methodology relevant for the Maastricht criteria uses a broader definition of the government sector, including in addition the Czech Consolidation Agency with subsidiaries (Konpo, Prisko, Česká finanční), Česká inkašni, the Administration of the Railway Infrastructure, the Viticultural Fund, the Supporting and Guarantee Agricultural and Forestry Fund, public universities, centrally and locally administered contributory organisations, and the PPP centre.

⁴⁾ Ceased to exist on 1 January 2006 pursuant to Act no. 94/2005 Coll., on the Dissolution of the State Land Cultivation Fund. Its rights, duties, and property were transferred to the Ministry of Agriculture as of that date.

⁵⁾ Ceased to exist on 1 January 2006 pursuant to Act no. 178/2005 Coll., on the Dissolution of the National Property Fund. Its sphere of activity was re-assigned to the Ministry of Finance, which is now entitled to manage the property transferred to the State after the dissolution of the Fund.

The equation above indicates how government budget deficit may be financed. Based on the equation terms on the right side of the equation, this is possible in three ways:

1. by increasing private domestic savings;
2. by reducing private domestic investments;
3. by reducing investments abroad (or loans from abroad).

The equation also outlines the relation between the budget deficit, savings, investments and foreign trade deficit.

A budget deficit may be of two types. The first type is a cyclical deficit, resulting from variations of the product in the course of the economic cycle. This is caused by a decline in the dynamics of economic growth, which affects both the expenditure side of the budget (higher unemployment allowance and social benefits) and the income side (lower tax returns). This deficit is temporary and occurs only during economic recession. This type of deficit is the result of exogenous factors, thus difficult for any government to influence. The second type, structural deficit, is caused by a structure of incomes and expenditures that is unsustainable in the long run. This is mostly due to high mandatory expenditures (social transfers and debt service).

Accumulation of budget deficits further leads to increasing public debt. Countries with high public debt and budget deficit gradually find themselves in a situation where it is more and more difficult to keep control of the budget situation. Solutions are typically associated with unpopular budget cuts and limitation of government consumption.

b) Accession of the Czech Republic to the Eurozone

The accession of an EU member state to the Eurozone is conditional on the achievement of a high level of convergence, which is measured by sustainability of performance of the four convergence criteria, including long-term sustainability of public finance assessed in the light of the development of the government deficit and government debt.

- The government deficit criterion

The convergence criterion of government deficit requires that the ratio of projected or actual deficit of the government sector to Gross Domestic product should not exceed 3%, except in cases where:

- the ratio declined substantially and continuously and achieved a level near the recommended value;
- and/or the reference value was exceeded on an exceptional and temporary basis and the ratio remained near the reference value.

The term “government deficit” means net borrowings of the sector of governmental institutions as defined in ESA 95, with minimal variations (see below).

- The government debt criterion

The convergence criterion of government debt provides that the ratio of the government debt to the Gross Domestic Product in market prices should not exceed 60%, except in cases where the ratio sufficiently decreases and approximates, at a satisfactory rate, the reference value.

The term “government debt” means the total gross debt of the sector of governmental institutions according to ESA 95 with some partial methodological modifications.

The loss of independent monetary policy will mean that accommodation of the economy to shocks will place increased requirements on other adaptation mechanisms, such as the stabilising function of public budgets (making of space for the work of automatic stabilisers, and securing the long-term sustainability of public finance) flexibility of the labour market (mobility of workforce) and the shock-absorbing capability of the financial system.

Meeting the Maastricht criteria for deficit (3% of GDP) and debt (60% of GDP) of the government sector in itself will not provide for stabilisation of the public finance within the framework of the European fiscal rules. It is necessary to create sufficient manoeuvring space ensuring that we will be able to keep the deficit of the government sector below the 3% reference value permanently, even under unfavourable economic circumstances. Problems may be caused in the future by further delaying of the pension and health care system reform. Expenditure to debt service is a mandatory expenditure and its growth will further limit the space for the stabilising functions of public budgets and an autonomous governmental fiscal policy.

2. Method of calculation of the indicators

There are two basic methods of reporting on the government debt and deficit on a cash basis, represented by the government financial statistics methodology (GFS 1986) and a methodology on the accrual basis of government operation reporting. Its best-known example is the ESA 95 methodology, developed by the European Statistical Office (Eurostat). The differences between the two methodologies can be described, in a simplified way, as the difference between single-entry bookkeeping, using current cash flows, and double-entry bookkeeping, working also with accounts receivable and payable. The differences in the results obtained using the two methods result, above all, from the different treatment of tax revenues, social and health security contributions, interest, government warrants, and the record-keeping of the economic management of the Czech Consolidation Agency. Another substantial difference is in the different definitions of the government sector.

For the purposes of this Report, we use data calculated based on ESA 95.

3. Assessment of the indicators

a) Development of the indicators in the Czech Republic

Table I.B.1: Government balance and government debt under ESA 95 (in % of GDP), Czech Republic, 1997–2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Balance	-3.7	-3.7	-5.7	-6.8	-6.6	-3.0	-3.6	-2.7	-1.6
Debt	16.4	18.5	25.1	28.5	30.1	30.4	29.7	29.4	28.7

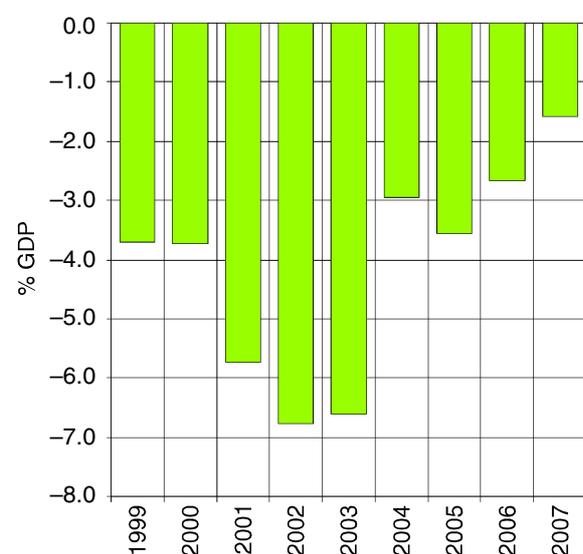
Data source: Czech Statistical Office

The governmental sector balance was better than expected in 2007. All subsectors showed better results. Central governmental institutions had the greatest effect, above all thanks to the good results of the national budget.

The major causes included the higher-than-expected tax revenue collection and the failure to realise numerous expenditures, with the unused resources transferred to reserve funds.

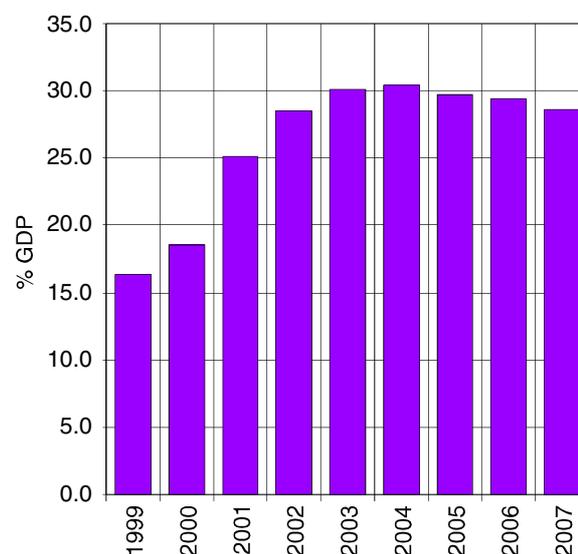
The government debt amounted to 28.7% of the GDP in 2007, remaining at a relatively low level, deep below the reference value of 60% of the GDP. The remarkable economic growth and relatively good results in the last two years have even resulted in its moderate proportional decrease. Relatively good results for the governmental sector are expected again for 2008, meaning that the proportional debt indicator may continue decreasing. Of course additional reforms are necessary for the long-term sustainability of the public budgets, particularly a reform of the pension system, which might become a future risk of growing government indebtedness because of the negative demographic trend. Consequently, that would lead to high debt service expenditures. The government debt may be in the form of treasury bills, government bonds, or credits. The interest rate is then derived from the market interest rate and risk level of the given country. Growing debt service expenditures restrict availability of funds for other public expenditures.

Chart I.B.1: Governmental sector balance, Czech Republic, 1999–2007



Data source: Czech Statistical Office

Chart I.B.2: Governmental sector debt, Czech Republic, 1999–2007



Data source: Czech Statistical Office

b) International comparison

The issue of deficit budgets and increasing public debt is one of the key macroeconomic topics not only in the Czech Republic but also in many other member states of the European Union and the European Monetary Union (EMU).

Deficits of public finances may have a serious adverse impact on currency. Failure of some member states to observe fiscal rules may impact adversely on other member states.

The majority of the EU Member States have shown improving fiscal discipline in the recent years. This results in their indebtedness gradually decreasing. In terms of government balance, the Czech

Republic governmental sector has performed markedly better than expected but still the country is below the EU-27 average. Hungary has performed by far the worst for many years.

The Czech Republic has a considerable leeway in terms of governmental sector indebtedness, amounting to about one half of the EU-27 figure. Italy is the most indebted and has failed to reduce the debt in a convincing manner.

Table I.B.2: Amount of surplus/deficit (% GDP), international comparison, 2004–2007

Country/year	2004	2005	2006	2007
Belgium	0.0	-2.3	0.3	-0.2
Bulgaria	1.4	1.8	3.0	3.4
Denmark	1.9	5.0	4.8	4.4
Germany	-3.8	-3.4	-1.6	0.0
Greece	-7.4	-5.1	-2.6	-2.8
Spain	-0.3	1.0	1.8	2.2
France	-3.6	-2.9	-2.4	-2.7
Ireland	1.4	1.6	3.0	0.3
Italy	-3.5	-4.2	-3.4	-1.9
Luxembourg	-1.2	-0.1	1.3	2.9
Netherlands	-1.7	-0.3	0.5	0.4
Austria	-3.7	-1.5	-1.5	-0.5
Portugal	-3.4	-6.1	-3.9	-2.6
Finland	2.4	2.9	4.1	5.3
Sweden	0.8	2.2	2.3	3.5
UK	-3.4	-3.4	-2.6	-2.9
Czech Republic	-3.0	-3.6	-2.7	-1.6
Cyprus	-4.1	-2.4	-1.2	3.3
Estonia	1.6	1.8	3.4	2.8
Hungary	-6.5	-7.8	-9.2	-5.5
Lithuania	-1.5	-0.5	-0.5	-1.2
Latvia	-1.0	-0.4	-0.2	0.0
Malta	-4.6	-3.0	-2.6	-1.8
Poland	-5.7	-4.3	-3.8	-2.0
Slovakia	-2.4	-2.8	-3.6	-2.2
Slovenia	-2.3	-1.5	-1.2	-0.1
Romania	-1.2	-1.2	-2.2	-2.5
Eurozone	-2.9	-2.5	-1.3	-0.6
EU-27	-2.8	-2.5	-1.4	-0.9

Data source: Eurostat

Table I.B.3: Amount of debt (% of GDP), international comparison, 2004–2007

Country/year	2004	2005	2006	2007
Belgium	94.2	92.1	88.2	84.9
Bulgaria	37.9	29.2	22.7	18.2
Denmark	43.8	36.4	30.4	26.0
Germany	65.6	67.8	67.6	65.0
Greece	98.6	98.0	95.3	94.5
Spain	46.2	43.0	39.7	36.2
France	64.9	66.4	63.6	64.2
Ireland	29.5	27.4	25.1	25.4
Italy	103.8	105.8	106.5	104.0
Luxembourg	6.3	6.1	6.6	6.8
Netherlands	52.4	52.3	47.9	45.4
Austria	63.8	63.5	61.8	59.1
Portugal	58.3	63.6	64.7	63.6
Finland	44.1	41.3	39.2	35.4
Sweden	51.2	50.9	45.9	40.6
UK	40.4	42.1	43.1	43.8
Czech Republic	30.4	29.7	29.4	28.7
Cyprus	70.2	69.1	64.8	59.8
Estonia	5.1	4.5	4.2	3.4
Hungary	59.4	61.6	65.6	66.0
Lithuania	19.4	18.6	18.2	17.3
Latvia	14.9	12.4	10.7	9.7
Malta	72.6	70.4	64.2	62.6
Poland	45.7	47.1	47.6	45.2
Slovakia	41.4	34.2	30.4	29.4
Slovenia	27.6	27.5	27.2	24.1
Romania	18.8	15.8	12.4	13.0
Eurozone	69.7	70.3	68.6	66.6
EU-27	62.1	62.6	61.3	58.7

Data source: Eurostat

c) Practical implications

The long-term sustainability of public finance was also strongly emphasised in the reform to the Treaty on Stability and Growth during the first half of 2005. The European Commission publishes regular assessments of the long-term sustainability of public finance, based on updated convergence and stabilisation programmes of the EU Member States. Long-term sustainability of public finance is a complex issue which cannot be assessed by a single indicator; therefore, the European Commission assesses it using both quantitative indicators and information descriptive of the quality of public finance. The primary quantitative indicator describing the possible risks to sustainability of public finance are the so-called sustainability gaps, measured as the difference between the existing and planned budgetary position on the one hand, and one that guarantees sustainability on the other hand. Increased attention is also paid to the systemic reflection of qualitative aspects, which complement the assessment of quantitative achievements. Factors reflected include, above all, the current level of debt ratio, effects of structural reforms, plausibility of projections, and the tax burden level.

Although literature offers no consistent definition of long-term sustainability of public finance, the European Commission includes in its assessment an analysis of whether the medium-term budgetary constraints are tenable based on the current policies and predicted public budget development trends in order that the discounted value of future revenues corresponds to the discounted value of future expenditures and the governmental debt, and the country can continue to meet its fiscal criteria for membership in the EMU, mainly the requirement to keep the debt below the 60% reference level.

In the assessment, the European Commission pays heed primarily to the effect of the net impact of population ageing and the initial budgetary position, enabling separate analyses of the principal risks to long-term sustainability of public finance in each of the Member States. Despite the fact that the analysis takes into consideration the decrease in some of the expenditure types related to population ageing, such as expenditures connected to unemployment and education, this decrease cannot compensate for the newly generated financial demands of the healthcare and pensions systems in the vast majority of the Member States. The impacts of the various Member States' pensions schemes differ greatly due to their highly diverse forms. Nevertheless, a significantly lower impact of public pensions schemes is predicted for countries that have recently undertaken a pensions reform. The Czech Republic ranks among countries with a growth in expenditures in excess of 8 per cent of the GDP predicted.

The predicted growth in pensions expenditures, therefore, is a substantial burden to the public finance system. Thus, to achieve long-term sustainability of public finance, the planned consolidation of public finance need to be completed in the medium term in order to stabilise the budgetary position; and other structural reforms need to be implemented to curb the growth in expenditures related population ageing. In this respect, the Government commenced the preparation of reforms to the pension and healthcare systems in mid 2006, aiming at reinforcing their long-term sustainability.

In addition to implementing parametric modifications (mainly extension of the retirement age to 65 years, increasing the minimum length of the insurance period, restrictions to compensatory insurance periods), the pension system reform includes the preparation of legislation changes concerning private pension funds (disconnection of shareholders' and clients' means, further promotion of employee participation in additional pension insurance, etc.), which may help the potential future introduction of the so-called opt-out system, among other things.

In respect of healthcare, the regulatory fees (for seeing the physician, receiving a prescribed medicine, and per day of stay in a healthcare facility) entered into effect on 1 January 2008, aimed at reducing superfluous medical care. At the same time, a revision of the scope of health insurance coverage is under preparation (introducing optional coverage, allowing supplementary charges or additional insurance for above-standard care) and other systemic changes to reinforce the fair competition among healthcare facilities. An independent expert committee has been set up in this case too in order to analyse possible future strategic changes by evaluating the status quo of the healthcare system, its prospects and possible solutions.

4. Main findings

The criteria of government deficit and debt are two principal fiscal indicators monitoring the target of tenability of the country's stability and its resistance to external and internal adverse effects. In its Strategy for Sustainable Development, the Government made a commitment to reform the public finance in order to secure long-term sustainability of basic social services, reduce the 'internal debt' gradually, and, at the same time, boost the growth potential of the national economy. In the

Convergence Programme, it claimed its effort to face long-term challenges of the continued public finance reform, which should follow predominantly coherent modifications to the pensions and healthcare systems and of increasing overall employment. The fiscal policy, generally speaking, should be formulated in order to provide the Government with a balanced fiscal position by means of a well-defined medium-term target, to allow long-term fiscal sustainability, which is the necessary prerequisite for the achievement of the goals defined under the economic pillar of sustainable development in the Czech Republic.

Although the Czech Republic ranks among the countries with lower governmental debt levels in the EU, the relatively large public budgets deficits in the long-term projections (until 2050) cause the debt level to grow, posing a threat to the sustainability of public finance. The public budget deficit has dropped below 3% of the GDP over the last few years, but the magnitude of the structural component of the deficit remains a problem. The public finance deficit, therefore, poses the main risk to the economic pillar of sustainable development.

I.C CURRENT ACCOUNT OF BALANCE OF PAYMENTS/GDP RATIO

Evžen Woller

1. Meaning and context of the indicator

The indicator current account of balance of payments/GDP ratio assesses the level of external imbalance of the economy. The output of this indicator is expressed in relative units (%).

The development of the indicator is assessed in the context of development of the other macro-economic indicators in the field of external relations, particularly in relation to the trends in the debt and liquidity indicators characterising the sustainability of indebtedness of the economy in question and its ability to meet its payment obligations. Knowledge of the structure of the current account is also important, whether the developments are due to direct productive activity or financial flows that need not be immediately related to the economic activities.

This indicator monitors, in particular, the development of the balance on goods and services, which characterises the equilibrium in trade exchange as a result of the competitiveness of the Czech economy in foreign markets. Another component of the indicator – the income balance – is the result of the different structure and rate of yield of the financial assets and liabilities of domestic entities vis-à-vis non-residents. This indicator significantly reflects positive economic results of foreign direct investments, which are attributable to foreign owners in the form of dividends, or reinvested in the company.

A reduction in the negative share of the current account in GDP is associated with an improvement in the export performance of the economy, i.e. with growing exports of goods and services, and also with growing income of residents from investments abroad and from transactions without consideration, recorded as part of the current transfer balance (such as subsidies from the EU budget). On the other hand, the indicator may deteriorate (decreasing positive or growing negative value) due to increased imports of goods and services and increased payments to foreign investors following from their investments in the Czech Republic or increased current transfers abroad.

A sensitive limit of external imbalance is, as a rule, perceived as a 5% ratio of the deficit (negative balance) of the current account to GDP. If exceeded over a long time, it may raise doubt among foreign investors concerning the sustainability of financing of the balance of payments deficit in the medium term.

2. Method of calculation of the indicator

The indicator current account of balance of payments to GDP ratio comprises the indicator “current account balance” as the numerator and the indicator “gross domestic product” as the denominator. The resulting indicator is expressed in %. Both source indicators are expressed in current prices in CZK. The indicator is often expressed as a moving annual cumulation with quarterly periodicity.

The balance of payments systematically reflects economic transactions with foreign countries over a period of time. The current account and the financial account are its basic components. The current account itself consists of four partial balances: trade balance, balance of services, income balance and current transfers. The current account thus records flows of goods (exports and imports), flows of services (exports and imports of transport services, tourism and other services), income on capital, investments and labour (interest, dividends, reinvested earnings, compensation of employees), and

transfers, e.i. offset items without receiving any real resource of financial item in exchange (such as contributions to funds, official foreign aid, donations, gifts, subsistence allowances, pension).

The gross domestic product is the basic macroeconomic aggregate of the economy's performance over a period of time (quarter, year). It is equal to the aggregate production of resident producers (in purchasing prices) after deduction of consumption of inputs and addition of import taxes. From another point of view, it is equal to the aggregate of final consumption, gross capital formation and the balance of foreign trade.

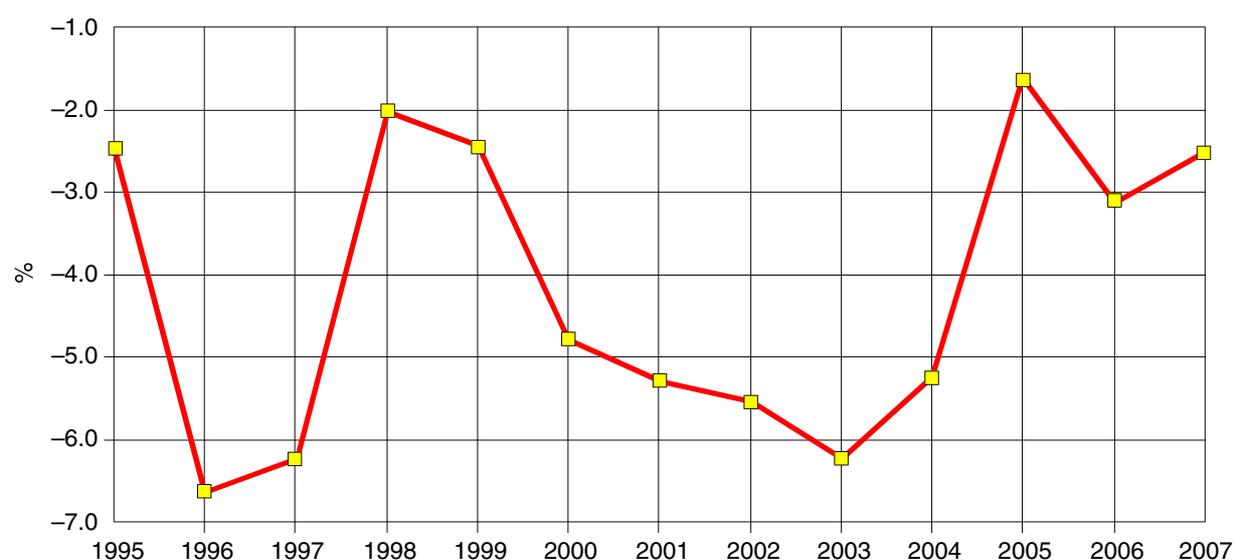
3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

In the course of the monitored period between 1995 and 2007 (in respect of which there is a consistent underlying time series of data on GDP), the value of the indicator "current account to GDP ratio" fluctuated substantially (Chart 3.1). The values of the indicator varied from -1.3% to -6.6% . The average value of the indicator in the monitored period of time amounted to -4.0% .

In the period 1995–2000, the current account to GDP ratio, or the deficit of the current account, was in fact predetermined by the development of the trade deficit. The development of the other three partial balances in the total may in principle be considered as merely complementary, which only partly modified the trend of development of the current account (Chart 3.2). The determining role of the development of the trade balance within the framework of the current account grew increasingly weaker after 2001 as a result of the continuously deepening deficit of the income balance (and subsequently, from 2002, including a temporary decline in the surplus of the balance of services). While in 1995 the deficit of income balance amounted to CZK -2.8 billion, in 2001 it amounted to CZK 83.5 billion and in 2007 (based on preliminary data) it reached the amount of CZK -221.7 billion. The trend in the revenue balance was largely influenced by the growing amounts of paid dividends on direct investment, as well as the amount of reinvested profits from direct investment in the Czech Republic. The growing cost of hiring foreign employees in the Czech Republic was another factor.

Chart I.C.1: Current account of balance of payments to GDP ratio, Czech Republic, 1995–2007



Data source: Czech National Bank, Czech Statistical Office

However, continuous improvements in the trade balance after 2000 (as a result of the progressive changes on the supply side, as an after-effect of the previous high tide of foreign direct investment and the following transfer of production old Member States to the Czech Republic), significantly slowed down the deepening of the overall deficit of the current account and deterioration of its GDP ratio. Starting in 2004, the continuous growth in net service exports was another factor in the improving current account.

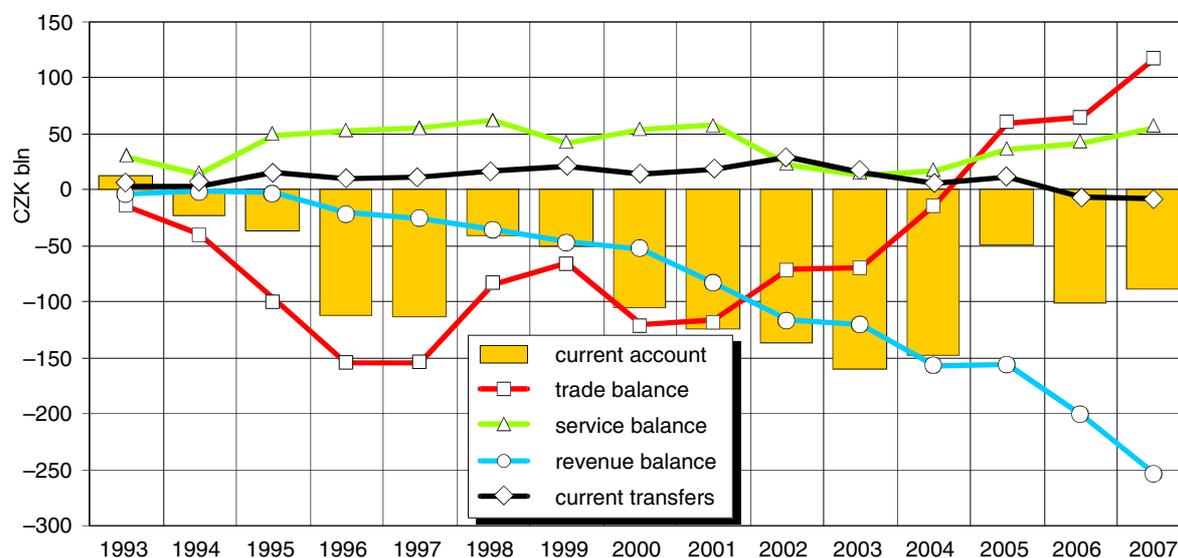
Since 2005, the current account trend has been determined by the continuing growth in the performance balance asset on the one hand and the dynamic nature of the revenue balance deficit on the other hand. The current account deficit has stabilised below CZK 100 billion in the last two years, corresponding to 1.8% of the GDP given growing economic performance of the Czech Republic (decreased by 0.8 p. p. in 2007). Since the values of both the economic figures may be revised retrospectively, the calculation of the indicator is but preliminary. Nevertheless, no significant change in the trend compared to previous years is expected.

Table I.C.1: Source data for calculation of the indicator Current account of balance of payments to GDP ratio, Czech Republic, 1995–2007

billion CZK	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Current account	-36.3	-111.9	-113.0	-40.5	-50.6	-104.9	-124.5	-136.4	-160.6	-147.5	-39.8	-82.2	-62.6
GDP	1,466.5	1,683.3	1,811.1	1,996.5	2,080.8	2,189.2	2,352.2	2,464.4	2,577.1	2,814.8	2,983.9	3,215.6	3,551.4

Data source: Czech National Bank, Czech Statistical Office

Chart I.C.2: Balance of payments current account and its components, Czech Republic, 1993–2007



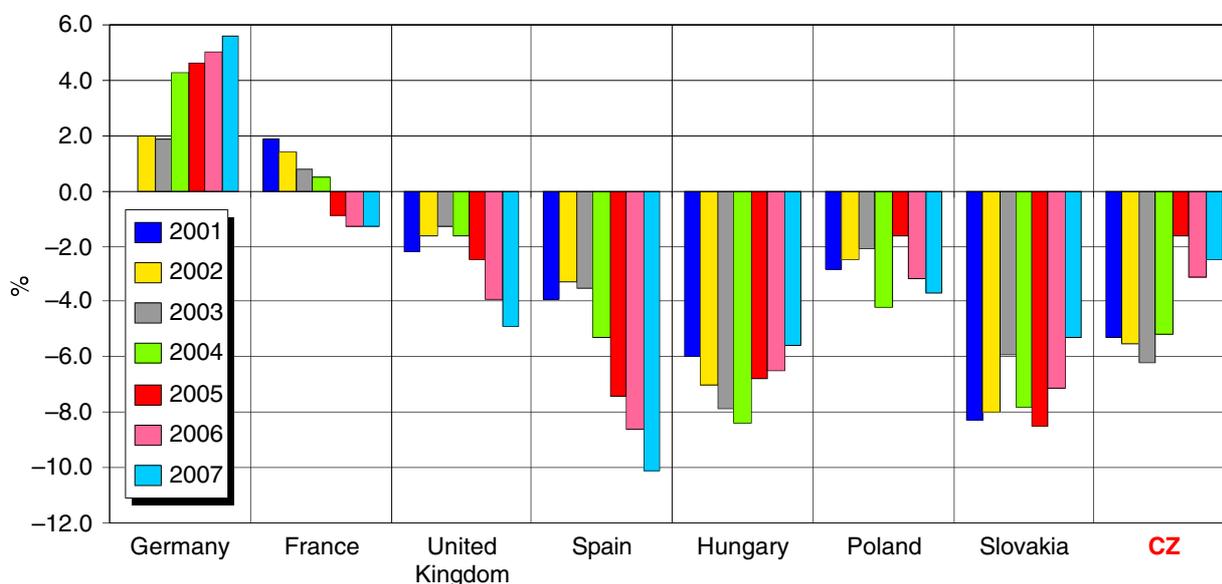
Data source: Czech National Bank, Czech Statistical Office

b) International comparison

International comparison of the indicator current account of balance of payments to GDP ratio indicates its considerable variability, both in terms of individual EU Member States and time. Over time, the current account tended towards a surplus in some countries (Germany); the deficit grew significantly in others (Spain, UK). The situation is less differentiated among the new EU Member

States. The surveyed countries (except Poland, where the trend is not as pronounced) have shown a remarkable improvement in the indicator; it rose from levels regarded as critical in Hungary (-8.4% in 2004) and Slovakia (-8.5% in 2005). The Czech Republic has joined the countries with a low proportion of the current account deficit to the GDP in the last three years (between 1 and 3%).

Chart I.C.3: Current account to GDP ratio, international comparison, 2001–2007



Data source: Czech National Bank, Czech Statistical Office, International Monetary Fund

4. Main findings

It is obvious, based on the above analysis, that the indicator 'Current account of balance of payments/GDP ratio' poses no potential risk in terms of sustainable medium-term development. Further development of the current account will be influenced crucially by factors affecting the formation of the performance balance asset and by counteractive effects on the growing revenue balance deficit. In the medium term, it is realistic to expect the indicator to remain below -5%, posing no potential risk in terms of sustainable development.

I.D LABOUR PRODUCTIVITY

Slavoj Czesany

1. Meaning and context of the indicator

Labour productivity is among the most widespread indicators of economic performance. Its growth is crucial to the growth of GDP per capita, hence the growing economic level of a country. GDP per capita may also increase due to a growing proportion of employed population, but this type of increase reaches its natural limits over time. On the other hand, growing labour productivity is not limited in the long run due to the effect of the qualitative factors such as technological development through skilled labour force. Growing labour productivity is also decisive in a population's growing standard of living, because the income per capita changes in direct proportion to changes in labour productivity. Its dynamics indicate the rate for non-inflation increase of wages and salaries. Some institutions, e.g. OECD, limit measurement of productivity solely to the business sector. This is justified by a convention applied in most OECD countries, under which measurement of output of the government sector is based on the assumption that labour productivity is constant over time.

2. Method of calculation of the indicator

The calculation of the Labour productivity indicator is based on the method of estimated GDP or, as the case may be, only the product of the business sector. The second component of the calculation – number of employees – has been obtained from employment statistics, whose international comparability is based on the recommendation of the International Labour Organisation (ILO) concerning the definition of "number of employees". Another method is the calculation of labour productivity by means of hours of work. This method makes the calculation more precise as it eliminates the differences between individual countries as to the extent of working hours and the number of labour contracts for part-time employment.

According to ESA 1995, employment covers both employees and entrepreneurs. The annual average figures cover both residents and non-residents working for residential production units. The Czech Statistical Office uses the term 'employed person', including everyone above 15 years of age who belonged among paid employees or self-employed persons during a reference week. It does not matter whether their work was of a permanent, temporary, seasonal or casual nature and whether they enjoyed one or more simultaneous employments. Depending on the populations included, the categories of total number of those employed in the national economy and of those employed in the civilian sector (excluding army service staff). The workplace activity categorisation under the Sectoral Classification of Economic Activity decides on the classification of those employed into sectors.

Variances exist in practical labour productivity surveying, depending on the purpose of the analysis, the sectoral scope, and the degree of aggregation (a business, a sector, a national economy). In many cases, the availability of data also significantly affects the labour productivity surveying. Labour productivity can be expressed in physical units or as the total amount of production (including intermediate consumption) in constant prices, but the macroeconomic level works with the gross domestic product in constant prices.

The gross domestic product in constant prices is measured against work input, but it can equally be measured against other types of input, yielding figures of capital, material or energy productivity. The ratio of the gross domestic product in constant prices to the weighted sum of work and capital inputs, referred to as the aggregate factor productivity, is a significant productivity indicator.

It has to be taken into consideration that the rate of growth of labour productivity is influenced by changes in the structure of employment. The growth of labour productivity accelerates in the case of transfers of labour force from sectors with low labour productivity, such as agriculture, to sectors with higher productivity, such as industry and certain types of services. The calculation of labour productivity in the private business sector has certain specificity, as it is based on deducting the value added and the number of employees in the non-market sector from the total aggregate.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

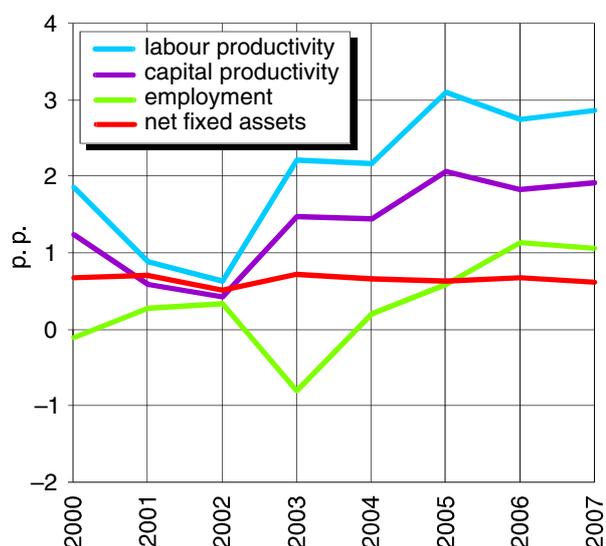
The primary sources of economic growth include employment, the net fixed capital stock, labour productivity, and capital productivity. The trends in the contributions by these sources was largely affected by the structural development in the economy in 2000–2007. The contributions by the intensive sources were very slightly reduced in 2006; the extensive ones increased marginally. Contrariwise, the intensive sources contributed more in 2007, while the extensive ones stagnated.

Labour productivity was growing at an average annual rate of 3.8% between 2001 and 2006; nevertheless, the growth was variable. The fast growth rate of 4.6% annually continued into 2007, although it decreased slightly compared to the year before. The contribution of labour productivity to the GDP growth increased between 2002 and 2007 to achieve 2.9 p. b., a value high above the average for the period in question (2 p. p.). The massive growth in investment was one of the crucial factors of this growth as it improved the capital provision of labour.

The net fixed capital stock⁶⁾ grew by an average 1.6% annually between 2001 and 2006; it grew by that same amount in 2007. This generally stable trend in comparison to other sources meant that the rate of contribution by material fixed capital changed little. It contributed 0.6 p. p. to the GDP growth in the last year, corresponding to the average figure for the period in question.

Capital productivity (net fixed capital stock) grew by an average of 2.5% annually between 2001 and 2006. The annual capital productivity growth in 2007 was nearly double that figure (4.8%). The average contribution of the capital productivity to the GDP growth was 1.3 p. b. per annum in the period in question. The low average rate was mainly the result of extremely low contributions in 2001 and 2002. From the medium-term perspective, the 2007 performance was above the average, with the capital contributing to the GDP growth by 1.9 p. p.

Chart I.D.1: Contributions of production factors to GDP growth (2000 co. p.), Czech Republic, 2000–2007



Data source: Czech Statistical Office

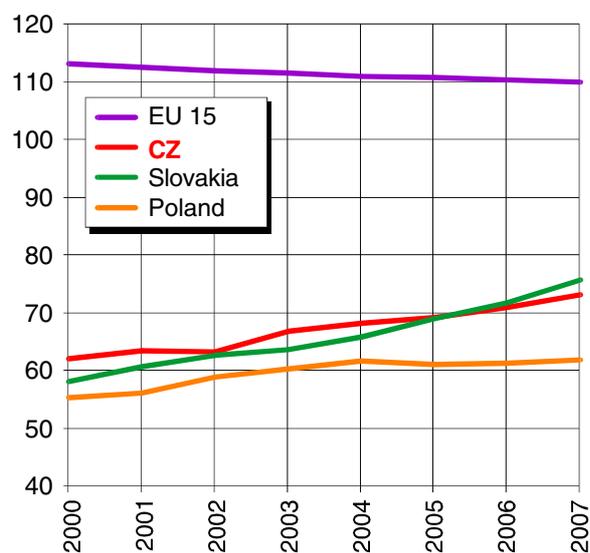
⁶⁾ Time series for the net fixed capital stock was available until 2005; its value for further years was therefore extrapolated.

b) International comparison

International comparison of labour productivity per employee shows that the Czech Republic achieved 73% of the EU-27 average in 2007. The labour productivity per employee figure converged with the EU-27 by an average 1.5 p. p. between 2001–2006 while that rate was exceeded by 0.7 p. p. in the last year. The Czech Republic held a worse position internationally in terms of labour productivity per hour worked. However, the comparison level was higher in this case: the EU-15 formed the basis. The Czech Republic achieved 53% of the EU-15 level of this indicator in the last year. Nevertheless, the country was improving in this indicator as well, reducing the distance from the EU-15 by 1.5 p. p.

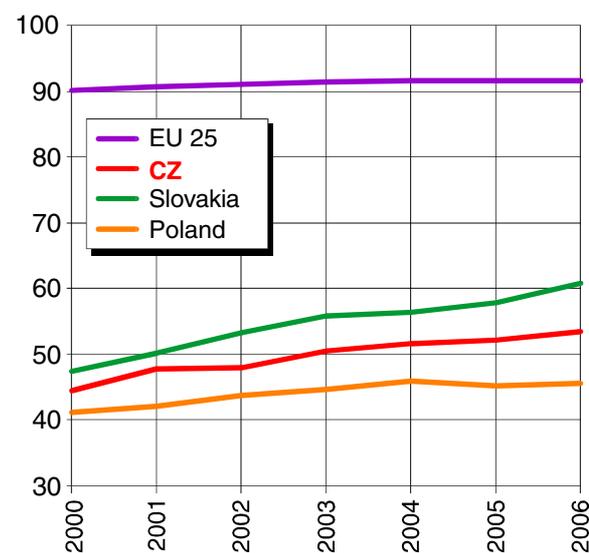
The growth in the labour productivity in the EU-15 as well as the EU-25 showed a certain deceleration in 2001–2006. The fastest growth rates within the EU-15 were reported from Greece (3.1%), followed by Ireland, Sweden and Finland (around 2%). The slowest growth was reported from Luxembourg (0.4%), Portugal (0.4%), and Cyprus (0.6%), with the labour productivity stagnating in Italy.

Chart I.D.2: Labour productivity – GDP as PPP per employed person (EU-27 = 100), international comparison, 2000–2007



Data source: Eurostat

Chart I.D.3: Labour productivity – GDP as PPP per hour worked (EU-15 = 100), international comparison, 2000–2007



Data source: Eurostat

4. Main findings

Labour productivity was the primary source of GDP growth in 2000–2007. Over this period, the Czech Republic assumed a leading position in the international comparison of labour productivity growth rates. The leading countries in this respect and Slovakia, South Korea, and the Czech Republic. Building on the great production potential of the Czech Republic's economic growth, the gap between the Czech level of productivity and the average of the EU Member States can be expected to continue to diminish. The growing availability of fixed capital and improved technology can be expected to continue, not only in foreign-controlled enterprises but, gradually, even small and medium-size businesses. Evidence of analytical data on growing economic performance worldwide shows that countries with lower labour productivity tend to close on the more advanced countries. The primary driving force behind this is the openness of the economies and the related capability of reducing the gap between the economies' technological facilities.

I.E TRANSPORT INTENSITY

Vladimír Adamec, Jiří Jedlička and Miroslav Vančura

1. Meaning and context of the indicator

The designed indicator includes two sub-indicators, namely Passenger transport intensity and Freight transport intensity. They both consist in a ratio of transport performance to GDP. First and foremost, the indicator establishes a connection between the developments of the economy and transportation, which are closely related. The development trend shows which of the factors grows faster and what their interconnection is. Transportation affects the GDP rate through car and car part manufacturers, transport infrastructure construction, hauliers, and revenues from fuel sales. On the other hand, the economy should be more dependent on activities that do not promote growth in transportation than it has been in the Czech Republic so far. A number of measures are taken to this end both at the national level (Czech Republic Transport Policy) and the regional and conurbation levels. In terms of sustainable development principles, it is desirable to decouple the GDP development from transport performance so that the GDP grows on while the transport performance rates stagnate or, even better, decrease.

The indicator is part of the so-called structural indicators (SI), which help the European Commission in its regular assessment of advances toward meeting the goals of the Lisbon Strategy. Freight transport intensity is also one of the indicators in the Czech Republic Transport Policy for 2005–2013. It is expected to decrease steadily down to the EU-15 level, with the following milestones: 2010/2005 index: 0.90; 2013/2005 index: 0.85.

2. Method of calculation of the indicator

Passenger transport intensity is expressed as passenger kilometres per CZK 1,000; freight transport intensity as tonne kilometres per CZK 1,000, while the GDP is considered in 1995 constant prices in thousands of CZK. The index is related to 1995, which represents 100%. The figures quoted, however, cannot be compared to road traffic intensities as only Czech hauliers, who influence the GDP, are included in the transport performance calculation. So far, the Transport intensity indicator has been quoted in relation to the rate of GDP in 1995 constant prices, but since the CSO has ceased publishing the data, the entire time series has been converted to a new basis for comparison. The recalculated times series have so far been available only up to 2006, since the official transportation performance figures are not available at the time of developing this Report (May 2008); they will only be published in June.

Passenger transport

Passenger transport performance is stated in person-kilometres (a unit expressing the transport of one passenger over a distance of one kilometre) and the aggregate figure comprises the performance of railway and public bus transport service, obtained from the departmental statistical system of the Ministry of Transport. The indicator also comprises an expert estimate of the transport performance in individual automobile transport, based on the amount of vehicle kilometres, an estimate of the average annual mileage of the passenger car and average occupancy of the passenger car. The serious shortcoming is that the methodology of data collection in this area is not harmonised across the EU.

Freight transport

Freight transport performance is stated in tonne-kilometres (a unit expressing the transport of one tonne of goods over a distance of one kilometre) and the aggregate figure comprises the performance

of railway, road and inland waterborne transport service, also obtained from the departmental statistical system of the Ministry of Transport. When comparing the transport performance of the various modes of transport, the method of calculating the tonne-kilometres must be considered, as the distance covered on the Czech territory is used in railway and inland waterway transport, while the calculation in road freight transport works with the total freight travel by vehicles registered in the Czech Republic.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Passenger transport

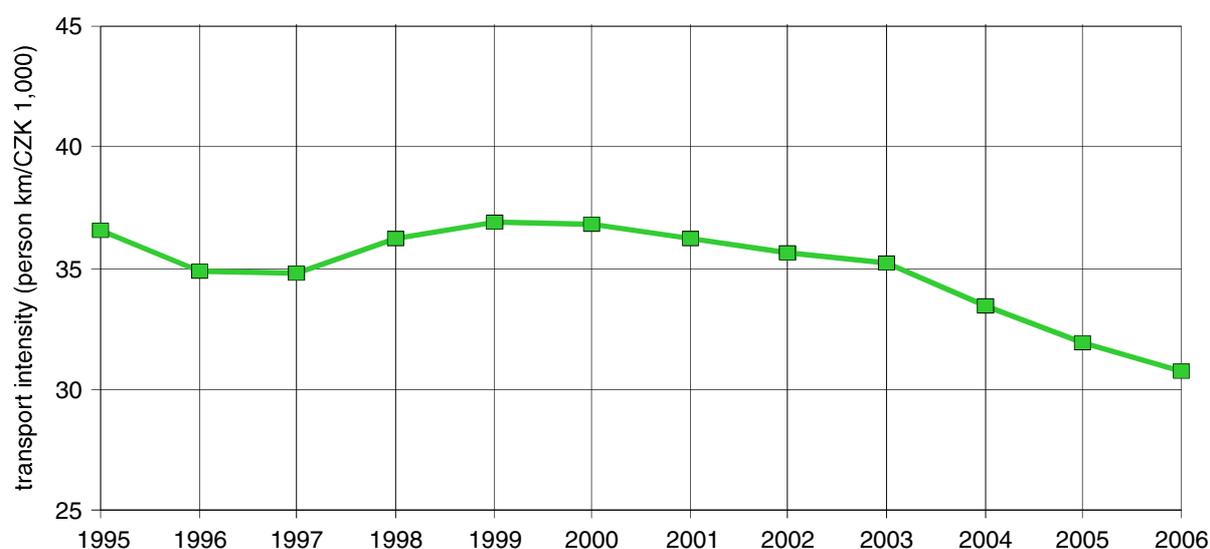
The development of this indicator over the period of time in question to a considerable extent copies the development of passenger transport performance. Between 1995 and 1997 the value of the indicator declined as a result of different developments of GDP (grows) and transport performance (declines). From 1998 to 2000 the value of the indicator increased, which was due to the fact that transport performance copied the growth of GDP. The values declined moderately between 2000 and 2003. In the last two years the indicator monitored decreased because the growth in GDP has accelerated since 2002 to exceed the growth in passenger transport performance. The massive growth in individual car transport is accompanied with decreasing public passenger transport performance. This trend is rather negative although it results in reduced growth in the total passenger transport performance.

Table I.E.1: Background data for calculation of Passenger transport intensity, Czech Republic, 1995–2006

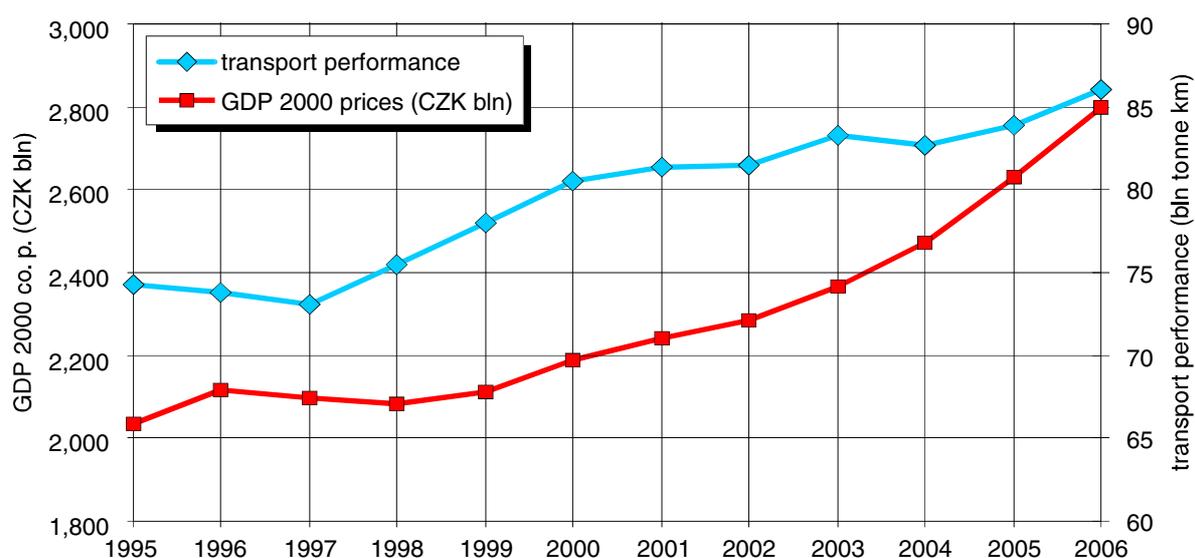
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
GDP 2000 prices (billion CZK)	2,033	2,115	2,100	2,084	2,112	2,189	2,243	2,285	2,368	2,474	2,631	2,799
Person km total (million)	74,278	73,829	73,091	75,479	78,003	80,571	81,327	81,454	83,326	82,676	83,914	86,053

Data source: Czech Ministry of Transport, Czech Statistical Office

Chart I.E.1: Passenger transport intensity, Czech Republic, 1995–2006



Data source: Czech Ministry of Transport, Czech Statistical Office

Chart I.E.2: Passenger transport performance and GDP, Czech Republic, 1995–2006


Data source: Czech Ministry of Transport, Czech Statistical Office

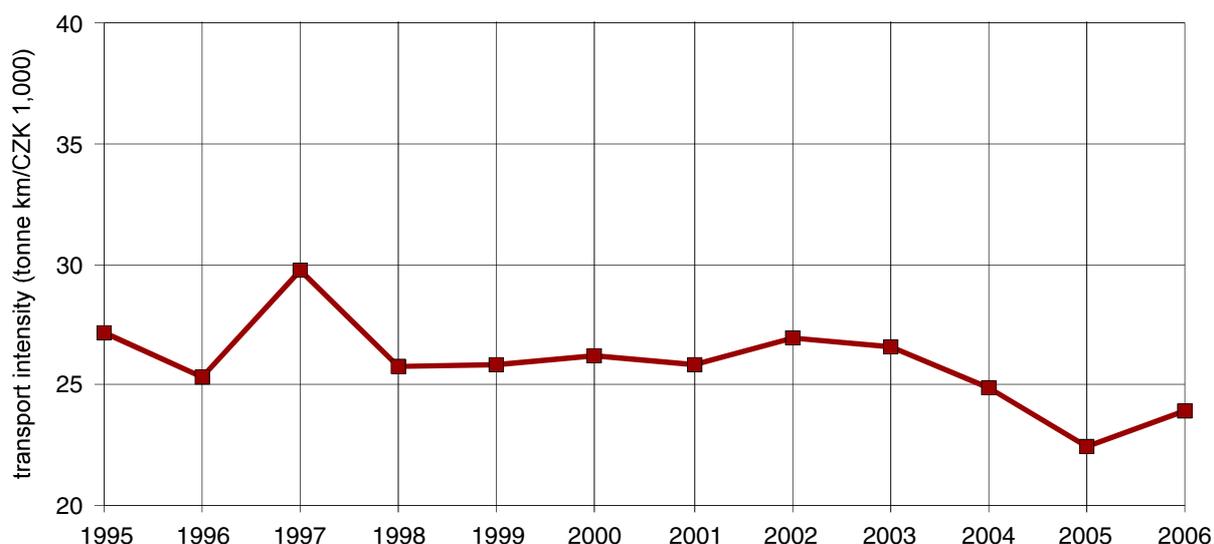
Freight transport

Similarly to passenger transport, this indicator over the period of time in question, to a considerable extent, copies the development of freight transport performance. The Eurostat methodology was first applied in statistical data collection in road transport in 1997, which explains the partial distortion of the comparison with previous years. Between 1998 and 2001, the indicator stagnated around 36 tonne-kilometres per CZK 1,000 despite the steady growth in transport performance rates. After 2003, the transport intensity declined due to growing GDP and decreasing transport performance. This is clear from Chart I.E.4, where the GDP decouples from the transport performance in the last year monitored, which is positive in terms of sustainable development. This is documented by the fact that the GDP is not directly dependent on freight transport performance. Road freight transport performance only includes performance by vehicles registered in the Czech Republic. However, the EU accession has led to an increase in the numbers of vehicles only transiting the Czech Republic, whose transportation performance is not reflected in the overall statistics.

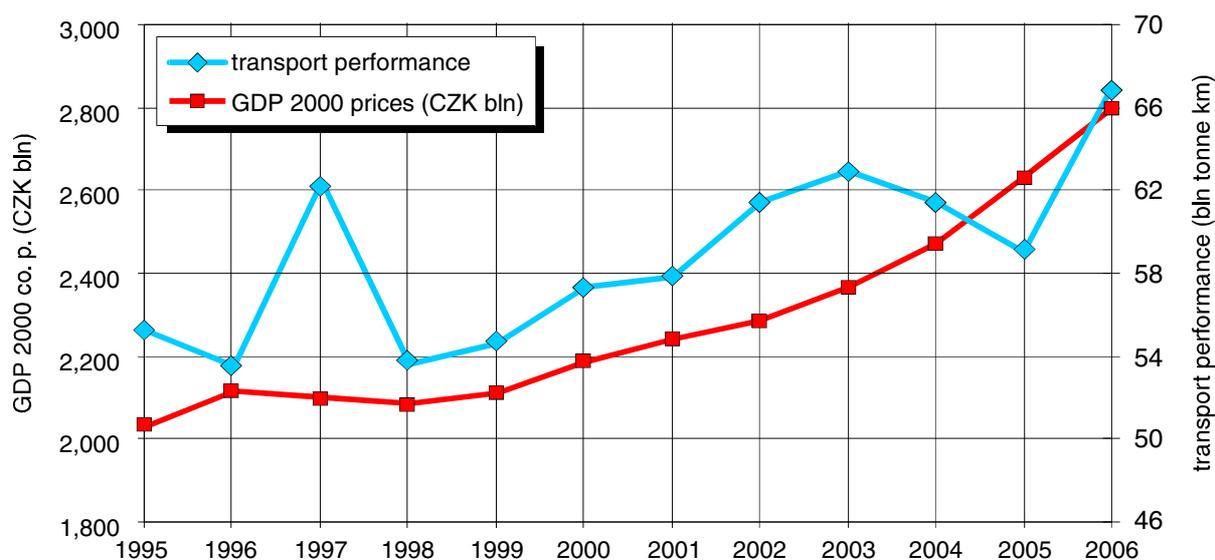
Table I.E.2: Background data for calculation of Freight transport intensity, Czech Republic, 1995–2006

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
GDP 2000 prices (billion CZK)	2,033	2,115	2,100	2,084	2,112	2,189	2,243	2,285	2,368	2,474	2,631	2,799
Tonne km total (million)	55,272	53,515	62,460	53,652	54,622	57,343	57,877	61,489	62,934	61,510	59,092	66,965

Data source: Czech Ministry of Transport, Czech Statistical Office

Chart I.E.3: Freight transport intensity, Czech Republic, 1995–2006


Data source: Czech Ministry of Transport, Czech Statistical Office

Chart I.E.4: Freight transport performance and GDP, Czech Republic, 1995–2006


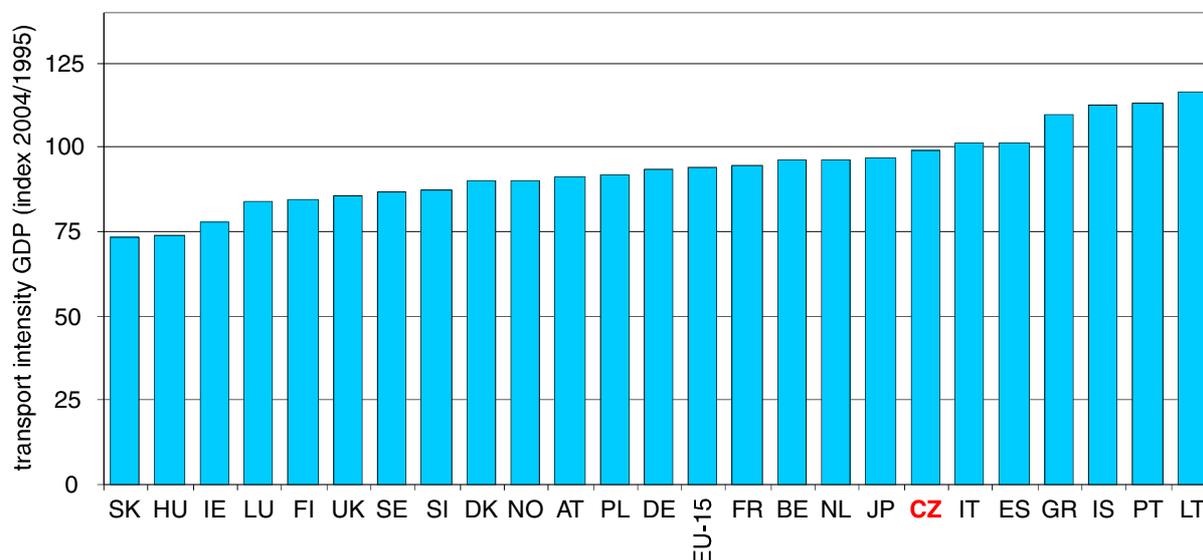
Data source: Czech Ministry of Transport, Czech Statistical Office

b) International comparison

The international comparison applied to the percentage development of transport intensity in 2004 and 2006 for passenger and freight transport, respectively, both related to the baseline year 1995. In this comparison, the Czech Republic is just below the 100 index, proving that a slight decrease occurred in the indicator compared to 1995 due to the GDP growth. It is somewhat difficult to determine the EU-wide position of the Czech Republic in this respect as the starting conditions (economic, transport infrastructure quality, vehicle fleet) in the selected countries listed in Charts I.E.5 and I.E.6 were different. In addition, the available data are published with great delays in most countries, meaning that 2004 is the most recent year for which the value of the indicator is known

for most European countries. What is of more importance in the assessment is whether the figure for the target year is below or above the starting year. If it is below, it proves a decrease in transport intensity, either through more efficient transportation or a significant growth in the GDP.

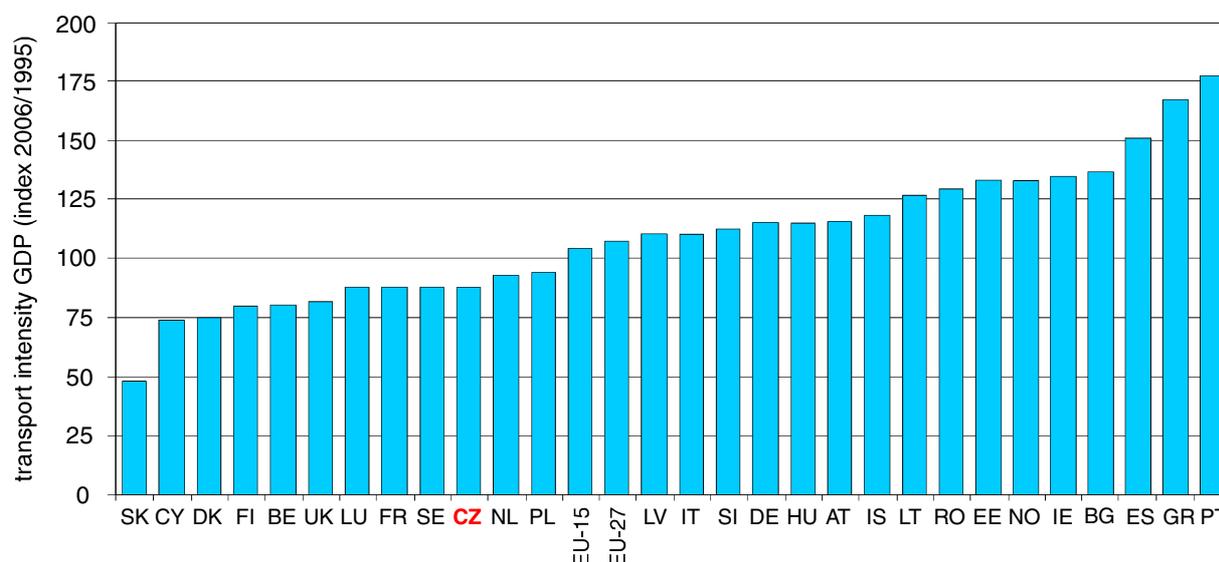
Chart I.E.5: Passenger transport intensity (in 1995 constant prices in '000 EUR), international comparison, 2004



Note: AT – Austria, BE – Belgium, CZ – Czech Republic, DE – Germany, DK – Denmark, ES – Spain, FI – Finland, FR – France, GR – Greece, HU – Hungary, IE – Ireland, IS – Iceland, IT – Italy, JP – Japan, LT – Lithuania, LU – Luxembourg, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, SE – Sweden, SI – Slovenia, SK – Slovakia, UK – United Kingdom

Data source: Eurostat

Chart I.E.6: Freight transport intensity (in 1995 constant prices in '000 EUR), international comparison, 2006



Note: AT – Austria, BE – Belgium, BG – Bulgaria, CY – Cyprus, CZ – Czech Republic, DE – Germany, DK – Denmark, EE – Estonia, ES – Spain, FI – Finland, FR – France, GR – Greece, HU – Hungary, IE – Ireland, IS – Iceland, IT – Italy, JP – Japan, LT – Lithuania, LU – Luxembourg, LV – Latvia, NL – Netherland, NO – Norway, PL – Poland, PT – Portugal, RO – Romania, SE – Sweden, SI – Slovenia, SK – Slovakia, UK – United Kingdom

Data source: Eurostat

4. Main findings

The indicator has been designed to be comparable against other European countries' when allowing for their different economies. It is a good way to reflect the development in terms of economy, but does not fully reflect the environmental and health impacts. The indicator need be understood in relation to a country's economy, not as a traffic assessment, since it only deals with performance by Czech hauliers, excluding international traffic. The indicator trend has been positive in the recent years, as it has shown a decrease. The decrease reflects the fact that the economy has grown substantially over the recent years, with the growth in traffic not as intense (excepting transiting traffic, which is not included in the performance sums). As concerns the modal split, automobile transport continues to be dominant, whereas the performance of public transport has been decreasing. The transportation development is therefore not optimal; nevertheless, the situation has been improving slightly over the previous years. The indicator is particularly suitable because it provides clear and comprehensive information on transportation in the Czech Republic and its relation to the developments of the economy and the GDP. The trend always needs to be, however, assessed in connection with the performance rates of individual modes transport and the modal split.

I.F ENERGY INTENSITY OF GDP

Miroslav Havránek

1. Meaning and context of the indicator

The indicator of energy intensity of GDP indicates how efficiently we are able to transform primary energy sources into economic output. This indicator is expressed as a ratio of energy and economic indicators. Any decrease of energy intensity of GDP is generally associated with new technologies, energy innovation and savings, transition of the economy from heavy to light industry and services, and economic revival. On the other hand, growth tends to be associated with wastage, obsolete technologies, economic inhibition or export of secondary energy sources.

2. Method of calculation of the indicator

This indicator is the ratio of the indicator total primary energy supply and GDP. It is expressed in GJ per thousand CZK, with GDP taken in 2000 constant prices. This indicator may also be expressed as year-on-year comparison indexed either in relation to the baseline year.

Total primary energy supply (TPES) is stated on a balance basis in derived SI units (J – Joule or PJ – 10^{15} J). The balance is calculated as domestic extraction of all energy raw materials plus their imports minus their exports. The balance is further adjusted by inventory and transfers. Energy sources are classified as gaseous, liquid and solid and primary electricity and heat (for details see Total primary energy supply).

GDP is a macro aggregate expressing the economic value created in the national economy during the previous period of time (as a rule, a year). GDP measures cash flows in the economy. It is also possible to interpret GDP as the value of goods and services of domestic origin intended for final use. GDP thus expresses the monetary value of market and non-market activities in given year, and is often regarded as an indicator of the material standard of living of the population. It is appropriate to monitor the growth of this indicator in longer time sequences (for details see GDP per capita).

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Energy intensity of GDP declined from the initial 0.86 GJ/thousand CZK in 1995 to the final 0.68 GJ/thousand CZK in 2006, representing roughly a 22% decrease. Taken in account the preliminary data for 2007, the decrease in a full 27%. The average annual decrease in energy intensity for 1995–2007 is 2.7%.

Energy intensity of GDP increased in 2003. This was due to a step increase in PSE (see Table I.F.1) related to the launch of the Temelin nuclear power plant. The economic growth caused by increased exports of secondary forms of energy (mainly electricity) failed to compensate fully⁷⁾ for the growth in PSE, forcing the GDP intensity to grow. The effect of the growing GDP is again observed in the following years, allowing the overall intensity to drop.

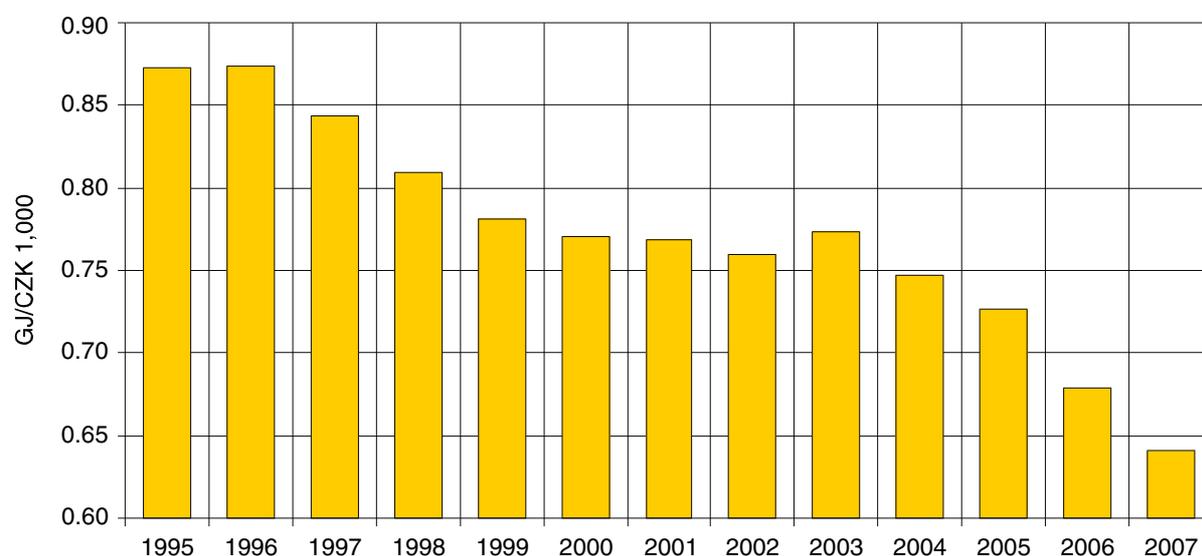
⁷⁾ The conversion of primary sources to electricity work with about one-third efficiency, which is why much more energy appears on the plus side of the PSE balance than on the minus side of exports.

Table I.F.1: Background data for calculation of Energy intensity of GDP, Czech Republic, 1995–2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
PSE (PJ)	1,774	1,848	1,771	1,686	1,650	1,688	1,724	1,736	1,830	1,850	1,915	1,902	1,908 ⁸⁾
GDP (billion CZK) ⁹⁾	2,034	2,116	2,100	2,084	2,112	2,189	2,243	2,285	2,368	2,476	2,637	2,800	2,979

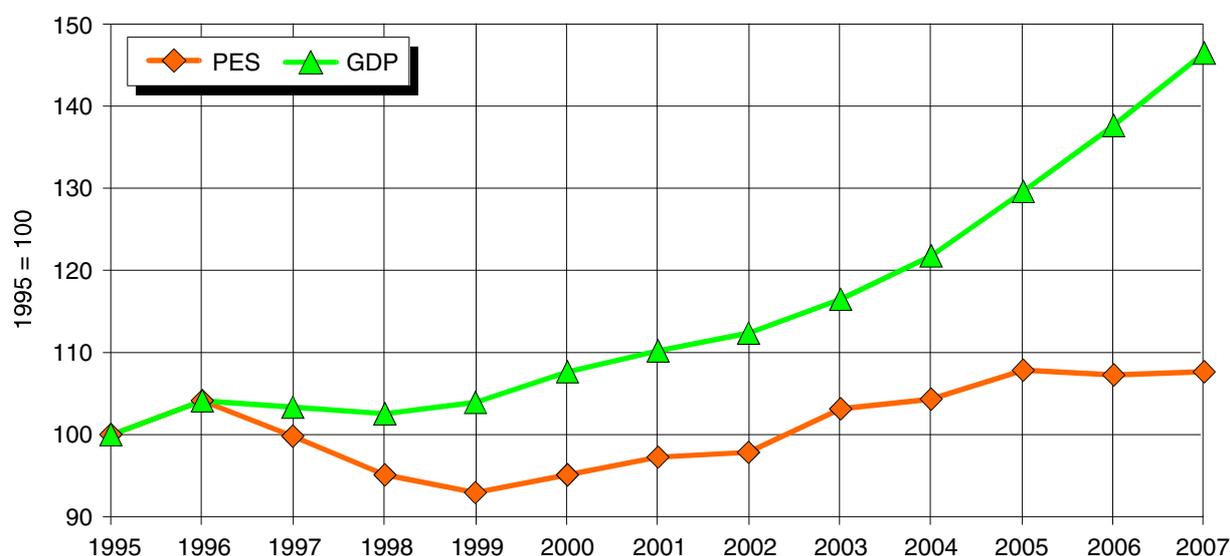
Data source: Czech Statistical Office, Ministry of Trade and Industry

Chart I.F.1: Energy intensity of GDP, Czech Republic, 1995–2007



Data source: Czech Statistical Office, Ministry of Trade and Industry

Chart I.F.2: TPES and GDP, Czech Republic, 1995–2007



Data source: Czech Statistical Office, Ministry of Trade and Industry

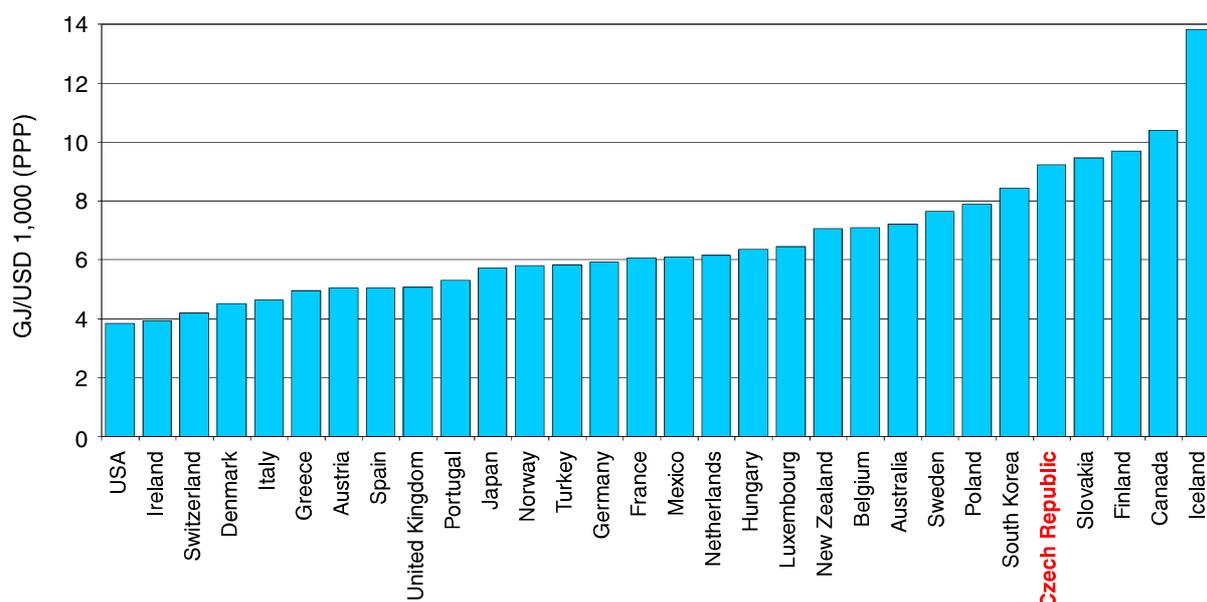
⁸⁾ Preliminary estimate by the MTI.

⁹⁾ Gross domestic product at 2000 constant prices.

The energy intensity of GDP is a typical indicator of the so-called decoupling (divergence of curves), where the divergence of the performance (GDP) curve from the environmental burden (PSE) curve is desirable. This decoupling is clearly shown in Chart I.F.2. Methodology distinguishes between relative and absolute decoupling. Relative decoupling is a situation where both the burden and performance increase (decrease), while the burden decreases faster (increases at a slower rate) than the performance. Examples of this are the portions of Chart I.F.2 for 1996–1998, 1999–2001 and 2006–2007. Absolute decoupling, then, is a situation where the burden decreases while the performance increases. Such a situation has only so far occurred in 1998–1999 and 2005–2006.

b) International comparison

Chart I.F.3: Energy intensity of GDP, international comparison, 2005



Note: GDP is calculated in 2000 prices using purchasing power parity

Data source: OECD

In the international comparison with OECD countries the Czech Republic holds one of the worst places after Slovakia; the energy intensity of its economy places it nearer developing countries than Western European ones. Energy intensity of GDP in the Czech Republic is about three times the EU-15 average. Taking in consideration GDP according to the exchange rate yields more than five times the figure. Yet the conversion using the exchange rate is consequential because roughly one half of the Czech Republic's energy resources originate from abroad, where the exchange rate defines their purchase prices. This comparison shows how the Czech Republic has failed to decrease this indicator. If we wish to achieve a rate of energy intensity similar to that in the EU-15, we will not only need to increase the rate of GDP, but will also have to actively reduce the consumption of primary energy sources (for details see TPES and GDP per capita).

4. Main findings

The Czech Republic's goals relating to this indicator are defined in the National Energy Policy.

The long-term goal in the area of the energy intensity of GDP is the acceleration and subsequent stabilisation of the indicator at 3.0–3.5% annually. The country has succeeded in this since 2004,

when the growing GDP and stabilising PES have made it possible to reach -4.8% on average annually. This objective of the State Energy Policy is thus definitely being met.

The international comparison of the energy intensity of GDP indicator is still not favourable for the Czech Republic, with the country ranking among the worst-performing. The comparison of per-capita energy consumption (see the indicator Total consumption of primary energy supply) places the Czech Republic near the European average. It may therefore be inferred that the relatively high rates of energy intensity of GDP in the Czech Republic are more likely to be due primarily to the country's lower economic output (e.g., compared to the former EU-15 countries).

I.G TOTAL PRIMARY ENERGY SUPPLY

Miroslav Havránek

1. Meaning and context of the indicator

The indicator total primary energy supply (TPES) indicates the aggregate amount of energy required for society to work. This indicator is denominated in derived SI units (J – Joule; PJ – petajoule 10^{15} J). The indicator can be compiled for socio-economic units of various sizes, from the entire planet to individual countries, regions and cities. TPES can be assessed for various time periods.

The rate of TPES provides indirect information about the pressure that society exerts on the geobiosphere. The absolute growth (total level) of this indicator tends to be associated with economic development and growing consumption. Its relative growth (per unit of output) then may mean declining competitiveness, wastage in consumption, and increased losses in energy conversions (for more, see the indicator Energy intensity of GDP). Its absolute level depends on many factors such as climatic conditions, fuel mix structure, population size, the structure of the industry, and economic performance of the territory considered.

2. Method of calculation of the indicator

In terms of methodology, total primary energy supply is one of the three components of the energy balance (along with energy processes and final energy consumption). The indicator is compiled as the domestic extraction of all energy raw materials plus their imports minus their exports. The balance is further complemented by the stocks and their transfers. Sources of energy are categorised as gaseous, liquid and solid, and as primary electricity and heat.

Solid PSE include, above all, coal; liquid PSE consist of crude oil and its derivatives; and gaseous PSE include primarily natural gas. Primary heat is mostly energy generated by nuclear reactors. This category also includes energy from heat pumps and solar heating, even though their importance is currently negligible in the Czech Republic. Primary electricity is the power generated by hydropower. Compared to previous years, the PES indicator has been extended to encompass renewable sources. They used to be largely neglected (use of biomass for household heating in particular). That is why the PES indicator has increased throughout the time series compared to last year. The category of RES includes energy from wind and photovoltaic power plants, biofuels, and geothermal energy. It excludes hydropower, which continues to be reported under primary energies. The inclusion of RES in the PES balance is also the main difference from the data reported by the CSO as part of the energy balances.

This papers also mentions the final part of the energy balance: the indicator of total final consumption. Total final consumption (TFC) is that portion of energy that the society actually consumes to perform its energy services. The difference between the TPES and TFC tends to be caused by losses in energy conversion processes, fuel refinement, and fuel, heat and electricity distribution and transfer, as well as the balance difference between the imports of primary sources and the exports of secondary forms of energy.

In terms of methodology, total final consumption (TFC) is the consumption detected prior to entering appliances in which it is applied to the final utility effect, not to generation of any other energy (with the exception of secondary sources of energy). In the energy balance, the final consumption is divided by consumption sector or by consumption of individual fuels.

Both of the above indicators are well-established and comparable internationally. Internationally, this indicator is monitored by the International Energy Agency (IEA); it is monitored by the Czech Statistical Office and Czech Ministry of Trade and Industry at the national level.

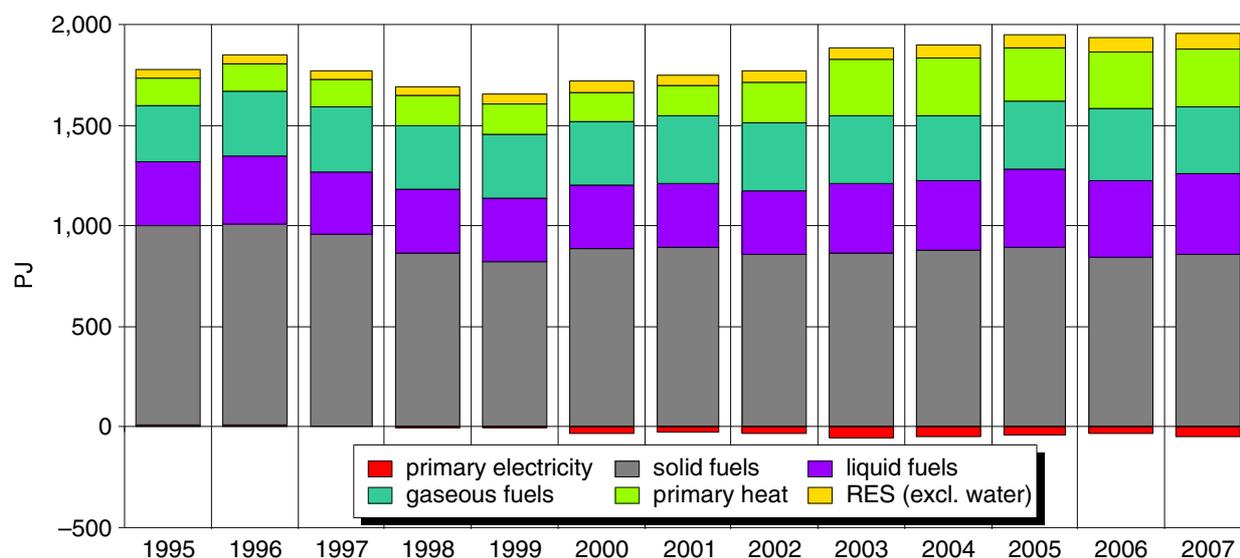
3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

TPES in the Czech Republic (Chart I.G.1) decreased at a rate of 3.8% per year between 1996 and 1999. In contrast, the period 2000–2005 saw an annual average increase of 2.5%; only in 2003 did PES leap up by 5.4% due to the full operation at Temelín NPP. The PES grew by 3.4% in 2005 in spite of preliminary data anticipating a zero growth. The available 2007 data are only preliminary at the time of development of the present Report, and predict a general stagnation in energy consumption. Since the data are preliminary, one should be cautious about overly optimistic evaluation of the trend. Moreover, the electricity exports grew after 1999 with a peak in 2003. In that year, the Czech Republic was the sixth biggest electricity exporter in the world in absolute quantities (IEA, 2005). The electricity exports decreased after 2003; the preliminary data for 2007 again indicate significant exports in this category (50 PJ).

The pro-export nature of the Czech power industry is partly due to the composition of its sources. Due to the need to maintain the stability of the power system, back-up sources the size of the biggest source in the grid have to be kept in operation. Since 2003, one of the Temelín NPP blocks with an installed capacity of 1,000 MWe has been the biggest source. For reasons of economic efficiency, these sources are best used for exports and as back-up in the event of a power failure, which as been the case to varying degrees since 2003.

Chart I.G.1: Primary sources of energy, Czech Republic, 1995–2007¹⁰⁾

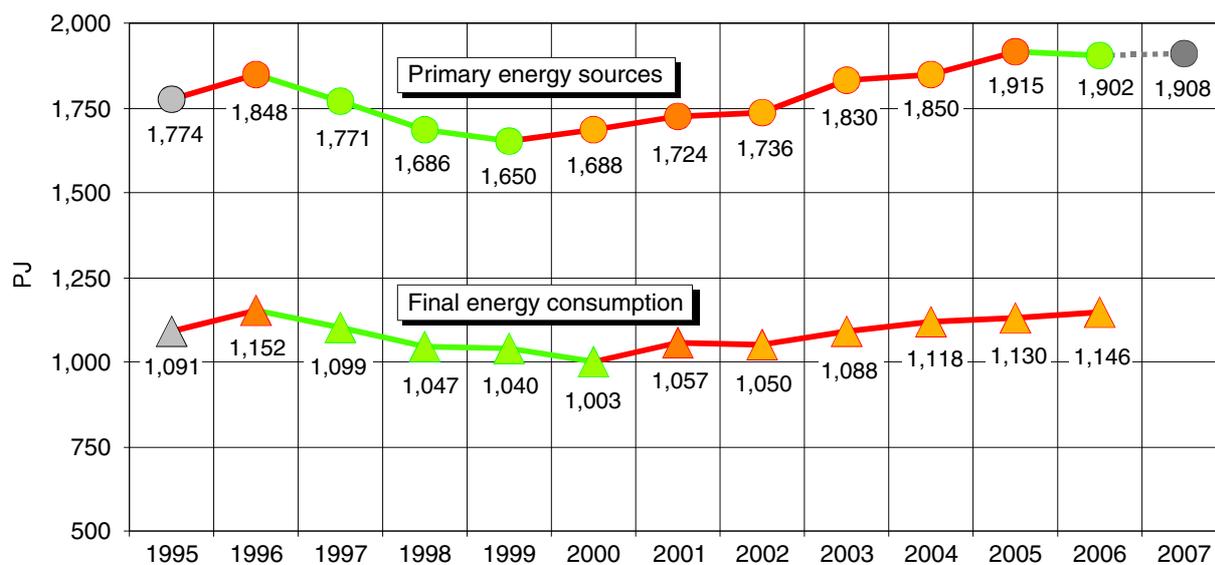


Data source: Czech Statistical Office, Ministry of Trade and Industry

¹⁰⁾ The 2005 data are preliminary estimates of the Ministry of Trade and Industry

The indicator of total final consumption copied the TPES very closely in the latter half of the 1990s. The trend reversed after 1999, and the indicators began to diverge. This phenomenon is termed decoupling, or curve divergence. With respect to environmental burden and economic output, decoupling is desirable. In the case of TPES and TFC, to the contrary, the convergence of the two curves is desirable. The difference between the TPES and TFC is caused by losses in transfer and the low efficiency in primary source conversion to final forms of energy. The convergence of the curves would indicate that the losses through distribution are being diminished and the energy conversion made more efficient. In Chart I.G.2, the years in which the TPES and TFC decreased are highlighted in green, and those in which they grew are marked in red.

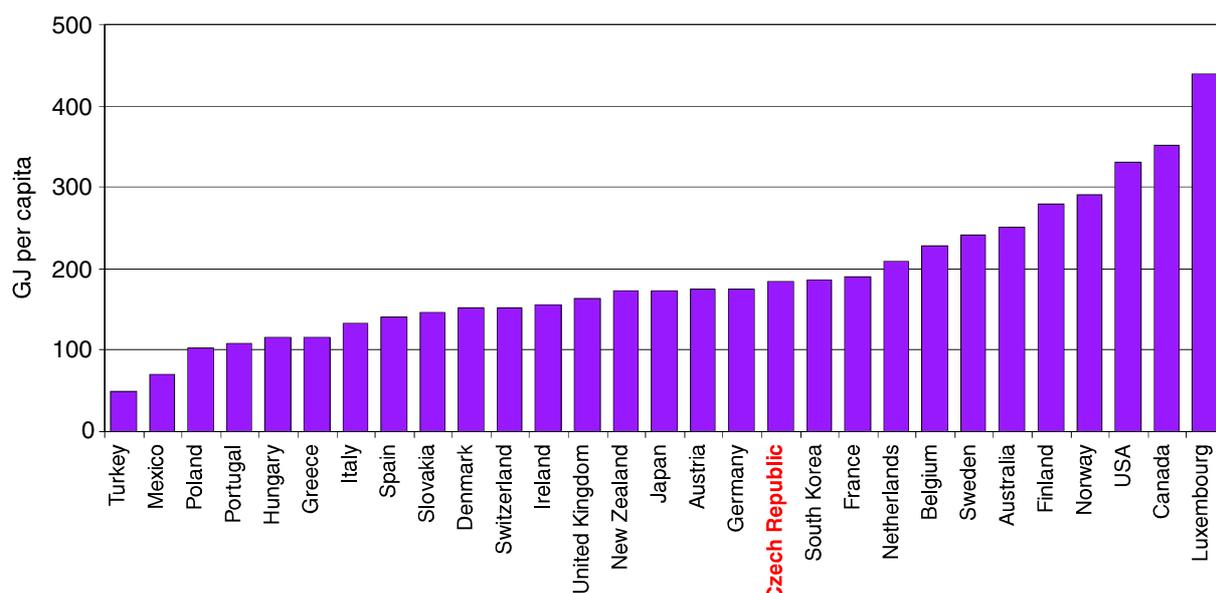
Chart I.G.2: Total final consumption and primary sources of energy, Czech Republic, 1995–2006



Data source: Czech Statistical Office, Ministry of Trade and Industry

b) *International comparison*

Chart I.G.3: Total primary energy supply, international comparison, 2005



Data source: OECD

The international comparison is made on the per-person basis, which normalises the various population sizes of the various countries. The international comparison should take account of climatic conditions and the length of the heating season in the countries compared. The international comparison places the Czech Republic with its 185 GJ/person near the EU-15 level, and the consumption level is roughly comparable to Western countries of comparable geographic conditions. The consumption is strikingly above the other Visegrad countries. For a comparison per unit of economic performance, see Energy intensity of GDP.

4. Main findings

This section attempts to evaluate the PES indicator in relation to the goals and commitments set out in the State Energy Policy as well as the Energy Vision for the Czech Republic.

The long-term goal in the NEP is 'not to increase the absolute rate of consumption of primary sources of energy (PSE). To secure economic growth primarily by increasing energy efficiency' (see also the indicator Energy intensity of GDP). The consumption of PES grew by 13.5% between 2000 and 2007. Admittedly, the target is not being met, but the 2006 data and the preliminary data for 2007 justify a dose of optimism.

The long-term goal in the NEP is to optimise the composition of PSE. The composition of PSE is shown in Chart I.G.1; and the goals of the NEP for 2005 and 2030, including the 2005 composition, are shown in Table I.G.1. These indicators allow us to say that the PSE composition goal defined in the NEP for 2005 was not met. The trend in nuclear fuel, solid fuels and renewable sources developed toward the defined goal; but since the overall PSE consumption grew or the trend was not particularly pronounced, this increase was not sufficient and the set targets for 2005 were not met eventually. The trends in gas and liquid fuels diverges from the targets of the NEP.

Table I.G.1: PSE composition and NEP targets; Czech Republic, trend in 2000–2007 and state of 2007

	Trend 2000–2007	NEP target for 2030	State in 2007	NEP target for 2005
Solid fuels	–7.4 p. p.	30–32%	45%	42–44%
Liquid fuels	+2.4 p. p.	11–12%	21%	15–16%
Gas fuels	–1.5 p. p.	20–22%	17%	20–22%
Nuclear fuel	+6.2 p. p.	20–22%	15%	16–17%
Renewable sources	+1.1 p. p.	15–16%	4% ¹¹⁾	5–6%

Source of data: Ministry of Industry and Trade

The trend is negative particularly for liquid fuels, which is caused by the growing consumption in the transportation sector, which was the sector responsible for the increased used of PES in 2005. The transportation sector is a problem within the Energy Policy, because the goals of the NEP do include liquid fuels, but the Policy itself only deals with transportation marginally.

Exports of secondary forms of energy, mainly of electricity, contribute to the growing consumption of primary energy sources (preliminary data for 2007 indicate an exception from the rule). In terms of methodology, the PSE indicator is a balancing one, meaning that inputs (extraction, imports) are added and outputs (exports) are subtracted. Electricity is almost exclusively produced from primary sources with losses, which regularly account for up to two-thirds of the inputs. These losses are not

¹¹⁾ Including hydropower, the RES represent 4.3% of PES

included with exported electricity in the balancing calculation, which is one of the reasons why the PSE per capita or per unit of GDP yields slightly overvalued results. This is also seen in Chart I.G.2, where the Final Energy Consumption starts diverging from the PSE significantly in 2002–2003, where Chart I.G.1 shows an increasingly negative electricity balance.

This disproportion in the PSE balancing calculation thus makes achieving the NEP goals more difficult; they are not being met as shown in Table I.G.1. A methodological solution is advisable: either by changing the calculation method, or by reflecting the pro-export character of the Czech energy industry in the defined goals.

I.H SHARE OF ENERGY FROM RENEWABLE SOURCES

Miroslav Havránek

1. Meaning and context of the indicator

Renewable energy sources (RES) are the only energy sources usable in the long run. It is therefore necessary to ensure that renewable sources in the future gradually replace non-renewable sources. Renewable sources are defined by law (Act No. 180/2005 Coll.) as “renewable non-fossil natural sources of energy, including wind energy, solar energy, geothermal energy, energy of water, soil, air, biomass, landfill gas, sludge gas and biogas”. Nuclear energy is not considered as renewable energy although it is not obtained from fossil fuel. We will use two indicators for the purposes of this Report – total RES and RES used to generate electricity.

2. Method of calculation of the indicator

The indicator is compiled from the results of statistical surveys carried out by the Ministry of Industry and Trade (biogas, municipal solid waste (MSW), biomass, solar systems, heat pumps) and data of the Energy Regulatory Office (wind and hydroelectric plants), and data obtained by a survey of the Czech Statistical Office are used in respect of total consumption of primary energy sources. The entire indicator in the annual aggregate is compiled by the Ministry of Industry and Trade. The indicator is presented in derived SI units – J (Joule), or multiples (PJ – Petajoule – 10^{15} J), and in respect of electrical energy in Wh (Watt hour), or multiples (MWh – Megawatt hour – 10^6 Wh). The relative comparison in the case of renewable energy sources is made against the total primary energy supply (for more, see the indicator Total primary energy supply). In the case of electricity, the comparison is made to gross domestic electricity consumption. Gross domestic consumption comprises the electricity generated from all types of fuels in the Czech Republic.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Energy obtained from water and biomass has been utilised over a long span of time in the Czech Republic. Unfortunately, this indicator was not systematically and comprehensively monitored before 2003; nevertheless, MTI reporting shows a time series since 1995 estimated at least as an aggregate without specifying the component items (except hydropower).

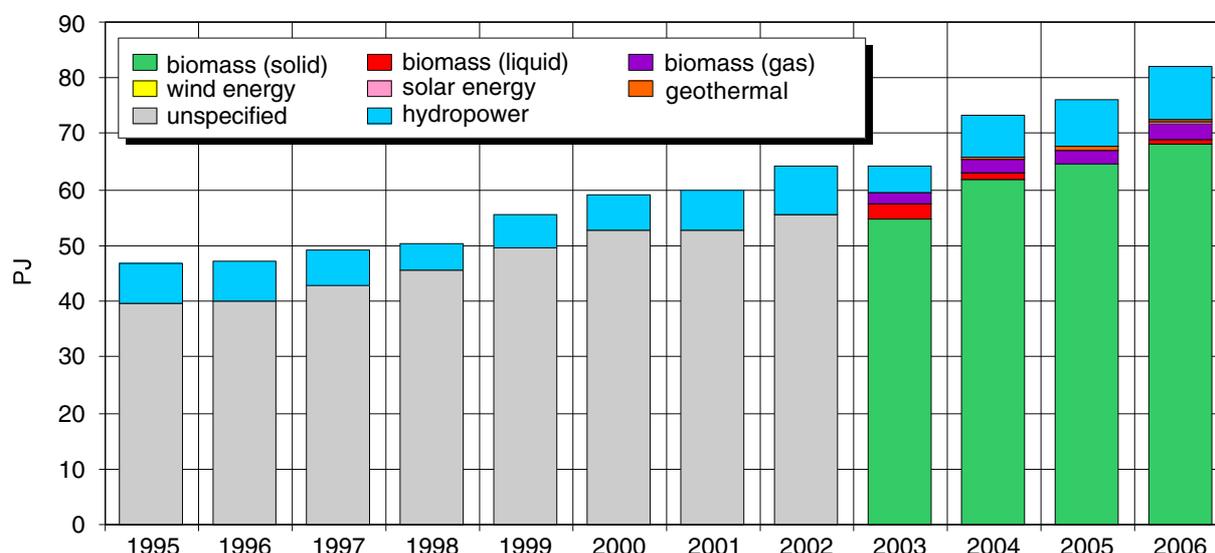
The categories in Chart I.H.1 are also aggregate. Solid biomass comprises biomass combusted both in and outside households, the biodegradable part of industrial and municipal waste, and alternate fuels. Liquid biomass is composed of the liquid fuel and organic fuel additive categories. Gaseous biomass is composed of biogas from biogas stations, landfills and wastewater treatment plants. Hydropower is electricity generated in small-scale and large-scale hydropower plants. Geothermal energy represents energy generated by geothermal installations.

As regards hydroelectric energy, capacities for building major hydroelectric plants have been exhausted while small hydroelectric plants still have some potential, though in the aggregate their share is minor. Hydro energy is influenced in particular by the climatic conditions in any particular year.

The data for 2006 and 2007 for the total RES and for electricity, respectively, were available for the compilation of the indicator. The overall distribution of consumption of renewable sources in 2006

documents that biomass plays the key role. Consumption of RES in 2003 amounted to 3.54% of the total consumption of PES. In 2004 this figure increased to 4.02%, and rose to 4.3% in 2006.

Chart I.H.1: Renewable energy sources, Czech Republic, 1995–2006^{12), 13)}

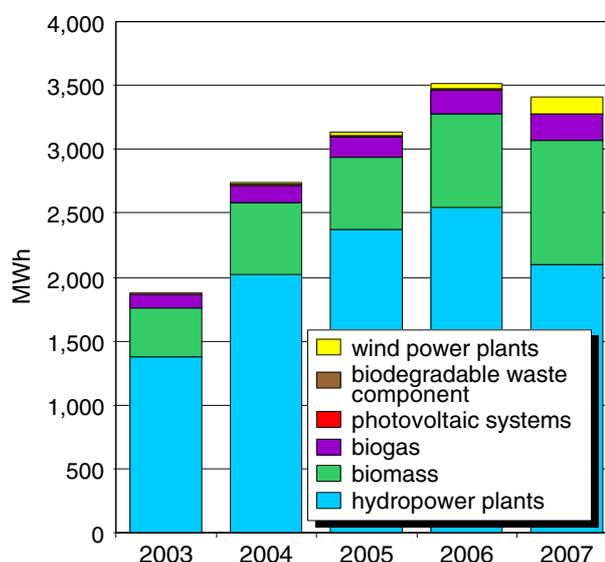


Data source: Czech Statistical Office, Ministry of Trade and Industry, International Energy Agency

Generation of electricity from renewable sources in the Czech Republic is covered in particular by major hydroelectric plants. Like in the case of total RES, data falling before 2003 are currently unreliable. In 2007, hydroelectric plants accounted for 62% of total electrical energy generated from RES, followed by 28% generated from biomass¹⁴⁾ and 6% generated from biogas. Electricity generated by wind power plants has begun to become attractive in terms of total supply. Its production doubles to triples every year. Wind power plants constituted nearly 4% of all electricity RES in 2007. The remaining sources (photovoltaic and biodegradable waste) are negligible in Chart I.H.2 as their aggregate share is approximately 0.5%.

Generation of electricity from renewable sources in 2007 dropped to 3.9% of gross

Chart I.H.2: Renewable sources of electricity, Czech Republic, 2003–2007



Data source: Ministry of Trade and Industry, Energy Regulatory Authority

¹²⁾ The 2005 data are preliminary estimates of the Ministry of Trade and Industry

¹³⁾ To keep the chart clearer, the categories of photovoltaics, solar thermal collectors, and wind energy have been left out as they make up under one per cent in total.

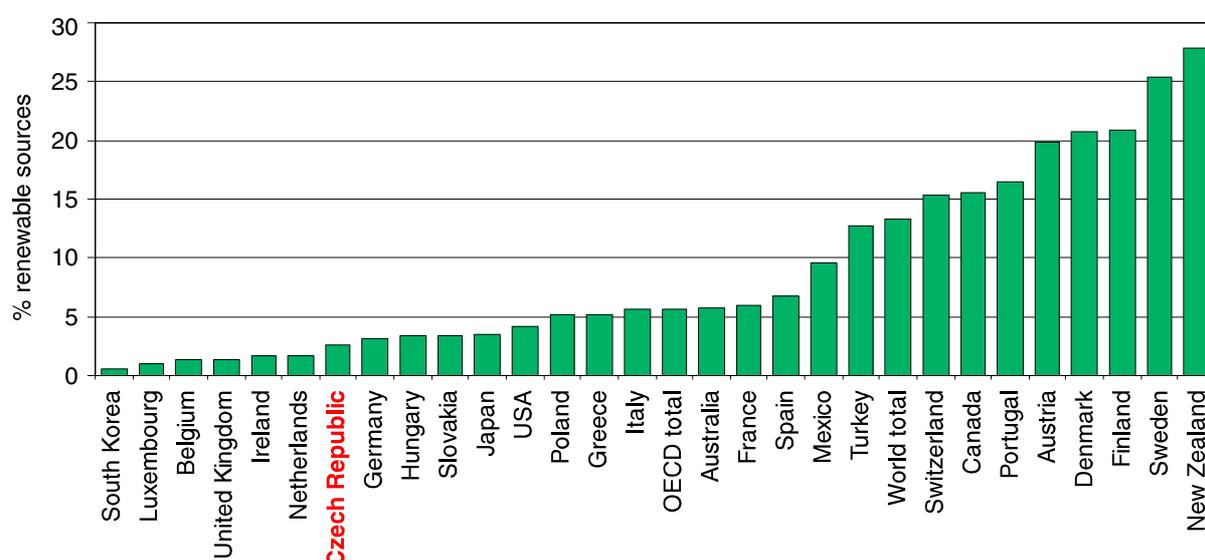
¹⁴⁾ Electricity production from biomass currently mostly consists in the combustion of cellulose press cake in paper mills, and combined combustion of biomass and coal. The amount of electricity produced by gassification of biomass or by means of steam boilers and turbines is still small.

electricity generation, or 4.7% of gross electricity consumption. The international target for the Czech Republic is to cover 8% of gross electricity consumption by RES by 2010.

b) International comparison

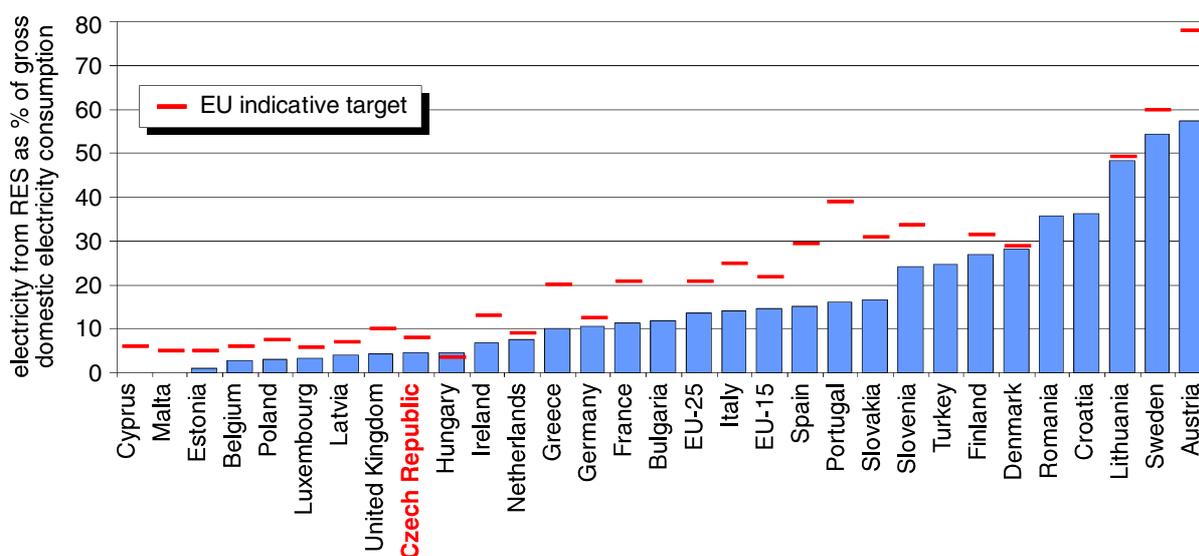
This indicator may prove difficult to compare internationally, as the categories included in the indicator tend to differ across countries. Biomass energy utilised in households is an example: it is monitored in Czech Ministry of Trade and Industry statistics but is not widely monitored internationally. Energy from burning waste is another example: only energy from biodegradable waste is taken into consideration in the Czech Republic while this category often includes all waste abroad. Nevertheless, despite the high degree of uncertainty in this comparison, it is useful to take a look at how other countries are doing.

Chart I.H.3: Share of renewable sources in total primary energy supply, international comparison, 2005



Data source: Eurostat, International Energy Agency

Chart I.H.4: Share of renewable sources in electricity generation, international comparison, 2004



Data source: Eurostat

The international comparison (RES as a percentage of primary sources of energy) shows clearly that the Czech Republic ranks rather low. Germany, Hungary, Poland and Slovakia, for instance, all share similar geographic and climatic conditions with the Czech Republic, but still perform somewhat better in the comparison.

Renewable sources used to generate electricity (production in proportion to gross domestic electricity consumption) are an internationally monitored indicator. Chart I.H.4 shows the 2005 situation, including EU indicative targets for 2010 for each EU member state. Norway is not included in the list, as it produced 109% of its consumption from RES in 2005. Hungary is worth noting: it achieved its 2010 target in 2005.

4. Main findings

The goal in the National Energy Policy (NEP) is to achieve such a structure of primary sources of energy that in 2010 renewable energy sources (RES) cover 5–6% of the total consumption. Observing the state of 2005, it must be said that the goal has not been met, even though the trend has been positive. This proportion is expected to grow in the upcoming years mainly thanks to the obligation to add liquid biofuels to engine fuels.

The European Union as a whole intends to achieve a coverage of 12% of primary sources of energy by renewables in 2010. The current state, seen in Chart 3, shows that the 12% share was only met by four out of the EU25 countries in 2003. The largest European countries, with the greatest shares in the total energy consumption (i.e., Italy, France, UK, Germany, and Poland) perform below 10 per cent.

The National Energy Policy defines an indicative goal for RES: 'to stabilise conditions for meeting the national goal concerning the use of renewable sources of energy, i.e., a 5–6% share of RES in the gross electricity consumption in 2005.' The 2005 estimates indicate that the goal is not going to be met, even though the trend is positive again. Hydropower plants are an important component of renewable electricity generation; the chart shows its considerable annual variability.

Another goal for electricity generation from RES is defined in the Renewable Sources Act (no. 180/2005 Coll.). The goal is to achieve 8% of electricity generated from RES in 2010. This goal is identical to that set for the Czech Republic by the European Commission. Under current conditions, this goal essentially means doubling amount the electricity generated from RES. In spite of the growing trend for 2003–2006, the dominant increases were in hydropower, which varies greatly depending on the water levels in the respective years, and virtually no new significant capacities are under construction in the country. The increase of biomass seems significant: its share increases year by year.

II.

ENVIRONMENTAL PILLAR: PROTECTING NATURE, THE ENVIRONMENT, NATURAL RESOURCES AND THE LANDSCAPE, ENVIRONMENTAL LIMITS

II.A GREENHOUSE GAS EMISSIONS PER CAPITA

Jan Mertl

1. Meaning and context of the indicator

The indicator greenhouse gas emissions per capita measures the annual aggregate of anthropogenous greenhouse gas emissions per capita, expressed as a CO₂ equivalent. Such an indicator of 'emission intensity' is preferable to the indicator of total greenhouse gas emissions, as it shows a better information capacity and allows objective international comparison. Combined with other economic indicators, it reports on the quality of life in the population, household consumption, economic forwardness of the country, its energy base and socio-cultural conditions.

In terms of development sustainability, it makes sense to reduce the amounts of anthropogenous greenhouse gas emissions, because these emissions (mainly from combustion of fossil fuels in stationary and mobile sources) affect the energy balance of the Earth's climate system and magnify the so-called greenhouse effect. This process leads to climate change, which manifests itself in temperature (so-called global warming), precipitation (some areas receive less rainfall and its distribution throughout the year changes), as well as more frequent risky weather events, such as periods of drought, flooding, storms and windstorms. Climate change entails numerous negative impacts on national economies, including the sectors of agriculture, forestry, water management, biodiversity protection, and human health. Climate change is likely to affect the drinking water reserves and quality in subtropical zones and cause the sea levels to rise. All of this will have massive economic and social impacts, which have recently led to increased public interest in the issues.

The Czech Republic may also be threatened by some of the negative impacts of increased greenhouse gas emissions, mostly in terms of hydrology and water management (such as declining average flow rates, reduced groundwater stocks, increased water temperature, eutrophication of water courses, increased risk of flooding and inundation); agriculture (such as the heat stress risk related to more frequent occurrence of extremely high temperatures, threat of drought, lower yields in the most productive agricultural areas, expansion of farming pests and diseases so far only typical of warmer zones); human health (such as possible heat stress in people, new diseases due to changing climate); and socio-economic conditions (such as possible reduction in living space due to increased population migration as a result of some of the world's regions being endangered).

2. Method of calculation of the indicator

For the purposes of national inventorying of the anthropogenous emissions, including the downfalls of greenhouse gases resulting from land-use changes and forestry¹⁵⁾, a unified IPCC method has been developed by the Intergovernmental Panel on Climate Change. The method focuses on greenhouse gases with a direct radiation-absorption effect: CO₂ (carbon dioxide), CH₄ (methane) and N₂O (nitrous oxide), and on fluoride-containing substances with increased radiation-absorption effect: HFCs, PFCs and SF₆ (so-called F-gases). The method pays the greatest attention to determining the emissions of CO₂, the most important greenhouse gas affected by human activity.

¹⁵⁾ The term downfall stands for carbon deposition in forest or soil. Downfall may therefore include, among other things, the amount of carbon contained in increment wood (carbon absorbed).

Aggregated data on emissions of all greenhouse gases monitored are expressed in mass units (typically Mt) of CO_{2eq}¹⁶⁾, obtained by means of inventorying under the UNFCCC, including the sinks in the Land-Use Change and Forestry (LUCF) sector. The resulting emission aggregate is recalculated to the mean population figure for the period in question. The simple structure of the indicator allows construction of longer time series and is used in defining the targets of the National Programme for Alleviation of Climate Change Impacts in the Czech Republic ("National Programme").

3. Assessment of the indicator

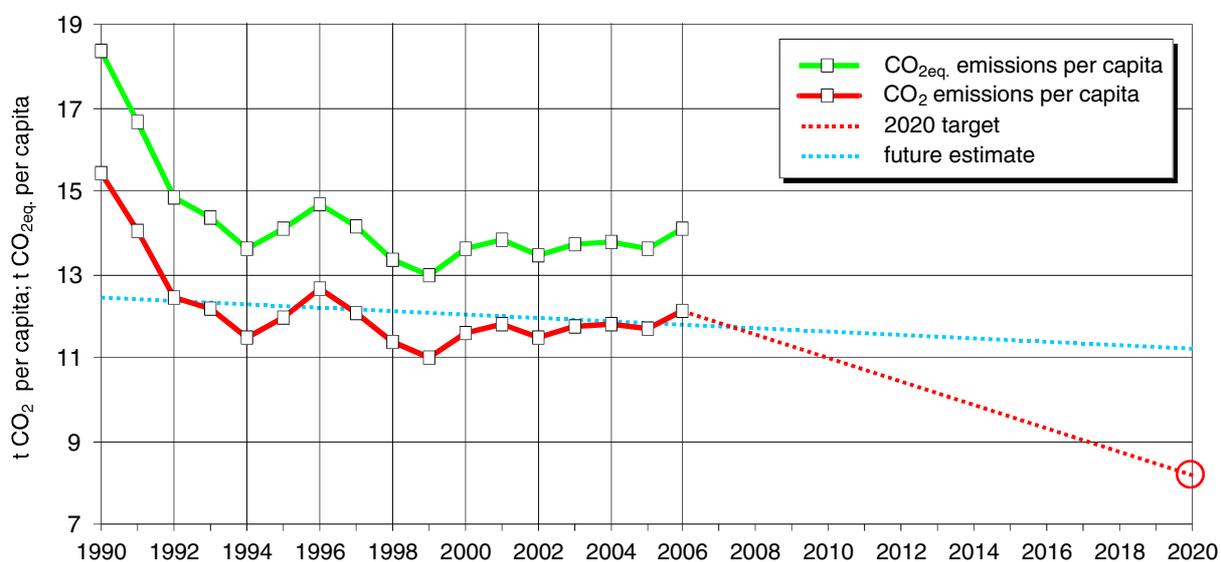
a) Target state

The Czech Republic is a party both to the UN Framework Convention on Climate Change and the Kyoto Protocol. The Protocol binds the country to reduce its aggregate greenhouse emissions over the control period 2008–2012 by 8% compared to the baseline year 1990. As concerns the indicator of CO₂ emissions per capita, the Czech Republic adopted, in its National Programme, a target of reducing the carbon dioxide emissions in order to attain average EU 2000 levels in 2020, i.e., the approved target of approximately 8.2 tonnes per capita per annum.

b) Development of the indicator in the Czech Republic

The Czech Republic achieved a reduction in its greenhouse gas emissions from 190.3 Mt in 1990 to 144.8 Mt in 2006 (including the emissions and sinks in LULUCF), i.e., approx. by 24%, meaning the country has met its commitment resulting from its joining the Kyoto Protocol with a considerable leeway.

Chart II.A.1: CO₂ and CO₂ equivalent emissions per capita (average), Czech Republic, 1990–2006, including 2020 target value and forecast further development



Data source: Czech Hydrometeorological Institute, Czech Statistical Office

¹⁶⁾ The aggregate greenhouse gas emissions are expressed as the equivalent amount of CO₂ showing a radiation absorption effect identical to the sum of emissions of the various gases multiplied by the respective conversion coefficients, which say how much more effective the given gas is in absorbing thermal radiation than CO₂ (CO₂: 1, CH₄: 21, N₂O: 310). The radiation potential values for the F-gases are 2–4 orders of magnitude higher.

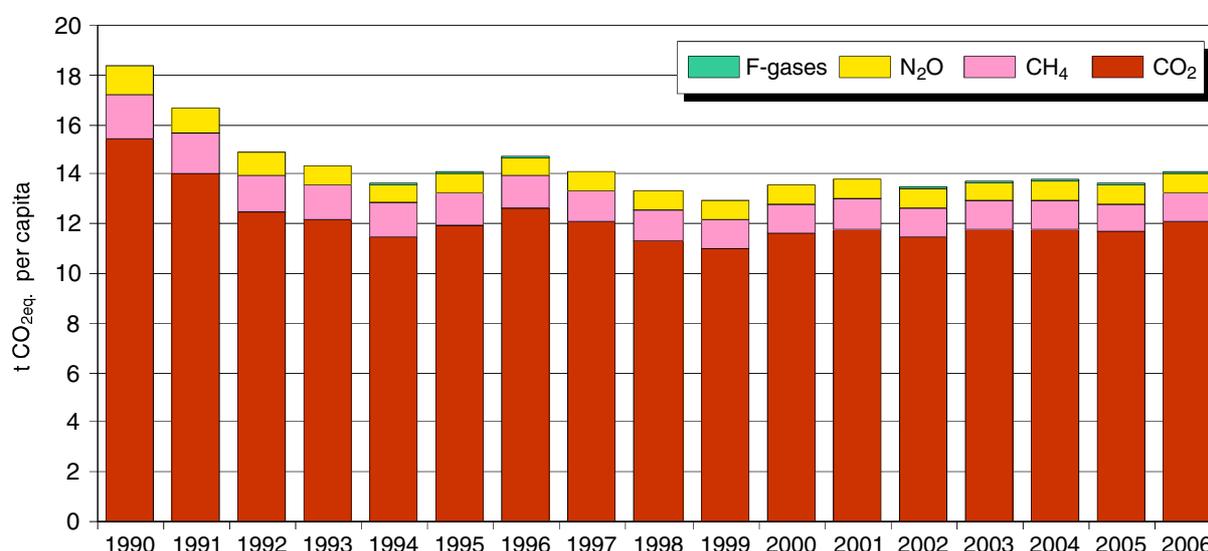
In per-capita figures, the emissions dropped from 18.3 t CO_{2eq} per capita in 1990 to approx. 14.1 t in 2006. However, the decrease occurred in the first half of the 1990s as a result of decreased industrial production and restructuring national economy; the emissions have been stagnating since then and have even grown by approx. 0.5 t per capita annually. The increase has nearly exclusively concerned CO₂ emission (from 11.7 t to 12.2 t); the emissions of other greenhouse gases have stagnated and N₂O has even decreased year on year. Chart II.A.1 shows the trend in the per-capita emissions.

The latest annual emission increase of nearly 4% was caused by the growing emissions from manufacturing industry (mainly metal working) and transportation as well as a significant decrease in the sinks in LULUCF (down from 6.4 Mt to approx. 3.4 Mt, i.e., nearly 50% within one year). This is probably the consequence of the destruction of vast forest areas by hurricane Kyrill and the increase in biomass cultivation on previously forested land. However, the emissions from the power industry have continued decreasing.

The greenhouse gas emissions from transportation are a problem: their share in the total emissions grew from under 4% in 1990 to over 12% in 2006 (18.3 Mt of CO_{2eq}). Nevertheless, the increased emissions from transportation have a negligible share in the very high total annual increase (approx. 5%).

The above greenhouse emission trends have been preventing the Czech Republic from approaching the target approved under the National Programme, i.e., to reduce the CO₂ emissions to amount to approx. 8.2 tonnes per capita per annum (that is, the EU-15 2000 level) by 2020. This would represent approximately 30% reduction from the 2000 level, but will most probably not be achieved, as demonstrated by Chart II.A.1, which shows both the target value and the regressive curve constructed based on the trend of 1995–2006, indicating the likely future rate of the specific emission reduction.

Chart II.A.2: CO_{2eq} emissions per capita – constituent greenhouse gases, Czech Republic, 1990–2006



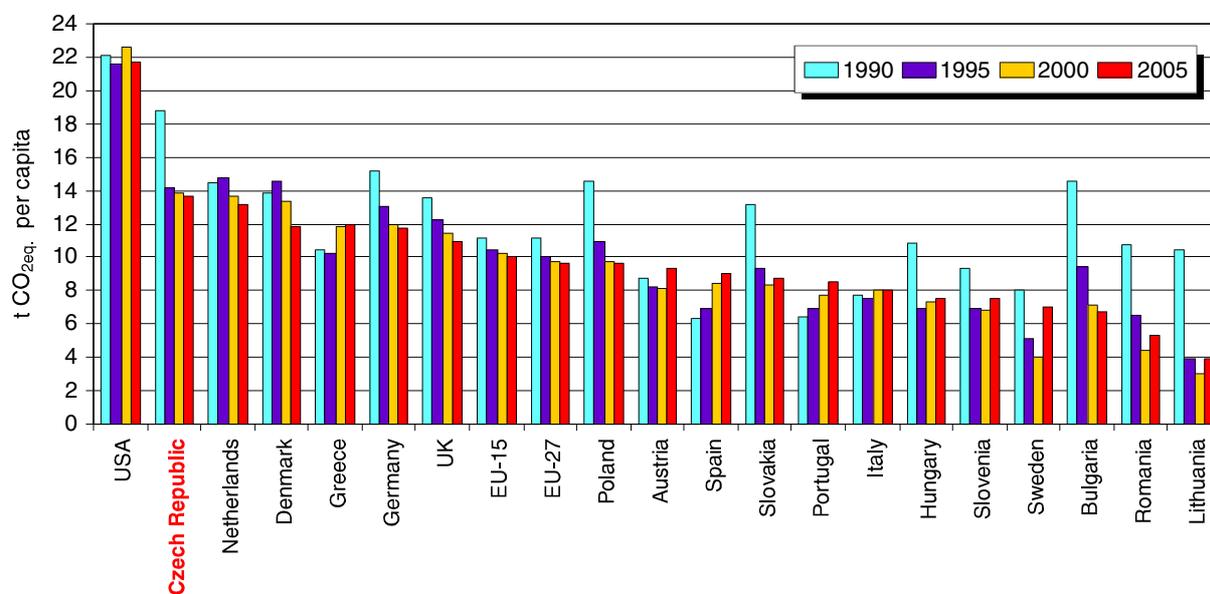
Data source: Czech Hydrometeorological Institute, Czech Statistical Office

Chart II.A.2 makes it clear that the greatest attention is justly paid to carbon dioxide emissions, constituting by far the greatest share in the total greenhouse gas emissions (in CO_{2eq}): this share has been stable at about 86% in the Czech Republic. The contributions by the other greenhouse gases in 2006 amounted to about 8.6% (CH₄), 5.1% (N₂O), and 0.7% (F-gases) of the total CO_{2eq} emissions. The N₂O emissions from transportation have been increasing significantly: they grew

nearly eight times between 1990 and 2006 (from 83.8 kt CO_{2eq} to 649 kt). Nonetheless, the total N₂O emissions have decreased moderately since 2004 due to the lower emissions from the chemical industry and agriculture. The emissions of CH₄ have been stagnating lately.

c) International comparison

Chart II.A.3: CO_{2eq} emissions per capita, international comparison, 1990, 1995, 2000, and 2005



Data source: Secretariat of the UN Framework Convention on Climate Change, Eurostat and OECD

As shown in Chart II.A.3, the Czech Republic still has very high per-capita greenhouse emissions compared to other European countries: roughly 13.8 tonnes of CO_{2eq} per capita in 2005 compared to the EU-15 average of 10.1 tonnes per capita. The US figure is quoted for purposes of illustration; the US approach to tackling its greenhouse gas emissions is different from the EU approach. The comparison also suggests that not only the Czech Republic, but other countries of the former Soviet Bloc as well, such as Slovakia and Poland, experienced a marked reduction in the emissions in the first half of the 1990s, which has recently slackened. Some of the old EU member states (such as Austria and Spain) are going through a reverse development with both the total and specific emissions growing.

4. Main findings

The greenhouse gas emissions in the Czech Republic in the early 21st century has shown a negative trend. Following a sharp emission drop in the early 1990s, resulting in the Czech Republic already meeting its Kyoto commitments, the emissions have not continued decreasing; to the contrary, the recent trend indicates the onset of a moderate growth. It is caused by growing production connected with the country's positive economic growth, rapidly increasing road traffic (emissions from transportation have more than doubled since 1990), as well as decreased emission sinks in the forestry sector caused by wood harvesting (mainly accidental clearances following natural disasters) and increasing production of rapidly growing biomass on previously forested land. The greenhouse gas emission trend has long been negatively influenced by the composition of the primary energy sources with a high share of solid fuels, the continuing low energy efficiency of the national economy

(which has clearly been diminishing in the recent years, though), and the relatively high share of the industry in the GDP generation.

Therefore, the following measures have been recommended under the National Programme in order to succeed in approximating to the defined goal:

- reduce energy intensity in manufacturing, distribution, and final consumption of energy to 60–70% of the current PSE consumption in 2030;
- introduce an environmental tax reform;
- increase use of biofuels to 5.75% in 2010, attaining a 20% share of all alternative fuels in transport by 2020.

II.B GREENHOUSE GAS EMISSIONS PER UNIT OF GDP

Jan Mertl

1. Meaning and context of the indicator

The issues of the Earth's climate system being threatened, generally perceived to be the gravest global environmental as well as economic and social problem at present, only received some public attention in the Czech Republic in the 1990s because the priority up to then had been the need to solve the pressing problems of air and water pollution and waste treatment. After the most pressing of these problems have been somewhat managed, however, climate protection has become a priority issue. In spite of a significant improvement in the development of greenhouse gas emissions, the Czech Republic still has high greenhouse emissions per capita and per unit of GDP in the EU comparison.

The indicator greenhouse gas emissions per unit of GDP indicates a country's efficiency in converting primary sources of energy and some raw materials (such as limestone) to economic output; it indicates the amount of emissions that have to be generated in order to produce a unit of output, thus monitoring the 'emission intensity' of GDP production. Unlike the indicator of Energy intensity, it also carries information concerning primary sources of energy, which can generally fall into two categories: zero-CO₂ sources (nuclear and hydropower, alternative energy sources), and CO₂-generating sources (gaseous, liquid and solid fuels).

Changes in the value of the indicator is connected primarily to a change in the fuel and energy bases and economic structure (fossil fuel consumption, RES use), to efficiencies both in consumption and production (application of energy efficient technologies), and to the material intensity of the economy. There is also a substantial connection with transport, where the dynamically growing passenger and freight transport performance leads to increased greenhouse gas emissions and their share in the total emissions.

The importance of monitoring and, above all, reducing the specific greenhouse gas emissions per unit of GDP is obvious as these emissions amplify the greenhouse effect in the planet's atmosphere and lead to climate change, which has significant negative impacts on national economies and populations. These concern mainly agriculture (crop plants are climate-sensitive and growing temperatures may help pests proliferate), water management (water availability and quality), biodiversity protection, and human health. Expected impacts may include the rising of sea and ocean levels and increased risk of natural disasters and extreme weather, such as frequent alternation of heat, drought, and floods. All of these have massive economic and social implications.

2. Method of calculation of the indicator

For the purposes of national inventorying of the anthropogenous emissions, including the downfalls of greenhouse gases resulting from land-use changes and forestry¹⁷⁾, a unified IPCC method has been developed by the Intergovernmental Panel on Climate Change. The method focuses on greenhouse gases with a direct radiation-absorption effect: CO₂ (carbon dioxide), CH₄ (methane) and N₂O (nitrous oxide), and on fluoride-containing substances with increased radiation-absorption effect: HFCs, PFCs and SF₆ (so-called F-gases). The method pays the greatest attention to determining the emissions of CO₂.

¹⁷⁾ The term downfall stands for carbon deposition in forest or soil. Downfall may therefore include, among other things, the amount of carbon contained in increment wood (carbon absorbed).

This indicator expresses the proportion of CO₂ equivalent emissions¹⁸⁾ (obtained based on inventorying done for the UNFCCC), including the downfalls from the LUCF (land-use changes and forestry) sector and the indicator of GDP. Since the construction of this indicator aims at eliminating monetary influences (inflation, and exchange rate fluctuation in international comparison) on the amount of GDP generated, the assessment of the indicator in this Report applies the GDP at 2000 constant prices in the national currencies indexed, for the purposes of international comparison, to the purchase power parity (PPP) to the US dollar according to the OECD. The indicator is expressed in kg CO_{2eq} per relevant unit of GDP.

3. Assessment of the indicator

a) Target state

The Czech Republic is a party both to the UN Framework Convention on Climate Change and the Kyoto Protocol. The Protocol binds the country to reduce its aggregate greenhouse emissions over the control period 2008–2012 by 8% compared to the baseline year 1990. As concerns the relative indicator of CO₂ emissions per unit of GDP, the Czech Republic adopted, in its National Programme, a target of reducing the carbon dioxide emissions in order to attain average EU 2000 levels in 2020, i.e., the approved target of approximately 0.35–0.4 kg CO₂ per GDP. It can be derived from this target that the total CO_{2eq} emissions should amount to approx. 0.45–0.5 kg per unit of GDP at the given moment (at 2000 USD PPP).

b) Development of the indicator

The Czech Republic reduced its absolute amount of greenhouse gas emissions by nearly 24%, from 190 million tonnes (CO₂ equivalent) in 1990 to some 145 million tonnes in 2006. The country has been successful at meeting its Kyoto Protocol commitment, but the situation is not so overwhelmingly positive from the point of view of reducing the energy and thus emission intensity of its economy.

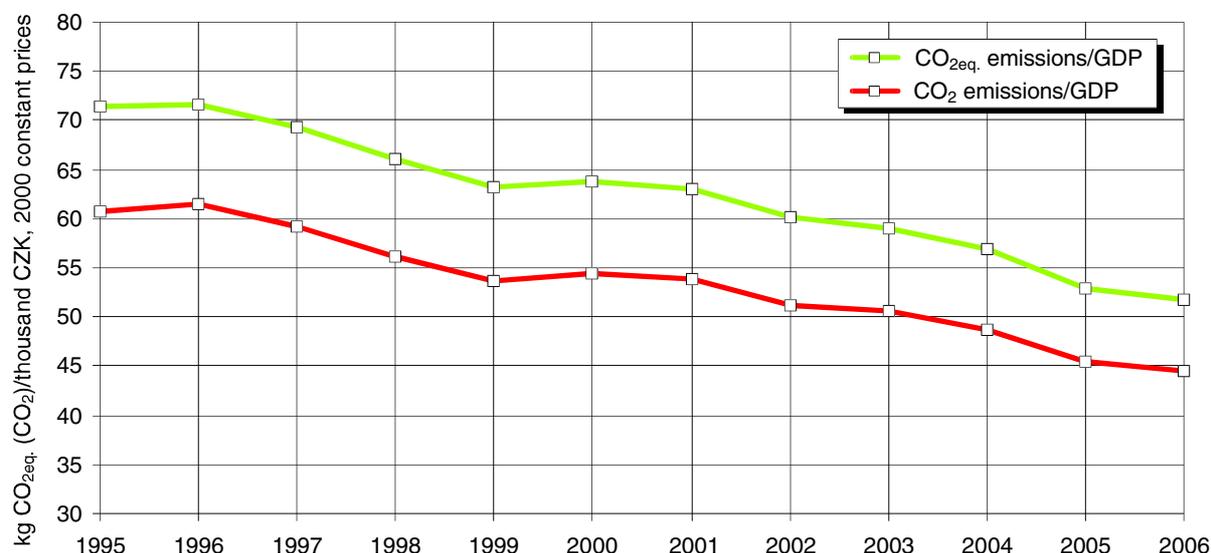
As shown in Chart II.B.1, the CO_{2eq} emissions per unit of GDP decreased over the monitored period, from an initial 71 kg of CO_{2eq} per thousand CZK of GDP in 1995 to approx. 52 kg in 2006. This development had a decisive impact on the increasing emissions of CO₂, the most important anthropogenic greenhouse gas, which dropped from 61 kg to some 44 kg per thousand CZK over the same period. In relative terms, the CO_{2eq} emissions per unit of GDP have decreased by about 28% since 1995. The decreasing trend in this indicator was stable throughout the study period, but it has been largely due to the good performance of the Czech economy reflected in growing GDP in the recent years (up by some 38% between 1998 and 2006 in constant prices), rather than changing total CO_{2eq} emissions, as they have been stagnating since 1995: they even increased moderately from 2005 to 2006 (by approx. 5.5 Mt of CO_{2eq}). The primary reason is the composition of the primary energy sources, where the share of solid fuels (i.e., CO₂-generating sources) is high, having a negative effect on the value of the indicator.

The decrease in the CO_{2eq} emissions per unit of GDP is also affected by technological changes, innovation, energy and material efficiency, including measures aimed at reducing energy intensity (such as deployment of less emission-intensive fuels in many sources and introduction of more advanced and energy-efficient operations), a transition from highly energy-intensive economic

¹⁸⁾ The aggregate greenhouse gas emissions are expressed as the equivalent amount of CO₂ showing a radiation absorption effect identical to the sum of emissions of the various gases multiplied by the respective conversion coefficients, which say how much more effective the given gas is in absorbing thermal radiation than CO₂ (CO₂: 1, CH₄: 21, N₂O: 310). The radiation potential values for the F-gases are 2–4 orders of magnitude higher.

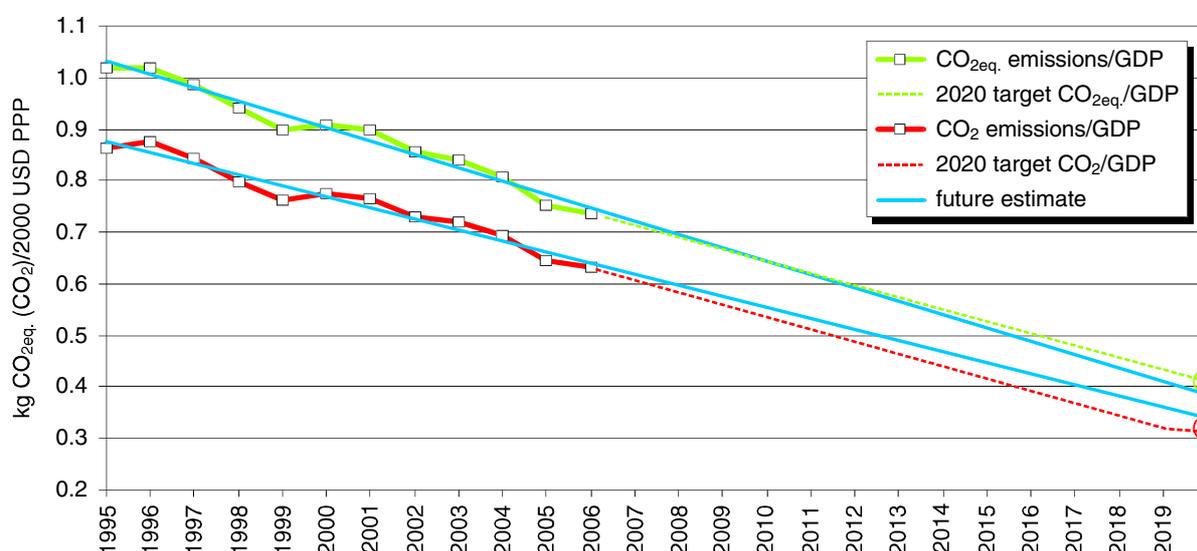
activities to less intensive ones, and increasing proportions of trade and services. The Czech Republic's growing economic output, however, is also bound to growing passenger, goods and material transportation by road, which has adverse environmental impacts has more than doubled its greenhouse gas emissions since 1990; their share in the total emissions now amounts to approx. 12.5%.

Chart II.B.1: Development of CO₂eq. and CO₂ emissions per GDP, Czech Republic, 1995–2006



Data source: Czech Hydrometeorological Institute, Czech Statistical Office

Chart II.B.2: CO₂eq. and CO₂ emissions per GDP, Czech Republic, 1995–2006, including 2020 target value and forecast of further development



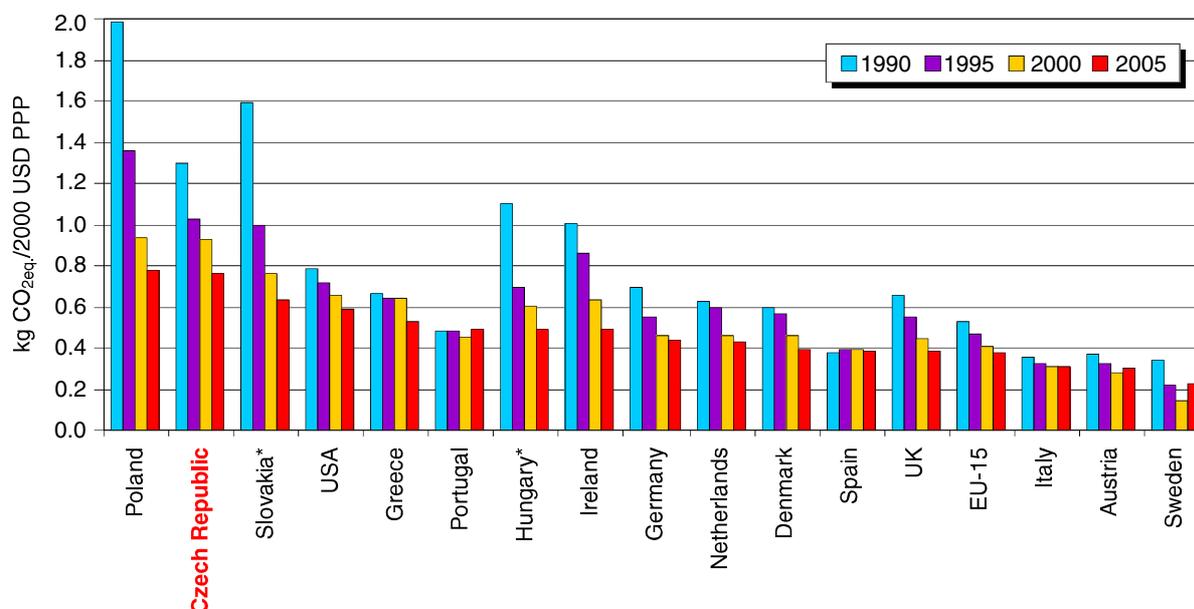
Data source: Czech Hydrometeorological Institute, OECD

As concerns the target defined in the National Programme, i.e., that the CO₂ and CO₂eq emissions should decrease gradually to amount to approx. 0.3–0.35 kg and 0.4–0.45 kg per unit of GDP (at 2000 USD PPP), respectively, by 2020, equalling the EU-15 2000 levels (see Chart II.B.2), it may be concluded that the Czech Republic is on the right path toward meeting the target given the stable decreasing trend. The Chart shows minute differences between target values and values obtained

by simple linear regression, which suggests the estimated possible future development based on data from 1995–2006. The suggested future decrease, however, is only feasible if significant innovation and investment in air protection are made and if robust political instrument exist and are applied effectively.

c) International comparison

Chart II.B.3: CO_{2eq} emissions per GDP, international comparison, 1990, 1995, 2000, and 2005



Note: Slovakia (1990) – 1992 data, Hungary (1990) – 1991 data

Data source: Secretariat of the UN Framework Convention on Climate Change and OECD

The CO_{2eq} emissions per unit of GDP (see Chart II.B.3) are among the highest when compared with other EU and OECD countries; they amounted to approx. 0.76 kg per unit of GDP in 2005, as opposed to the EU-15 average. The greenhouse gas emissions per unit of GDP are also above average for other newly acceded EU Member States due to the considerable use of fossil fuels and low energy efficiency of the economies; however, the emission decrease for the Czech Republic is slower than for other new EU Member States. In respect of this indicator, the Czech Republic and Poland achieved the worst levels in the entire OECD region.

4. Main findings

In spite of all the measures taken in order to meet the defined goals, the currently high rates of CO_{2eq} nominal emissions and the high emission intensity of GDP generation in the Czech Republic compared to other countries are caused by the composition of primary sources of energy, wherein the share of solid fuels is great, and the persevering high energy intensity of its economy, although it showed a record-breaking annual decrease between 2005 and 2006. Therefore, the following measures have been recommended under the National Programme in order to succeed in approximating to the defined goal: a decrease in energy intensity in manufacturing, distribution, and final consumption of energy to 60–70% of the current PSE consumption in 2030; the introduction of an environmental tax reform; an increase use of biofuels to 5.75% in 2010, attaining a 20% share of all alternative fuels in transport by 2020; and finally, an increase in the share of renewable energy sources in the consumption of primary sources of energy to 6% and 20% by 2010 and 2030, respectively.

II.C MATERIAL CONSUMPTION

Jan Kovanda

1. Meaning and context of the indicator

Material consumption is regarded as an appropriate indicator of environmental pressure as the extraction and processing of raw materials is associated with numerous key environmental issues. If related to GDP, the material consumption indicator will provide information about the efficiency with which materials entering the economic system are transformed into economic output expressed in monetary units. This indicator is referred to as the material intensity of GDP. When the material intensity declines, environmental pressure per unit of GDP declines as well, and competitiveness increases as a result of reduced production costs due to lower levels of purchases of raw materials and other materials necessary for the production process.

Material consumption is closely related to the issue of total primary energy supply. The indicator of total primary energy supply is, in addition to primary electricity and primary heat, composed mainly of domestic extraction of all energy raw materials plus their imports minus their exports. The total primary energy supply can therefore be regarded, to a certain extent, as a subgroup of material consumption as such, or as material consumption for the purposes of energy production.

Given that all materials enter the economic system in order to be consumed, they are also bound to exit the system in some time: in the form of air emission, water pollution or landfill waste; material consumption is therefore closely related to the issues of waste and material use of waste.

As a result of its structure, the indicator is inherently bound to gross domestic product.

A reduction in material consumption leads to a reduction of total demands of a socio-economic system for materials and a reduced environmental burden. It also contributes to the mitigation of many environmental problems. These may include, but not be limited to, structural changes in landscape in connection to mining, reduced biodiversity due to biomass production in large-scale agroecosystems, global climate change and acidification as a result of burning of fossil fuels, eutrophication as a result of excessive use of industrial fertilisers, and increased waste streams due to increased material consumption. In some way, the materials consumed within a national economy have to be transported from the point of extraction to the points of production and consumption. Decreasing material consumption may therefore result in decreasing environmental burden in terms of transport.

2. Method of calculation of the indicator

Material consumption is monitored as the indicator domestic material consumption (DMC), compiled according to Eurostat methodology for calculating material flow indicators. Domestic material consumption is the sum of the physical quantity of raw materials extracted (energy raw materials, ores, non-ore raw materials, and building materials) and biomass produced (crop, timber and fish harvest etc.) in the territory of a particular country. All imports are then added to and all exports are deducted from these materials (imports and exports of raw materials, biomass, semi-finished products, and final consumption products). The indicator disregards recycling flows and material reuse, which are reflected in indicator II.D Material use of waste. Domestic material consumption is typically monitored in millions of tonnes or in tonnes per capita. The material intensity of GDP is

calculated as the proportion of domestic material consumption to GDP in constant prices (for methodology of calculation of GDP see the indicator GDP per capita). Material intensity is presented in kg per CZK 1,000 of GDP or as an index, where the baseline year has a value of 100 and the following years indicate a percentage change compared with the baseline value.

3. Assessment of the indicator

a) *Development of the indicator in the Czech Republic*

The development of domestic material consumption in the Czech Republic between 1990 and 2006 is shown in Table II.C.1.¹⁹⁾ Concerning the entire study period, the domestic material consumption decreased from 300.4 Mt in 1990 to 197.9 Mt in 2006. The decrease occurred largely in the early 1990s. The indicator reached its historical minimum (176.9 Mt) in 2002; but it grew over the following years to reach 197.9 Mt in 2006, thus exceeding the 2002 figure by 11.9%. The trend for the last four years thus indicates that the decrease in the total environmental burden related to material consumption has slowed down in the Czech Republic, probably due to the significant economic growth.

In terms of material categories, the greatest increase in 2000–2006 was recorded for ores and products from them (up from 3.7 Mt to 6 Mt, i.e., 62%). Within the time series, which shows a fluctuating tendency, the 2006 consumption figure is well above average. A considerable growth was recorded for construction raw materials (up from 59.1 Mt in 2002 to 78 Mt; 32%), related to the growing building construction in the Czech Republic. Fossil fuels and derived products showed an increase in petroleum consumption (from 7.8 Mt to 9.6 Mt; 23.1%) and a contrasting decrease in natural gas (7.1 Mt to 6.8 Mt; 4.2%) and coal consumption (56.6 Mt to 56.3 Mt; 0.5%). The coal consumption decrease was markedly smaller than in the preceding years, when the item dictated the decreasing trend of the total material consumption. As for gas consumption, the period up to 2002 even saw a considerable growth, related to the substitution of gaseous fuels for solid ones. The positive trend – use of gaseous fuels entails milder environmental impacts than of solid ones – has thus ceased. Furthermore, biomass consumption showed a pronounced change: wood consumption grew by 13.5% (from 9.6 Mt in 2002 to 10 Mt in 2006), while the consumption of biomass for nutrition and the use of organic fertilisers decreased by 30.4% (from 10.2 Mt to 7.1 Mt) and by 9% (from 10 Mt to 9.1 Mt) respectively. The consumption of these material categories is related to the composite share of renewable resource consumption on the DMC. That decreased from 16.8% in 2002 to 13.7% in 2006. In terms of the time series, the decrease in the share of renewable resources in the domestic material consumption that began after 2001 has been continuing. Since consuming renewable resources is typically linked with milder environmental impacts than using non-renewables, this trend can be judged as negative.

Chart II.C.1 shows the decomposition of the DMC indicator by the components, i.e., domestic extraction used (raw materials extracted and biomass produced in the Czech Republic), imports and exports.

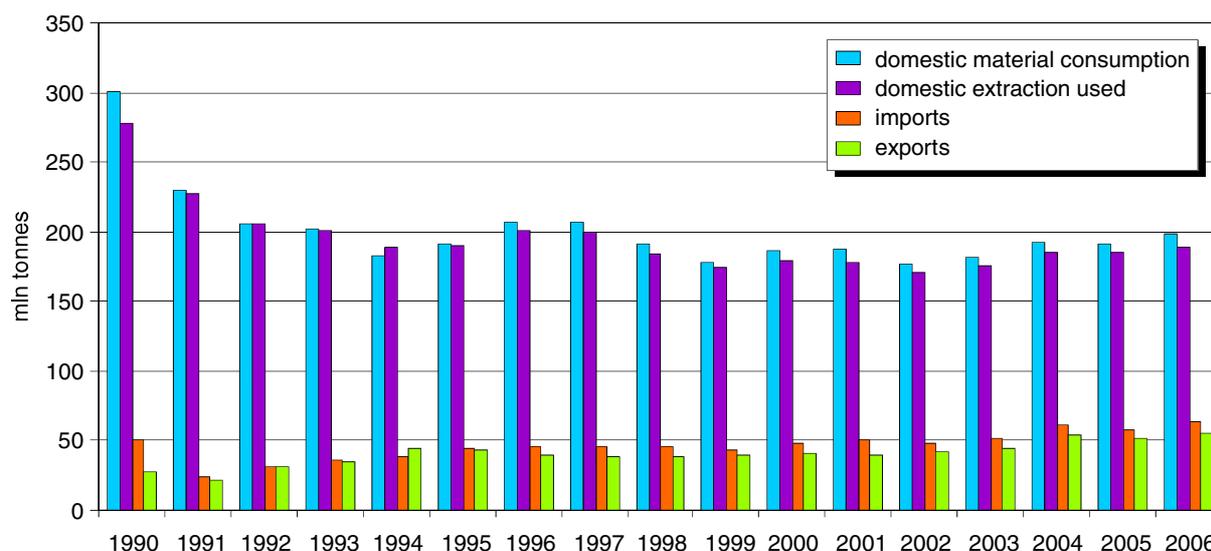
¹⁹⁾ Unlike the 2006 and 2007 Progress Report and the Czech Statistical Office report „Material flow accounts in the Czech Republic 2001–2006 (selected indicators), the domestic material consumption in Table II.C.1 excludes imports and exports of packaging, which is extremely difficult to quantify. For this reason, Eurostat discourages their inclusion in the indicator.

Table II.C.1: Domestic material consumption by group of materials (mil. tonnes), Czech Republic, 1990–2006

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Vegetable biomass for nutrition	15.9	15.6	13.0	14.8	12.4	12.5	15.2	14.6	13.6	13.0	11.9	14.1	10.2	7.3	11.1	8.7	7.1
Vegetable and animal fodder	20.4	19.9	14.3	14.6	13.4	13.8	14.0	13.5	11.6	11.3	10.5	11.0	10.0	7.9	10.6	9.9	9.1
Wood and wood products	8.7	7.2	5.5	6.8	6.6	7.0	7.1	7.8	8.8	8.5	9.3	9.1	9.6	8.9	8.1	9.4	10.9
Mineral raw materials for construction and products made thereof	97.9	60.8	54.6	55.0	55.7	58.3	65.8	69.1	61.8	59.6	59.3	59.2	59.1	66.6	69.7	73.9	78.0
Mineral raw materials for industry and products made thereof	19.2	13.0	10.7	11.5	11.1	11.6	11.9	11.9	11.9	14.0	14.6	15.2	13.0	13.1	13.1	12.8	13.3
Mineral ores and products made thereof	9.9	-0.1	4.0	4.2	0.7	5.6	4.4	3.7	4.1	2.1	3.8	3.7	3.7	4.9	5.5	4.1	6.0
Coal and products made thereof	110.8	100.7	90.1	82.6	69.3	67.7	71.3	68.9	61.7	53.4	60.1	58.3	56.6	57.9	57.4	56.0	56.3
Crude oil and products made thereof	13.8	6.4	7.3	6.6	7.2	7.8	7.9	8.1	8.3	7.8	7.5	8.0	7.8	8.2	8.8	9.8	9.6
Natural gas and products made thereof	6.5	6.9	7.0	7.0	7.4	8.2	9.7	9.7	9.8	9.5	9.8	9.9	7.1	6.9	6.5	7.0	6.8
Miscellaneous	-2.7	-1.2	-1.1	-0.6	-1.1	-0.9	-0.7	-0.6	-0.4	-1.0	-0.6	-0.4	-0.2	0.3	2.2	-0.1	0.8
Total	300.4	229.2	205.4	202.5	182.7	191.6	206.6	206.7	191.2	178.2	186.2	188.1	176.9	182.0	193.0	191.5	197.9

Note: 'Miscellaneous' includes animal biomass for nutrition, other biomass and other fossil fuels and products.

Data source: Charles University in Prague, Environment Center, Czech Statistical Office

Chart II.C.1: Domestic material consumption, Czech Republic, 1990–2006


Data source: Charles University in Prague, Environment Center; Czech Statistical Office

The domestic extraction used figure directly corresponds to the burden related to the extraction of renewable and non-renewable resources taking place on the country's domestic territory. The Czech domestic extraction used follows the DMC very closely. It has thus grown by 10.6% since 2002. The share of imports in the DMC is of a great information capacity. The higher the share, the more sensitive the national economy to random fluctuations in foreign trade (lack of certain commodities on markets, unexpected price increases, etc.).

Chart II.C.2: Material intensity (2000 co. p.), Czech Republic, 1995–2006


Data source: Charles University in Prague, Environment Center; Czech Statistical Office

This concerns mainly strategic material resources such as fossil fuels and rare metals. The share of imports in the DMC grew noticeably between 1991 and 2006: up from 10.5% in 1991 to 32.1% in 2006, while the increase was by 5.1 p. p. between 2002 and 2006. As for fossil fuels²⁰⁾, the share of their imports in the consumption grew from 15.7% in 1991 to 35% in 2006 (again growing by 5.2 p. p. between 2002 and 2006). The pronounced increase was caused mainly by growing petroleum and natural gas consumption, with the vast majority of their quantities being imported.

Chart II.C.2 illustrates the development of material intensity of GDP in the Czech Republic.

A decrease in the material intensity was recorded for the period 2002–2006 thanks to the development of the two latest years. The decrease was caused by a significant economic growth, which was above the rate of material consumption. The decreasing material intensity is a positive trend, indicating increasing efficiency of transformation of material inputs to economic outputs due to

²⁰⁾ Sum of categories "Coal and coal-based products", "Petroleum and petroleum-based products", "Gas and gas-based products" and "Other fossil fuels and products".

introduction of modern technologies, increasing rate of recycling, and decreasing environmental burden per unit of GDP.

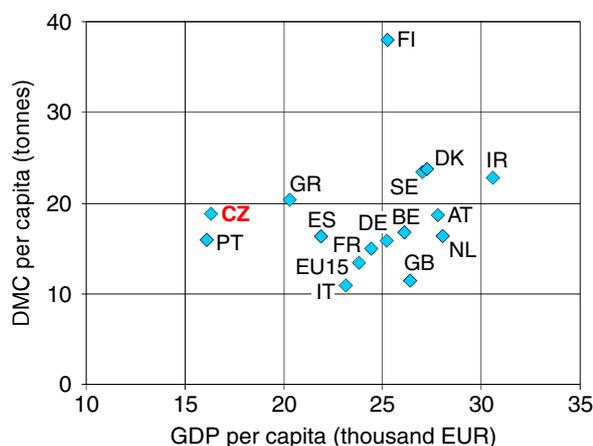
b) International comparison

Chart II.C.3 offers an international comparison of DMC per capita and GDP per capita.

International comparison indicates that the Czech Republic achieves levels of domestic material consumption per capita slightly above the EU-15 average, while in the case of GDP the level is significantly lower.

The levels of DMC and GDP per capita indicate further that the material intensity in the Czech Republic (1.16 tonnes per 1,000 EUR GDP) is the second-highest among the group of countries studied: only Finland shows greater figures (1.51 t per EUR 1,000 of GDP). Compared to the EU-15 average material consumption (0.61 t per EUR 1,000 of GDP), the material intensity of the Czech Republic is nearly double.

Chart II.C.3: Domestic material consumption (DMC) and GDP per capita, international comparison, 2004



Note: GDP calculated using the purchasing power parity; AT – Austria, BE – Belgium, CZ – Czech Republic, DK – Denmark, DE – Germany, ES – Spain, FI – Finland, FR – France, GB – United Kingdom, GR – Greece, IR – Ireland, IT – Italy, NL – Netherlands, PT – Portugal, SE – Sweden

Data source: Eurostat

4. Main findings

A trend of noticeable decrease in the environmental burden related to material consumption began in the 1990s. However, the data on the domestic material consumption indicate that the trend ceased in 2002, meaning the burden has again started growing. As for the structuring of the material consumption, the use of ores, construction raw materials, and petroleum and petroleum-based products have seen the greatest increase since 2002, while biomass for nutrition and organic fertilisers showed a considerable decrease. The last four years have also seen the end of the substitution of gaseous fuels for solid ones, and a decrease in the share of renewable resources in the domestic material consumption. This trend can be judged as negative since the use of gaseous fuels and renewable sources of energy entails milder environmental impacts.

The environmental burden related to raw material extraction and biomass agriculture was also growing after 2002, while the trend of increasing material dependency on imports was continuing. That was the case with all materials consumed as well as fossil fuels, being one of the strategic material sources of the economy.

The positive trend of decreasing material intensity continued after 2002. The decrease was caused by considerable economic growth above the rate of material consumption increase. The efficiency of transformation of materials to economic outputs was thus growing, while the environmental burden per unit of GDP was decreasing. This also reflected in the decreasing production costs in relation to purchases of raw materials and other materials required for production, which led to an increase in the labour productivity and competitiveness of the Czech economy, among other things.

The material intensity of the Czech Republic (1.16 tonnes per 1,000 EUR of GDP) is still markedly different from the EU-15 average (0.61 tonnes per 1,000 EUR of GDP). If reduction in the material intensity is set as the goal, and if the EU-15 average is the reference value, the material consumption will have to show no increase or even a decrease, while improving the economic performance simultaneously. The crucial factors in this respect include further introduction of less material-intensive state-of-the-art technologies that generate less voluminous waste streams; an increasing share of recycling; and restructuring the economy toward a reduced share of energy-intensive industries and greater shares of services and, generally, industries with great added value. These goals comply with the policy papers of the economic character, such as the Raw Material Policy in the area of natural resources, and the National Energy Policy of the Czech Republic.

II.D MATERIAL USE OF WASTE

Petra Bradnová and Jiří Valta

1. Meaning and context of the indicator

Material use of waste defines the proportion of the total waste production that is used as raw material. It is defined in the Waste Act no. 185/2001 Coll., as amended, as “replacement of primary raw materials by substances obtained from waste that can be considered as secondary raw materials, or the use of the properties of waste for the original purpose or for other purposes, except for immediate generation of energy”. This indicator forms a part of the Waste Management Indicators System of the Czech Republic, intended to evaluate the achievement of the objectives of the Waste Management Plan of the Czech Republic (Indicator I.6v – share of all recoverable waste). The Waste Act rules the obligation to develop Waste Management Plans.

Material use operations include, above all, such methods of waste use as defined in Annex 3 to the Waste Act and marked with the letter R: retrieval/regeneration of solvents and organic substances not used as solvents (including composting and other organic processes), recycling/retrieval of metals, metal compounds and other inorganic materials, or any application to soil that is beneficial to agriculture and improves ecology.

The indicator encompasses all types of waste included in the Waste Catalogue, except waste code 200304 (cesspool and septic tank sludge), regardless of their category.

The indicator Material use of waste is generally a complement to indicators of energy use of waste and waste disposal methods. Law gives priority to material use of waste to its energy use. Waste disposal by means of landfilling or incineration is considered the least desirable waste management method and environmentally inappropriate as long as it can be reused.

The amount of waste used as materials helps reduce the amount of raw materials extracted from primary sources. This indicator is therefore bound to the material and energy intensity of an economy. It is desirable to increase the share of raw and derived materials that can be retrieved for production from waste. The amount of material reuse, in addition, indicates the overall forwardness of a society, as it knows the price of raw material sources and prefers increasing the value of waste to exploiting primary sources.

In terms of sustainable development, as high shares of material use of waste as is technically feasible and economically acceptable should be striven for. That is why this indicator is an important marker of the sustainability of the current development. It is important that it has a growing tendency, that is, the share of waste used as materials is continually increasing. The importance of material use of waste is highlighted in Section 11 of the Waste Act, which states the priority of such use over any other method of waste treatment.

Furthermore, material use of waste reduces the requirements on the size and security of landfills, as some of the reused substances would be labelled and would have to be deposited as hazardous waste.

2. Method of calculation of the indicator in the Czech Republic

The data for the calculation of the indicator are collected from the Waste Management Information System (ISOH). The ISOH is obliged to collect data by the Waste Act (no. 185/2001 Coll., as amended) and the Packaging Act (no. 477/2001 Col., as amended). The data in the database are compiled from

reports made by regional and district authorities, which gather reports made by those waste producers that generate or handle more than 50 kg of hazardous waste and/or more than 50 tonnes of other waste, annually. The database adds all the numeric amounts of waste which is reported as reused as material (i.e., treatment codes R2–R11 (i.e., material reuse), N1, N2, N8, N10–N13, N15 (i.e., other types of disposal), and the sum of all waste quantities for which the disposal code A00 (waste generation) was reported, reduced by the amounts reported under code 200304. The figures thus yielded compose the indicator, which is expressed as mass percentage.

Note, however, that a considerable proportion of the material reuse of waste in the Czech Republic occurs in the N disposal code category, the classification of which under material reuse of waste is not in compliance with the material reuse reporting rules as set out for EU Member States by European Parliament and Council Regulation no. 2150/2002 on Waste Statistics and Directive 75/442/EEC as amended.

3. Assessment of the indicator

a) Target state

The Czech Republic Waste Management Plan defines its primary objective to increase the level of waste reuse, preferring recycling, to 55% of all waste generated by 2012, and increase the level of material use of municipal waste to 50% by 2010, the baseline year being 2000. Secondary targets include, above all, the use of 50% and 75% of mass of all construction and demolition waste by 2005 and 2012, respectively. Another target is to use at least 80% of the average mass of any used large household appliance. By the end of 2006, at least 75% of the average mass of materials, substances and components of large appliances should be reused or recycled. Yet another target is to reuse or recycle at least 80% of the average mass of materials, substances and components of discharge lamps by the end of 2006. Czech Government Resolution no. 1621 of 14 December 2005 defines a measure to harmonise the goals of the Czech Republic Waste Management Plan with the EU Directive, examine tools to increase the efficiency of collection of used portable batteries, and co-ordinate the issues of batteries, electrical waste and vehicles after useful life. The target for material reuse (at least 50% of the mass) was met in 2005 and 2006.

Starting from 1 January 2006, at least 80% of the average mass of collected used vehicles in a calendar year should be reused and recycled; the ratio should increase to 85% as of 2015. The total collection of wrecks of cars manufactured before 1 January 1980 was 559 tonnes in 2006, of which 62.1% was reused and recycled.

b) Development of the indicator in the Czech Republic

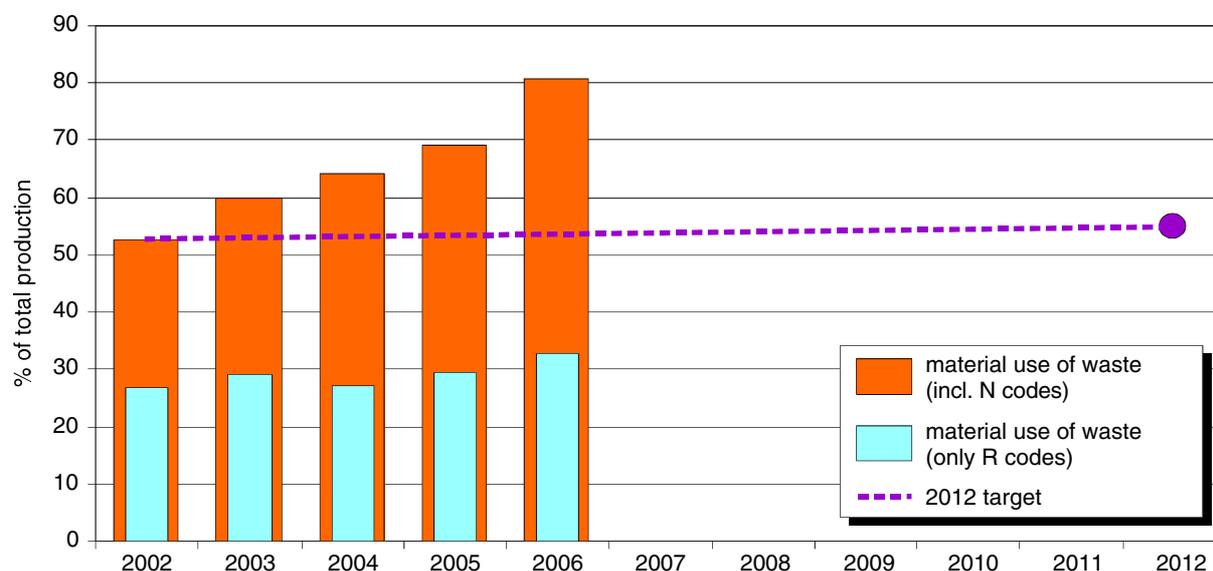
As shown in the above chart, development of the share of recovered waste in the Czech Republic between 2000 and 2006 has a positive tendency. Including the N codes (above all use of waste in land reclamation, general landscaping, landfill reclamation and deposition of waste as technological material to secure landfills), 20.6 Mt of waste was reused in 2005; it was 22.7 Mt in 2006. The share of material use of waste in 2006 was thus nearly 81% of the total waste production, which amounted to 28.1 Mt.

The share of material use of waste for internationally comparable purposes (R codes) was only 32.8% in 2006 (see Chart II.D.1).

Above all, the volume of separated collection of reusable components of municipal waste increased; within that, packaging waste and construction waste showed the biggest figures. The most reused

materials include ferrous and non-ferrous metals and construction waste; less reused are certain metal-containing types of waste, waste plastics, glass and paper.

Chart II.D.1: Material use of waste and its target value, Czech Republic, 2000–2006



Data source: Waste Management Centre

Municipal waste remains a difficult area as it has failed to converge with the defined goal of increasing the material use of municipal waste streams to 50% by 2010 in comparison with 2000. Approximately 70% of municipal waste ends up in landfills at present, with the share of reused hazardous municipal waste being less than 1% of the total production. The main reason for this sad state is that the waste deposit fees are too low to motivate other, more environmentally acceptable waste treatment methods. The situation may be complicated further by the fact that municipal waste collection tends to be subsidised from municipal budgets, therefore the citizens do not bear the full actual costs of waste disposal or reuse.

c) International comparison

This indicator has not as yet been monitored in OECD and Eurostat official statistics. The EU has not even standardised any methodology of calculation or methods of waste disposal and management to be considered as recovery/recycling. These statistics only indicate the share of recycling for selected waste flows, mainly packages and packaging waste or municipal waste. In a recommendation of the OECD Council on material flows and resource productivity, it is envisaged that methodology will finally be unified for internationally comparable monitoring of the indicator characterising the ratio of recoverable waste to total material inputs into the national economy.

4. Main findings

Comparing the factual figures with the defined principal goal (see Chart II.D.1), i.e., increase waste reuse, prioritising recycling, to 55% of all generated waste by 2012, it is clear that the Czech Republic is already succeeding in this goal with a considerable leeway; this is particularly due to the introduction of state-of-the-art waste management systems, including the integration of EC legal requirements on waste, along with other international commitments, in the new Waste and Packaging Acts, adopted in 2001. The National Waste Management Strategy and 14 regional strategies have been adopted,

setting numerous long-term and medium-term quantitative targets; a nation-wide packaging waste reuse and recycling system has been introduced; an information system on waste management is in operation and undergoes constant improvements.

Municipal waste is a complex issue; it requires attention, above all, to promotion of separated collection of waste and recycling of municipal waste; support to development of recycled product markets; and introduction of appropriate economic incentives, primarily in the area of fees. Simultaneously, efforts need to be directed toward waste generation prevention, such as by means of information on the costs and benefits of alternative technologies, and by promoting cleaner or zero-waste technologies. Environmental education and information will, no doubt, play an important role in the area of municipal waste separation.

Experience so far suggests the need for the Czech Republic to become involved in the international working groups (such as the OECD Working Group on Waste Prevention and Recycling– WG WPR) and in more effective information exchange with more advanced countries and harmonisation of methodologies, to transfer more efficiently the experience of more advanced countries in the area of material accounting (including waste streams) and analysis, and to apply the results in practical management. Similarly, experience needs to be transferred in the area of developing systemic measures aimed at establishing raw material management systems, requiring a clear concept of material flows of waste as a balancing component of the total material flows, including imports and exports and monitoring of the actual consumption of secondary raw materials in the economic processes.

II.E CONSUMPTION OF BASIC NUTRIENTS IN MINERAL FERTILISERS

Martin Leibl

1. Meaning and context of the indicator

Consumption of basic nutrients in mineral fertilisers is considered one of the key indicators of ecologisation of agriculture. Soil is the result of the erosion of minerals and the activity of live organisms. This process is so slow that soil may be regarded as a non-renewable resource. Agriculture often has a very adverse impact on soil. One of the factors diminishing the quality of soil is excessive use of mineral fertilisers, associated in particular with soil acidification and erosion, and consequently overall deterioration of fertility. The use of mineral fertilisers largely contributes to eutrophication of water and contamination of drinking water.

The use of industrial fertilisers is closely related to the issue of consumption of pesticides. In the operational practice, the use of chemicals in the form of fertilisers and pesticides is closely connected; similar trends in the consumption of these chemicals can thus be seen throughout the study period.

Consumption of mineral fertilisers is also closely related to organic farming, where the application of industrial fertilisers is prohibited. Moreover, it is related to the issues of surface water and groundwater nitrate pollution, where nitrogen-based fertilisers are one of the major sources of nitrates. The use of industrial fertilisers also has a direct adverse effect on climate, as greenhouse gases are released to the atmosphere during the production of industrial fertilisers.

2. Method of calculation of the indicator

This indicator is calculated as the amount of fertilisers used (in kilograms of pure nutrients) per hectare of farmland. The higher the amount, the lower the sustainability.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

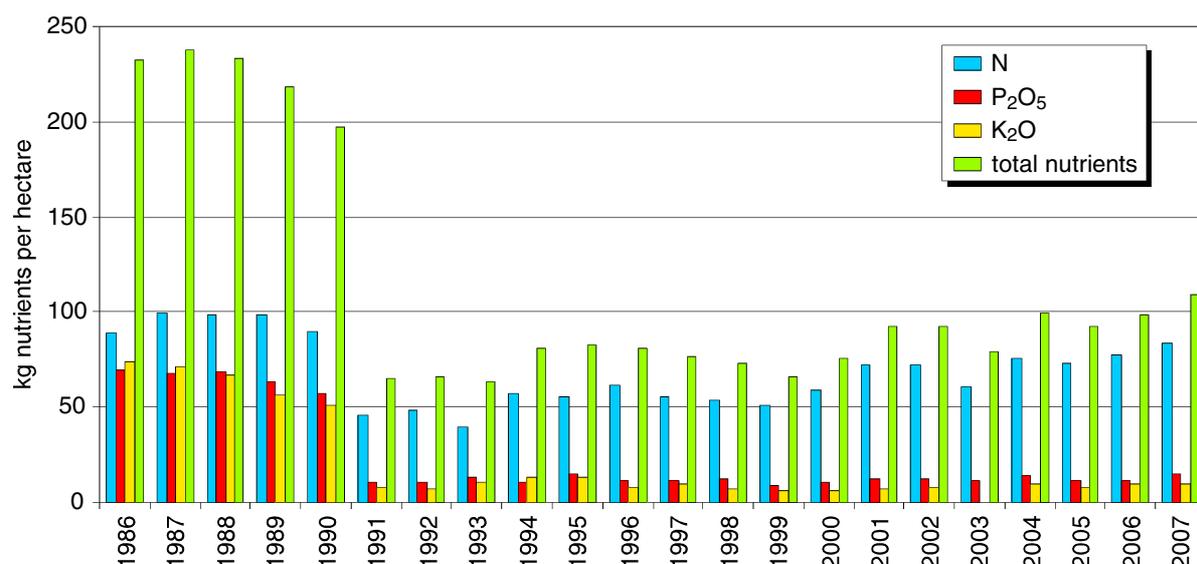
The development of the use of basic nutrients in industrial fertilisers in 1986–2007 is shown in Chart II.E.1.

The rate of use of industrial fertilisers was significantly reduced after 1989, mainly due to their increasing price. The least significant drop in the use of fertilisers occurred in respect of nitrogen as nitrogen fertilisation influences crop yield the most.

The first remarkable increase of fertilisation with industrial fertilisers (by approximately 25% compared to the previous year) occurred in 2004. This is mainly due to the Czech Republic's accession to the EU, as farmers now have more available funds to buy agricultural inputs, without undertaking any structural reform of farming methods or general transition to sufficiently regardful farming methods.

The use of industrial fertilisers has been increasing regularly since 2004 due to the improving economical situation of the farmers, and has already exceeded the 1991 level of fertiliser use. However, it is still far from the 1990 level as there was a massive drop in the use of industrial fertiliser between 1990 and 1991.

Chart II.E.1: Consumption of mineral fertilisers, Czech Republic, 1986–2007

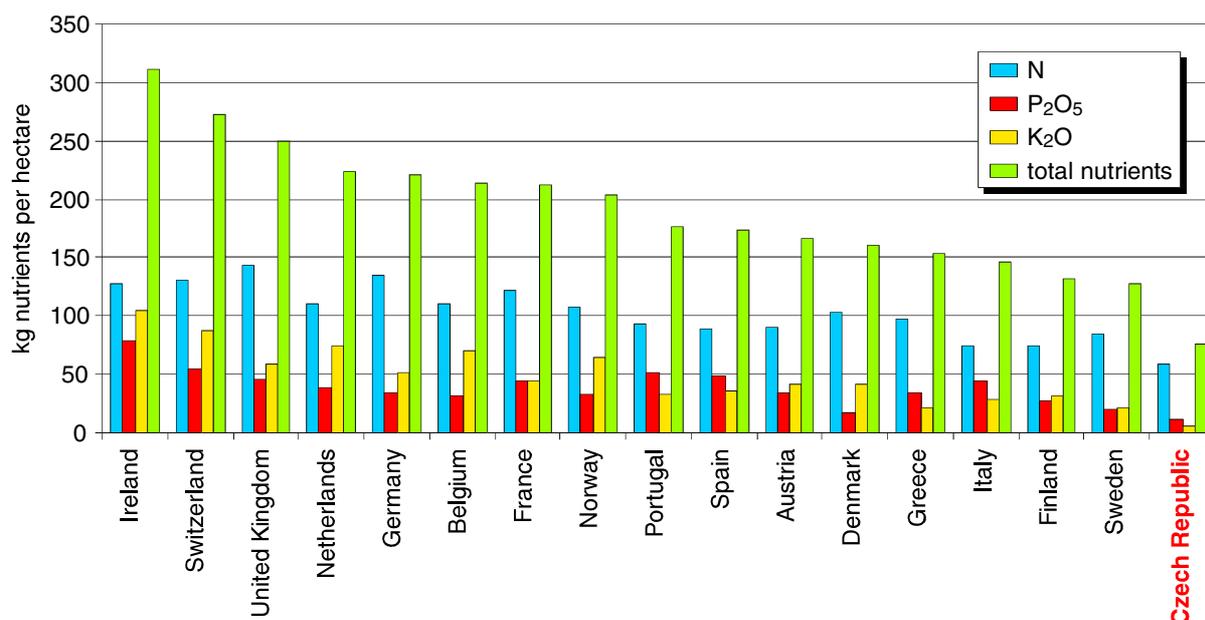


Data source: Czech Ministry of Agriculture

b) International comparison

Any comparison between the use of industrial fertilisers in the Czech Republic and the advanced countries is still only rough, because comparable data only exist for the year 2000. However, it can be assumed that the use of industrial fertilisers has since grown in other European countries as it has in the Czech Republic, because the EU agricultural subsidy policy is equal for all EU Member States. Chart II.E.2 shows details.

Chart II.E.2: Consumption of mineral fertilisers, international comparison, 2000



Data source: Czech Ministry of Agriculture

4. Main findings

The dominant trend in the area of industrial fertiliser use is a marked decrease in their use after 1990, and a subsequent rise in their use following the Czech Republic's accession to the EU. Compared to the EU-15 countries, the use rate in the Czech Republic remains among the lowest. One-sided increases in the use of industrial fertilisers by farmers due to their improving financial standing, not accompanied by the necessary structural changes in agriculture along with a shift to environmentally friendlier farming practices, are becoming a problem. The use of industrial fertilisers is currently above the 1991 level.

II.F CONSUMPTION OF PESTICIDES

Martin Leibl

1. Meaning and context of the indicator

Consumption of pesticides is regarded as one of the most relevant indicators of the ecologisation of agriculture. Chemical pesticides contaminate soil and food directly with extraneous substances harmful to human health. The consumption of pesticides is closely related to the issue of use of industrial fertilisers. In the operational practice, the use of chemicals in the form of fertilisers and pesticides is closely connected; similar trends in the consumption of these chemicals can thus be seen throughout the study period.

Consumption of chemical pesticides is also closely related to organic farming, where the application of pesticides is prohibited. The use of chemical pesticides also has a direct adverse effect on climate, as greenhouse gases are released to the atmosphere during the production of chemical pesticides.

2. Method of calculation of the indicator

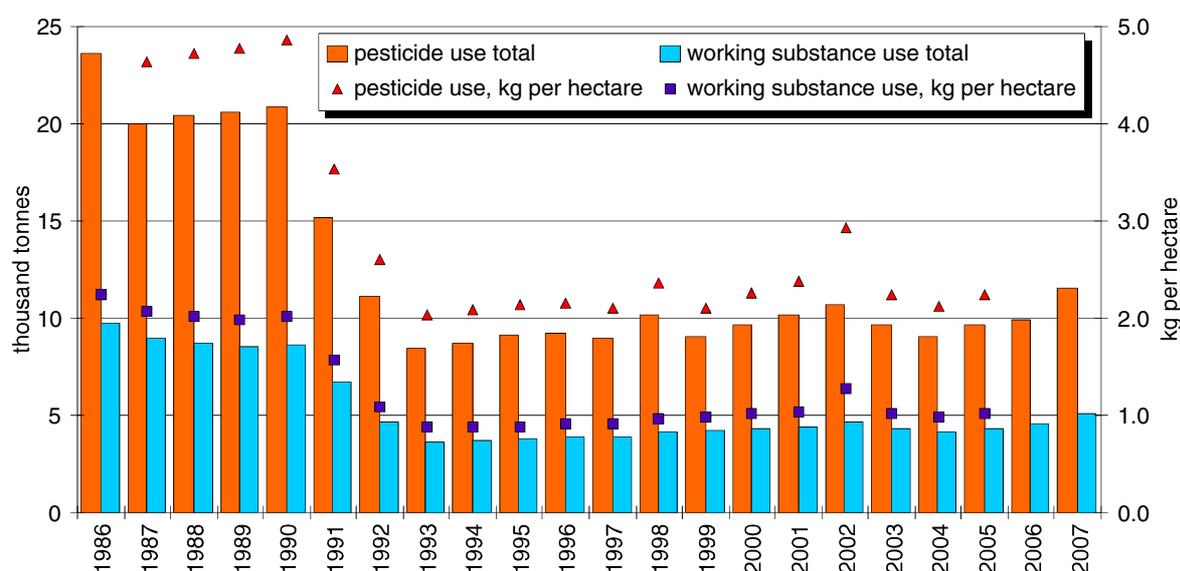
This indicator is calculated as the amount of pesticides used in kilograms per hectare of farmland, or their total use in tonnes. The higher the amount, the lower the sustainability.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Chart II.F.1 shows the development of consumption of pesticides over time.

Chart II.F.1: Consumption of pesticides, Czech Republic, 1986–2007



Note: The chart shows the consumption of both pesticides and working substances. The working substance constitutes only a part of the mass of the pesticide, and the pesticide also contains other substances (water, solvent, etc.). That is why the amounts of pesticides consumed are always above the consumption of working substances.

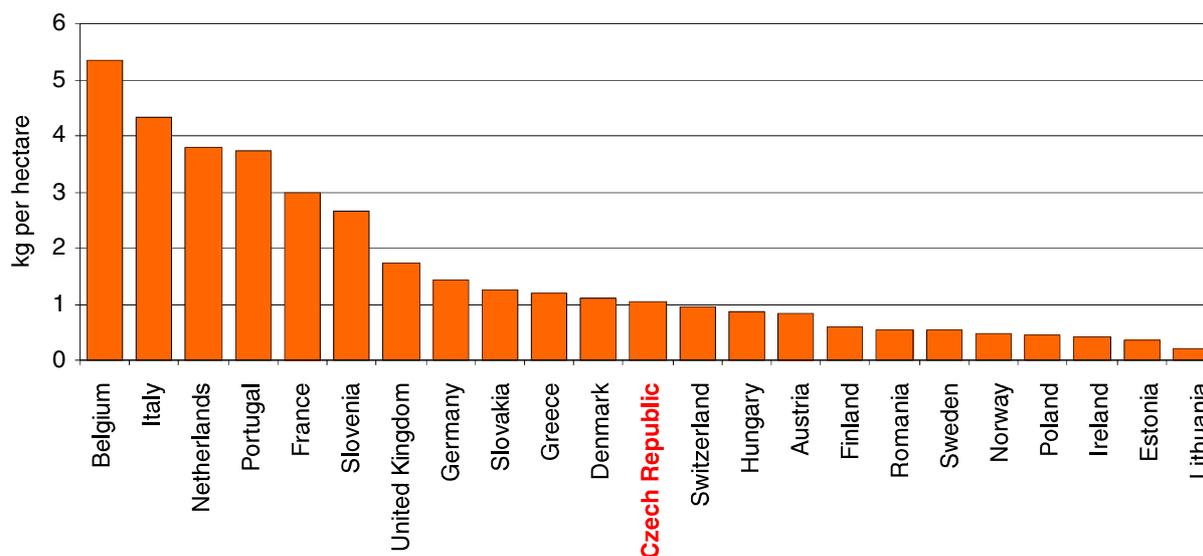
Data source: Czech Ministry of Agriculture

A similar trend exists in respect of the consumption of pesticides as in respect of industrial fertilisers – a significant decrease of consumption in the early 1990s due to an increase in the prices of pesticides and overall transformation of agriculture. The use of pesticides has been very moderately increasing since 1993. The consumption stagnated between 2003 and 2005; the consumption of the pesticides has been growing since 2006 and now equals the 1992 level.

b) International comparison

Data on the consumption of working substances (kg/ha) in European countries are available for international comparison; see Chart II.F.2.

Chart II.F.2: Consumption of working substances in pesticides, international comparison, 2001



Data source: European Environment Agency

The consumption of working substances in the Czech Republic was 1.03 kg/ha in 2001. This means that many countries consumed less (the Nordic countries, EU-10, Switzerland, Austria); most other EU-15 countries consumed more. Belgium, Italy, the Netherlands and Portugal consumed the most; the Baltic States consumed the least.

4. Main findings

The dominant trends in the area of pesticide use are similar to those in mineral fertiliser use: a marked decrease in their use after 1990, and a subsequent rise in their use following the Czech Republic’s accession to the EU. Compared to the EU-15 countries, the use rate in the Czech Republic remains among the lowest. One-sided increases in the use of pesticides by farmers due to their improving financial standing, not accompanied by the necessary structural changes in agriculture along with a shift to environmentally friendlier farming practices, are a potential future threat.

II.G INDEX OF COMMON SPECIES OF WILD BIRDS²¹⁾

Lenka Vrtišková

1. Meaning and context of the indicator

The indicator captures changes in populations of common species of wild birds, which are in close relation to changes in land use and intensity of agriculture. Indicators of trends in individual taxonomic groups are being developed at a global level as well as at the national level of individual EU countries, and population trends in selected taxonomic groups belong to principal indicators selected under the Convention on Biological Diversity (CBD). The best-explored taxa include birds, in respect of which long-term data are available from most European countries, the Czech Republic included, concerning changes in the size of populations. Birds appear to be an appropriate indicator of biodiversity, due to their popularity with the general public.

Increases in the index of bird populations (above all, the farmland-dwelling species) may reflect improvements in a broad range of environmental parameters. From the economic point of view, biodiversity increases the potentials of such sectors of the economy as agriculture, forestry, and tourism. As a rule, a renewal of the life-supporting functions of ecosystems is observed.

Agricultural aspects probably have an effect on the development of bird populations, both negative (livestock density, nitrogen entering the soil) and positive (areas where agroenvironmental measures are taken, organic farming). Biodiversity is also affected negatively by such pressures as air pollution, toxic substances, and land build-up. In addition, greenhouse gas emissions may contribute indirectly to loss of habitats or interruption of food chains as a result of climate change.

The implications of declining common bird populations and, in general, biodiversity are not yet entirely understood; it is therefore important to monitor their numbers, especially as ruled by the precautionary principle: the exact consequences of what may happen if biodiversity and, in turn, biological balance decrease are unknown.

In its Sustainable Development Strategy (COM(2001)264 final), the European Union states its commitment to halt the decline in biodiversity by 2010, legally binding by the 6th Action Programme as well as the EU Biodiversity Strategy (COM (98)42) and the Habitats and Birds Directives (nos. 92/43/EEC and 79/409 EEC respectively). The EU also committed itself to halting the loss of biodiversity at the World Summit on Sustainable Development in Johannesburg. The European Commission issued a communication on biodiversity 'Halting the Loss of Biodiversity by 2010 and Beyond' (COM(2006) 216 final) this May, in which the major threats are summarised and goals specified that are to be achieved in the area; above all, in connection to the loss of plant and animal species and habitats.

The Czech Republic has stated 'a halt to the decrease in biodiversity' as one of the priority goals in its National Environmental Policy for 2000–2010, and details the issue in its Biological Diversity Strategy.

2. Method of calculation of the indicator

The results of the Breeding Bird Monitoring Programme in the Czech Republic (BBMP), which provides findings on a regular annual basis, were used as a source for compiling the indicator. The methodology used is a standard methodology for bird census and BBMP belongs to other generally accepted

²¹⁾ No new data were available for the indicator; the text is therefore identical to that published in the 2007 Progress Report.

standard monitoring programmes applied in Europe. At present, BBMP monitors relative changes in the population of individual species in locations which are the subject of census, and aggregately for the entire territory of the Czech Republic. An improvement of the methodology is being planned for the near future, which will make it possible also to determine densities of individual species. Year-on-year changes in the size of populations of individual species are expressed as an index (in percent) in relation to the baseline year (100%) (as a rule the first year of a time sequence). An analysis of data is performed by the modern method of calculation of population trends the TRIM programme (Trends and Indices for Monitoring data), and is compatible with the methods used elsewhere in Europe. The indicator itself is a combined index comprised of indices of changes in the size of populations of individual species, generated as a geometric average of the species indices. The species that are indexed to make up the indicator are selected on the basis of the main types of their habitat in which they live and on which they are dependent. It is also possible in respect of the combined multi-species index (indicator) to compute reliability intervals (Gregory et al. 2005). The index may also be analysed using the TrendSpotter, a programme for analysing time sequences. This procedure is compatible with the procedure of calculation of the indicator of common bird species in Europe. Any multi-species combined index may also be decompiled into indexes of individual species, and thus it is possible to make a detailed analysis as to which species are responsible for the overall development of the indicator and, indirectly, identify the causes of changes in population size.

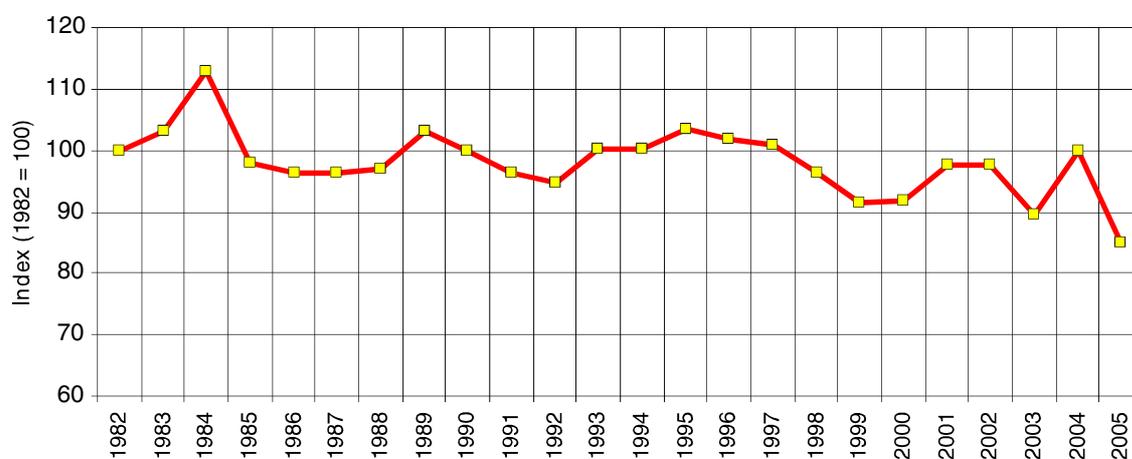
The combined index of changes in the size of populations of 66 species of birds is used as the main indicator of common species of birds, and its components, i.e. the combined indices of groups of species according to the type of habitat – the index of farmland species, the index of woodland species, and the index of other species – are presented separately.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The index is a biodiversity indicator, reflecting aggregate changes in the populations of selected species. A growth in the index indicates a prevalence of such species the populations of which are growing, but it does not imply that the populations of all species are growing.

Chart II.G.1: Index of common species of wild birds, Czech Republic, 1982–2005

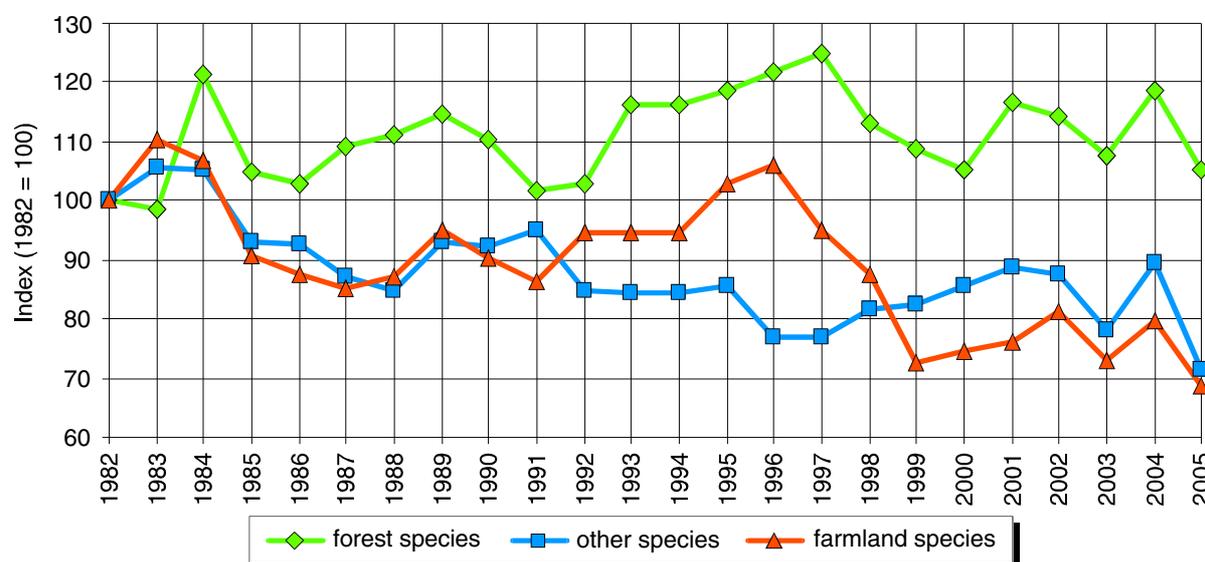


Data source: Czech Ornithological Society

Wild bird populations oscillate year to year as a result of a complex of interrelations with climate, other species, and other environmental factors. For this reason, emphasis should be on trends in bird populations over several years rather than on year-on-year variations. Decreases then reflect changes in agricultural methods and specialisations. Key factors include the loss of groves, draining of the land, growing use of machinery, fertilisers and pesticides, reduction in spring tilling, regular harvesting, changes in harvest use, and decreasing farm diversity.

Chart II.G.1 captures the development of the index between 1982 and 2005. The index is presented as an aggregate for all the 66 selected bird species. The total value of the index shows a decrease over the period in question, being approximately 15% the 1982 level in 2005. The curve shows a decrease in the value throughout the 1980s followed by a moderate rise in the early 1990s, going into a decline again.

Chart II.G.2: Breakdown of the index according to major environment types, Czech Republic, 1982–2005



Data source: Czech Ornithological Society

The breakdown of the index according to major environment types shows some differences between the categories. The populations of farmland-dwelling bird species was decreasing mainly in the first half of the 1980s with a stabilisation at the end of the decade and an increase in the early 1990s; but the index shows another drop after 1996. A certain connection might be established between the decrease in farmland-dwelling bird populations and the trend in the consumption of fertilisers and pesticides, where a steady moderate growth is being observed despite the slight oscillation. Contrariwise, the positive tendency of increasing area of ecological farmland has not been reflected in the index at all so far, in spite of the more than 15-fold increase in the area since 1997. The area, nevertheless, still only represents about 6% of the total farmland.

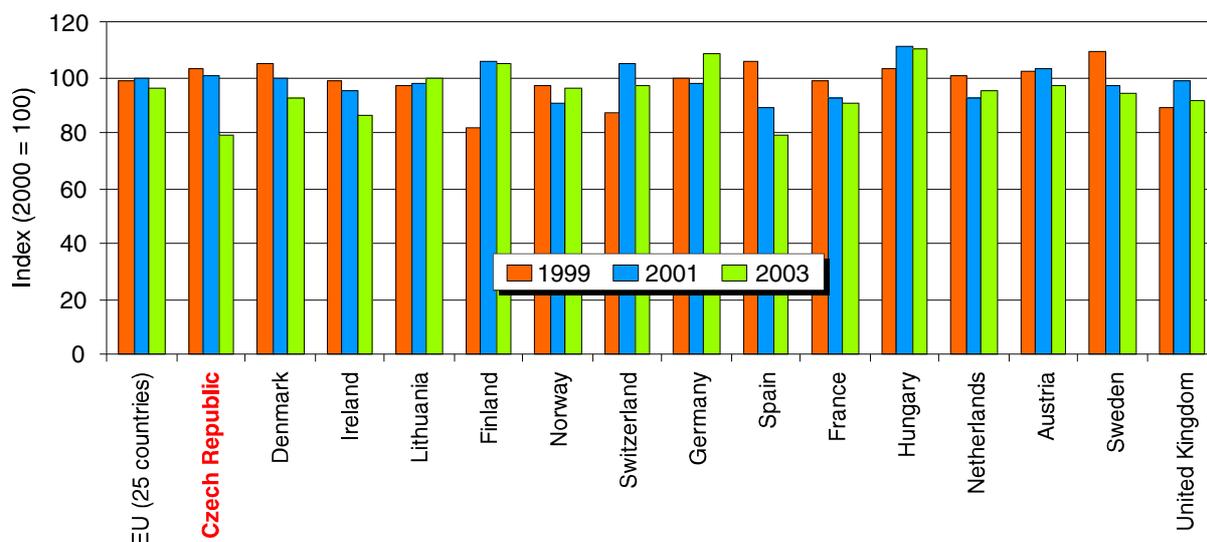
The index for forest bird species, on the other hand, shows a moderate increase with several notable fluctuations. Compared to the farmland birds, the causes of this trend are not as obvious. What is interesting is that although the indicator suggests that the forest bird species are better-off, the state of the Czech forests as expressed by the defoliation index is deteriorating. The bird species included under the 'other species' category are not strictly bound to any environment type, and the fluctuations in their populations reflect, above all, extreme weather and conflicts with the human civilisation.

In total, the index of common wild bird species shows a diminishing of these species, with the growing intensity of agriculture being one of the major causes.

b) International comparison

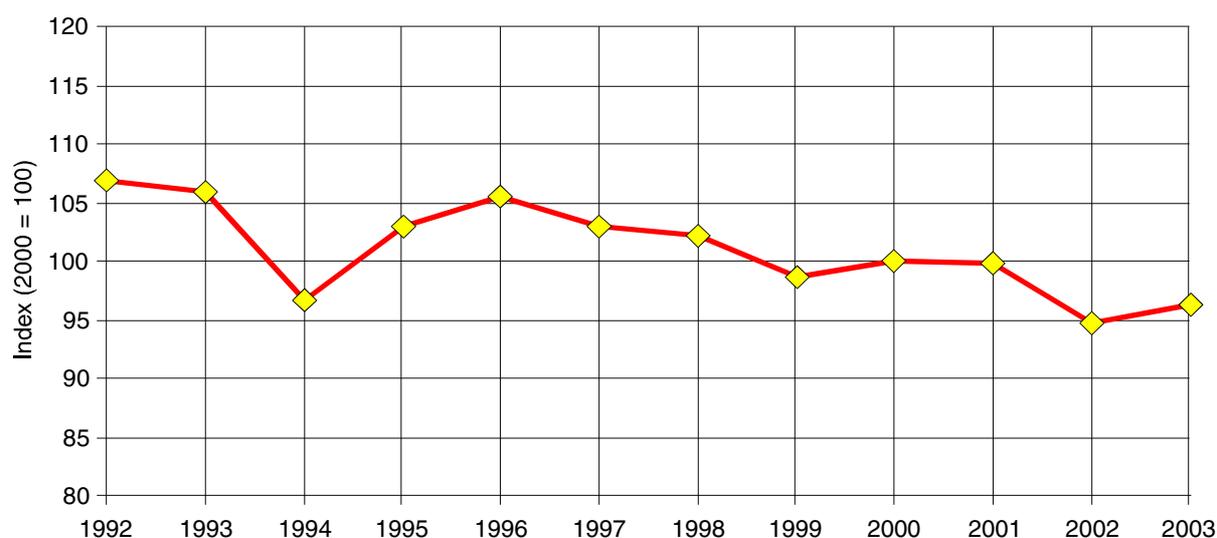
The bird populations indicator has been included in the broader list of structural indicators for EU countries and in the EU sustainable development indicator list. The Europe-wide index follows a similar trend – a significant decline in populations of farmland bird species and more or less stagnating or increasing populations of woodland ecosystem birds. The indicator is, from a methodological point of view, consistent with indicators accepted at international level for similar purposes.

Chart II.G.3: Index of farmland bird species, international comparison, 1999, 2001, 2003



Data source: Eurostat

Chart II.G.4: Population trends for selected farmland bird species, EU-25, 1992–2003



Data source: Eurostat

4. Main findings

As mentioned above, the Index of common species of wild birds gives evidence of the numbers of bird species and populations, and indirect evidence of the state of biodiversity. Diminution of bird populations typical of agricultural landscapes as well as other birds, along with a converse increase of forest-dwelling bird species, is a world-wide trend. According to EuroMonitor data, the numbers of forest-dwelling bird species in Central and Eastern Europe are growing (most likely due to landscape changes, reforestation, etc.), whereas the forest bird counts are dwindling in Western Europe, mostly due to forestry management and, to some degree, predation of nests (it has been proved, for instance, that land-nesting species show a more rapid diminution).

II.H DEFOLIATION

Zdeňka Podhajska, in collaboration with FGMRI

1. Meaning and context of the indicator

Defoliation is defined as the relative loss of assimilation equipment in the treetop compared with a healthy tree growing in identical vegetation and habitat conditions.

The degree of defoliation then describes the health status of trees, reflecting the effect of undesirable changes in forest ecosystems as a consequence of long-term excessive presence of various pollutants (SO₂, NO_x, F, Cl, O₃, heavy metals, particulate matter, etc.) in the air.

The defoliation indicator is also monitored Europe-wide since 1986 under the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests). The programme was launched in connection with the Convention on Long-range Transboundary Air Pollution (CLRTAP), and its primary objective is to monitor the state of the European forest using two levels of monitoring of various intensities based on EU-wide co-operation. At present, 40 countries are involved in the programme.

As already mentioned, the state of European forests has been observed thoroughly for over twenty years. Since then, the research has proved that air pollution is the primary reason for defoliation. In addition, clear interrelations between the chemical properties of forest soils and depositions of acidifying substances and heavy metals have been established. For this reason, the state of the soils has also been monitored internationally, providing information on soil stress factors affecting the state of the forest in respect of nutrient imbalance and soil conditions. The nutrient content monitoring is the foundation for the assessment of forest health.

Further factors involved in defoliation include insects, fungi, as well as equally important abiotic factors, such as extreme seasonal temperatures, the water regime, etc. The poor health of the forest in the Czech Republic is also a result of improper species composition and the overpopulation of deer game.

The weight of forest vegetation for sustainable development is undebatable. It plays a key role in maintaining the biological diversity of nature, and define, to a great degree, the face of the landscape. It increases the water-retaining capacity of the land, affects local climates, prevents erosion, and contributes to flood prevention, among other benefits. Forests are also significant for recreation and the wood processing industry.

For the above reasons, the health of forests needs to be monitored and assessed. Defoliation is one of the indicators of such health. The general objective of monitoring the index of defoliation is to identify and reduce the factors that cause it.

2. Method of calculation of the indicator²²⁾

The First-level National Centre for Regular Monitoring has been performing the tasks under the ICP Forests in the Czech Republic since 1986. The first level of the programme, consisting in the country-wide monitoring of forest health over a systemic network of areas, has been complemented with the so-called second level since 1994; this involves intensive monitoring of forest ecosystems

²²⁾ <http://www.vulhm.cz/?did=253&lang=cz>

in selected monitoring spots. Since 2004, the ICP Forests programme has been followed up by a new European co-operation project titled Forest Focus, which involves monitoring of forests and the environmental influences on forest societies.

At present, the regular first-level measurements under the Forest Focus in the Czech Republic are made in monitoring areas forming a 16-by-16-km primary network, and selected monitoring spots forming an 8-by-8-km network. The total number of areas is 306; they are distributed across the entire country according to forest density. The areas are located in the forest in order to provide good representation of the specified habitat and vegetation conditions. More than 14 thousand trees, representing 28 forest tree species in various age groups, ranging from 150 to 1,300 metres above the sea level, are monitored and evaluated annually. The basic habitat and vegetation characteristics are indicated in each of the monitoring areas. Besides the treetop assessment (defoliation, colour variations, etc.), further expert examinations are made at regular intervals (1–5 years), such as determining the social status, measuring of the dendrometric parameters, and phytosociological photography. In addition, leaf, growth-ring, and soil analyses are performed on an irregular basis.

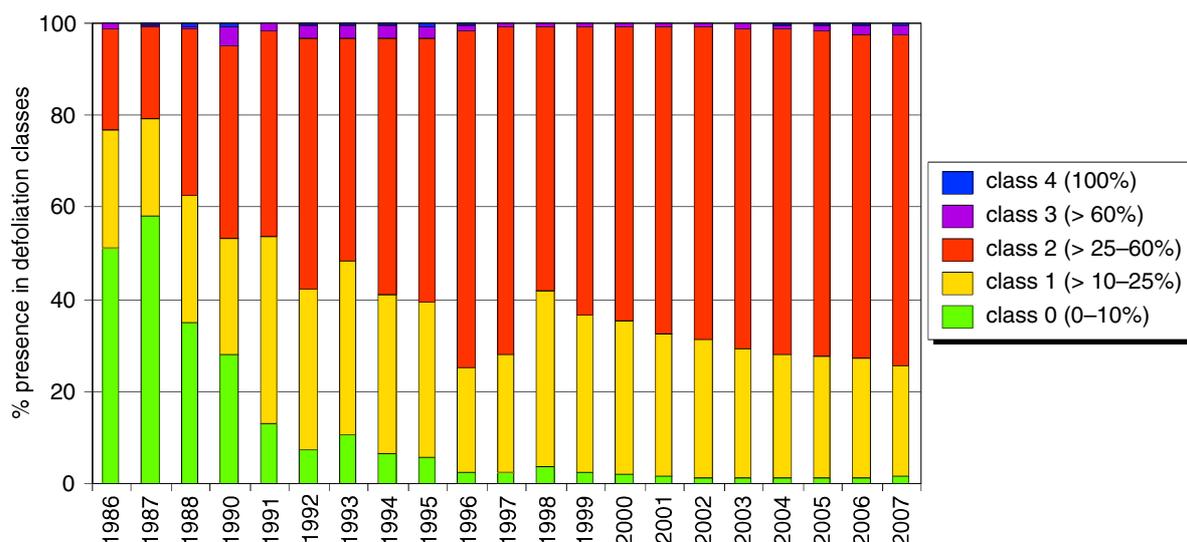
Defoliation assessment follows the standard ICP Forests method, which assumes the assessment of the defoliation of the entire treetop of each separate tree. The defoliation information is expressed as a percentage of needle/leaf loss, at an exactitude of 5%. Thus, for example, 60% defoliation stands for the loss of 60% of a tree’s needles/leaves compared to a healthy tree in the same habitat.

The defoliation percentage of an entire treetop is then converted to the degree of defoliation. The standard European range consists of five degrees: 0 – good health (0–10%); 1 – slight defoliation (10–25%); 2 – medium defoliation (25–60%); 3 – serious defoliation (60–100%); 4 – necrosis (death) (100%).

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Chart II.H.1: Defoliation in coniferous trees (60 years and older), Czech Republic, 1986–2007



Note: The vegetation has been divided into under and over 60 years of age since 1998.

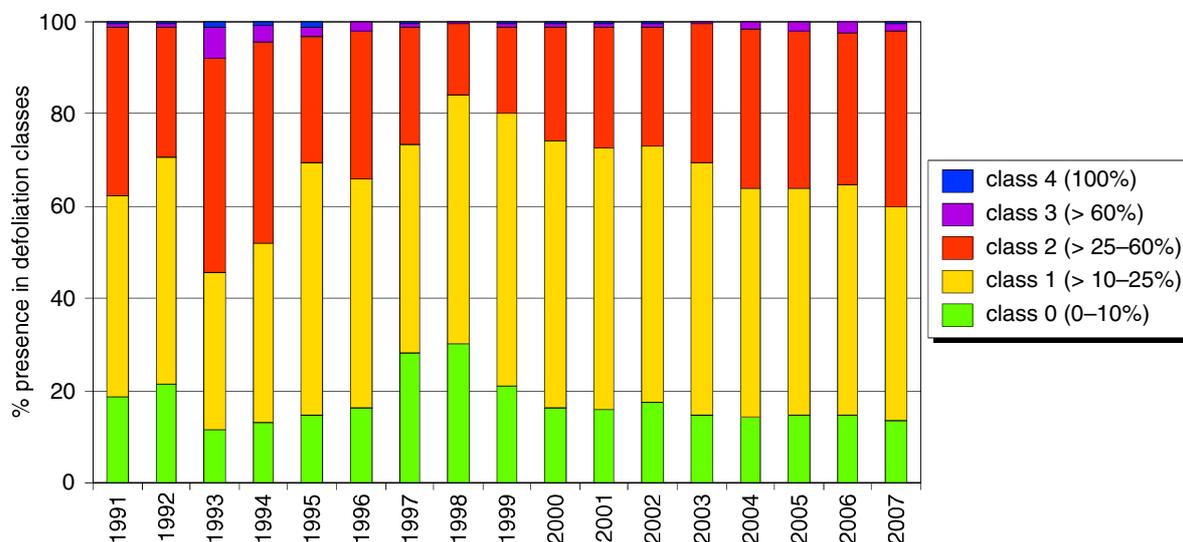
Data source: Forestry and Game Management Research Institute

The dynamism of the defoliation development in most economically important coniferous species (60 years and older) is shown in Chart II.H.1. A sharp deterioration in the forest health status is seen at the turn of the 1980s, with a pronounced culmination in 1992. Some stagnation ensued, until the average tree defoliation rose again significantly after 1996 to reach the maximum levels of 33.9% and 38.3% for the spruce and the pine, respectively. The situation improved in 1998, but since then the rate of vegetation defoliation damage has been increasing moderately but steadily.

As shown in Chart II.H.1, no significant change in the defoliation of coniferous forest over 60 years of age occurred compared to previous years. The Forestry and Game Management Research Institute, which has been involved in the defoliation studies, recorded a moderate annual change for larch in 2007 (lower presence in class 2 in favour of class 1).

The defoliation index for deciduous trees over 60 years of age has developed in a markedly different manner. Within the monitored period of 1991–2007, the defoliation in deciduous trees peaked in 1993. The average defoliation rates for the oak and the beech were 43.0% and 22.5%, respectively, in 1993. The rate of vegetation damage decreased afterwards to reach the lowest point in 1998 (average defoliation of 27.8% and 14.6% for the oak and the beech, respectively). This period was followed by an increase and some stagnation, with another notable deterioration in the health status of the deciduous trees after 2003. The defoliation increased annually in 2007, showing higher presence in class 2 (from 28.9% to 33.2%) and reduced presence in class 1. The oak contributed the greatest share to the change, with its presence in class 2 going up from 54.7% in 2006 to 69.9% in 2007. Notable differences exist between the individual species of deciduous trees. The oak shows a greater variation in its values and a greater rate of defoliation in the long run than the beech.

Chart II.H.2: Defoliation in deciduous trees (60 years and older), Czech Republic, 1991–2007

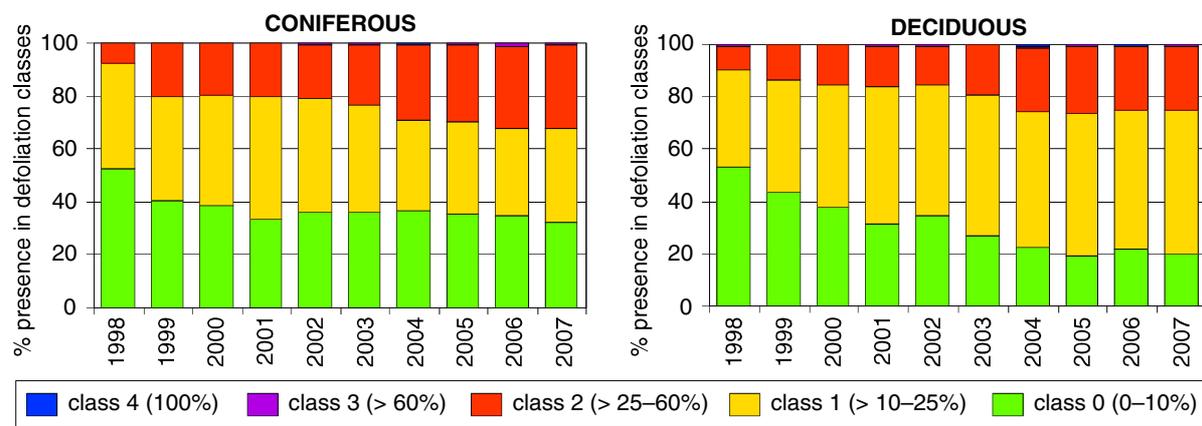


Note: The vegetation has been divided into under and over 60 years of age since 1998.

Data source: Forestry and Game Management Research Institute

Generally speaking, younger vegetation (under 60 years of age) show better health, that is, perform better in defoliation classes 2–4, the difference from the older trees being most pronounced for coniferous species.

Chart II.H.3: Defoliation in coniferous and deciduous trees (60 years and older), Czech Republic, 1998–2007

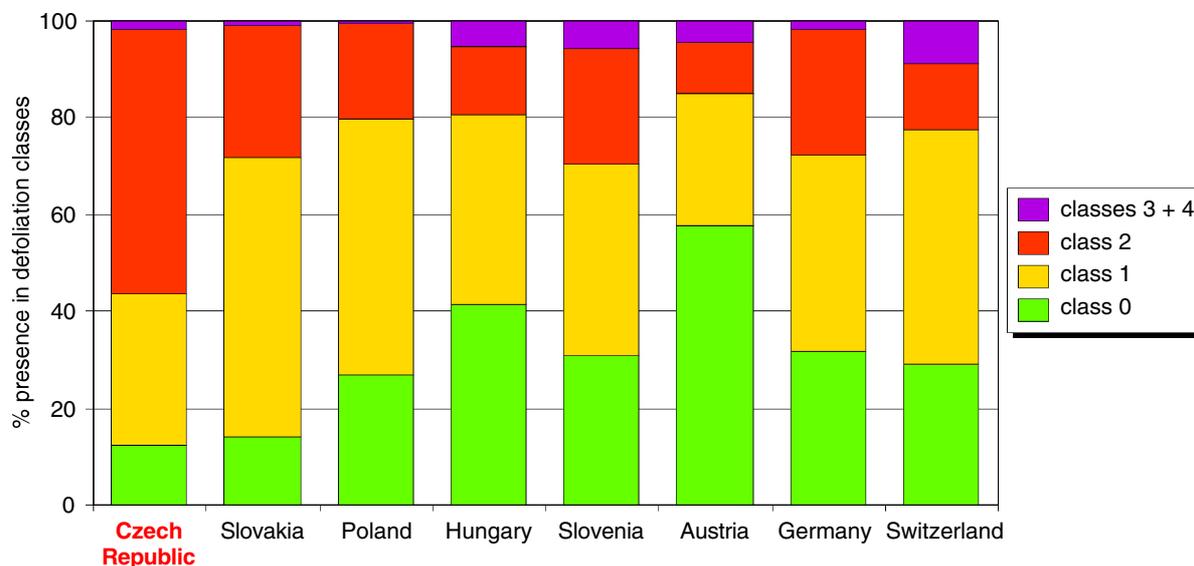


Data source: Forestry and Game Management Research Institute

b) International comparison

As stated above, the defoliation indicators are being monitored Europe-wide under the ICP Forests programme. Chart II.H.5 places the Czech Republic in the unenviable first place as regards the damage of vegetation by upper defoliation classes. As for the development dynamics, however, the situation in some other European countries has recently been rapidly becoming worse.

Chart II.H.4: Classification of all tree species into defoliation classes, international comparison, 2006



Data source: ICP Forests

4. Main findings

Despite the significant drop in emission rates during the 1990s, the state of the Czech forest remains poor; in fact, it is the worst in all Central Europe, despite the defoliation growth slowing down in the recent years due to the generally improving pollution levels. The reason is that forest ecosystems respond to pollution changes with a certain delay. Yet there are still concentrations of pollutants

(such as nitrogen oxides from car exhaust) in certain regions capable of threatening the overall stability of forest ecosystems. In addition, ozone emissions are quoted among risk factors on an ever growing scale (mostly in studies conducted abroad).

Besides emissions, however, the Czech forests are affected by many other factors; mainly by the forestry management methods used. The species and age composition of the forests is incorrect, with the greatest proportion of Czech forests occupied by non-native spruce monoculture, sensitive to climatic conditions, prone to pest infestation, and degrading the forest soil by their needle shed. Further risk factors include clear-cut forestry, overpopulation of deer, etc. The impacts of climate change have manifested themselves in the health of the Czech forest recently, including above all more frequent periods of drought and warmth as well as hurricanes.

The index of defoliation as an expression of forest health needs further close monitoring and assessment, with factors most seriously affecting defoliation identified and reduced as much as possible.

II.I SHARE OF ORGANIC FARMING IN TOTAL FARMLAND

Martin Leibl

1. Meaning and context of the indicator

Share of organic farming in the total area of farmland (%) is considered as a fundamental and unambiguously quantifiable indicator of the level of development of organic farming.

The Government of the Czech Republic highlights the importance of advancing organic farming. On 17 March 2004, it adopted the Czech Republic Action Plan for Advancing Organic Farming until 2010 by means of Resolution no. 236/2004. The Action Plan defines the primary tasks for both governmental and non-governmental organisations in promotion of the principal areas of organic farming (publicity, processing and marketing, research, education and consultancy, welfare, environmental position of organic farming). Support to organic farmers via subsidies per organically farmed area has been distributed since 1990, with a pause in 1993–1997. In 2004–2006, the support was distributed under the Horizontal Rural Development Scheme. From 2007 on, the financial support will be distributed among organic farmers under the 2007–2013 Rural Development Scheme. It supports organic farmers not only in the form of subsidies per hectare, but also a point advantage in evaluating investment projects on organic farms.

Organic farming is closely related to the issues of consumption of mineral fertilisers and chemical pesticides as the application of such substances in organic farming is prohibited. Organic farming is friendly to the environment, improves biodiversity, and organic farmers and producers of organic food are not allowed to use pesticides, industrial fertilisers and many other chemicals, such as plant and animal growth stimulators). Organic farming and the production of organic food provide new business opportunities (agrotourism, production of regional specialities), and organic farming also offers an alternative in resolving the issue of the depopulation of rural areas.

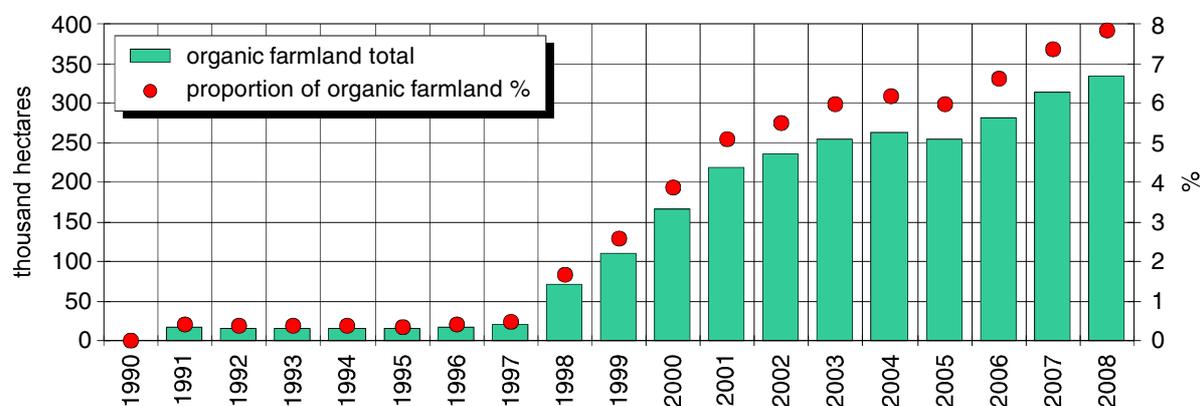
2. Method of calculation of the indicator

The indicator is calculated as the proportion of the area of farmlands categorised as organic farmland to the total area of farmlands in the Czech Republic. The higher the proportion, the higher the sustainability.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Chart II.I.1: Organic farming, Czech Republic, 1989–2008

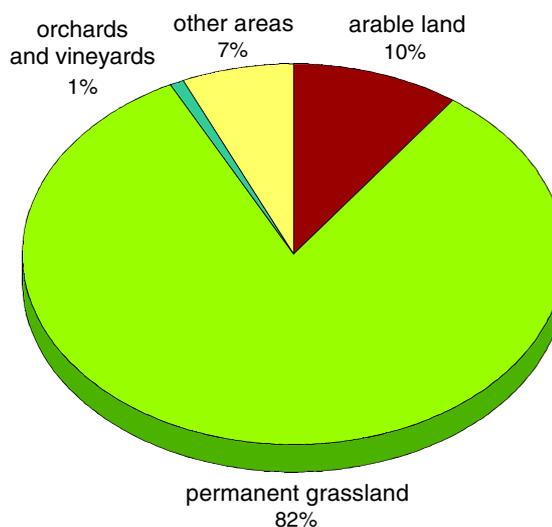


Data source: Czech Ministry of Agriculture

Chart II.I.1 shows the development of organic farming, including organically farmed area, in individual years. Chart II.I.2 shows the categories of organic farmland depending on soil type in 2008.

The origins of organic farming in the Czech Republic date back to 1990. As early as the end of 1990, the first financial subsidies were made available to support the establishment of organic farming businesses. Subsidies continued until 1992 and probably were the main reason for an increase in organic farming areas up to approximately 15,000 ha, which accounted for some 0.4% of the total area of total farmlands. The decision of the Ministry of Agriculture of the Czech Republic to cancel subsidies caused stagnation of organic farming land in the period from 1993 to 1996, but also had a positive effect on the qualitative development of organic farming.

Chart II.I.2: Categories of organic farmland depending on soil type, Czech Republic, 2008

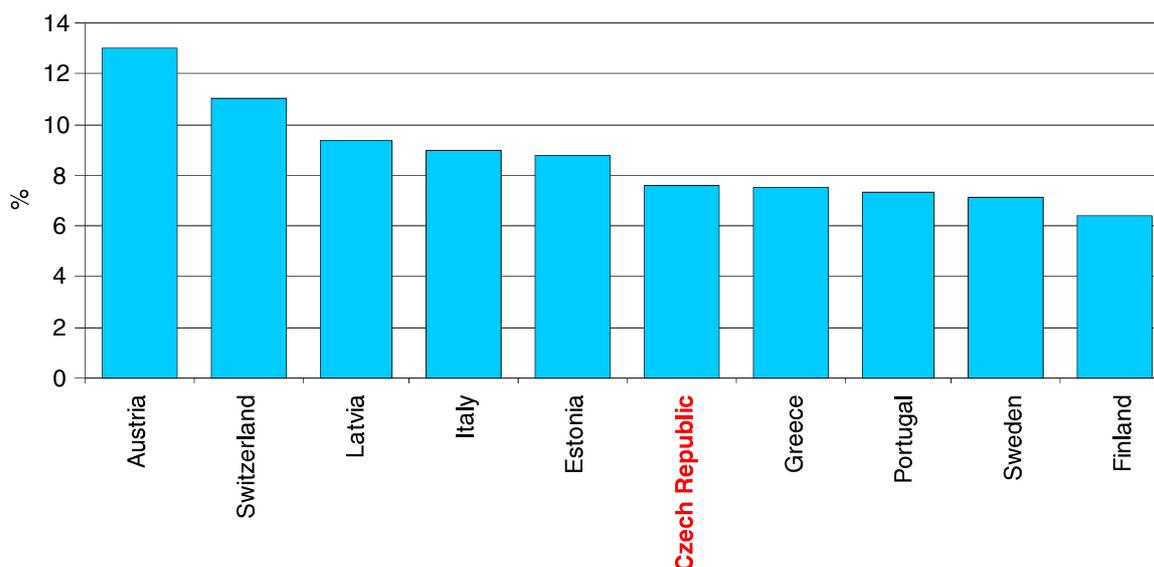


Data source: Czech Ministry of Agriculture

An important move was the resuming of financial subsidies to organic farmers in 1998, which resulted in further dynamic development of organic farming, continuing till 2004, with expansion of organic farming to more than 6% of total farmlands (being approximately 4.2 million ha in the Czech Republic). The year 2005 saw a moderate decrease in the organically farmed land; the figure has been rapidly increasing since then and has exceeded 7.5% of all farmland.

b) International comparison

Chart II.I.3: Share of organic farmland in total farmland, international comparison, 2007



Data source: Organic-Europe

The share of organic farming is high compared to other European countries. The countries with the highest shares of organic farmland are shown in Chart II.I.3 below.

4. Main findings

Organic farming is an agricultural system compliant to the principles of sustainable development. Governmental support is aimed mainly at disbursement to farmers for farmland converted to organic farming systems and investment projects of farmers on organic farms. The National Action Plan for Organic Farming Development Until 2010 focuses on other important issues, such as promotion, research, education, processing and marketing, welfare, and environmental implications of organic farming, and sets the target of 10% of organic farmland by 2010. With approximately 7.5% of ecological farmland, the Czech Republic ranks among the leading EU Member States. Most of the area (about 80%) consists of grassland, which is why domestic production of organic foodstuffs from arable land is scanty and needs expanding. Nevertheless, the surface area of organic farmland as well as organic orchards and vineyards has been growing. The consumer demand for organic foodstuffs exceeds the domestic supply, approximately 60% of all organic foodstuffs is imported to the Czech Republic. The current trend, nonetheless, is positive; the numbers of organic food producers has been growing radically, and the historically biggest promotion and consumer information campaign on organic food has begun this year. The budget of the campaign, to run for three years, is some CZK 28 million, half of which is funded by the European Commission.

II.J ENVIRONMENT PROTECTION EXPENDITURES AND PUBLIC ENVIRONMENT PROTECTION EXPENDITURES

Jan Šůsa, Alena Krejčová and Jan Pokorný

1. Meaning and context of the indicators

The indicator Environment protection expenditures provides a basic overview of the financial quantification of the needs for maintenance and improvement of the environment in terms of the overall expenditures and their structure. One of the major indicators for the overall assessment of the amount of environment protection expenditures consists in their ratio to the overall economic performance measured by means of gross national product at current prices and, in terms of investment expenditures, their ratio to the overall expenditures. Out of the overall expenditures towards environment protection in the Czech Republic, only investments were monitored up to 2002. Since 2003, non-investment environment protection expenditures have also been monitored.

The indicator Public environment protection expenditures quantifies the political assertion of the need for environment protection at the central and regional levels. Environment protection expenditures from public budgets are such expenditures made from the state budget, state funds, the National Property Fund of the Czech Republic (so-called environment protection expenditures from central sources) and ATU budgets. In addition to their absolute amounts, the total public environment protection expenditures can be compared to the overall economic performance, i.e., the gross domestic product at current prices, and environment protection expenditures from the national budget can be compared with the total national budget expenditures.

The indicators Material consumption, Environment protection expenditures, and Public environment protection expenditures connect the macroeconomic GDP aggregates, investment and industrial production along with the public budget system (including the national, ATU and state fund budgets) with the needs of the environment.

No sustainable development can be achieved without adequate environment protection expenditures, including the public. The absolute and relative amounts reflect both the difficulty of attaining and maintaining an adequate and required standard environmental quality, and the societal consensual understanding of the need for a good quality environment.

2. Method of calculation of the indicators

The data for the indicator Environment protection expenditures are collected from statistical surveys conducted by the Czech Statistical Office. The surveys are carried out among selected businesses and municipalities. Environment protection expenditures include investment expenditures and non-investment expenditures on environment protection relating to environment protection activities the principal aim of which is to detect, remove, monitor, control, reduce, prevent or eliminate pollutants and pollution or any other damage to the environment. These expenditures are divided into 9 categories (programme themes) of environment protection according to the international classification CEPA 2000 (Classification of Environment protection Activities), developed by Eurostat.

The data for the indicator Public environment protection expenditures are collected from the Ministry of Finance (MoF). The structure of the expenditures corresponds to the MoF budgetary composition, adapted by the Czech Statistical Office and corresponding to the Eurostat statistical reporting.

3. Assessment of the indicators

a) Development of the indicators in the Czech Republic

Improving the state of the environment became imperative after 1989, which naturally entailed massive costs. New legislation, setting strict emission limits on pollutants as well as rigorous deadlines for achieving the pollution reduction, was the cornerstone for growing environmental expenditures. The biggest amounts of resources were expended in 1996–1998, largely in the area of air protection (desulphurisation) and, to a lesser extent, in water protection.

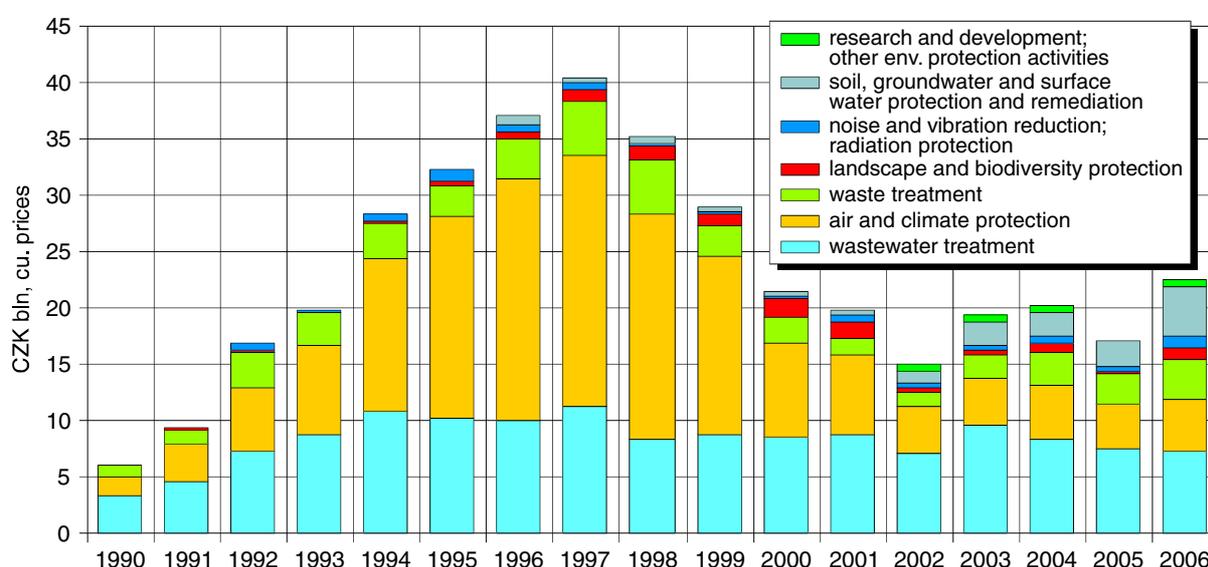
a) Environment protection expenditures

The total environment protection expenditures amounted to CZK 63.5 billion in 2006. In respect of target areas, most funds were expended on waste treatment (CZK 28.8 billion), wastewater treatment (CZK 14.3 bln) and air protection (CZK 7.45 bln) in that year. The proportion of investment and non-investment (operational) environment protection expenditures to the GDP was 2% in 2006.

As noted above, out of the overall expenditures on environment protection in the Czech Republic, only investments were monitored up to 2002. Non-investment environment protection expenditures have only been monitored since 2003.

Investment environment protection expenditures were growing gradually from CZK 6.0 bln in 1990 until 1997, when they peaked at CZK 40.5 bln due to investment largely in air protection. They began decreasing afterwards, and grew moderately after 2003 to reach CZK 22.5 bln in 2006. The development of investment expenditures on environment protection in the period 1990–2004 is shown in Chart II.J.1.

Chart II.J.1: Investment environment protection expenditures by focus, Czech Republic, 1990–2006



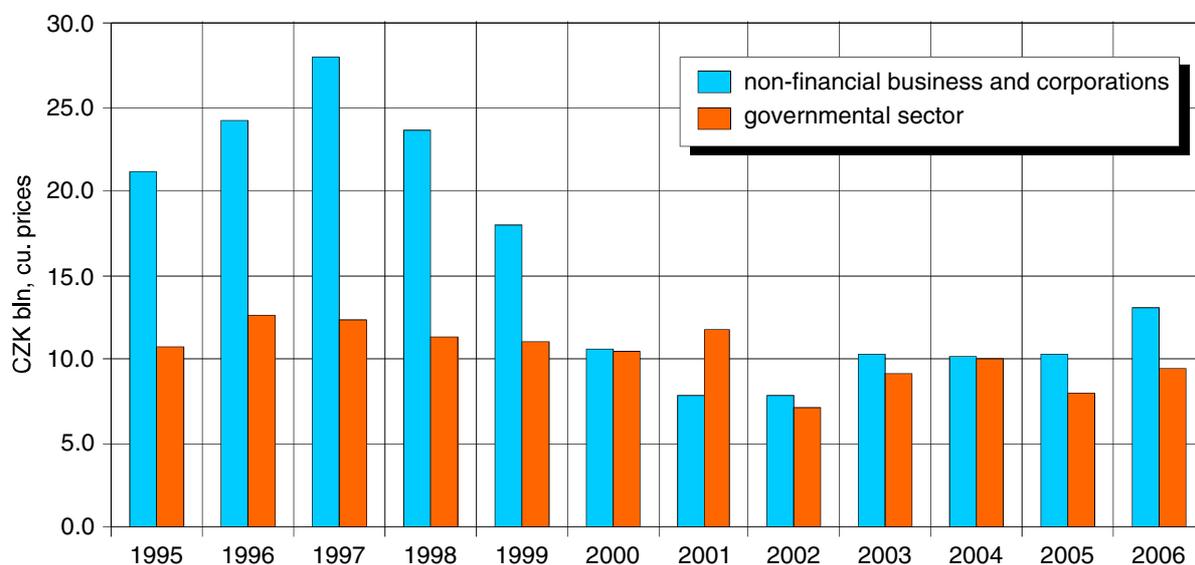
Note: The 2002 data were collected by means of a cross-section report rather than an exhaustive survey of environment protection expenditures.

Data source: Czech Statistical Office

Data on environment protection expenditures classified into public and private have only been available since 1995. They suggest that while the amount of public, or governmental (both central and regional) expenditures was stable around CZK 10 bln throughout the study period, private

expenditures dropped from the peak of CZK 28 bln in 1997 to CZK 13 bln in 2006 (see Chart II.J.2). The primary reason for the decrease was the reduced environmental investment activity, which had been a priority area in the early 1990s. The share of private expenditures in the total investment expenditures was always above one half with the exception of 2001; it amounted to 58% in 2006.

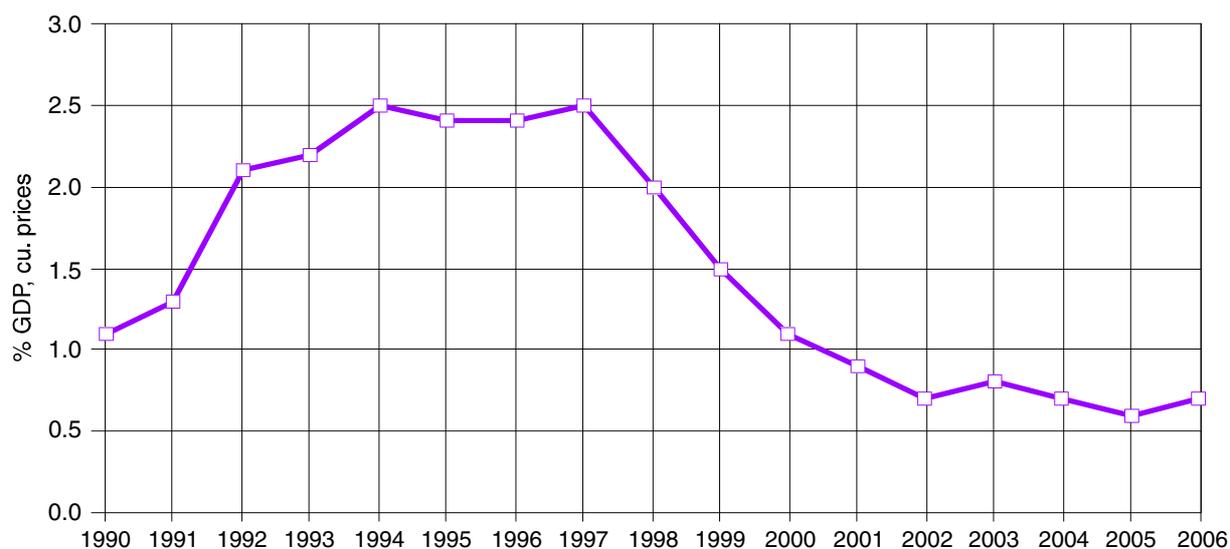
Chart II.J.2: Investment environment protection expenditures by institutional sector, Czech Republic, 1995–2006



Note: The 2002 data were collected by means of a cross-section report rather than an exhaustive survey of environment protection expenditures.

Data source: Czech Statistical Office

Chart II.J.3: Proportion of investment environment protection expenditures to the GDP, Czech Republic, 1990–2006



Note: The 2002 data were collected by means of a cross-section report rather than an exhaustive survey of environment protection expenditures.

Data source: Czech Statistical Office

One of the indicators that are crucial to the overall assessment of the rate of environment protection expenditures is their development in relation to the overall economic performance, i.e., the GDP. Since non-investment expenditures have only been monitored since 2003, the indicator is expressed as the proportion of investment environment protection expenditures to the GDP (see Chart II.J.3).

Non-investment environment protection expenditures in 2006 amounted to CZK 41 billion. In terms of thematic focus, the largest amounts were expended in 2006 on waste (CZK 25.4 billion) and wastewater (CZK 6.9 billion) management.

b) Public environment protection expenditures

Public environment protection expenditures comprise environment protection expenditures from central funding sources and ATU budgets. The state budget is the most important central public source of funding for environment protection actions in terms of amounts of funds. The expenditures have been growing since 1997 and amounted to CZK 18.2 billion in 2007. Other public central environmental funding sources include the State Environmental Fund and the National Property Fund (the latter now abolished; its remaining funds are managed by the Ministry of Finance).

The public sources of environment protection expenditures also include environment protection expenditures from ATU budgets, which equalled CZK 26.3 billion in 2007, with the majority of the funding directed toward water protection (CZK 10.9 billion), waste management (CZK 8 billion), and biodiversity and landscape protection (CZK 6.9 billion).

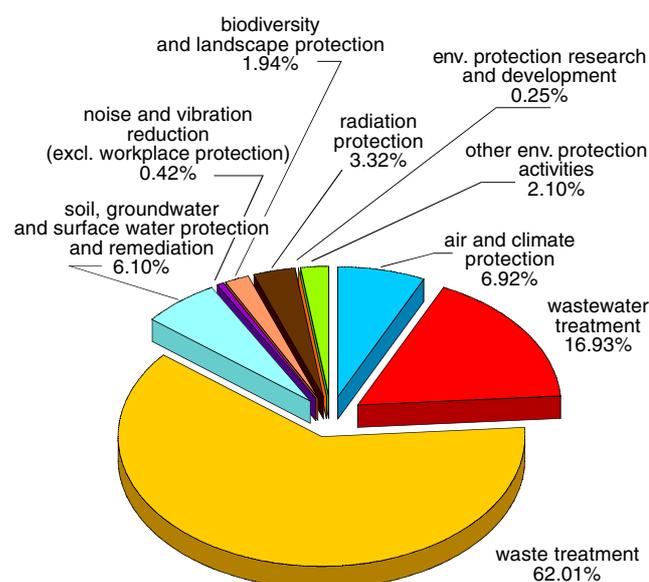
Like in the case of investment environmental expenditures, the development of the total public environment protection expenditures in relation to the overall economic performance measured as GDP is a vital indicator (see Table II.J.1).

Table II.J.1: Total public environment protection expenditures, Czech Republic, 1997–2007

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Territorial budget expenditures (CZK billion, cu. p.)	12.90	12.40	14.50	14.90	15.60	17.30	21.60	23.20	24.90	27.40	26.30
Central budget expenditures (CZK billion, cu. p.)	9.10	9.20	9.90	10.10	10.80	12.30	13.40	14.40	17.00	23.30	24.60
Territorial budget expenditures to GDP (%)	0.71	0.62	0.70	0.68	0.66	0.70	0.84	0.82	0.83	0.85	0.74
Central budget expenditures to GDP (%)	0.50	0.46	0.48	0.46	0.46	0.50	0.52	0.51	0.57	0.72	0.69

Note: The marked increase of public expenditures from central sources between 2005 and 2006 was due to the involvement of EU funds.

Chart II.J.4: Non-investment environment protection expenditures by target area, Czech Republic, 2006



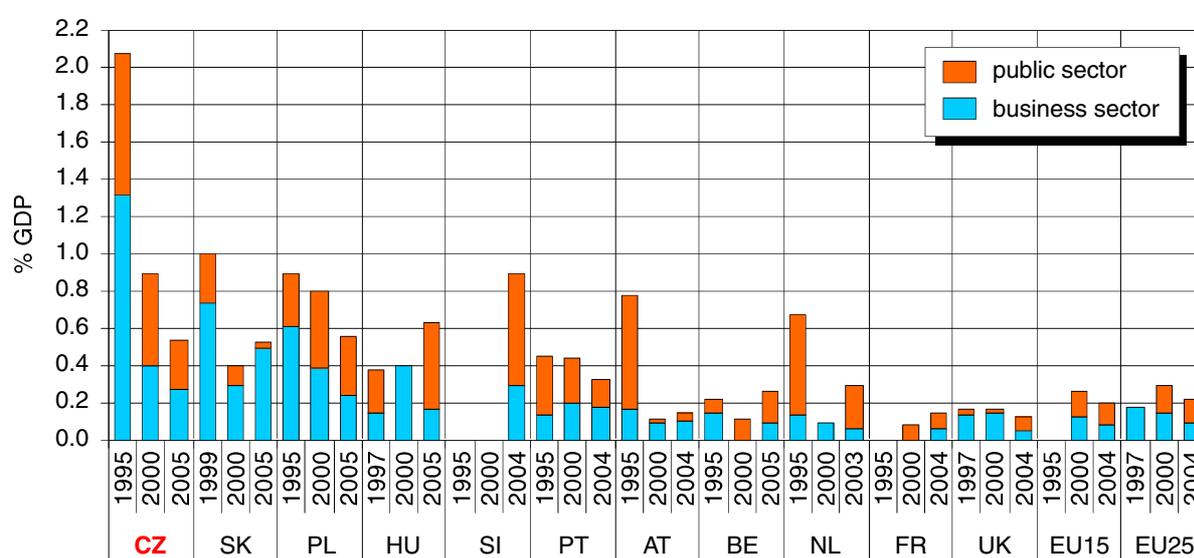
Data source: Czech Statistical Office

Data source: Czech Ministry of Finance, Czech Statistical Office

b) International comparison

The international comparison of the Environment protection expenditures indicator is clear from Chart II.J.5, which shows the proportion of investment environment protection expenditures to the GDP separately for the public and private sectors. The chart suggests that alongside other post-communist countries, the Czech Republic expended many more funds on environment protection than the average EU Member State. This was mainly due to the considerably worse state of the environment, which had to be resolved by increased investment, as well as the need to meet the EU requirements in relation to EU accession (particularly investment in water protection). Despite the above-average investment environment protection expenditures, however, note their dramatic decrease to a level that the OECD interprets this level as insufficient as the state of the Czech environment has not yet achieved the OECD standards.

Chart II.J.5: Proportion of private and public environment protection expenditures to the GDP, international comparison, 1995, 2000, 2005 (or nearest available years)



Note: CZ – Czech Republic, SK – Slovakia, PL – Poland, HU – Hungary, SI – Slovenia, PT – Portugal, AT – Austria, BE – Belgium, NL – Netherlands, FR – France, UK – United Kingdom. The data on HU, SI, BE, NL, FR and EU-15 for selected years were partly or not available.

Data source: Eurostat

No international comparison is made in respect of the public environment protection expenditures as the public budgets (both central and local) are understood differently in the individual countries.

4. Main findings

Having peaked in 1996–1998, the amount of investment in environment protection began to decrease gradually and has now stabilised around 0.7% of the GDP. In the 1990s, the greatest share was that of corporate expenditures on air and climate protection (the desulphurisation of coal power plants played a decisive role), whereas wastewater treatment expenditures, the second largest amount, mostly covered by public budgets, showed a less dynamic rate. After the surge of corporate investment in environment protection waned, the total amount of investment in environment protection decreased, and investment in water protection, mainly construction of wastewater treatment plants, plays a decisive role with over 30% share.

The stagnating investment environment protection expenditures in spite of a moderate growth in the total expenditures contribute to the stagnating environmental quality as well as the slow advancement in fulfilling the environmental commitments that the country made when joining the EU.

In future, it will be necessary to promote, as many EU Member States do, the decentralisation trend of growing amount of responsibility for investment in and expenditures on environment protection assumed by the private sector, regions and municipalities, and of the governmental or EU funds playing only supplementary roles.

III.

SOCIAL PILLAR: STRENGTHENING SOCIAL COHESION AND STABILITY

III.A LIFE EXPECTANCY

Michala Lustigová

1. Meaning and context of the indicator

Life expectancy is an indicator of a population's health based on mortality rates within a given population. The indicator is widely used, easy to interpret and to compare internationally.

Life expectancy represents the expected average number of years of age that the persons of a given age may live if the existing mortality rate continues throughout their lifetimes. Life expectancy can be calculated for any age, but most often it is expressed for birth, i.e., age 0. It is a synthetic indicator portraying the mortality rates for all age groups and reflecting all causes of mortality. For these reasons, the indicator is suitable as a description of the general health and mortality rates in a population. Given the sharp differences between males and females, the indicator of life expectancy is assessed for each sex separately.

2. Method of calculation of the indicator

The indicator is based on mortality tables characterising, with the use of specific functions, the order of a population's death rate. The mortality tables are derived from age-specific mortality rates, while life expectancy is stated for a certain age; it is age 0 in this case. The indicator expresses the hypothetical life span of a person just born, providing that the order of death rate will remain the same during the individual's entire life.

Life expectancy is stated in years. In the Czech Republic the responsibility for the calculation rests with the Czech Statistical Office on the basis of mortality data available. These source data (broken down by age and sex) are forwarded to the World Health Organisation (WHO), which processes them and then calculates, using its own methodology, the indicator of life expectancy used in international comparisons.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

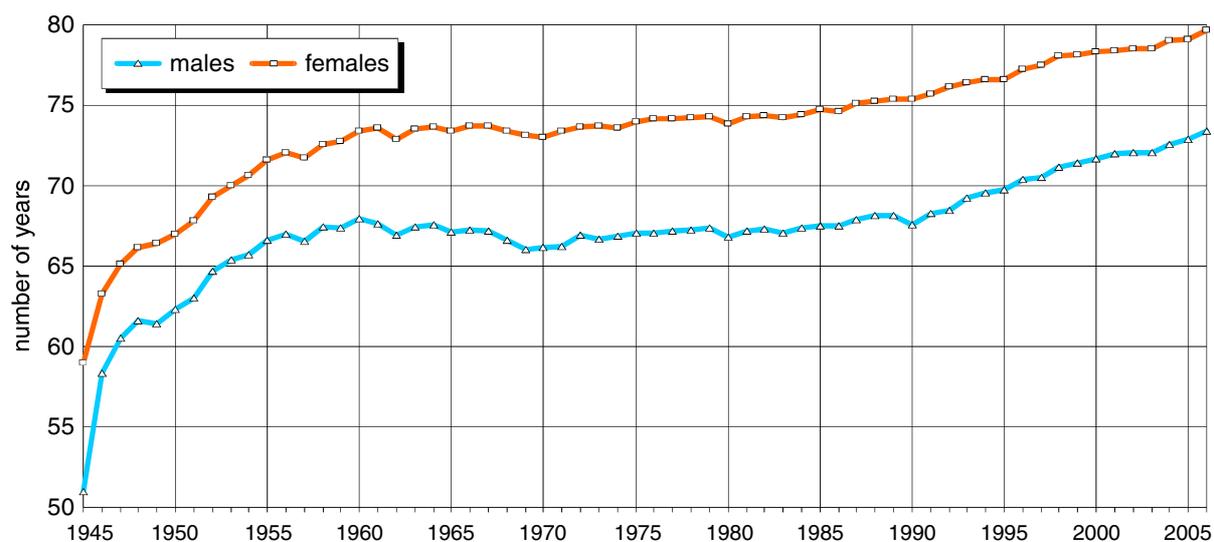
Since the end of World War II, the life expectancy in the Czech Republic did not develop steadily; in consequence, the period can be broken down into three major stages (Chart III.A.1):

In the first stage, the mortality rates for both sexes declined rapidly with the life expectancy growing accordingly. This period lasted roughly until 1960; the life expectancy was comparable to that of the Western European countries.

The following stage, until approximately 1987, was characterised by stagnation in the expected length of life for males, and only a moderate increase of 1.7 years for females.

A turn for the better occurred in the late 1980s, while a notable acceleration of the rate of growth in the average life expectancy was observed after 1990. The life expectancy for males was increasing at a much slower pace than that for females due to their worse mortality trend in the previous period; the significant difference in the life expectancy for either sex was thus gradually reduced. The expected length of life was 73.4 and 79.9 for new-born boys and girls, respectively, in 2006.

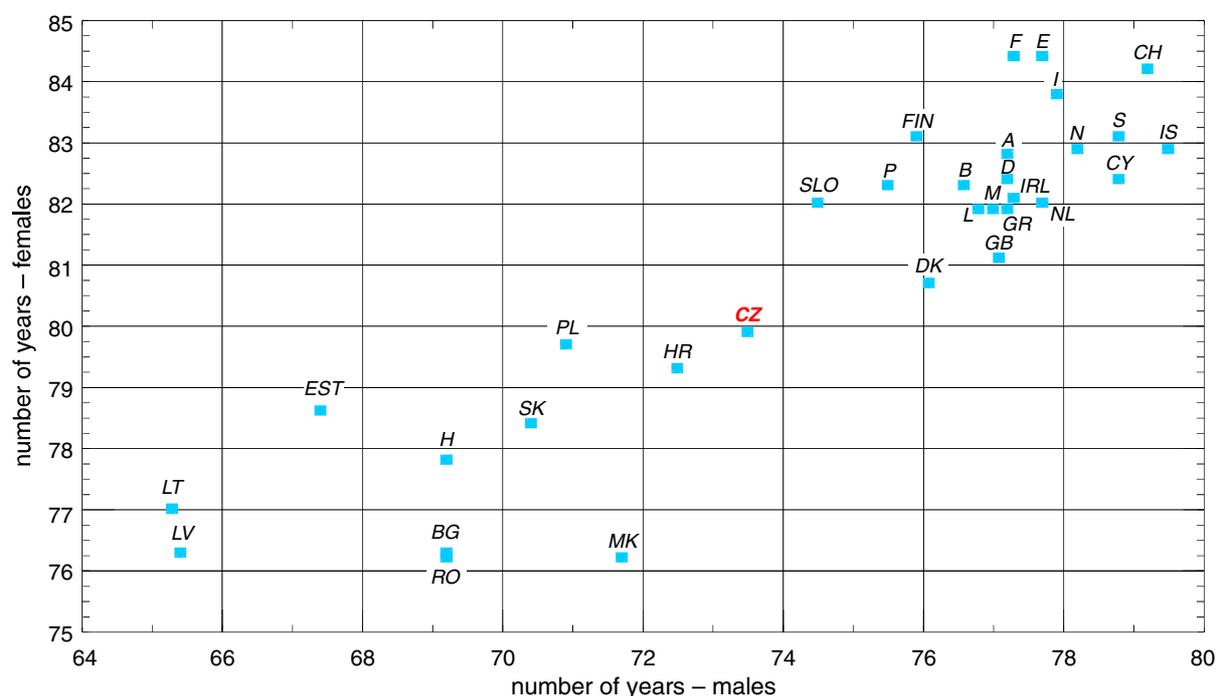
Chart III.A.1: Life expectancy at birth, Czech Republic, 1945–2006



Data source: Czech Statistical Office

b) International comparison

Chart III.A.2: Life expectancy at birth, international comparison, 2006



Note: The following countries do not show 2006 figures: Italy (2004), UK (2005).
 A – Austria; B – Belgium; BG – Bulgaria; CY – Cyprus; CZ – Czech Republic; D – Germany; DK – Denmark; E – Spain; EST – Estonia; F – France; FIN – Finland; GB – United Kingdom; GR – Greece; H – Hungary; HR – Croatia; CH – Switzerland; I – Italy; IRL – Ireland; IS – Iceland; L – Luxembourg; LT – Lithuania; LV – Latvia; M – Malta; MK – FYR Macedonia; N – Norway; NL – Netherlands; P – Portugal; PL – Poland; RO – Romania; S – Sweden; SK – Slovakia; SLO – Slovenia.

Data source: Eurostat

The life expectancy rates vary greatly across countries. In Europe (within EU-27), the life expectancy rates for males ranged from 65.3 in Lithuania to 78.8 in Sweden, and for females, from 76.2 in Romania to 84.4 in Spain in 2006. The average of this indicator for EU-27 was 74.6 and 80.9 for males and females, respectively, in 2004.

Chart III.A.2 depicts the life expectancy at birth for both males and females in the various European countries. High life expectancy and a minor difference in the indicator for females and males are typical for the advanced countries. On the other hand, a notable excess in life expectancy of males over that of females is seen in the Baltic States.

In spite of the outstanding improvement in the life expectancy after 1990, the position of the Czech Republic remains roughly the same; the country still fails to achieve even the lowest rate of the former EU-15. Of the post-communist countries of Central and Eastern Europe, the Czech Republic ranks second only to Slovenia.

4. Main findings

The conservation and improvement of the quality of public health is one of the preconditions for sustainable development in the Czech Republic. Life expectancy is an indicator suitable for assessment of public health, as it is applied widely and comparable internationally.

Following several years of stagnation at the beginning of the 21st century, the medium life expectancy grew for both sexes, to 73.4 and 79.9 for boys and girls, respectively, in 2006. The Czech Republic now ranks near the top among post-communist countries. The life expectancy is approximately three years shorter compared with the original EU-15 states.

III.B MORTALITY

Michala Lustigová

1. Meaning and context of the indicator

Mortality is one of the very important indicators of the health of a population and of the frequency and seriousness of certain diseases.

The gross mortality rate is influenced by the differences in the age structures of the populations of various countries. In the case of comparing populations with different age structures it is therefore appropriate to use an indicator that eliminates these drawbacks, i.e. mortality standardised by age.

The overall mortality rate consists of mortality rates per disease and disease group. In terms of medical and social impact, the assessment divides into that of the standardised overall mortality, deaths by malignant neoplasms, circulatory diseases, and external causes, such as injuries and suicide.

2. Method of calculation of the indicator

The indicator is based on normally available data on deaths by age and population in the age groups. The calculation is typically performed using the method of direct standardisation, where the age-specific rates of mortality in the actual population are applied to the standard population. The most frequently used standard population is the "global" or "European" standard (the age structure of the model population as determined by WHO).

Standardised mortality is normally stated in deaths per 100,000 population. The indicator is calculated on an annual basis; calculations for the Czech Republic are conducted by the Czech Statistical Office.

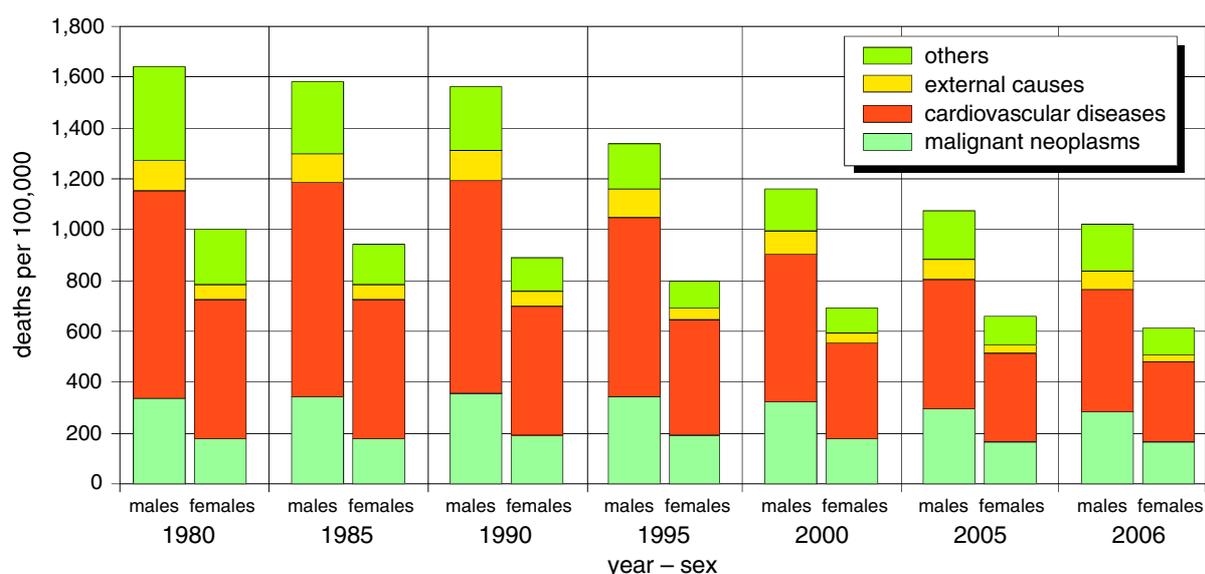
3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

In 1980 – the beginning of the study period – the standardised mortality of males was in the region of 1,650 deaths per 100,000 of the standard population, while in respect of females the indicator slightly exceeded 1,000 deaths per 100,000 of the population. After a period of temporary stagnation of mortality (from the mid 1960s to the late 1980s), the value of the indicator began to decrease markedly and constantly until 2001. The indicator stagnated temporarily at the beginning of the 21st century, but the standardised mortality figures are again decreasing at present. The indicator value was 1,024 per 100,000 for males and 613 per 100,000 for females in 2006. The standardised mortality rates decreased by approx. 38% for both sexes over the study period (1980–2006).

The overall standardised mortality consists of deaths of constituent disease categories and other causes (Chart II.B.1). Approximately one-half of the overall mortality is caused by circulatory diseases. A decrease in death rate caused by circulatory diseases is significantly reflected in a decrease in overall mortality. Deaths by malignant neoplasms is another crucial component of the overall standardised mortality. There was virtually no change in the numbers of deaths by malignant neoplasms over the monitored period, but their share in the overall mortality has been growing. In respect of social importance, deaths by external causes (such as injuries, poisoning, and suicide) has been included in the assessment. This particular death rate decreased for both sexes in the monitored period.

Chart III.B.1: Standardised mortality, Czech Republic, 1980–2006

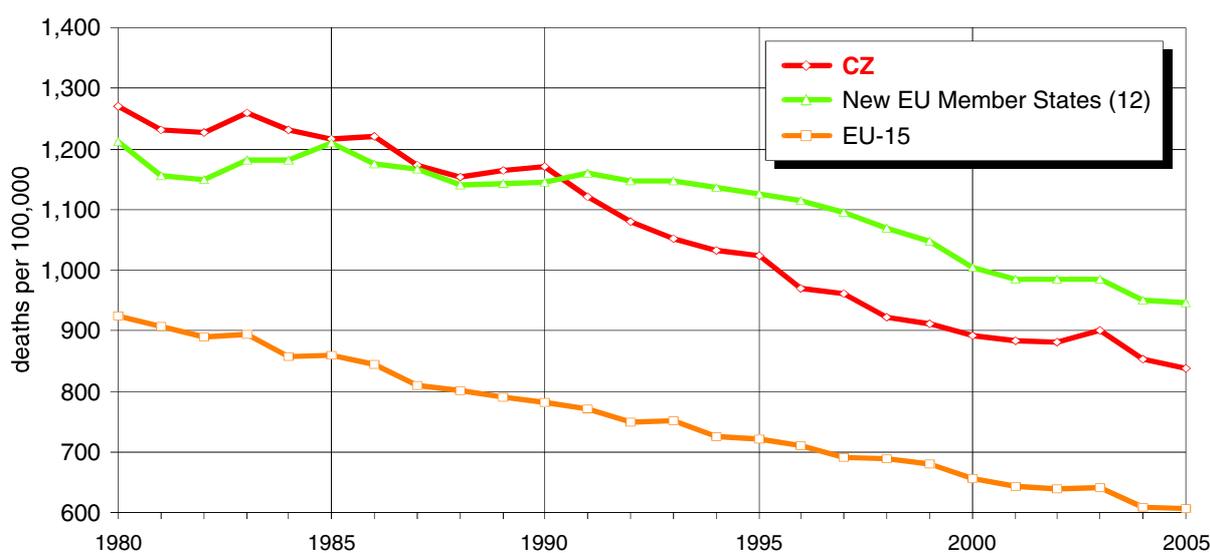


Data source: Institute of Health Information and Statistics of the CR

b) International comparison

Despite the considerable improvement in mortality rates in the 1990s, the Czech Republic still lags behind Western European countries (Chart III.B.2). Standardised mortality in the Czech Republic in 2005 exceeded the EU-15 average by 38%. In comparison with the standardised overall mortality in the new EU Member States (12 countries), the mortality in Czech Republic has been lower since 1991, reaching 89% of the average for those countries in 2005.

Chart III.B.2: Overall standardised mortality, international comparison, 1980–2005



Data source: WHO, HFA Mortality Database

4. Main findings

Mortality rate is one of the supremely important indicators reporting on the population's health and the prevalence and importance of selected diseases. The largest part (about 50%) of the total mortality are deaths by circulatory system diseases; deaths by malignant neoplasms are another major cause. The total standardised mortality was 1024 and 613 deaths per 100,000 persons for males and females, respectively, in 2006. The total mortality (measured as standardised mortality) has thus decreased by approximately 38% for both sexes compared to the year 1980.

Despite the substantial improvement in the mortality rate, the Czech Republic falls behind the advanced countries of Western Europe in terms of total mortality.

III.C GENERAL UNEMPLOYMENT RATE

Eva Procházková

1. Meaning and context of the indicator

Along with the development indicators of overall employment and employment of older people, as well as regional disparities in the employment rates, the general employment rate is among the structural indicators in the area of employment and social inclusion. In addition, it serves the assessment of employment policy goals, based on the European Council Meetings in Lisbon (2000) and Stockholm (2001).

These indicators were also adopted by the revised policy, developed by the European Commission in 2005 for the spring European Council Meeting based on recommendations made by a wide expert group as a modification to the current understanding of the agenda based on its Medium-term Assessment. The Integrated Directions for Growth and Jobs (2005–2008), adopted by the European Council in June 2005, combine the Main Directions in Economic Policy and the EU Employment Directions in a single document, representing a major move within the process of new direction and understanding of the Lisbon Strategy.

Besides its environmental focus, sustainable development also possesses economic and social limitations, formulated in the EU by the Lisbon Strategy; that is why these indicators are crucial for the respective pillars of sustainable development.

2. Method of calculation of the indicator

The indicator builds on data from the selective labour force surveys, carried out in all EU countries based on Eurostat and ILO methodology, guaranteeing full international comparability of results.

It is defined as the proportion of unemployed persons to the labour force in %. According to Eurostat methodology, the calculation of the rate applies to the age category of 15–74 years.

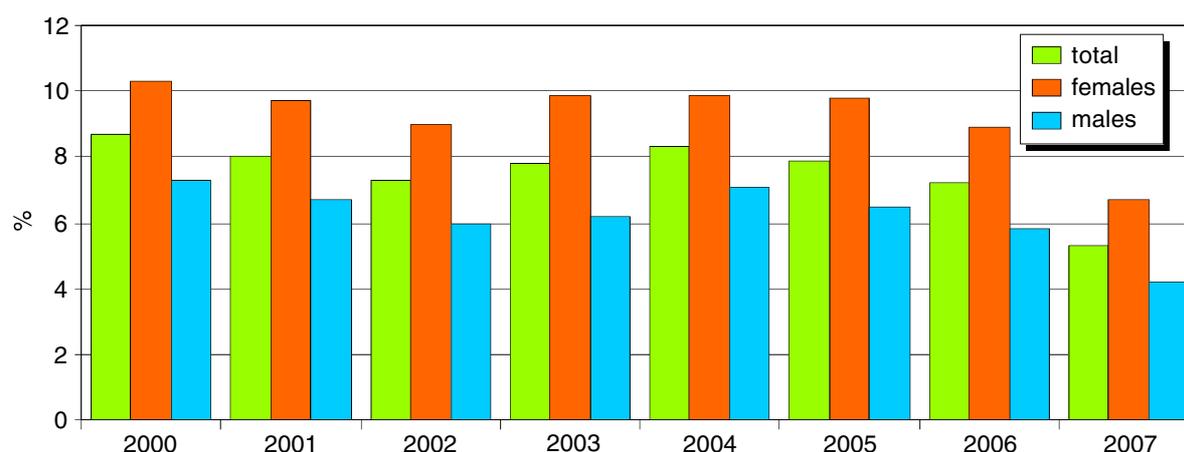
The definition of unemployed according to the International Labour Organisation (ILO) applies to persons who were without work or other gainful activity during the reference period, actively looked for a job and were available to start work within 14 days.

The labour force is composed of people employed or unemployed. A person employed is a person who worked at least one hour in the reference week for pay or with a view to making a profit, or had a job where he was not present. The employed category does not include people on parental leave.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

After the culmination of unemployment in 2000 the development in this decade has not been consistent. After two years of a significant decline, the rate of unemployment was lower in 2002 than in the EU-15, but from 2003 unemployment grew to 8.3% in 2004, the 13th highest rate in the EU-27. The unemployment rate dropped to 7.9% in 2005, the 16th position within the EU-27. The annual decrease in the general unemployment rate accelerated in the following period. The value of the indicator was 5.3% in 2007, ranking the Czech Republic in the 11th place within the EU-27.

Chart III.C.1: General unemployment, males and females, Czech Republic, 2000–2007

Data source: Eurostat, Czech Statistical Office

The Czech Republic is a country with unemployment rate of females continuously higher than unemployment of males. Fluctuations in the development of unemployment in recent years have been similar with both sexes. In 2006 and 2007, the development in the female unemployment was the crucial factor behind the annual decrease in unemployment; the female unemployment rate dropped annually by 0.9 p. p. and 2.2 p. p. respectively. So far, the results of a selective survey for this year have indicated further decrease in the unemployment (the general unemployment rate was 4.7% in the first quarter of 2008).

b) International comparison

The uniform methodology used in respect of general unemployment permits, where necessary, an immediate comparison of the values of the indicator in individual EU Member States. General unemployment in the EU-27 reached 7.1% in 2007, and was 1.6 p.p. lower than in 2000. This decrease was apparent mainly in the EU-25, where unemployment dropped in this period by 1.4 percentage points to 7.2%. The unemployment rate decreased in most member states, including the Czech Republic.

In 2007, the unemployment rate in the Czech Republic was lower than the average rate in the EU-27 (at 7.1%), which was significantly affected by the high rate of unemployment in Poland and Slovakia. Twenty-four out of the EU-27 states recorded a year-on-year decrease, within the old EU-15 as well as newly acceded, including Slovakia and Poland.

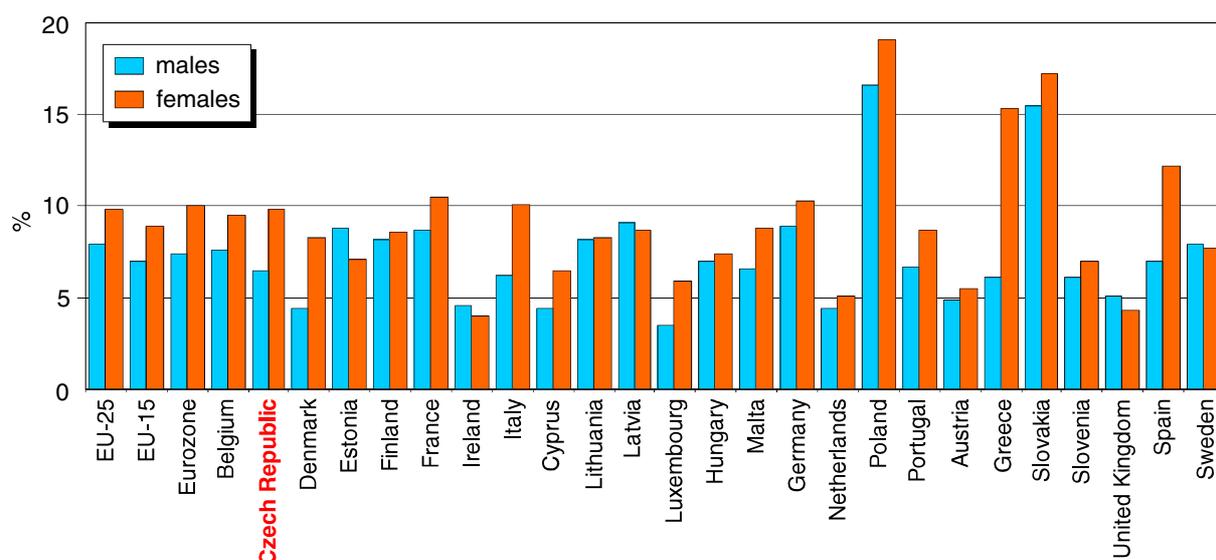
In most EU Member States the general rate of unemployment of females is higher than that of males; however, this is not the case in Estonia, Latvia, Ireland, Germany, Romania, and the United Kingdom. These countries, with the exception of Germany, generally have a lower rate of unemployment, and Estonia and Latvia belong to countries with the most rapid decrease in unemployment over the last seven years.

Table III.C.1: General unemployment rate, international comparison, 2000–2007

Country	2000	2004	2005	2006	2007	Difference 2007–2000	Difference 2007–2006
EU-27	8.7	9.0	8.9	8.2	7.1	-1.6	-1.1
EU-25	8.6	9.0	8.9	8.2	7.2	-1.4	-1.0
EU-15	7.7	8.1	8.1	7.7	7.0	-0.7	-0.7
Eurozone	8.2	8.8	8.9	8.3	7.4	-0.8	-0.9
Austria	3.6	4.8	5.2	4.8	4.4	0.8	-0.4
Belgium	6.9	8.4	8.5	8.3	7.5	0.6	-0.8
Bulgaria	16.4	12.1	10.1	9.0	6.9	-9.5	-2.1
Cyprus	4.9	4.7	5.3	4.6	3.9	-1.0	-0.7
Czech Republic	8.7	8.3	7.9	7.2	5.3	-3.4	-1.9
Denmark	4.3	5.5	4.8	3.9	3.8	-0.5	-0.1
Estonia	12.8	9.7	7.9	5.9	4.7	-8.1	-1.2
Finland	9.8	8.8	8.4	7.7	6.9	-2.9	-0.8
France	9.0	9.3	9.2	9.2	8.3	-0.7	-0.9
Germany	7.5	9.8	10.7	9.8	8.4	0.9	-1.4
Greece	11.2	10.5	9.9	8.9	8.3	-2.9	-0.6
Hungary	6.4	6.1	7.2	7.5	7.4	1.0	-0.1
Ireland	4.3	4.5	4.4	4.5	4.7	0.4	0.2
Italy	10.1	8.1	7.7	6.8	6.1	-4.0	-0.7
Lithuania	16.4	11.4	8.3	5.6	4.3	-12.1	-1.3
Latvia	13.7	10.4	8.9	6.8	6.0	-7.7	-0.8
Luxembourg	2.3	5.1	4.5	4.7	4.1	1.8	-0.6
Malta	6.7	7.4	7.3	7.3	6.4	-0.3	-0.9
Netherlands	2.8	4.6	4.7	3.9	3.2	0.4	-0.7
Poland	16.2	19.0	17.8	13.9	9.6	-6.6	-4.3
Portugal	3.9	6.7	7.6	7.7	8.0	4.1	0.3
Romania	7.3	8.1	7.2	7.3	6.4	-0.9	-0.9
Slovakia	18.8	18.2	16.3	13.4	11.1	-7.7	-2.3
Slovenia	6.7	6.3	6.5	6.0	4.9	-1.8	-1.1
Spain	11.1	10.6	9.2	8.5	8.3	-2.8	-0.2
Sweden	5.6	6.3	7.4	7.0	6.2	0.6	-0.8
United Kingdom	5.5	4.7	4.8	5.3	5.3	-0.2	0.0

Data source: Eurostat

Chart III.C.2: General unemployment rate, males and females, international comparison, 2007



Data source: Eurostat

4. Main findings

The annual decrease in the general unemployment rate in the Czech Republic has accelerated in the recent years. The value of the indicator was 5.3% in 2007, ranking the Czech Republic in the 11th place within the EU-27. The general unemployment rate in the Czech Republic was lower than the EU-27 average of 7.1% in 2007. Similarly to most EU Member States, the female unemployment rate is above the male figures in the Czech Republic (difference of 2.5 p. p.).

III.D REGISTERED UNEMPLOYMENT RATE

Eva Procházková

1. Meaning and context of the indicator

Registered unemployment rate is one of the cardinal indicators for monitoring the current state and trends on the labour market. It is the decision-making basis in employment policy enforcement aimed toward its overall reduction, as well as reduction in unemployment of risk groups of job seekers, and increasing of their employment chances.

2. Method of calculation of the indicator

This indicator shows, as a percentage, the proportion of job seekers (numerator) to total labour force (denominator).

The term “job seeker” is defined in Act No. 435/2004 Coll. on employment. The definition of a job seeker and the conditions for their inclusion, exclusion and termination of registration with an employment authority is contained in Sections 24 to 32 of the Act. A job seeker may be an individual who in person seeks the procurement of an appropriate job through the employment authority in whose catchment area the job seeker is resident, and subject to compliance with conditions set out by law this person may be included in the list of job seekers. A job seeker is not a person who works under employment or a similar arrangement, is self-employed or is consistently preparing for an occupation. Job seekers include any job seekers coming from the EU and EEA (European Economic Area)²³⁾ countries.

Available job seekers are job seekers who are able to start work immediately if a suitable job is offered, i.e. no objective obstacle prevents their undertaking a job. Available job seekers do not include job seekers in custody or prison, those incapable of work, job seekers assigned to retraining courses or undertaking short-term employment, and job seekers who draw pecuniary maternity benefits or who receive material support during maternity leave. Available job seekers are close to the definition of the unemployed made by the ILO recommendations in the selective labour force surveys (SLFS), which are used in the calculation of general unemployment rates.

Overall workforce is based on the outcome of SLFS and data on registered unemployment (available job seekers), extended to include legally working foreigners in the Czech Republic who are not included in the SLFS or are only included to a limited extent.

The numerator: accurate records on registered – available, non-employed job seekers, Czech and EU citizens, kept at an employment authority according to the job seeker’s place of residence²⁴⁾ as of the end of the month in question.

The denominator: number of persons employed in the national economy, with one or two main jobs, as stated by selective labour force surveys – SLFS (sliding average for the last four quarters) +

²³⁾ EEA: EU countries (Belgium, Denmark, Finland, France, Ireland, Italy, Luxembourg, Netherlands, Germany, Portugal, Austria, United Kingdom, Spain, Sweden, Greece; and since 1 May 2004 also Czech Republic, Slovakia, Poland, Hungary, Slovenia, Estonia, Lithuania, Latvia, Cyprus, Malta), plus Norway, Liechtenstein, and Iceland

²⁴⁾ Residence: a) if a citizen of the Czech Republic, address of permanent residence in the Czech Republic; b) if a foreigner – citizen of the European Union, or his family member, address of permanent or temporary residence in the Czech Republic; if no such residence exists, address of the place where he usually stays in the Czech Republic; c) if a foreigner – non-EU citizen, or his family member, address of permanent residence in the Czech Republic.

the number of employed third-country foreigners with a valid work permit, employed EU citizens registered at the employment authorities (sliding average for the last 12 months) and foreigners with a valid trade licence (sliding average for the last two six-month terms) + accurate records on registered – available, non-employed job seekers, Czech and EU citizens, kept at an employment authority according to the job seeker’s place of residence (sliding average for the last 12 months).

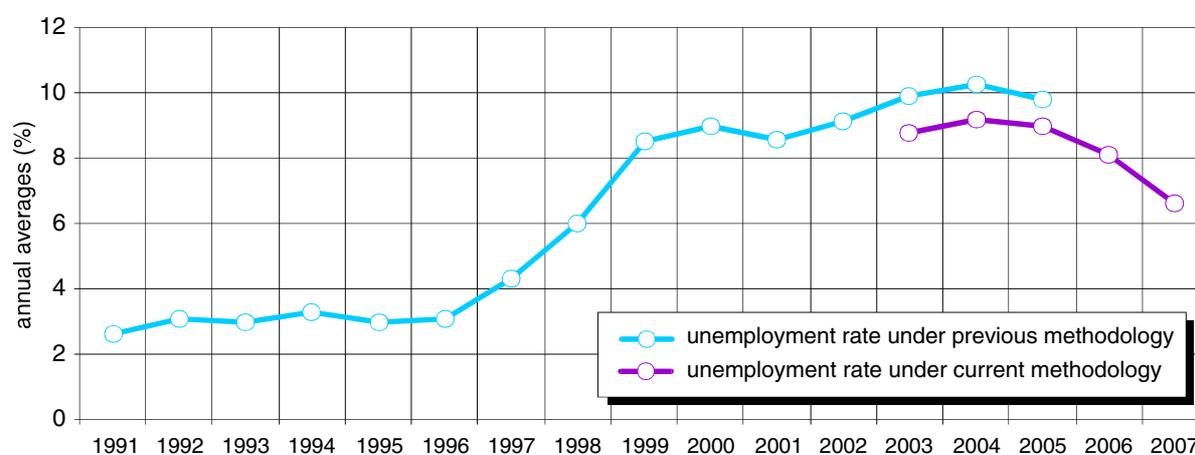
The sum in the denominator represented labour force that did not change in the course of individual calendar quarters.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

At the beginning of economic and social transformation, unemployment was an unheard-of phenomenon. Following the jump growth of unemployment from zero in 1989 to 4.1% in 1991 the rate of unemployment remained between 3 and 4% in the years 1992 to 1996. The development took a turn at the time of recession in 1997 when unemployment rate began growing up to 9.8% in January 2000. Then unemployment slightly declined in connection with the economic revival, and subsequently stagnated. This relatively favourable development continued until December 2001, when unemployment began increasing again due to the global recession and deteriorating sale opportunities of Czech producers.

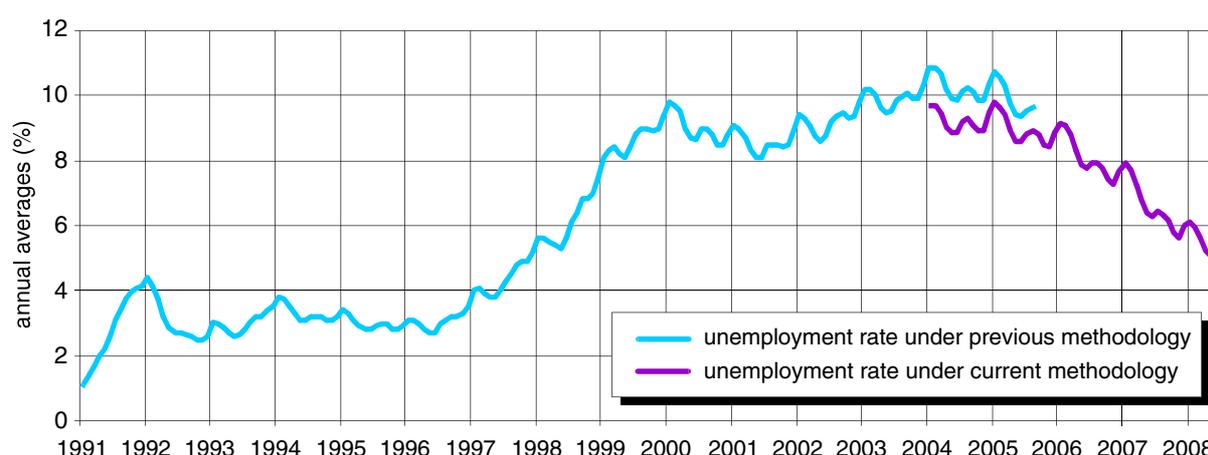
Chart III.D.1: Registered unemployment rate – annual average values, Czech Republic, 1991–2007



Data source: Czech Ministry of Labour and Social Affairs

Positive development resumed in 2004 when, after the highest ever rates at the beginning of the year, the unemployment rate decreased and in the second half of 2004 dropped to the 2003 level. These positive developments, due largely to the economic revival, inflow of foreign investments and the implementation of instruments of active employment policy, continued in 2005, 2006 and 2007 as unemployment remains under the previous years’ levels, while the annual decrease in the unemployment rate was accelerating. The average registered unemployment rate was 9.0% in 2005; the decreased to 8.1% in 2006 and amounted to 6.6% in 2007.

The current level of unemployment of 5.0% (June 2008) is comparable to the level of June 1997 and June 1998.

Chart III.D.2: Registered unemployment rate – monthly values, Czech Republic, 1991–2008

Data source: Czech Ministry of Labour and Social Affairs

b) International comparison

The international comparison uses the indicator of general rate of unemployment determined by SLFS (conducted by the Czech Statistical Office) based on recommendations of ILO and Eurostat that are binding on EU member States.

Registered job seekers are defined by applicable national laws. Therefore, considerable differences exist in many countries between general employment rate and registered employment rate, which are due mainly to legislative differences, but also to the level of active employment policy and other areas of social policy achieved by individual countries.

4. Main findings

After the historic peak in early 2004, the registered unemployment rate began decreasing and equalled to the 2003 level in the second half of that year. The positive trend, dictated by the reviving economy, inflow of foreign investment, and application of instruments of a proactive employment policy, continued into 2005, 2006 and 2007, when the unemployment rate was below the level of the preceding years, while the annual decrease in the unemployment rate was accelerating. The average registered unemployment rate was 9.0% in 2005; the decreased to 8.1% in 2006 and amounted to 6.6% in 2007.

III.E EMPLOYMENT OF OLDER PEOPLE

Eva Procházková

1. Meaning and context of the indicator

Along with the development indicators of overall employment and general employment rate, as well as regional disparities in the employment rates, the employment of older people is among the structural indicators in the area of employment and social inclusion.

2. Method of calculation of the indicator

This indicator describes the situation in the labour market regarding persons between 55 and 64 years of age. It is based on the findings of the selective labour force survey carried out in all EU member states in accordance with the methodology developed by Eurostat and guarantees full international comparability of the results.

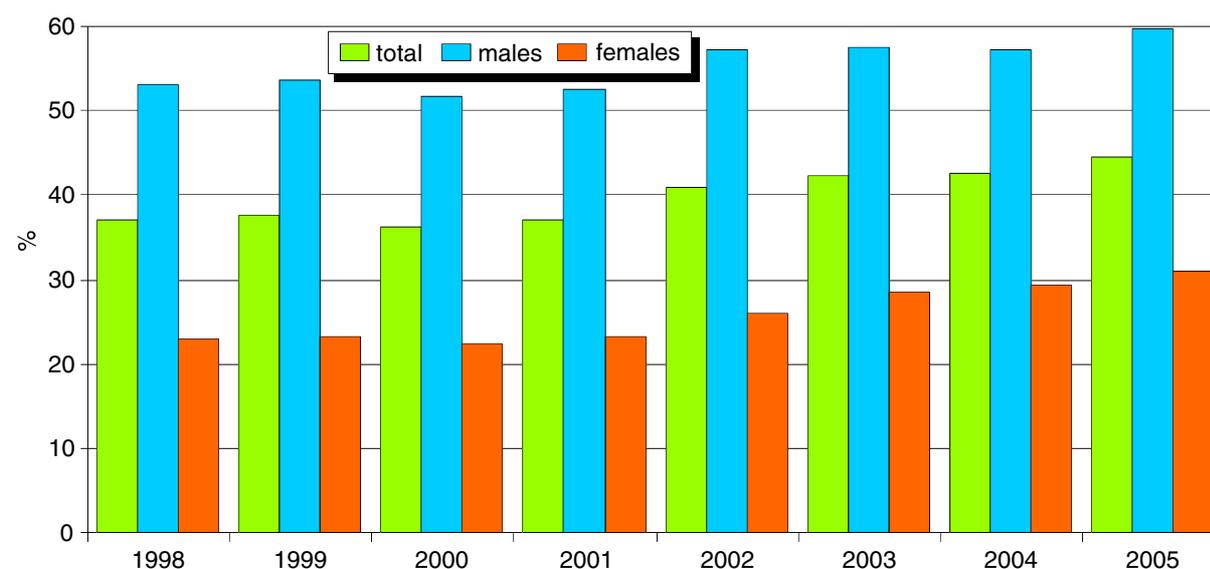
It is defined as the proportion of employed persons between 55 and 64 years of age to the number of all persons in this age category. The data are harmonised with the data of demographic statistics and national accounts.

An employed person in the age category of 55 to 64 years is a person between 55 and 64 years of age who worked at least one hour in the reference week for pay or compensation or with a view to making a profit, or had a job at which he was not present.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

Chart III.E.1: Employment of older people between 55 and 64 years of age, Czech Republic, 1998–2007



Data source: Czech Ministry of Labour and Social Affairs

The rate of employment of males and females between 55 and 64 years of age constantly increased between 1998 and 2007, with the exception of 2000, while the employment of females grew relatively faster (by 10.6 percentage points) than the employment of males (by 6.4 percentage points). Nonetheless, the Czech Republic still belongs to countries where the rate of employment of males in this age category is substantially higher than the rate of employment of females of the same age. The difference reached 26.1 percentage points in the Czech Republic in 2007 (male rate of 59.6%, female rate of 33.5%), and thus the Czech Republic ranked among six EU countries with the highest differentiation of employment rate based on sex. This difference is primarily the consequence of a difference in the age limit for retirement, but also of the difficulty in maintaining the employment of females of pre-retirement age. A difference in the sex-based employment rates greater than in the Czech Republic exists only in Malta, Spain, Greece, Cyprus, and Ireland.

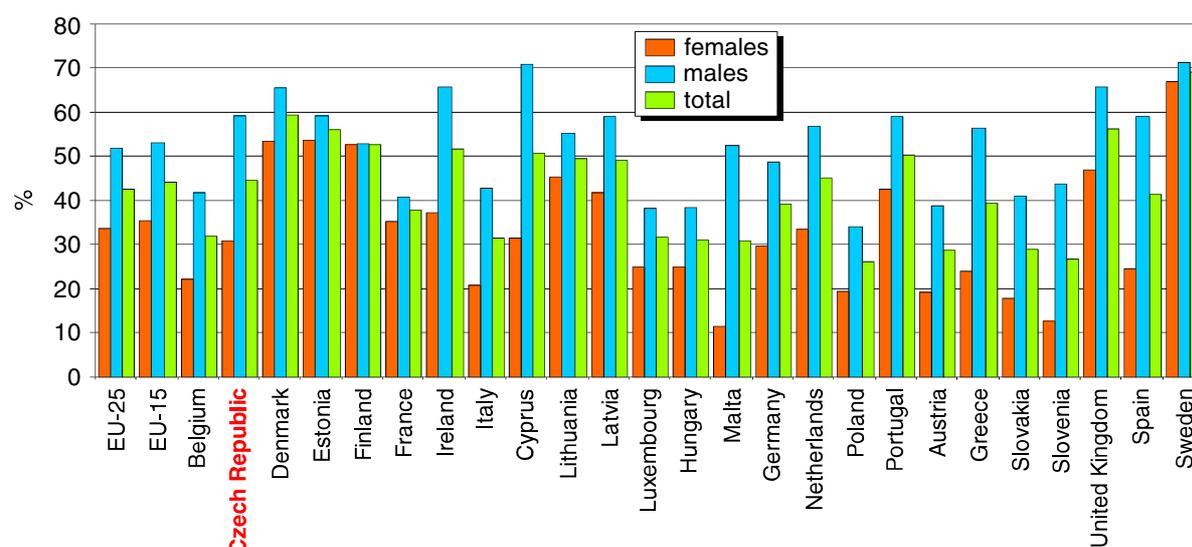
b) International comparison

The aggregate rate of employment of older people in EU Member States is consistently rising. Since 1998, the EU-25 aggregate rate increased from 36.2% to 44.7%, and the EU-27 aggregate, from 35.8% to 44.9% in the last year. The employment rate is relatively higher in the EU-15, where it increased during this period by 10.0 percentage points to 46.6% in 2007.

Differences exist between countries. On the one hand, the employment rate in this age category in ten countries does not even amount to 40% of the total number of these persons (Malta, Poland, Luxembourg, Hungary, Slovenia, Italy, Belgium, Slovakia, France, and Austria), while on the other hand in eleven countries more than one-half of persons in this age category worked in the last year (the Netherlands, Portugal, Germany, Lithuania, Ireland, Finland, Cyprus, Latvia, Denmark, Estonia 60%, and Sweden 70%).

The employment rate in this age category in the Czech Republic (44.5%) is above the average and is higher than in the UK and France, for instance, and substantially higher than in the neighbouring countries of Austria, Poland and Slovakia. This higher rate of employment is mostly due to the employment of males while the employment of females in this age category is below the EU-15 and even EU-27 average.

Chart III.E.2: Employment of older people between 55 and 64 years of age, international comparison, 2007



Data source: Eurostat

The employment rate in the Czech Republic grew faster than in the EU-27 (after 1998 by 8.9 percentage points in the Czech Republic, 8.5 percentage points in the EU-27, and 10.0 p. p. in the EU-15); however, the increment in the employment rate in some countries was considerably higher than that in the Czech Republic (e.g. in Finland by 16.5 percentage points, in Hungary by 15.7 percentage points, and in Latvia by 13.2 percentage points).

Table III.E.1: Employment of older people between 55 and 64 years of age (in %), international comparison, 1998–2007

Country	1998	2000	2004	2005	2006	2007	Difference 2007–1998
EU-27	36.2	36.9	40.7	42.4	43.5	44.7	8.5
EU-25	35.8	36.6	41.0	42.6	43.7	44.9	9.1
EU-15	36.6	37.8	41.9	44.2	45.3	46.6	10
Austria	28.4	28.8	28.8	31.8	35.5	38.6	10.2
Belgium	22.9	26.3	30.0	31.8	32.0	34.4	11.5
Bulgaria	:	:	:	34.7	39.6	42.6	:
Cyprus	:	49.4	50.4	50.6	53.6	55.9	:
Czech Republic	37.1	36.3	42.7	44.5	45.2	46.0	8.9
Denmark	52.0	55.7	60.3	59.5	60.7	58.6	6.6
Estonia	50.2	46.3	52.4	56.1	58.5	60.0	9.8
Finland	36.2	41.6	50.9	52.7	54.5	55.0	18.8
France	28.3	29.9	37.3	38.7	38.1	38.3	10
Germany	37.7	37.6	39.2	45.4	48.4	51.5	13.8
Greece	39.0	39.0	39.4	41.6	42.3	42.4	3.4
Hungary	17.3	22.2	31.1	33.0	33.6	33.1	15.8
Ireland	41.7	45.3	49.5	51.6	53.1	53.8	12.1
Italy	27.7	27.7	30.5	31.4	32.5	33.8	6.1
Lithuania	39.5	36.0	47.1	49.2	49.6	53.4	13.9
Latvia	36.3	36.0	47.9	49.5	53.3	57.7	21.4
Luxembourg	25.1	26.7	30.8	31.7	33.2	32.9	7.8
Malta	:	28.5	30.9	30.8	30.0	28.3	:
Netherlands	33.9	38.2	45.2	46.1	47.7	50.9	17
Poland	32.1	28.4	26.2	27.2	28.1	29.7	-2.4
Portugal	49.6	50.7	50.3	50.5	50.1	50.9	1.3
Romania	:	:	:	39.4	41.7	41.4	:
Slovakia	22.8	21.3	26.8	30.3	33.1	35.6	12.8
Slovenia	23.9	22.7	29.0	30.7	32.6	33.5	9.6
Spain	35.1	37.0	41.3	43.1	44.1	44.6	9.5
United Kingdom	49.0	50.7	56.2	43.1	44.1	44.6	-4.4

Data source: Eurostat

4. Main findings

The rate of employment of older people in the Czech Republic (44.5%) is above average, above the level of such countries as the UK and France, and high above that of the neighbouring countries of Austria, Poland and Slovakia. The employment rate was growing faster in the Czech Republic than in other EU Member States in the long run (by 8.9 p. p. since 1998 compared to 8.5 p. p. in the EU-27 and 10.0 p. p. in the EU-15).

The higher level of employment of older people in the Czech Republic is mainly due to the male employment, while the female employment in this age group is below both the EU-15 and EU-27 averages. The difference between the employment rates in the Czech Republic was 26.1 p. p. (59.6% for males and 33.5% for females) in 2007. The Czech Republic is thus among the six EU Member States with the greatest difference between sexes in terms of employment rates of older people.

III.F REGIONAL DISPERSION OF THE EMPLOYMENT RATE

Eva Procházková

1. Meaning and context of the indicator

Along with the development indicators of overall employment, general employment rate, and employment of older people, the Regional dispersion of the employment rate is among the structural indicators in the area of employment and social inclusion.

2. Method of calculation of the indicator

Regional dispersion of the rate of employment measures inter-regional differences in the dispersion of employment. It is based on the data of selective labour force surveys conducted in all EU countries pursuant to the methodology of Eurostat and guarantees full international comparability of results.

It is variance index of regional employment rates for persons between 15 and 64 years of age, expressed as a proportion of the relevant variation of weighted regional rates of employment of persons between 15 and 64 years of age to the nation-wide rate of employment of persons between 15 and 64 years of age.

The calculation is based on the annual average of employment rate in the Czech Republic and in individual NUTS 2 or NUTS 3 regions.

The indicator is defined as the proportion of the square root of the dispersion of weighted employment rates for persons between 15 and 64 years of age to the nation-wide rate of employment of persons between 15 and 64 years of age.

The dispersion of weighted employment rates of persons between 15 and 64 years of age is defined as:

$$\text{Var}\left(\frac{x_i}{y_i}\right) = \sum_i \left(\left[\frac{x_i}{y_i} - \frac{\bar{x}}{\bar{y}} \right]^2 \cdot \frac{y_i}{\sum_i y_i} \right),$$

where x_i is the number of persons employed in the age of 15 to 64 years in region i , y_i is population between 15 and 64 years of age in region i , \bar{x} and \bar{y} stand for nation-wide average values of x_i and y_i .

The nation-wide employment rate is defined as $\frac{\bar{x}}{\bar{y}} = \frac{\sum_i x_i}{\sum_i y_i}$.

Eurostat does not apply the indicator of the dispersion of regional employment rate to Denmark, Estonia, Luxembourg, Cyprus, Lithuania, Latvia, Malta and Slovenia, which are not subdivided into regions due to their size, and to Ireland, subdivided into only two regions. However, employment rate dispersion in these countries is accounted for as a quantification of this indicator for the relevant group of countries (EU-25, EU-15, EU-13).

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The findings of the labour force survey indicate two stages in the long-term development of the dispersion of the regional employment rate. During the first stage from 1996 to 2000 the rate grew rapidly as a result of the increasing differences in employment rate between regions. This growth in the variance index was influenced mostly by the development of employment in Prague, where job opportunities are much greater than elsewhere, and by the rapid decrease in employment rate in the Moravian-Silesian Region. The regional differences from the nation-wide average stagnated in and after 2001. In the Czech Republic, the differences in the group of NUTS 2 regions are slightly lower than in the group of NUTS 3 regions.

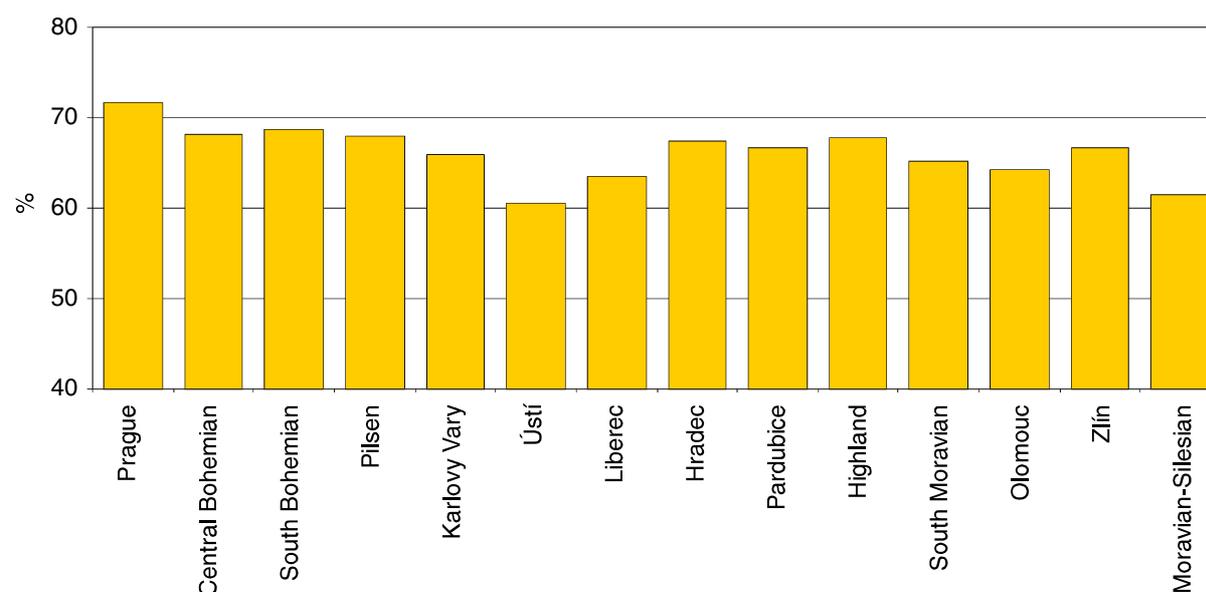
Table III.F.1: Variance index in NUTS 2 and NUTS 3 regions, Czech Republic, 1993–2007

Territorial subdivision	1993	1995	2000	2001	2002	2003	2004	2005	2006	2007
NUTS 2	2.9	3.1	5.8	5.7	5.6	5.8	5.5	5.6	5.4	4.8
NUTS 3	3.0	3.2	6.4	5.9	5.8	6.0	5.7	4.8	4.6	4.3

Data source: Czech Statistical Office

The rate of employment of persons between 15 and 64 years of age declined in all regions except Prague from 1993 to 2000. In the following years, when employment declined at a substantially slower rate, it remained at the level of the turn of millennium in the Central Bohemian, Liberec, Pardubice and Moravian-Silesian Regions, while it increased moderately in the Ústí Region. Nonetheless, the low rate of employment in the Ústí and Moravian-Silesian Regions still adversely affects the variance index of the regional employment rate in the Czech Republic.

Chart III.F.1: Employment rate of persons between 15 and 64 years of age, by region, Czech Republic, 2007



Data source: Czech Statistical Office

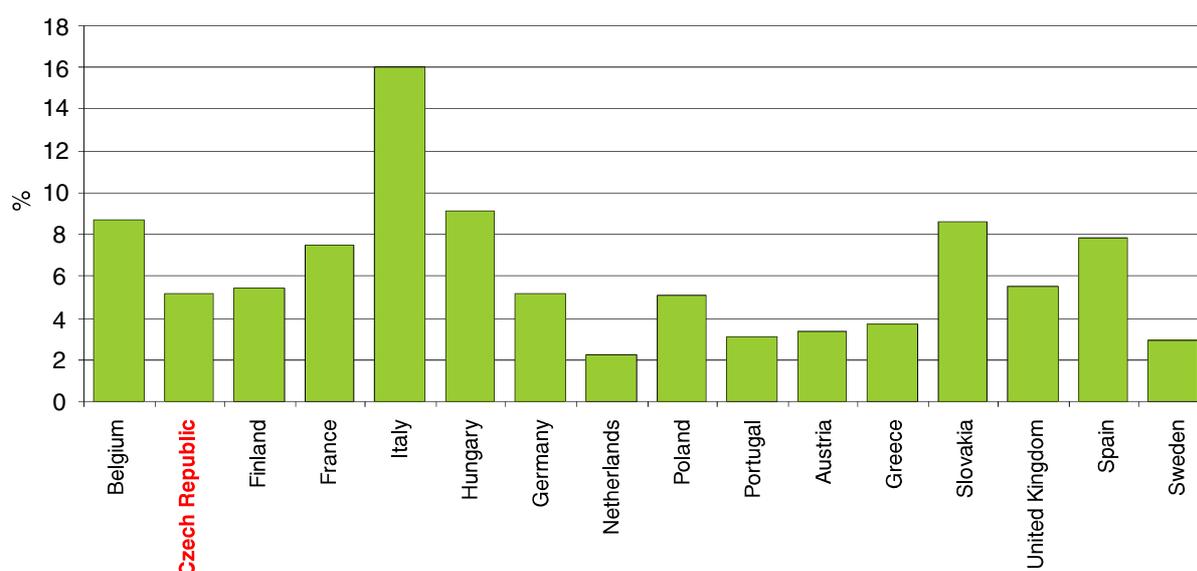
b) International comparison

The variance index of the regional employment rate amounted in the EU-27 aggregate in 2006 (latest known data) to 11.4%, 1.5 percentage points less than in 1999.

Table III.F.2: Dispersion of regional employment rate, international comparison, 1999–2006

Country	1999	2000	2001	2002	2003	2004	2005	2006	Difference 2006–1999
EU-27	12.9	13.0	13.2	13.2	12.8	12.1	11.9	11.4	-1.5
Eurozone	13.3	13.0	12.7	12.1	11.5	10.5	10.6	10.7	-2.6
Austria	2.3	2.5	2.6	2.5	3.0	3.5	4.1	3.4	1.1
Belgium	8.0	7.9	8.0	8.0	7.7	8.7	8.4	8.7	0.7
Czech Republic	5.6	5.8	5.7	5.6	5.8	5.6	5.5	5.2	-0.4
Finland	6.7	6.8	7.0	6.7	6.1	5.5	5.5	5.4	-1.3
France	7.1	6.9	8.3	8.0	7.2	7.1	7.3	7.5	0.4
Germany	5.4	5.4	5.8	5.7	5.9	6.0	5.6	5.2	-0.2
Greece	5.2	5.1	4.3	3.8	3.2	4.1	4.3	3.7	-1.5
Hungary	9.1	9.0	8.8	9.4	8.5	9.4	9.9	9.1	0.0
Italy	17.4	17.5	17.1	16.7	17.0	15.6	16.0	16.0	-1.4
Netherlands	2.3	2.2	2.3	2.2	2.3	2.3	2.0	2.2	-0.1
Poland	4.8	6.9	7.2	7.3	7.2	6.4	5.6	5.1	0.3
Portugal	3.6	4.3	3.5	3.8	3.9	3.5	3.3	3.1	-0.5
Slovakia	8.1	9.1	8.3	7.3	7.6	9.0	9.8	8.6	0.5
Spain	10.8	10.7	10.0	9.3	9.0	8.7	8.3	7.8	-3.0
Sweden	4.8	4.5	4.2	4.6	4.3	4.4	3.0	2.9	-1.9
United Kingdom	7.5	7.1	6.8	6.6	6.1	5.9	5.7	5.5	-2.0

Data source: Eurostat

Chart III.F.2: Variance index of regional employment rate at NUTS 2 level, international comparison, 2006


Data source: Eurostat

The data referring to groups of countries are considerably influenced by the differences between countries; within the borders of individual countries, a higher level of dispersion existed only in Italy as a result of differences between employment rates in the north and in the south of the country, while in other countries it ranged in 2006 from 2.2% in the Netherlands to 9.1% in Hungary. The higher the variance index is, the less the data on regional employment differ from the national average in individual countries. The variance index in the Czech Republic is practically in the middle of the range and is approximately the same as in Finland, Germany and Poland.

Differences in the employment of females in the regions of countries are considerably greater than in the employment rate of males, and are extraordinarily conspicuous in Italy and Spain. In Germany and Austria, this variance index for females is lower than for males. The variance index of regional employment rate in the Czech Republic (4.3% for males and 7.0% for females in 2006) compared with other EU countries is roughly in the middle of the interval (seventh lowest of the 16 countries for males, and eighth lowest for females).

Table III.F.3: Variance index of regional employment rate at NUTS 2 level, international comparison, 2006

Country	Males	Females
EU-27	9.3	16.2
Eurozone	8.0	16.6
Austria	4.1	2.7
Belgium	7.1	10.6
Czech Republic	4.3	7.0
Finland	5.1	5.9
France	6.7	8.8
Germany	6.3	4.9
Greece	2.6	7.7
Hungary	8.7	9.9
Italy	9.3	26.1
Netherlands	2.2	2.6
Poland	3.7	7.4
Portugal	3.1	4.8
Slovakia	6.6	11.5
Spain	5.0	12.8
Sweden	2.4	3.7
United Kingdom	5.0	6.6

Data source: Eurostat

4. Main findings

We can distinguish between two stages in the long-term development in the regional dispersion of employment rates. The first of them lasted from 1996 to 2000 and saw a fast growth in the figure due to the increasing differences in regional employment. Since 2001, a certain stagnation in the regional differences from the national average has been seen. The differences among the NUTS 2 areas are slightly lower than among the NUTS 3 regions in the Czech Republic.

The variance index for the Czech Republic was roughly one half of that for the EU-27 (5.2 compared to 11.4) in 2006. Lower values were reported from the Netherlands, Portugal and Austria; higher ones from Belgium, Hungary and particularly Italy.

III.G POPULATION LIVING BELOW THE POVERTY LINE BEFORE AND AFTER SOCIAL TRANSFERS

Lucie Malíková

1. Meaning and context of the indicator

The indicator Population living below the poverty line before and after social transfers indicates the effectiveness of social transfers, or their impact on persons threatened by poverty. Persons threatened by poverty are persons whose annual adjusted disposable income is less than 60% of the country's annual adjusted median disposable income per consumption unit. This indicator expresses the proportion of individuals (males, females) threatened by poverty in the relevant age categories to the total number of individuals (males, females) in the relevant age categories. The advantage of this relative measurement by the median (and not the average) is that it is not overly affected by extremities; the disadvantage is the considerable difference in thresholds of threatened poverty in different countries.

2. Method of calculation of the indicator

Persons threatened by poverty (living below the poverty line) are persons whose annual adjusted disposable income (before and after all social transfers) is less than 60% of the country's adjusted annual median disposable income per consumption unit. Adjusted median income is defined as total disposable household income divided by its "equivalent size" (in relation to a given consumption unit) reflecting the size and structure of the household, and is assigned to each member of the household.

The limit/threshold of income-based poverty is 60% of annual national adjusted median income per EU consumption unit. The consumption unit according to the EU-equivalent scale (an OECD-equivalent scale also exists) is defined as follows: the first adult in the household counts as 1 unit, each next adult (older than 13 years) in the household counts as 0.5 units, and each child (under or at the age of 13) counts as 0.3 units. Income in new member states includes also income in kind.

The indicator of the threat of poverty (the proportion of persons threatened by poverty to the total number of persons) may be further differentiated not only by age and sex, but also by the type of household or economic activities of household members.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The data for the Czech Republic are based on the Household Social Situation 2001 survey, carried out by the Czech Statistical Office in 2001 (to determine incomes of individuals and households in 2000), and on EU-SILC 2006 survey, carried out by the Czech Statistical Office in 2006 (to determine incomes of individuals and households in 2005).

Over the study period, the limit/threshold of individual income-based poverty (after accounting for all social transfers) increased by 32.6% from CZK 64,629 in 2000 to CZK 85,714 in 2005. The proportion of the Czech population living below the line was 8% in 2000 and 10% in 2005.

The level of threat of poverty in households with children grew by 3 p. p. to 13% in 2005, compared to a growth from 5% to 6% for childless households. A negative trend is observed above all in

incomplete families and families with more children. The level of threat of poverty amounted to 41% in 2005 (26% in 2000) for incomplete families; it was 30% (18% in 2000) for families with three or more children. Complete families with two children showed a moderately increased poverty rate (up from 6% to 10% in 2005). The threat of poverty for families with a single child is below average (6% in 2000; 7% in 2005). In aggregate, 16% of children under 18 years of age lived in poor households in 2005 (the figure was not established in this age group for 2000).

In the age category above 18 years, 3% of workers were threatened by poverty in 2005 (neither this nor the following figures was established for people over 18 years of age for 2000). In contrast, there were high shares of poor people among the unemployed (43%) and other economically inactive persons except pensioners (15%). A relatively low proportion of people threatened by poverty was found among workless pensioners (7%).

Social transfers significantly affected the overall level of poverty in the Czech Republic. Without pensions and other social transfers, 39% of people in the Czech Republic would live below the threshold of threat of poverty in 2005. The pensions paid out reduced this rate to 22%, and the other social transfers to the resulting 10%. Social transfers reduced the poverty rate by 29 percentage points. The greatest effect came from pensions, other benefits paid under the Act on state social assistance, sickness insurance benefits and unemployment benefits. Pensions included in incomes, the other social transfers reduced poverty by twelve percentage points.

Although the Czech Republic has a relatively high concentration of persons just above the poverty threshold (8% of people were between 60% and 70% of the national adjusted median disposable income in 2005), the situation is not bad because the hypothetical event of a slump in these people's incomes below the established poverty line (60% of the national adjusted median disposable income) would result in an increase in the numbers of poor people broadly to the average EU rate.

b) International comparison

The Czech Republic is the country with the lowest rate of threat of poverty (social transfers accounted for) among all EU-25 countries (only Netherlands have 10% of poor people like Czech Republic).

On average, 16% of the population in the EU-25 were classified as threatened by poverty in 2006 (based on data provided by Eurostat). This rate differs considerably between individual EU countries, ranging from 10% in the Czech Republic and the Netherlands to 23% in Latvia.

Countries with the highest rate of child poverty (up to 18 years of age) include Spain, the UK (24%); Italy, Lithuania and Hungary (25%); Latvia and Poland (26%); on the other hand, this specific rate is the lowest in Finland and Denmark (10%).

The assessment of the effect of social transfers on the final rate of threat of poverty from the perspective of age is influenced to a great extent by pensions, the inclusion of which dramatically improves the results for the age group of 65 years and above (EU-25 average from 90% to 23%). The overall effect of transfers in the EU-25 reduces the base rate of the threat of poverty from 43% to the resulting 16%.

Table III.G.1: Population living below the poverty line before and after social transfers by age categories (in %), international comparison, 2005

Country	Excl. all social transfers				Incl. pensions				Incl. all social transfers			
	Total	0–17	18–64	65+	Total	0–17	18–64	65+	Total	0–17	18–64	65+
EU-25	43	35	33	90	26	33	24	23	16	19	15	19
Belgium	41	30	32	92	27	29	26	27	15	15	12	23
Denmark	37	24	28	94	28	24	28	35	12	10	11	17
Finland	41	31	31	92	29	30	27	31	13	10	11	8
France	44	32	35	96	25	31	24	20	13	14	12	16
Ireland	40	42	31	86	33	41	28	40	18	22	15	27
Italy	43	34	33	83	24	32	22	24	20	25	18	22
Luxembourg	40	36	31	89	24	34	23	10	14	20	13	8
Germany	46	35	35	95	26	34	27	15	12	12	13	17
Netherlands	36	27	27	94	21	27	21	12	10	14	9	6
Portugal	40	31	31	84	25	28	23	31	18	21	16	26
Austria	43	39	33	88	25	37	23	19	13	15	11	16
Greece	40	27	32	82	23	25	21	30	21	23	18	26
Spain	39	31	29	84	24	28	20	34	20	24	16	31
Sweden	42	36	30	93	29	36	28	21	12	15	11	12
UK	42	42	30	91	30	41	25	36	19	24	16	28
Czech Republic	39	34	30	90	22	32	20	13	10	16	9	6
Estonia	38	34	28	82	25	31	22	28	18	20	16	25
Cyprus	29	21	21	85	22	20	16	55	16	11	11	52
Lithuania	41	35	32	85	27	32	25	26	20	25	18	22
Latvia	40	35	32	77	28	31	25	33	23	26	21	30
Hungary	49	48	40	87	30	44	29	14	16	25	15	9
Malta	34	32	26	80	22	30	19	25	14	19	11	21
Poland	49	43	43	87	29	36	30	12	19	26	19	8
Slovakia	39	34	31	89	20	28	19	14	12	17	11	8
Slovenia	41	30	33	84	24	26	22	32	12	12	10	20
Romania	42			77	24			21	19			19
Bulgaria	41	28	30	79	17	21	15	20	14	16	12	18

Data source: Eurostat

4. Main findings

The Czech Republic show one of the lowest poverty rates of all EU states (10% alongside the Netherlands, compared to 16% in the EU-25). Without pensions and social welfare, 39% of the Czech Republic's population (43% in the EU-25) would live below the poverty line. The social welfare payments reduce the poverty rate by 29 percentage points; while the share of such payments in the GDP is relatively low compared to the other countries (Eurostat reports the proportion of social protection expenditures to the GDP for the Czech Republic at 19.1%, compared to the EU-25 average of 27.4% in 2005). This testifies the effectiveness of the Czech Republic's welfare systems.

IV.

RESEARCH AND DEVELOPMENT, EDUCATION

IV.A HIGHEST LEVEL OF EDUCATION ATTAINED

Michaela Kleňhová

1. Meaning and context of the indicator

Each advanced society is judged by the level of education among its population. A more educated society has better and more skilled human resources and is able to make adequate use of their potential. The population's level of education is in turn reflected in the economic advancement of the entire society and naturally influences the entire society as well as the individuals' personal growth. This is why the population's level of education is one of the crucial factors influencing the advancement of the entire society.

In the international context, the population's education is of great weight, as the countries use it to compare their levels of education with others; such comparisons are applied in school-related statistics and those assessing the development in human resources, mainly by Eurostat and the OECD. At the same time, the level of education may correlate with other indicators describing the level a society's of development and its economic status.

Sustainable development would be impossible without educated people, mainly the young, who are entering or about to enter the labour markets. People without education have limited chances of finding a good job, thus receive sufficient remuneration. For this reason, information concerning a population's level of education is one of the primary indicators describing the quality of human resources within a society.

2. Method of calculation of the indicator

A population's level of education is typically measured as the proportion of the population with a certain level of education attained. A population's level of education depends both on the overall level of education in the society when a certain age group took part in initial schooling and on the possibilities for further education in the society. These factors in turn influence the differing levels of education between populations in different age cohorts. For international comparison and for sustainable development assessment, the indicators assessing the population's level of education focus primarily on the young, who best characterise the development dynamics of the entire population. That is why we also focus on the level of education among the young population between 20 and 24 years of age, that is, population which should have completed initial secondary schooling.

The highest level of education attained is an indicator that is based on the methodology of the Czech Statistical Office and on the methodology of OECD and Eurostat. The highest level of education attained is reported in categories under ISCED-97 (International Standard Classification of Education, employed by Eurostat, UNESCO, OECD and CSO).

In respect of the young population between 20 and 24 years it is reasonable to state that the share of population with at least upper secondary education (ISCED 3 and higher – in the context of the Czech Republic this includes general secondary education, secondary vocational education or training, upper vocational education or training and higher education), which best characterises this population. One of the reasons why it is pointless to indicate the share of population with higher (tertiary) education is that a part of it is still in the educational process and has not yet completed university studies. In respect of older population groups the share of population with tertiary education is also stated.

All data, both in the context of the Czech Republic and in international comparison, are based on the Labour Force Survey, where individual countries contribute data from their national statistics.

Minor methodological differences may occur in international comparisons of upper secondary education. However, the differences at this level of education do not cause major discrepancies in contrast to comparisons of people with tertiary education, where the methodological differences may cause relatively serious problems of data comparability.

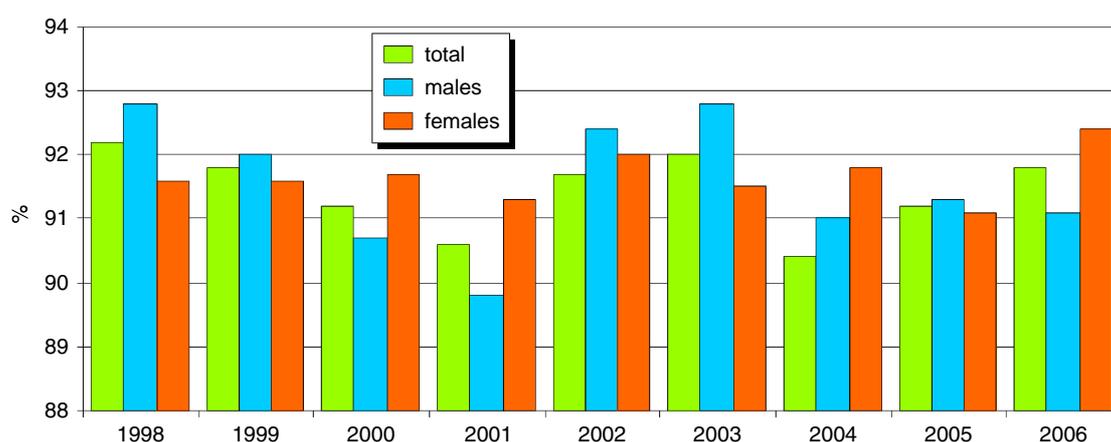
3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The education level of the Czech population in respect of upper secondary education attained is historically relatively high. This is largely due to the high quality of the colleges, which prepare the students both for continuing education and as skilled workers on the labour market.

The following chart describes the level of education in young population between 20 and 24 years of age. Since equal opportunities in education are a crucial issue today, the data are presented by gender.

Chart IV.A.1: Share of population between 20 and 24 years of age with at least upper secondary education, Czech Republic, 1998–2006



Data source: Eurostat

As noted above, the level of upper secondary education among the Czech population is relatively high – the value of the indicator did not drop at any point in the period of time monitored below 90%. Between 1998 and 2006 the proportion of individuals aged 20–24 with at least upper secondary education ranged between 90.6% and 92.0%, while the annual differences are practically negligible.

Nevertheless, the values of around ninety per cent of the population with an upper secondary education do not mean that the remaining ten per cent of the population only completed primary school without continuing education. There are several reasons: part of the population aged 20–24 is still receiving education at secondary school due to postponed primary school enrolment; the phenomenon of changing schools and specialisations has been occurring increasingly in Czech secondary schools in the recent years, resulting in prolonged secondary schooling and leaving secondary schools at an older than standard age. Another reason is that the Czech educational system also comprises programmes for students who attained primary education outside the main education stream completed schools for the mentally handicapped (special schools), or for pupils that quit elementary school before the last grade – these programmes had been categorised as ISCED 2 and thus had not been included under upper secondary education for the purposes of international comparison.

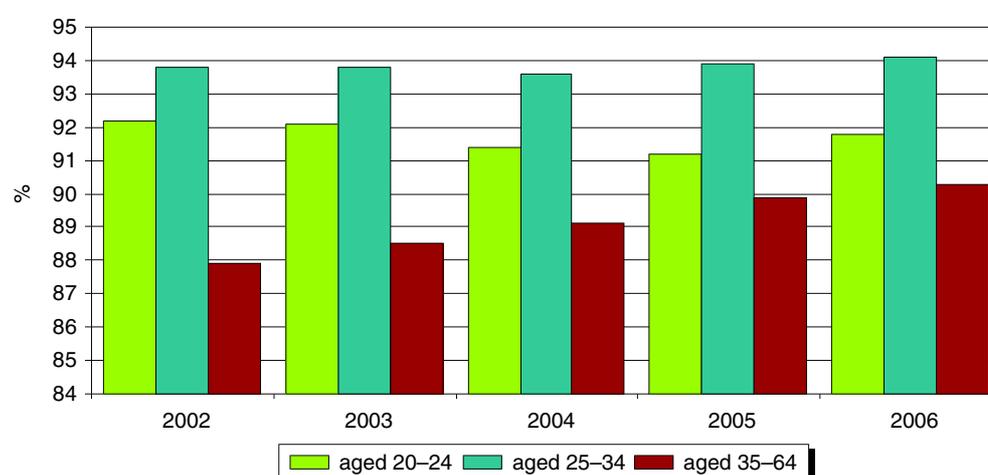
In addition, part of the population who leaves the secondary education system prior to its accomplishment very frequently complete their education at an adult age through distance or evening courses.

From the gender-related point of view, the indicator does not show any great differences. The differences between the proportions of males and females with at least an upper secondary education attained were ± 1.3 p. p. in the years within the study period. As the differences between male and female education levels for individual years oscillate and are not very significant, this is not indicative of any trend or substantial differences between males and females.

The slight variations in the population's level of education in individual years (as the variations are relatively minor, they cannot be referred to as a trend) are not indicative of a continuous trends; rather, were due to changes in the educational system – a progressive increase in the number of children that are granted postponement of commencement of compulsory school attendance and the changing structure of students of secondary schools (with a higher share of students of "longer – GCSE" programmes as opposed to "shorter – non-GCSE" programmes) and, last but not least, to the trend making ground in recent years – extending the duration of secondary school attendance mostly by changing educational programmes.

For comparison, in the next age category (25 to 34 years), the share of individuals with at least upper secondary education is higher and has been in the region of 94% for the last three years, including those who have gradually completed their education level. The growing level of education of the entire society is testified by the values of the indicator for the entire population aged 25–64. In the recent years, the values for this age group have grown increasingly closer to the to the proportion of young people with at least an upper secondary education (the level of education among the population aged 25–64 was only 1.3 p. p. below that of the young population in 2006).

Chart IV.A.2: Share of population in the age categories of 20–24, 25–34 and 25–64 years with at least upper secondary education, Czech Republic, 2002–2006



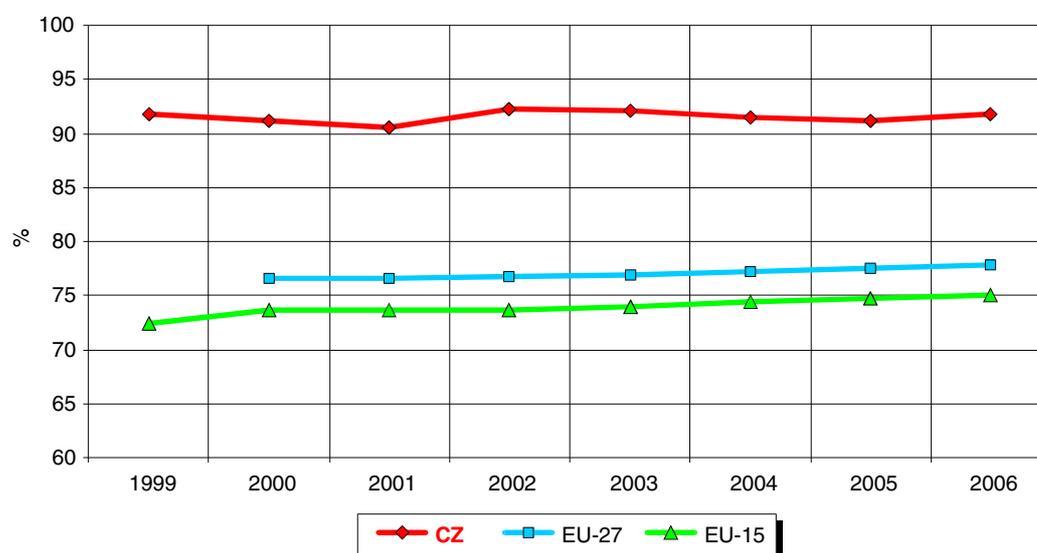
Data source: Czech Statistical Office, Eurostat

b) International comparison

In the international comparison, the Czech Republic holds the first position and achieved very good results in respect of this indicator – a higher share of population with upper secondary education in 2006 was reached only by Poland (91.7%) and Slovakia (91.5%). In some countries, for example Portugal or Malta, less than 50% of population in the age category of 20 to 24 years has upper secondary education.

The chart below shows that, compared with average values in the EU, the Czech Republic achieves highly above-average values. It is also obvious that the EU accession of post-communist countries has favourably affected the value of this indicator, as the share of EU population with at least upper secondary education has increased by approximately 3 percentage points.

Chart IV.A.3: Share of population between 20 and 24 years of age with at least upper secondary education, international comparison, 1999–2006



Data source: Eurostat

The Czech Republic rates Czech Republic exceed the average share of EU-27 population with upper secondary education by nearly 14 percentage points.

4. Main findings

In respect of the proportion of its population aged 20–24 with at least an upper secondary education, the Czech Republic ranks among the leading EU countries, surpassing the EU average by nearly 14 p. p. In this respect, therefore, the level of education is very high in the country, because the values of the indicator have been at that level for a long time. Given the already high values, the proportion cannot be expected to grow significantly in the coming years; rather, the proportion of the population with a tertiary education is expect to grow as the Czech Republic has been lagging behind the advanced EU countries to date.

Compared to other European countries as well as globally, a relatively low proportion of the population of the Czech Republic has a tertiary education (i.e., college or university degree) at present. The proportion of the population with a tertiary education is admittedly increasing, but still does not reach the level of advanced countries. The situation is largely the result of the structuring of the secondary education courses and the fact that it is the secondary schools are largely vocationally oriented, producing people with full secondary vocational qualification who frequently receive good positions through the labour market, thus having no need for extended education. The entrance procedures and capacities of the Czech colleges and universities also play a role. The proportion of the Czech population with a tertiary education is positively affected by the gradually increasing qualification requirements on certain professions.

IV.B RESEARCH & DEVELOPMENT EXPENDITURES

Michaela Kleňhová

1. Meaning and context of the indicator

The scientific and technological evolution of an advanced society is characterised, among other indicators, by the level of research and development and the related expenditures. The aim of the Czech Republic is to secure its international competitiveness as a knowledge society. However, advancement in research and development is impossible without quality human resources – without an educated society. A society that does not invest adequate resources in research and development can take advantage of research results only to limited extent, thus in fact slowing down the advancement of the entire economy. Likewise, a society that does not dispose of an adequately educated and high-quality human potential cannot produce and apply research results adequately.

The development of society, particularly sustainable development, is based on promotion of research and application of its results in practice. At the same time, the development needs to respect its socially sustainable forces. That is why the real state and animosities within a society need to be regularly monitored. Only such systemic surveys, their evaluation and identification of optimum or decisive points and limits, followed by deduction of procedures and social and other measures implemented in order to strengthen the cohesive bonds within the society can achieve social conciliation and sustainable development trends.

Like in other economies, research and development in the Czech Republic is funded from various sources – domestic public and private sources, foreign sources and by the private non-profit sector. The objective of the Czech Republic is to increase the level of funding for research and development from public funds to 1% of the GDP by 2010. In the recent years, the primary goals in research and development have included its interlinkage with practical application of results, also because the Czech Republic shows relatively low level of practical application of research and development results compared to other countries. That in turn reduces the effectiveness of the expenditures, be they from private or public sources.

2. Method of calculation of the indicator

The methodology of calculation of the Research and development expenditures indicator is based on the methodology used by Eurostat. The total gross domestic expenditure on R&D (GERD) comprises business sector expenditure (BERD), higher education sector expenditure (HERD), government sector expenditure (GOVERD) and private non-profit expenditure (PNPERD). In order to enable comparison of research and development expenditures to the overall economic performance in the individual countries, the research and development expenditures are quoted in the statistics as the percentage of the gross domestic product.

The published data are expressed as a percentage of GDP, and are based on data stated annually in a Eurostat report and categorised by the source of financing.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

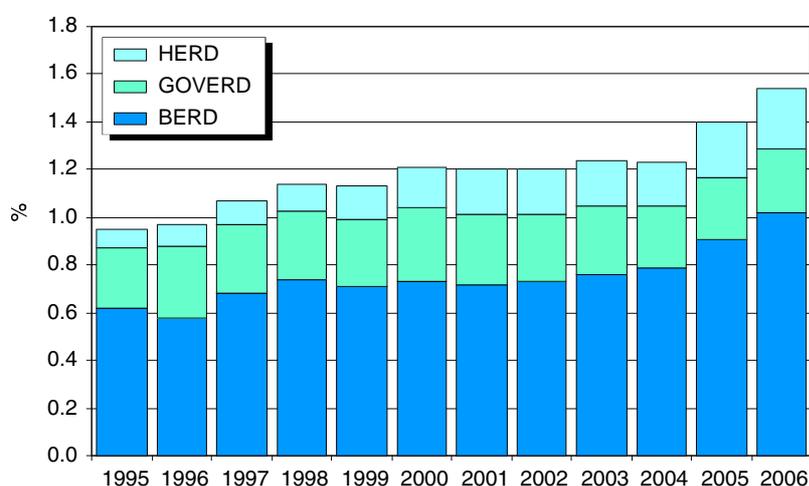
The total research and development expenditures in the Czech Republic have grown by 0.59 p. p. over the last twelve years. However, the trend was not smooth throughout the study period.

The expenditures were increasing between 1995 and 2000 (from 0.95% to 1.21% of the GDP); they virtually stagnated at 1.2–1.25% of the GDP over the four next years. In 2005 and 2006, the research and development expenditures expressed as a percentage of the GDP grew significantly to reach 1.54% of the GDP in 2006.

Neither the constituent expenditures from the different sources nor the total expenditures showed a smooth growth over the study period. Most research and development expenditures came from private, or corporate sources (1.02% of the GDP in 2003). University and state budget expenditures combined amounted to 0.52% of the GDP in 2003 (of which 0.27% and 0.25% of the GDP were state budget and university expenditures, respectively).

Corporate expenditures represented 0.71–1.02% of the GDP in 1999–2005; the greatest annual increase occurred between 2004 and 2005: up by 0.12 p. p. The university expenditures on research and development grew moderately or stagnated over the same period (except 2004, when they decreased by 0.1 p. p.), ranging between 0.14% and 0.25% of the GDP; they peaked in 2006.

Chart IV.B.1: R&D expenditures (% of GDP) by funding source, Czech Republic, 1995–2006



Note: BERD – business enterprise expenditures; GOVERD – government expenditures; HERD – higher education expenditures

Data source: Eurostat

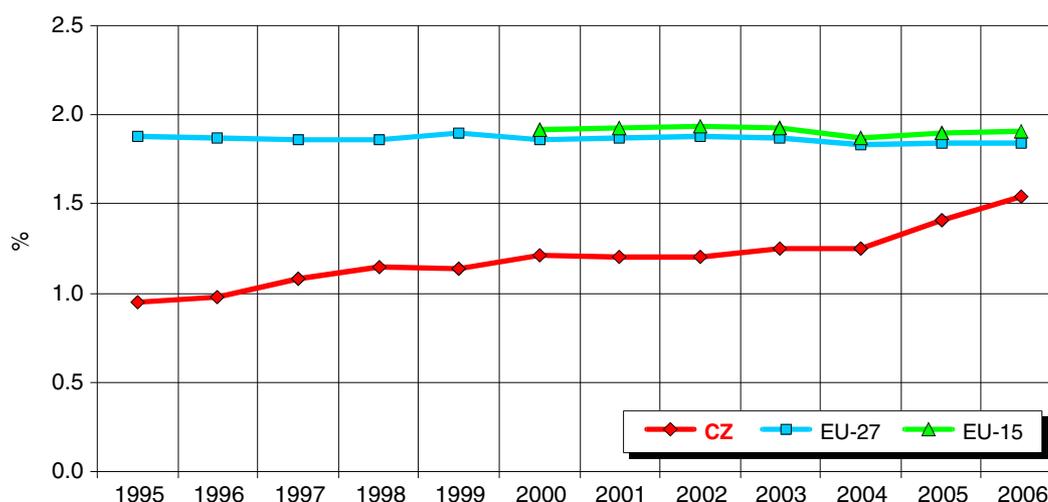
R&D expenditure from the state budget depends directly on the general financial standing of the state and on the aggregate amount of the state budget. Therefore, this category of R&D expenditure strongly reflects any “swings” in the country’s economic situation to a much greater extent. Related to GDP, R&D expenditure from the state budget (net of expenditure of the higher education sector) amounted on aggregate to 0.26–0.31% of all expenditures in 1999–2006. The greatest decrease occurred in 2004, when the expenditures decreased by approx. 0.3 p. p. annually.

b) International comparison

Even though the total research and development expenditures expressed as percentage of the GDP have been growing significantly in the last two years, the Czech Republic still cannot match the European average. Note, however, the virtually all new EU Member States as well as some other countries show lower values than the Czech Republic; only four EU countries achieved expenditures over 2% of the GDP: France (2.12%), Austria (2.45%), Finland (3.75%), and Sweden (3.73%).

While the proportion of R&D expenditure to GDP has been stagnating in the EU in the last three years, a considerable increase was observed in the Czech Republic.

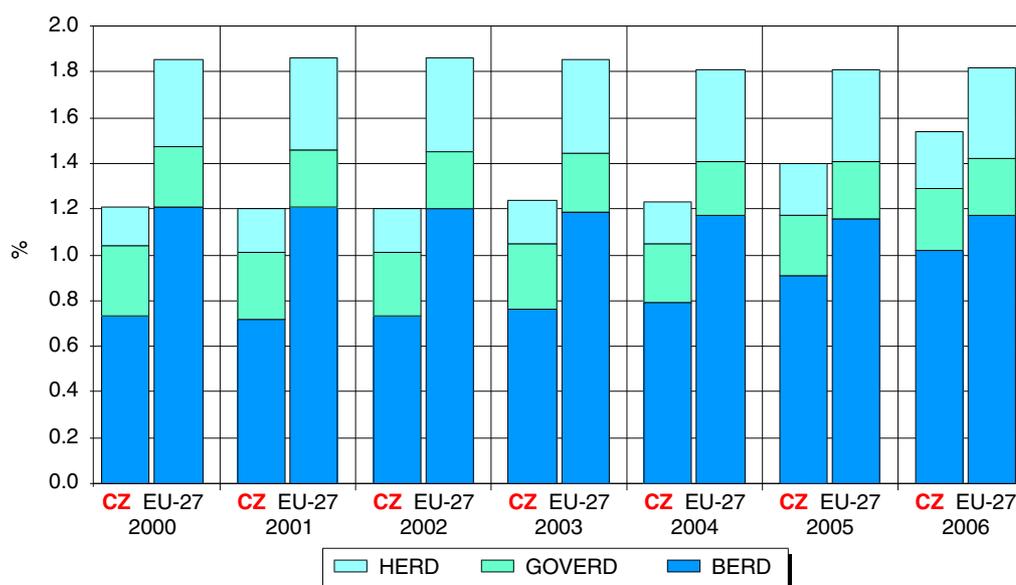
Chart IV.B.2: Expenditure on R&D (% of GDP), international comparison, 1995–2006



Data source: Eurostat

While EU countries expend many more funds on research and development from private sources than the Czech Republic (1.17% of the GDP in the EU-27 compared to 1.02 in the Czech Republic), the Czech Republic's expenditures from the state budget (net of expenditure of the higher education sector) are 0.2 p. p. above the average EU expenditures. Research and development expenditures by Czech universities also lag behind the EU average. Nonetheless, the situation in the Czech Republic should progressively change due to the ever intensifying tendency towards financing science and R&D from private sources as evidenced by the most recent developments.

Chart IV.B.3: Expenditure on R&D by sources of financing (% of GDP), international comparison, 2000–2006



Note: BERD – business enterprise expenditures; GOVERD – government expenditures; HERD – higher education expenditures

Data source: Eurostat

4. Main findings

In the area of funding research and development, the Czech Republic has so far failed to meet the targets it committed itself to. Even though the amount of funds directed to R&D has been growing slowly, it still does not compare to the European and world's advanced countries. Both public and private funding needs boosting; that is the only way we can compare with the advanced countries. At the same time, the proportion of the population with tertiary education needs to increase, because only well-educated people can take good part in research and development.

However, the funding is not the only problem related to research, development and innovation. The relatively low application of research and development results in practice in another significant problem; this leads to lower effectiveness and rate of return of the funds expended on R&D compared to advanced economies. These and other problems related to R&D should be dealt with by the new Reform of the Research, Development and Innovation System, approved by the Czech Government in March 2008.

IV.C ACCESS TO THE INTERNET

Martin Mana

1. Meaning and context of the indicator

Economic performance, competitiveness, effective nature protection, social cohesion, science and education are now all difficult to imagine without using information and communication technologies (ICT)²⁵⁾. Today's global society and economy are largely based on the possibilities offered by the modern ICT. For most people, the basic equipment now comprises not only the mobile telephone²⁶⁾ and a personal computer, but mainly an Internet connection²⁷⁾; the Internet is among the biggest phenomena of today's world.

The goals of this chapter are to provide a basic overview of the state and development in respect of Internet connection among Czech households and Internet use by individuals, as well as to depict the differences in access to the Internet depending on the socio-demographic and economic situation of the individuals.

2. Method of calculation of the indicator

The method of calculation of the indicators is largely defined by the Czech Statistical Office in line with international standards used by Eurostat and the OECD. Surveys performed by the CSO cover the entire width of this issue (comprising the equipment of households, businesses and public administration authorities with selected ICT and, above all, their use by individuals), and are fully harmonised throughout the EU. Additional information on the overall Internet infrastructure (Internet subscribers) come from the Czech Telecommunications Office.

A synoptic information overview of the issues is available on the CSO website at http://czso.cz/csu/redakce.nsf/i/informacni_technologie_pm.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The rate of Internet subscribers in the Czech Republic was below one per cent of the population in 1998. It was nearly 20 per cent in 2007, three quarters of which used a broadband connection. The total numbers of Internet subscribers have grown significantly and the type of connection used has changed enormously since 1998. While dial-up connections, with only limited usefulness of the Internet access, prevailed in the Czech Republic as recently as 2005, the last two years have seen a rapid arrival of technologies offering per-second data transfer rates several times greater, enabling further development and applicability of the Internet.

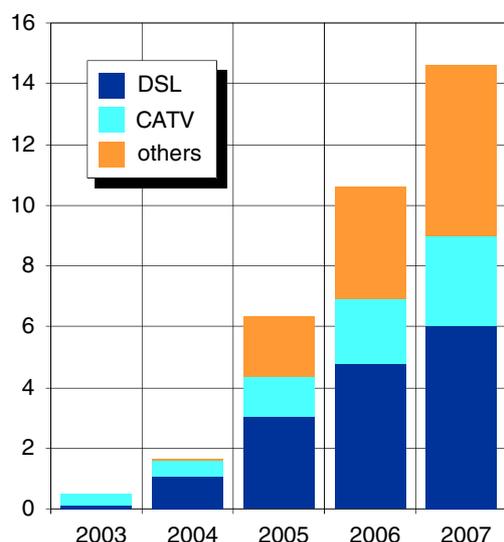
Internet connection providers in the Czech Republic reported nearly 1.5 million subscribers/contractual end customers (natural and legal persons) with contractual broadband Internet access at the end of 2007 (the figure was one third of that in 2005).

²⁵⁾ The term information and communication technologies (ICT) typically comprises technologies, systems, activities and processes used for electronic displaying, processing, storage and transfer of information and data.

²⁶⁾ There were 3.3 billion active SIM cards and 86% of the Czech population aged 16+ were using a mobile telephone at the end of 2007, i.e., 26 years after the first mobile network was put into operation in Sweden and Norway.

²⁷⁾ An estimated 360 million people were using the Internet at the end of 2000; it is 1.5 billion now (in 2008; i.e., over one fifth of the world's population).

Chart IV.C.1: Broadband Internet subscribers, percentage of population, by connection type, Czech Republic, 2003–2007



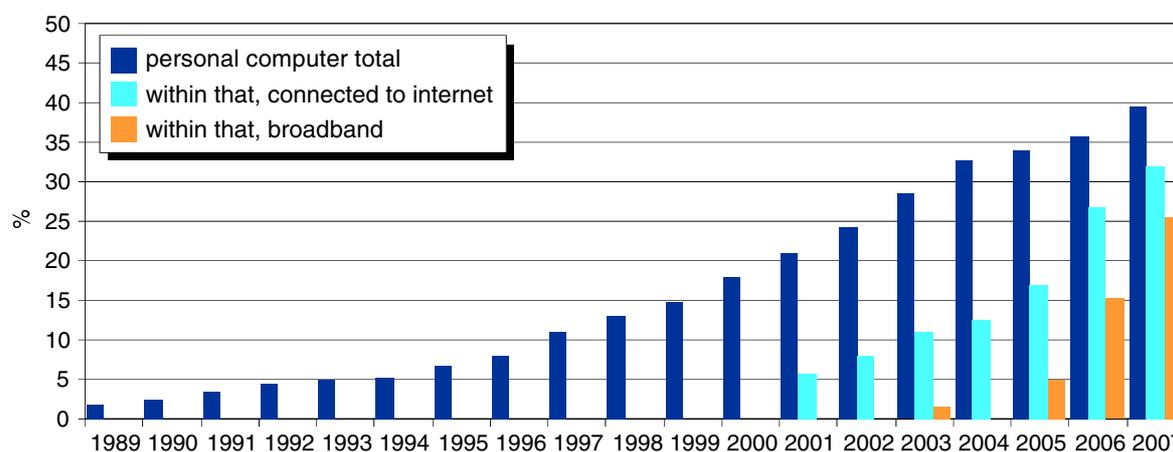
Note: CATV – cable television,
DSL – digital subscriber line

Data source: OECD

The proportion of Czech households equipped by a personal computer has been growing and can be expected to continue growing. Only 2% of households had a personal computer in 1989. A computer was still an exception in a Czech household in the late 1990s (14.7% of households owned a PC in 1999). An average of four in ten households owned a computer in 2007 (1.7 million households, nearly 450 thousand more than in 2005). Only a quarter of the households owning a computer were connected to the Internet in 2001; it was 80% six years later. Four out of ten households equipped with a personal computer reported the Internet access among the main reasons for its purchase in 2005.

In 2007 (second quarter), nearly one third (32%) of all households (1.35 million households) had Internet in 2007; it was less than a fifth (780 thousand households) in 2005; only 15% in 2003; and only 6% in 2001. The proportion of households enjoying a broadband Internet connection also grew significantly between 2003 and 2007). While only one in ten households connected to the Internet had a broadband link in 2003, it was eight out of ten in 2007.

Chart IV.C.2: Proportion of households with a personal computer at home, Czech Republic, 1989–2007



Data source: Czech Statistical Office

The greatest difference in household Internet connection can be seen in dependence on the presence of children: 55% of households with children were connected to the Internet in 2007 as opposed to only 19% of childless ones.

The use of the mobile telephone is absolutely taken for granted by Czech individuals: 85% of all persons older than 16 years had one in 2007. Over one half (51%) of the Czech population aged 16+ (4.4 million individuals) used a personal computer in 2007. However, not all computer users are

Chart IV.C.3: Proportion of households with and without children with an Internet connection, Czech Republic, 2007

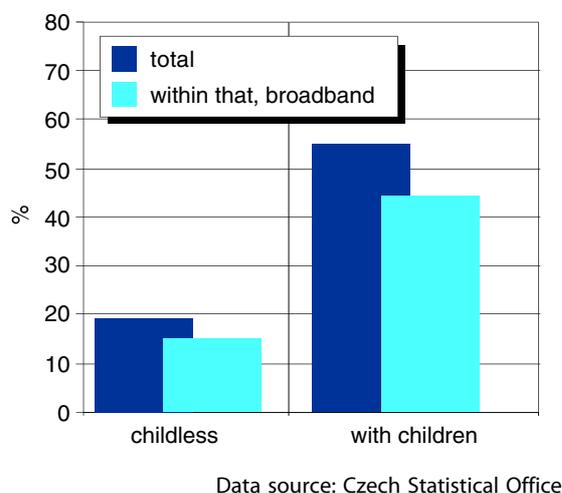
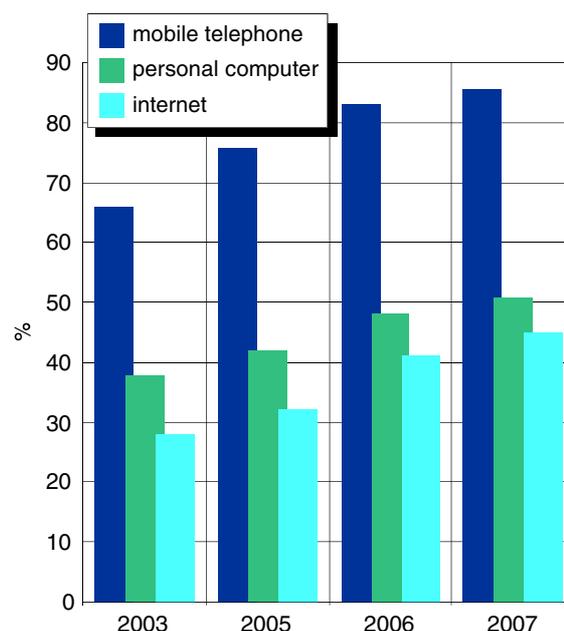


Chart IV.C.4: ICT users, Czech Republic, 2003, 2005–2007



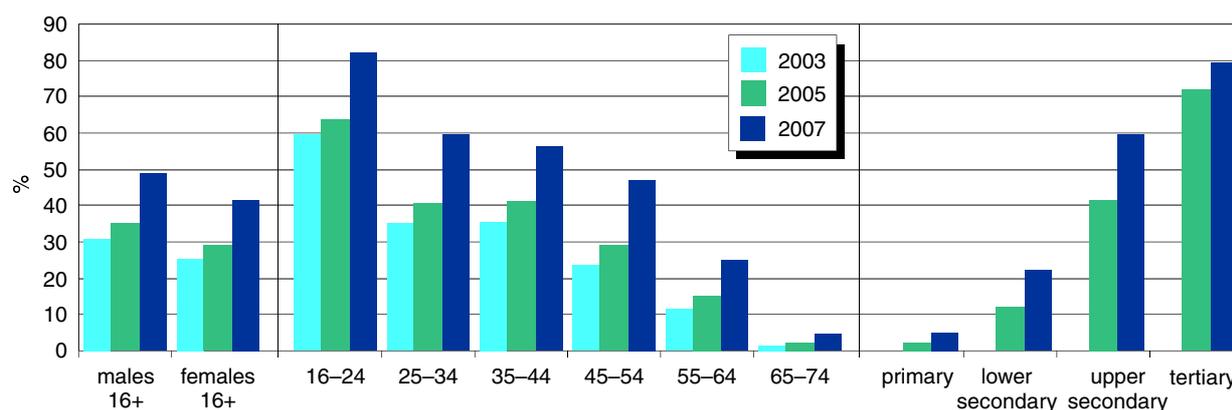
Note: The proportion of users aged 16+ to the total number of individuals in the same age group.

Data source: Czech Statistical Office

Internet users; the latter were nearly 6 p. p. fewer in 2007 (3.9 million individuals aged 16+). 28% of Czech individuals used the Internet in 2003; 45% did less than four years later. 86% of the Internet users (3.38 mln individuals)

are regular users, working with the Internet at least once a week (converted to the total population, this means that 39% of the population aged 16+ were regular Internet users in 2007). Half the Internet users used the Internet every day or almost every day (compared to 30% in 2005). The Internet users mostly used the Internet at home (76%), at work (42%) and at school (19%) in 2007.

Chart IV.C.5: Internet users by socio-demographic characteristics, Czech Republic, 2003, 2005, 2007



Note: The proportion of users aged 16+ to the total number of individuals in the given socio-demographic group; education for the age group 25+.

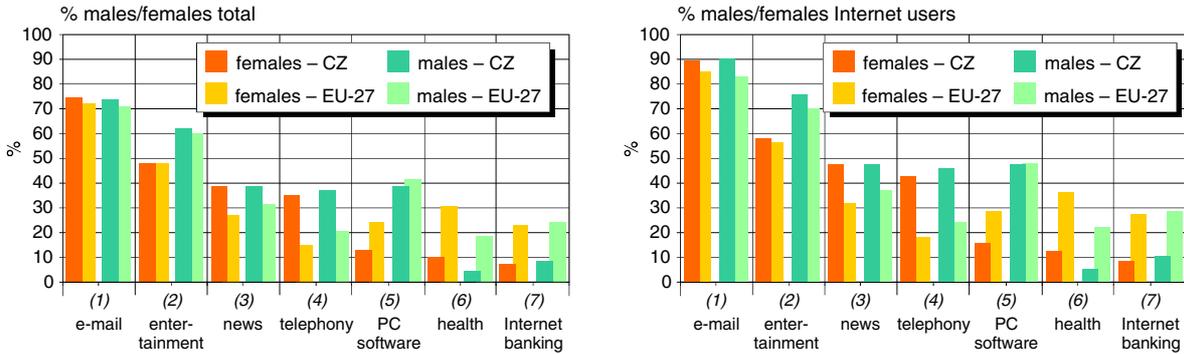
Data source: Czech Statistical Office

Significant differences exist in respect of gender, age and education of the study population of individuals both for the computer and the Internet. The Internet is most popular among students (93% of students are Internet users), young people aged 16–24 (82%), and individuals with a university degree (79%). Males also use the Internet more frequently than females, particularly among the

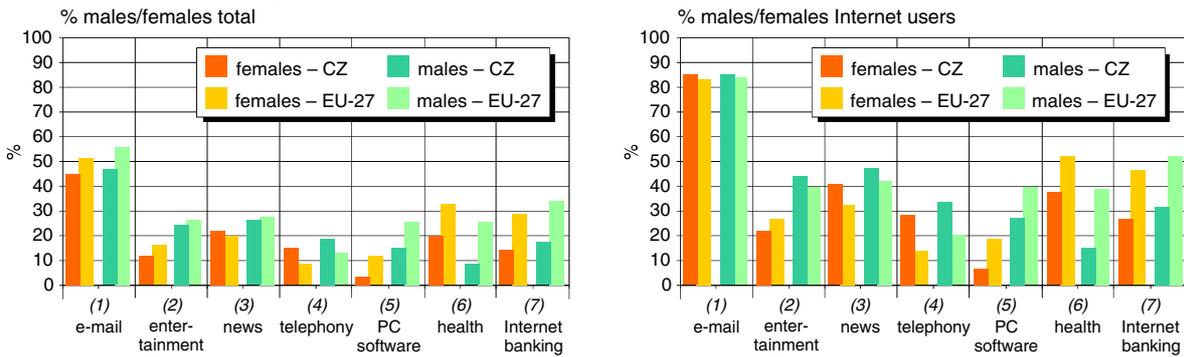
older generation. In 2007, 55% of persons (mostly females) on maternity or parental leave used the Internet. The Internet is least used by individuals older than 65 years and individuals with lower education (primary and lower secondary). The vast majority of the Internet users are regular users, meaning they use the Internet at least once a week. The proportion of Internet users in the population is higher in towns and cities than in the countryside.

Chart IV.C.6: Selected activities of individuals while on the Internet, by gender and age, Czech Republic, 2007

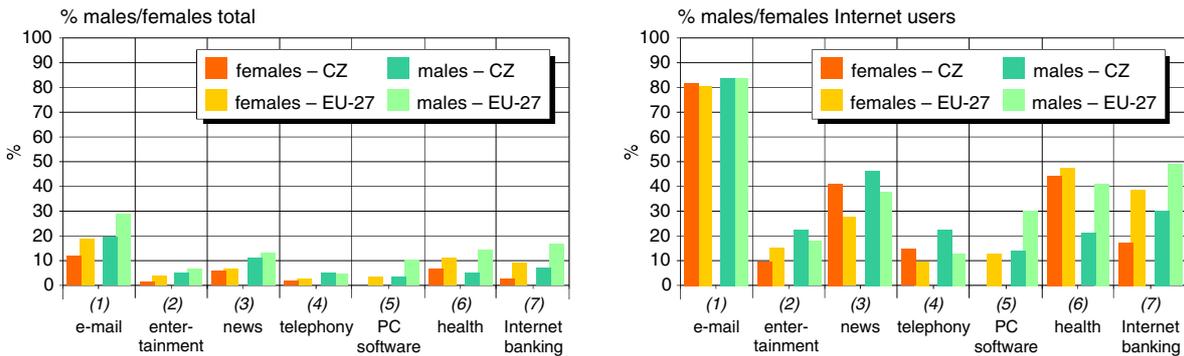
a) males and females aged 16–24



b) males and females aged 25–54



c) males and females aged 55–74



- (1) E-mail
- (2) Playing or downloading of games, images, films and music
- (3) Reading of on-line news, news servers, web newspapers and magazines
- (4) Internet telephony
- (5) Downloading of computer programs
- (6) Searching for health information
- (7) Internet banking

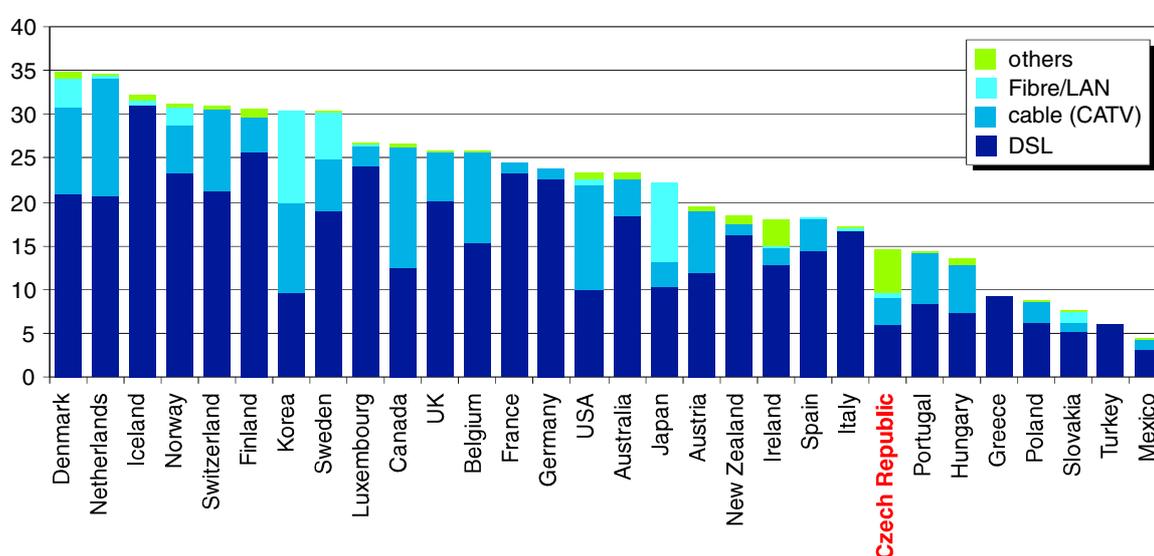
Data source: Czech Statistical Office, Eurostat

Besides the proportion of Internet users, the type of their activities while on the Internet is important information.

b) International comparison

In the international comparison among OECD countries, Denmark shows the highest rate of broadband Internet connection: there were 35 broadband subscribers per 100 inhabitants in 2007. The Netherlands reported nearly identical figures. With its fewer than 15 connections per 100 inhabitants, the Czech Republic was in the worse half among the studied countries (the OECD average was 20 broadband connections per 100 inhabitants). Slovakia and Turkey reported the lowest rates of all OECD countries (7.7 and 5.9 respectively). In all studied countries except the Czech Republic, Korea, Canada and Japan, an xDSL line represented over one half of the broadband connections in 2007.

Chart IV.C.7: Numbers of broadband Internet subscribers per 100 inhabitants by type of connection, international comparison, 2007

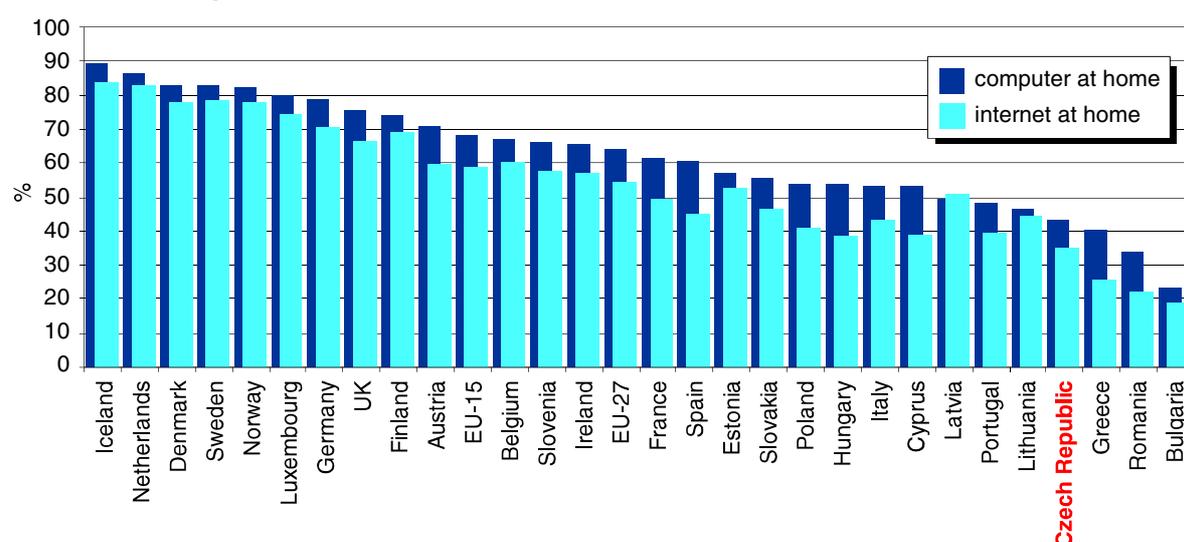


Note: DSL – digital subscriber line, CATV – cable television, Fibre/LAN – fibre local area network

Data source: OECD

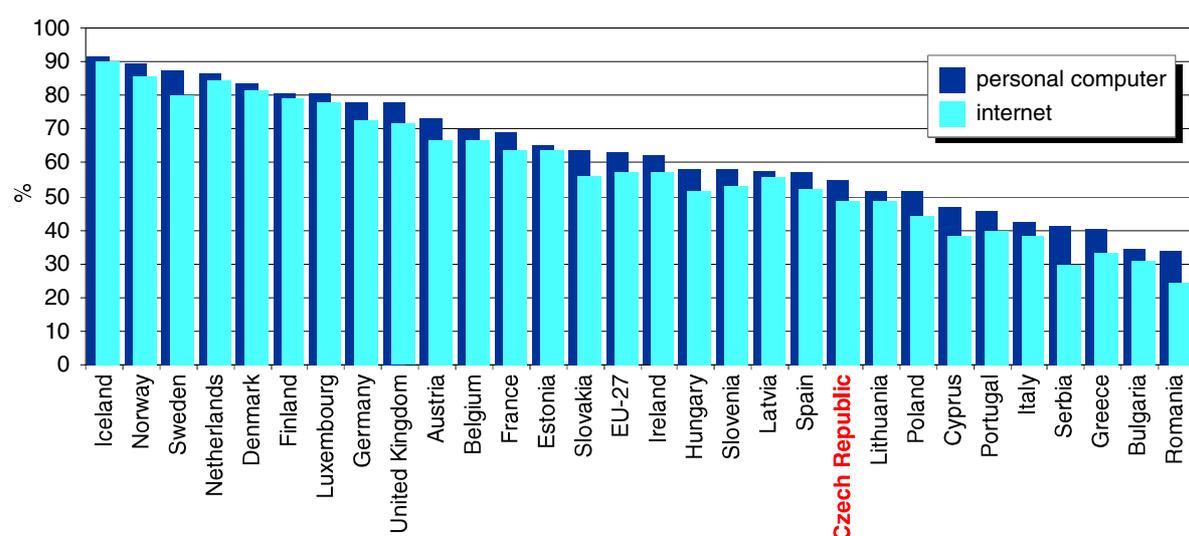
The international comparison suggests that the Czech Republic is still well below the EU-27 average as concerns the level of equipment of households with information technologies.

The international comparison shows that the proportion of both computer and Internet users among the adult population in the Czech Republic is below the EU-27 average. The Czech Republic is well below Western and Northern European countries in both the indicators. The Scandinavian countries lead the chart of both computer and Internet users among the population, with up to 90%. The Netherlands, Germany and United Kingdom are also doing very well in this respect. Greece, Bulgaria and Romania have the lowest proportion of Internet and computer users: about one third of the population. The figures by the age group are much more interesting than those for the entire adult population, and show why the Czech Republic lags behind most of advanced European countries in terms of Internet users.

Chart IV.C.8: Proportion of households with a computer and Internet connection, international comparison, 2007


Note: Proportion of households with at least one member aged 16–74.

Data source: Eurostat

Chart IV.C.9: Proportion of computer and internet users, international comparison, 2007


Note: The proportion of users aged 16–74 to the total number of individuals in the same age group.

Data source: Eurostat

4. Main findings

The Czech Republic had under one Internet subscriber per 100 inhabitants in 1998. The proportion was nearly 20 subscribers per 100 inhabitants in 2007; three quarters of them used a broadband connection. The proportion of Czech households equipped with a personal computer shows an increasing trend; it can be expected to continue in future. Four out of ten households owned a computer in 2007. Only one quarter of households with a computer were connected to the Internet in 2001; it was 80% six years later. The use of the mobile telephone is absolutely taken for granted by Czech individuals: 85% of all persons older than 16 years had one in 2007.

In spite of the growth in the recent years, the international comparison shows that the proportion of both computer and Internet users among the adult Czech population is still below the EU-27 average. The Czech Republic is thus well below Western and Northern European countries in both the indicators.

V.

EUROPEAN AND INTERNATIONAL CONTEXT

V.A TOTAL INTERNATIONAL DEVELOPMENT CO-OPERATION

Vladimír Hejduk and Karel Mroček

1. Meaning and context of the indicator

The involvement of a country in international development co-operation characterises its preparedness to assist in dealing with global issues faced by the humanity and in establishing sustainable development in accordance with programmes and commitments stemming from UN documents (above all, the multiannual international work schedule of UN Committee for Sustainable Development until 2017), and the conclusions of major UN international conferences regarding this issue (Rio and Johannesburg). The Czech Republic, as a member state of the EU has participated in the preparation of the Revised EU Strategy for Sustainable Development, and will reflect its conclusions in its own sustainable development programmes. As a member state of the OECD, the Czech Republic has the status of an observer in the OECD Development Assistance Committee (DAC), which plays the role of a key co-ordinator of global major providers of development assistance. The level of involvement of the country in the international development co-operation is quantified by means of the indicator Official development assistance related to Gross national income (ODA/GNI). Although this indicator is synthetic, thus unable of capturing the entire scope of problems connected to the priorities of the donor and beneficiary countries, choice of projects, their execution and cost efficiency, that is, the entire development aid dimension, it is clearly defined and is broadly internationally recognised as the key parameter (for comparison and evaluation) of developed (donor) economies for the purposes of development assistance.

Based on the type of the recipient of funds, the official development assistance provided by the Czech Republic is characterised as bilateral assistance (provided directly to the developing country) or multilateral (provided via the relevant international organisation and its development programmes). Of the total amount of ODA provided by the Czech Republic in 2006 and 2007, bilateral assistance (50%) was equal to multilateral assistance (50%). Including financial contributions by the Czech Republic to relevant international institutions (in line with OECD/DAC reporting), and particularly with respect to the obligatory contributions to the EU budget, the share of multilateral assistance will exceed 50% of the total Czech IDC in the coming years.

The indicator of the total international development assistance describes the degree of involvement of a donor country in the external (global) dimension of sustainable development. It is not immediately connected with the other indicators (themes), describing the status of trends in the sustainability of a country's domestic development. The value of the indicator is strongly dependent on political decision-making and the amount of resources dedicated to ODA from the state budget as well as the amount of payments (contributions) made toward development purposes in international organisations prescribed for the Czech Republic pursuant to its commitments (EU, UN, etc.).

2. Method of calculation of the indicator

According to OECD methodology, Total international development co-operation (IDC) is composed of: development projects, humanitarian aid, aid to refugees, discharge from debt, payments to the United Nations and other international organisations, payments to international financial institutions and payments to the EU, whether in the full amount of the contribution to the relevant organisation or in a prorated amount characterising the developmental dimension of the relevant international organisation.

In accordance with international standards, IDC involves assistance provided to developing countries (referred to as ODA – official development assistance) and assistance to transforming countries (referred to as OA – official assistance). Due to the prevailing importance of ODA and due also to the fact that many countries are completing the transformation process, OA is no longer reflected in statistics and is integrated in ODA. Thus, the proportionate indicator ODA/GNI serves as the aggregate indicator of IDC.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The IDC of the Czech Republic has shown a continuously increasing trend in recent years. This trend has been in line with the “Concept of the Czech Republic International Development Assistance Programme for the 2002–2007 period” and the ensuing role of an emerging donor. Motivation to increase IDC also follows from the Czech Republic’s membership of the EU and from the obligations assumed in this respect within the European Union.

Table V.A.1: Amounts expended in IDC during the 2002–2004 period and an estimate for 2005–2008 (in million CZK), Czech Republic, 2006–2007, and a projection for 2008–2011

	2006	2007	2008	2009	2010	2011
ODA	3,504	3,628	3,711	3,835	3,604	3,715
ODA/GDI (%)	0.12	0.11	0.10	0.10	0.09	0.08

Data source: OECD/DAC

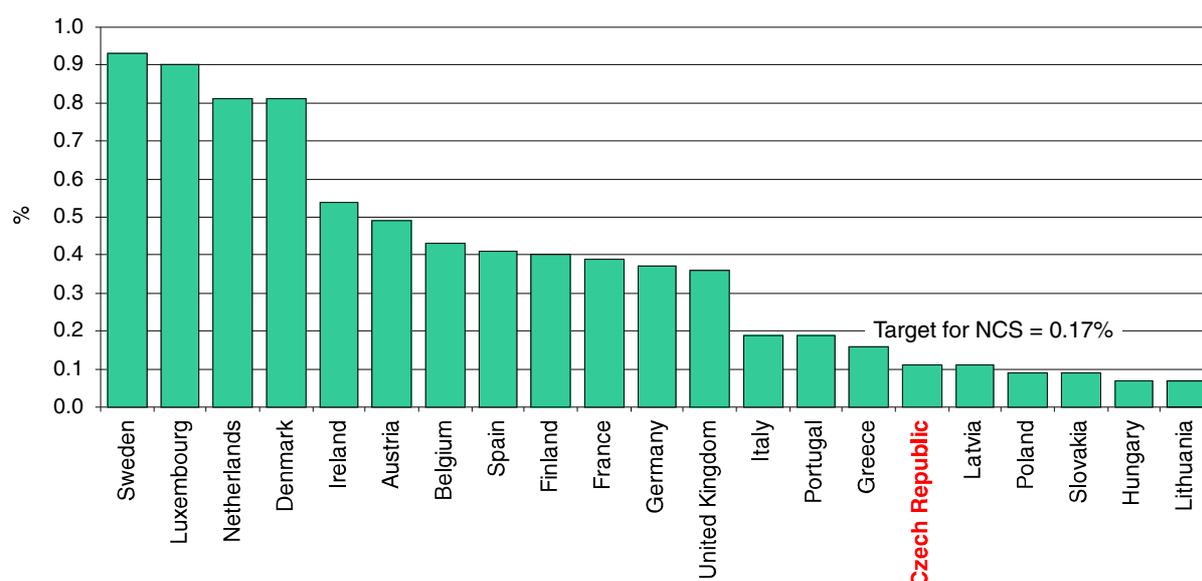
The Czech Republic’s official development assistance in 2007 amounted to CZK 3.628 billion, which corresponds approximately to 0.10% of GNI. The Czech Republic as an EU member state is subject to the conclusions of the European Council (June 2005), defining new targets concerning the amount of ODA. New member states should “endeavour to increase development assistance to the level of 0.17% of gross national income by 2010 and then to 0.33% of gross national income by 2015”.

Although this is a very ambitious target, it is derived from the capacities of the donor countries rather than the needs connected to the realisation of the Millennium Development Goals. Unfortunately, as shown in the table, the current considerations of the medium-term budgetary perspective have not reflected the above commitments, and conditions for meeting the targets have not been set.

b) International comparison

Since 2003, the Czech Republic’s ODA to GNI rate has exceeded 0.10%, which is the highest level of all emerging donors (for example, Slovakia achieved 0.09%).

The charts below, taken from OECD statistics, indicate the ODA/GNI rate for leading EU Member States in 2007.

Chart V.A.1: Level of ODA/GDI, international comparison, 2007


Data source: OECD/DAC

4. Main findings

International development aid is one of the prominent priorities of the Czech foreign policy, and its international importance is going to grow with the attention paid by the international community to the execution of the Millennium Development Goals, adopted by the UN in 2000. Considering its economic potential, however, the goal of 0.33% proportion of official development aid to gross national income (DAC OECD average) is rather removed for the Czech Republic. As shown in Table V.A.1 on the desirable allocation of ODA within the Czech national budget above, the mere fulfilment of Europe's commitment to 'strive to attain... 0.17%' by the year 2010 would mean a considerable increase in the ODA compared to the current rate.

The position of the Czech Republic among the emerging donors outside of the DAC must be expected to change. They have presented their reporting for 2007 and it shows that they have virtually reached the level of the Czech Republic in 2007 (Poland and Slovakia 0.09% of the GNI). Without real money, it will therefore not be possible for the Czech Republic and other countries to crown their "efforts" to achieve the value of 0.17% in this indicator.

The fulfilment of the Czech Republic's international commitments regarding IDA is going to require continuous attention by the Government, the Ministry of Foreign Affairs, and all the executive departments, including the business sector.

VI.

GOOD GOVERNANCE

VI.A CORRUPTION PERCEPTIONS INDEX

Stanislav Beránek

1. Meaning and context of the indicator

Corruption, or corrupt practices, is a negative phenomenon that can be traced in all economies throughout the world. It can be characterised as a specific relation between two or more subjects (whether individuals or institutions or both), one of which offers and provides a consideration for any unjustified advantage or promise of such advantage, and the other demands and accepts the consideration for such unjustified advantage. The consideration need not always be in cash, but may also consist of material benefits, information, action or inactivity, etc. The danger of corruption lies in its capability of undermining the principals underlying competition, democracy and other values, such as the rule of law, unrestricted access to information, and civil and professional virtues. Corruption may cause erosion of trust in the legitimacy of existing government institutions and may contribute to the formation of a parallel structure of power with potential close ties with organised crime.

As the consequences of corrupt practices are reflected most in the administration of public affairs, the fight against corruption has become one of the priorities of the Czech government. Developments in the field of corruption and the achievements in combating corruption are thus one of the appropriate indicators of the development and ripening of democracy in the Czech Republic. For this reasons, the authors of this Report decided to include this factor among the other indicators.

For this purpose, the Corruption Perceptions Index (CPI) was selected; it has been published annually by Transparency International since 1995. CPI is an extremely complex indicator compiled on the basis of numerous surveys carried out by a number of agencies (14 surveys by 12 independent agencies in 2007²⁸). CPI measures the level of corruption (in 2007 in 180 countries of the world) as perceived by entrepreneurs, analysts and risk managers. It is thus based on purely subjective data and may not correspond with the actual state of corruption in a particular country, which, however, cannot at present be determined reliably. Nonetheless, CPI is a valuable indicator, recognised and used globally.

As the Progress Report comprises primarily the sources of empirical, “hard” data, it may appear that CPI and other “soft” indicators are somewhat inorganically incorporated into the document. The authors of the Progress Report nonetheless intended to provide, using available information, the whole picture of all aspects of the developments in the Czech Republic, and are convinced that CPI is suitable for this purpose. Nevertheless an indicator will be designed in the future that will use more objective rather than subjective data to grasp the problem of corruption.

²⁸) ADB: Asian Development Bank – Country Performance Assessment Ratings
 AFDB: African Development Bank – Country Policy and Institutional Assessments
 BTI: Bertelsmann Foundation – Bertelsmann Transformation Index
 CPIA: World Bank (IDA and IBRD) – Country Policy and Institutional Assessment
 EIU: Economist Intelligence Unit – Country Risk Service and Country Forecast
 FH: Freedom House – Nations in Transit
 GI: Global Insight – Country Risk Ratings
 IMD: IMD International – World Competitiveness Report
 MIG: Merchant International Group – Grey Area Dynamics
 PERC: Political & Economic Risk Consultancy – Asian Intelligence Newsletter
 UNECA: UN Economic Commission for Africa – African Governance Report
 WEF: World Economic Forum – Global Competitiveness Report

2. Method of calculation of the indicator

The Corruption Perceptions Index is a composite index compiled on the basis of several corruption-related surveys. These surveys use a uniform definition of corruption: "Corruption is the abuse of public power for private benefit, the brining of public officials, or embezzlement of public funds", but do not use a uniform methodology. In order for a source indicator to be included in CPI, it must meet three criteria: 1. Compares several countries; 2. Measures the overall rate of corruption (frequency and/or total amount expended in corruption by those corrupting); 3. Is not older than 3 years. The aim of CPI is to provide data on the general perception of corruption in the countries involved.

CPI for 2007 reflects the findings of 14 various surveys conducted by twelve independent institutions. All input indicators are standardised on a scale between zero and ten, where a higher number means a lower rate of corruption. The CPI level is calculated as the arithmetic average of these indicators.

CPI for 2007 offers a comparison of 180 countries. To achieve maximum objectivity of the index, only those countries that were included in at least three separate surveys were ranked.

All surveys exclusively include a subjective type of data obtained from answers of entrepreneurs, analysts and risk managers. In principle, there are three categories of surveys depending on what respondents are approached. 1. surveys approaching non-residents – experts in developed countries; 2. surveys approaching non-residents – managers in developing countries; 3. surveys approaching residents – local and foreign managers. Data obtained from all three types of surveys correlate well with each other despite the different categories of respondents and different methodologies.

In general, the weakness of CPI is that it is based on subjective data. Furthermore, it is a composite index, whose drawback is that it incorporates different inputs based on mutually incompatible methodologies. This may be reflected in a broader scatter of results, which may not be sufficiently statistically robust. CPI methodology develops progressively and improves rapidly as its significance increases.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The year-on-year changes in CPI levels are the result not only of changing perceptions of corruption in individual countries, but also of the changing range of resources and methodologies used. The use of certain outdated resources in CPI is often discontinued and replaced by new resources, which disrupts the consistence of the selection. The primary purpose of CPI is to provide a yearly summary of the opinions of individual respondents rather than to monitor the trend of CPI. The trend can be reliably monitored only in respect of some countries where the resources remain the same year on year. In the Czech Republic, it is possible in this way to see a moderate improvement in 2007 compared with 2006. The Czech Republic has achieved an index of 5.2 (on a scale of 10–1, where 10 means a country with nearly no corruption, while 0 is a country with a high level of corruption). The Czech Republic has improved by 0.5 point compared to 2006.

The table below shows development in the Czech Republic after 1998.

Table VI.A.1: Corruption Perceptions Index, Czech Republic, 1998–2007

Year	Czech Republic CPI ranking	Divergence/range	Position	Number of countries surveyed	Surveys used
2007	5.2	0.8	41	180	8
2006	4.8	4.6–5.2	46	163	8
2005	4.3	3.7–5.1	47	159	16
2004	4.2	3.7–4.9	51	145	11
2003	3.9	0.9	54	133	12
2002	3.7	0.8	52	102	10
2001	3.9	0.9	47	91	10
2000	4.3	0.9	42	90	10
1999	4.6	0.8	39	99	12
1998	4.8	0.8	37	85	9

Data source: Transparency International

Between 1998 and 2002 CPI indicated a gradually worsening rate of corruption in the Czech Republic. Since 2003 the CPI trend has showed an improving tendency. This reliably determined improvement in the index may be attributed to the Czech Republic's accession to the European Union, which improved the country's credit in the eyes of respondents in the surveys in connection with the free movement of persons, goods, services and capital and the reliance on the transposition and implementation of *acquis communautaire*.

b) International comparison

In the ranking, including 180 countries in 2007, the Czech Republic shares the 41st place with Italy. Both countries achieved an index of 5.2 (on a scale of 10 to 0, where 10 means a country practically without corruption and 0 is for a country with a high level of corruption), while the global CPI average is 4.0 for 2007. The ranking of the Czech Republic is still not enviable despite the moderate improvement.

Not only have the majority of European countries, USA and Australia ranked higher, but so have many states of Asia (Singapore, Hong Kong, Japan, Israel, Qatar, etc.), Africa (Botswana) and South America (Chile, Uruguay). The Czech Republic is followed predominantly by countries of the less-developed regions of Africa (Namibia, Sudan, Egypt, Ghana, etc.), Asia (Bangladesh, Syria, Pakistan, the Philippines, etc.), South America (Colombia, Brazil, Peru, Paraguay, etc.) and the post-communist bloc (Belarus, Armenia, Azerbaijan, Georgia, etc.). Slovenia and Estonia are the best among the post-communist countries, occupying the 27th and 28th positions, respectively.

Among the EU Member States, the Czech Republic performs among the worst. While the ranking of the Czech Republic has stagnated for some time, or improved only moderately, some other countries that acceded to the EU at the same time have shown continuous improvement recently. In the regional ranking²⁹⁾ (encompassing the EU including the newly acceded, Iceland, Norway, and Switzerland), the Czech Republic, awarded the mark 5.2, shares places 22–23 with Italy, lagging behind such countries as Estonia (6.5), Slovenia (6.6), and Hungary (5.3). In the EU context, where the average CPI is 6.8, the country's ranking is below the average. Worse CPI in the regional ranking are reported for

²⁹⁾ Countries in the region surveyed: Denmark – 9,4; Finland – 9,4; Sweden – 9,3; Island – 9,2; Netherlands – 9,0; Switzerland – 9,0; Norway – 8,7; Luxembourg – 8,4; UK – 8,4; Austria – 8,1; Germany – 7,8; Ireland – 7,5; France – 7,3; Belgium – 7,1; Spain – 6,7; Slovenia – 6,6; Estonia – 6,5; Portugal – 6,5; Malta – 5,8; Cyprus – 5,3; Hungary – 5,3; Czech Republic – 5,2; Italy – 5,2; Slovakia – 4,9; Latvia – 4,8; Lithuania – 4,8; Greece – 4,6; Poland – 4,2; Bulgaria – 4,1; Romania – 3,7.

Slovakia (4.9), Latvia (4.8), Lithuania (4.8), Greece (4.6), Poland (4.2), Bulgaria (4.1), and Romania (3.7). Table VI.A.2 below shows the ranking of EU Member States, Iceland, Norway, and Switzerland and their CPI levels. Table VI.A.3 further includes the ranking of the 180 countries surveyed in 2007.

Table VI.A.2: Corruption Perceptions Index, international comparison – EU Member States, Iceland, Norway, Switzerland, 2007

Ranking within region	Ranking by CPI	Country/territory	CPI 2007 value	Surveys used	Standard deviation	Highest – lowest value	Range (credibility interval)
1	1	Denmark	9.4	6	0.3	8.9–9.8	9.2–9.6
1	1	Finland	9.4	6	0.3	9.1–9.8	9.2–9.6
2	4	Sweden	9.3	6	0.2	9.0–9.5	9.1–9.4
3	6	Iceland	9.2	6	1.0	7.1–9.8	8.3–9.6
4	7	Netherlands	9.0	6	0.3	8.7–9.5	8.8–9.2
4	7	Switzerland	9.0	6	0.3	8.5–9.5	8.8–9.2
6	9	Norway	8.7	6	0.9	7.1–9.5	8.0–9.2
7	12	Luxembourg	8.4	5	0.7	7.1–8.9	7.7–8.7
7	12	UK	8.4	6	0.8	7.1–9.5	7.9–8.9
8	15	Austria	8.1	6	0.9	7.1–9.1	7.5–8.7
9	16	Germany	7.8	6	0.9	7.1–9.2	7.3–8.4
10	17	Ireland	7.5	6	0.4	7.1–7.9	7.3–7.7
11	19	France	7.3	6	0.8	6.3–8.6	6.9–7.8
12	21	Belgium	7.1	6	0.1	7.0–7.2	7.1–7.1
13	25	Spain	6.7	6	0.6	5.6–7.1	6.2–7.0
14	27	Slovenia	6.6	8	0.7	5.1–7.6	6.1–6.9
15	28	Estonia	6.5	8	0.8	5.2–7.6	6.0–7.0
15	28	Portugal	6.5	6	1.1	5.1–7.6	5.8–7.2
16	33	Malta	5.8	4	0.6	5.2–6.6	5.3–6.2
17	39	Cyprus	5.3	3	0.3	5.1–5.6	5.1–5.5
17	39	Hungary	5.3	8	0.5	4.2–5.8	4.9–5.5
18	41	Czech Republic	5.2	8	0.8	4.2–7.1	4.9–5.8
18	41	Italy	5.2	6	0.8	4.3–6.3	4.7–5.7
19	49	Slovakia	4.9	8	0.6	3.9–5.6	4.5–5.2
20	51	Latvia	4.8	6	0.6	3.8–5.3	4.4–5.1
21	51	Lithuania	4.8	7	0.8	3.9–6.2	4.4–5.3
22	56	Greece	4.6	6	0.5	3.8–5.2	4.3–5.0
23	61	Poland	4.2	8	1.2	2.7–5.6	3.6–4.9
24	64	Bulgaria	4.1	8	1.1	2.7–5.8	3.6–4.8
25	69	Romania	3.7	8	0.7	2.8–4.9	3.4–4.1

Data source: Transparency International

Table VI.A.3: Corruption Perceptions Index, international comparison (selected countries), 2007

Ranking by CPI*	Country/territory	CPI 2007 value	Surveys used**	Highest – lowest value***
1	Denmark	9.4	6	8.9–9.8
1	New Zealand	9.4	6	8.9–9.8
9	Canada	8.7	6	7.6–9.5
11	Australia	8.6	8	7.2–9.5
12	UK	8.4	6	7.1–9.5
16	Germany	7.8	6	7.1–9.2
17	Japan	7.5	8	6.3–9.0
19	France	7.3	6	6.3–8.6
20	USA	7.2	8	5.1–8.6
22	Chile	7.0	7	5.6–7.7
30	Israel	6.1	6	5.2–7.6
41	Czech Republic	5.2	8	4.2–7.1
43	South Africa	5.1	9	4.4–6.2
64	Croatia	4.1	8	3.2–5.2
72	China	3.5	9	2.5–6.2
123	Vietnam	2.6	9	1.9–3.5
143	Russia	2.3	8	1.9–3.2
147	Angola	2.2	7	1.3–2.7
150	Belarus	2.1	5	1.3–3.2
162	Turkmenistan	2.0	5	1.7–2.7
179	Myanmar-Burma	1.4	4	1.0–2.0
179	Somalia	1.4	4	1.0–2.0

Notes:

* Index reflects corruption perceptions by representatives of the business sector and analysts evaluating the given country. A scale of 10–0 is used (10 = country practically without corruption; 0 = high level of corruption).

** Surveys used: the figure stands for the number of surveys that evaluated the country. In total, 16 surveys and expert opinions were used, and at least 3 of them were to evaluate any given country in order to be included in the CPI.

*** Range within which the index for a given country may be. Shows how the rating of a country may change depending on the accuracy of measurement. It should be a rule that the rating of a country may be higher or lower with a 5% probability than the range shown. Nevertheless, particularly for countries whose rates are calculated from few sources, the probability of the rate being within the interval shown may be lower than the nominal 90%.

Data source: Transparency International

4. Main findings

The CPI index is considered an eminent indicator of corruption in the given country. It is an estimate of the rate of corruption in the public sector as perceived by businesses, analysts, and the general public. Its reliability, however, varies across countries. In countries with fewer sources and great variation among the amount from the various sources (expressed as a great range), both the assessment and the ranking are less reliable. Another weak point of the CPI consists in the fact that it is based on subjective information, thus cannot reach entirely objective conclusions concerning the rates of corruption in respective countries. In addition, it must be noted that the CPI sources make no distinction among the forms of corruption: administrative versus political, small-scale versus large-scale, etc. The CPI alone does not provide an answer to the what the differences in values for different countries are and whether such differences are factual or merely differences in perception. Despite the above reservations, the CPI index presents a dependable instrument for measuring the

rates of corruption in individual countries, and its importance must not be underplayed. The fact that the Czech Republic ranks amongst the worst EU-wide is alarming. Corruption creates a very unstable economic environment, in which the willingness to invest decreases rapidly in direct proportion to the inability to judge the economic processes within the society. A poor result in the CPI assessment may therefore have adverse implications for the amount of foreign direct investment in and the total economic standing of the Czech Republic.

VI.B AVAILABILITY OF PUBLIC CULTURAL SERVICES

Alena Mockovčiaková

1. Meaning and context of the indicator

The actually declared needs and interests of people in the cultural sector are considerably influenced by the general character (economic, demographic, geographic and historical) of the settlement or region – including the rate of employment (job opportunities), the economic standard of households and the structure of their expenditures, the condition of technical infrastructure in the location, accessibility of cultural venues, etc. The effect of culture on social cohesion and the quality of life in a municipality or region is indisputable, and its support from public budgets is therefore desirable.

Culture is a complexly structured set of diverse individual, collective and society-wide interests and activities that substantially facilitates the identification and development of the individual and also the integration of civil society. Its social and communication functions are important as well. In the Czech Republic, the realm of culture has traditionally been viewed as one of public interest as well as criterion for assessing the quality of life.

In view of the political and economic aspects of historical developments, the Czech Republic currently lacks private sources of funding in an amount substantial enough to permit a reduction in the participation of public budgets in the financing of public cultural services. The parameters of the economic standard of households in the Czech Republic do not allow us the assumption that expenditure in support of culture or public cultural services can be covered largely by increasing the prices of availability of cultural goods. However, it must not be assumed in connection with the economic and other circumstances of individual living that the fact that the people's need to participate in culture are not declared in their communication with the public administration means they do not exist.

The generally understood importance of the indicator Availability of public cultural services in terms of sustainable development is, among other things, articulated by the inclusion of culture in the priority areas of existing approved strategies and operational programmes for the period 2007–2013.

The advancement of public cultural services may play a role in the economic development of an area or region, increasing employment, reducing influences destabilising the social environment in municipalities, improving the quality and diversity of the supply of educational opportunities, and increasing the qualification of the population. Last but not least, public decision-making on culture and its funding with public resources is one of the most immediate opportunities for improving the quality of the decision-making on public affairs as well as a possibility for the lay as well as expert public to get involved in the public administration's decision-making on culture.

The importance of the indicator, or of availability of public cultural services, for sustainable development is further accepted by regional governments. They provide funding to the operation and work of certain key facilities that provide public cultural services, such as libraries, museums, theatres, community centres, etc. As long as budgetary resources allow, regional and larger municipal authorities develop their cultural grant (subsidy) policies. Within them, mainly non-governmental non-profit organisations – largely citizens' associations established under Act no. 83/1990 Coll. on associations of citizens – receive support from public budgets typically in the form of special-purpose subsidies.

The public availability of good public cultural services is generally seen as one of the criteria for assessing the quality of life.

2. Method of calculation of the indicator

The percentage of expenditure recorded as expenditure on culture (according to the applicable budget structure) out of the total expenditures of public budgets is an important piece of information that allows an assessment of the extent to which the public administration pays attention to creating conditions for the availability of public cultural services, care of tangible and intangible cultural heritage, and creating conditions for the generation of new cultural values.

By monitoring this indicator it will also be possible to react to Council Resolutions (EU) on culture – for example 96/C 242/01; 2002/C 32/01; 2002/C 32/02; or 2003/C 13/03.

The sources of information for the purposes of this indicator are the data on expenditure on culture from public budgets pursuant to Decree No. 323/2002 Coll. on the structure of Chapter 334 of the state budget (administered by the Ministry of Culture of the Czech Republic), and data provided by local governments (Chapter 700). With the exception of the so-called performance indicators, the statistics do not report any economic data related to culture separately. Private legal entities and persons doing business in culture typically provide no information on their work or economy. In a situation where the obligation to provide information for statistical purposes cannot be enforced in effect, the data on public budget expenditures on culture are the only dependable information.

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

So far the state budget expenditures on culture have been stagnating at around 0.5–0.7% of the total expenditures. Territorial budgets show higher expenditures on culture, but their increase is only imaginary. It must be noted that so far the total public budget expenditures on culture (including the growing prices of inputs etc.) have virtually only sufficed for covering the essential costs, but no desirable improvement in the structuring and quality of the public cultural services can be expected. What is more, the depreciation mechanism particularly for immovable assets of self-governing regions managed by public cultural institutions leads to their growing internal indebtedness.

Table VI.B.1: Public budget expenditures on culture (billion CZK) and their proportion to GDP, Czech Republic, 2000–2007

	2000	2001	2002	2003	2004	2005	2006	2007
GDP	2,189.2	2,352.2	2,464.4	2,577.1	2,781.1	2,970.3	3,204.1	3,557.7
On culture*	13.1	14.4	15.6	17.4	19.3	19.7	22.3	22.8
%	0.59	0.61	0.63	0.67	0.69	0.66	0.69	0.64

Note:

* sum of expenditures under Chapters 334 (Ministry of Culture incl. expenditures on churches and religious societies) and 700 (administrative territorial unit budget expenditures), including district authorities until 2002

Data source: Czech Statistical Office, REGIS/NIPOS

The involvement of the State in funding local and regional culture has been restricted by law since 2001.

The share of Chapter 334 expenditures in the total state budget expenditures has been stagnating steadily, or even decreasing: the latter is the case when expenditures on churches and religious societies are excluded from reported Chapter 334 expenditures on culture. Considering the level of expenditures on culture, the rate of inflation and fluctuating wages and the related levies under the

law have to be taken into account. Unless a change takes place, the funds under Chapter 334 can be expected in the near future to fail to cover even the regular State tasks in culture and upkeep of the State property, not to mention the support to cultural activities of other subjects. In addition, the likelihood of the tangible and intangible cultural heritage as well as architectural heritage managed by the State being endangered is increasing. If the unfavourable trend in the allocation of funds to the Chapter continues, there is a threat that even the Ministry itself will fail to perform its tasks defined by the approved Cultural Policy of the Czech Republic and meet the requirements and needs of regional authorities formulated in relation to the tasks of the Ministry in supporting culture.

Table VI.B.2: Public budget expenditures on culture (billion CZK) and their proportion to the total public budget expenditures, Czech Republic, 2000–2007

	2000	2001	2002	2003	2004	2005	2006	2007
State budget total	632.27	693.92	750.76	808.72	862.89	922.80	1,020.64	1,040.78
Within that, Chapter 334	5.37	4.76	4.81	6.23	6.55	6.50	7.10	8.30
Expenditures on culture as %	0.85	0.69	0.64	0.77	0.76	0.70	0.70	0.79
Territorial budgets total	192.73	206.17	243.88	304.84	317.81	326.91	363.43	*
Within that: districts	1.39	1.68	1.50	0.00	0.00	0.00	0.00	0.00
Municipalities – Chapter 700	7.71	8.38	9.07	9.35	10.71	10.91	12.66	11.83
Regions – Chapter 700	0.00	0.38	0.89	1.83	2.03	57.00	2.57	2.68
Chapters 700 and 380 total	9.10	10.44	11.46	11.18	12.74	13.24	15.23	14.51
Expenditures on culture as %	4.72	5.06	4.70	3.67	4.01	4.05	4.19	*
State budget total	632.27	693.92	750.76	808.72	862.89	922.80	1,020.64	1,040.78
Territorial budgets total	192.73	206.17	243.88	304.84	317.81	326.91	363.43	*
Public budgets total	825.00	900.09	994.64	1,113.56	1,180.70	1,249.71	1,384.00	*
Chapter 334	4.02	3.98	4.10	6.23	6.55	6.50	7.10	8.30
Chapters 700 and 380 (2001–2)	9.10	10.44	11.46	11.18	12.74	13.24	15.23	14.51
Expenditures on culture total	13.12	14.42	15.56	17.41	19.29	19.74	22.33	22.81
Expenditures on culture as % of total public budget expenditures	1.59	1.60	1.56	1.56	1.63	1.58	1.61	*

Note: * Data unavailable at the time of writing

Data source: Czech Statistical Office, REGIS/NIPOS

With respect to the stabilisation of the number of key cultural facilities funded from ATU (municipal and regional) budgets, most of which were founded by the regional authorities, the ATU budget expenditures on culture – reported as approx. 4% of the total expenditures – are insufficient. Systemic changes, improving the quality of public cultural services and the professional aspects of their work would require an annual increase in the expenditures on culture of at least 20% (currently approx. 10%, virtually only sufficient to cover the growing prices of input and labour costs).

The maintenance and development of the material base of public cultural services – i.e., all assets intended or necessary for the provision of public cultural services, including library and other collections and their professional upkeep – is an integral component and a prerequisite for providing public cultural services. The professional capacities of the employees of the responsible legal entities are the precondition for the quality of the professional work underlying the public cultural services as well as the quality of the public cultural services supplied.

Naturally, that calls for a boost in the funding covering labour costs in culture, as the advancement of public cultural services may become a stimulus for positive labour market developments in many places.

Of course it is not an absolute necessity that public cultural services be supplied by legal entities founded by the public administration. For various reasons, it is a fact that in terms of proportion to the total number of legal entities active in culture, non-profit public cultural services are supplied mainly by allowance organisations founded by municipalities or regions, followed by organisational units (without legal status) founded by municipalities, and municipalities themselves by way of municipal employees. Greater involvement of businesses in provision of public cultural services is prevented both by the economic unprofitability of these services and by legislation limiting public funding support and public budget tenders.

The level of funding support to local and regional culture by private or corporate resources can be deduced from the structuring of the own incomes of cultural subjects: it is constantly negligible. In spite of exceptions, public services in local and regional culture are not attractive to donors. Both the public cultural services and the support to voluntary cultural activities are thus still dependent in their existence on public budget.

Where regional authorities do set priorities in culture within their plans, they mostly concentrate on their own founded cultural facilities, supporting the cultural activities of citizens' associations, cultural events connected to the promotion of a municipality or region or related to tourism. These priorities naturally reflect the specificities of the municipality or region. Changes in the network of region-founded cultural facilities are decided entirely by the founding authorities. Therefore, they depend largely on the degree of co-operation between the municipalities in the area and their potential willingness to agree on co-funding the services provided by an organisation founded by one municipality for residents of another. Certain forms of such co-operation among territorial authorities in funding culture can be detected in libraries and partially in theatres.

Potential innovations in the activities and of cultural facilities founded by territorial authorities or their development are radically limited by the funds provided by the founder to their budgets. The funding capacities also limit available spaces, technological means and, last but not least, quality personnel.

b) International comparison

The international comparison of the data comprising this indicator is impracticable and, given the completely different structures of public administration, public budgets and practices related to the participation (in terms of both organisation and financing) of the public administration (the state and local governments) in the financing of culture would not have any rational basis. Comparable countries have completely different structures of public cultural services, consisting in differences between the legal entities providing such services and between the types, kinds and forms of cultural services rendered as well as their support from public budgets. Not least, individual (albeit comparable) countries considerably differ in respect of the priorities of users of public cultural services and their requirements concerning the structure of public cultural services supplied.

4. Main findings

Public budget expenditures reported as expenditures on culture only allow the advancement of certain public cultural services and activities to a limited extent; however, they are quite insufficient to gradually resolve the internal indebtedness in the area of public cultural services where the supply is provided by allowance organisations managing public assets. Large-scale innovation projects or enhancement of public cultural services are either impossible or quite exceptional under the current economic conditions. The situation is identical for repairs, upkeep and technological valuation of

the venues owned by the public administration used for the provision of public services, which may have a negative impact not only on the quality of the services provided but also on the conservation and presentation of art and library collections, which represent a relatively large part of the cultural heritage. The ATU budget funds earmarked for the implementation of the subsidy policy and for support to citizens' cultural activities do not allow their crucial development.

Unless the Czech Republic, that is, its public administration, intends to renounce its support to culture, cultural heritage conservation, public cultural services, and arts, a more dynamic approach is necessary to the public budget expenditures in culture.

VI.C AVERAGE DURATION OF COURT PROCEEDINGS

Vlastimil Rajnošek

1. Meaning and context of the indicator

The indicator encompasses the following:

- criminal agenda before district and regional courts,
- civil and guardian agenda before district and regional courts,
- commercial agenda before regional courts.

One of the conditions of a well-functioning state administration is a well-functioning judiciary. Since the early 1990s, the judicial system in the Czech Republic has been faced by numerous problems, which are cumulative; the developments cannot as yet be referred to as stabilised. As a result of political and economic change after 1989, the cases in traditional court agenda became more numerous and complex and, in line with the principles of the rule of law, court protection has become the fundamental method for the protection of subjective rights (new agendas concerning restitutions, rehabilitations, or the inheritance agenda following the privatisation of notary's offices; the emergence of commercial law and the commercial judiciary; the gradual emergence of the administrative judiciary); in criminal law, besides the steep growth of crime and gross violence, new forms of unfair conduct emerged, whether in business or organised crime (in addition, general courts had to take over the agenda of the dissolved military courts). Along with the qualitative and quantitative changes in court agendas, the entire legal system is undergoing dynamic transformation, which has not been completed yet (due to protracted recodification of the fundamental codes) and the development of which may be described as rash, hardly systematic, and non-transparent even for the professional public, which places increased demands on the court application and interpretation of law; these trends intensified after the Czech republic's entry into the EU legal environment. The disproportion between the agenda and the staffing capacity of courts increased dramatically in the early 1990s when approximately 50% of all judges resigned, some of them for political reasons, but most left of their own will by transferring to the private sector, which during the whole of the 1990s experienced a boom of legal professions intensified by the privatisation of attorneys and notaries, and most recently court restrainers (the Ministry of Justice then had to deal with the situation by replenishing the number of judges with young graduates).

All this resulted in the long-lasting overburdening of all segments of the judicial system and in assessments of the judiciary as ineffective; the Czech Republic has on several occasions been criticised in international forums for the inadequate duration of court proceedings. The situation is still unstable, questions are raised as to the structure of the judicial system, the number of judges or prosecutors and other judicial staff, their professional standard, etc. In this situation, Government Agenda Declaration dated 17 January 2007 set out measures aimed at faster and better court decision-making. The main purpose of the changes in the judiciary is to lift the burden off judges and achieve a state when judgements are issued by courts of first instance within six months as a rule and appellate procedures take no longer than four months as a rule, all that without increasing the numbers of judges. This is aided mainly by the projects of e-justice, simplification of process rules, changes in the personnel structure in the judiciary, and other component changes already taking place that need to be accomplished soon. Subsequently, the Ministry of Justice published the Judiciary Reform Paper for 2008–2010 in 2007 (available at the Ministry web site), which should safeguard the implementation of the Government Agenda in the judiciary.

Stabilisation of the judicial system will be a long-term process, and thus it is proposed to use the indicators of the average length of court proceedings for the purposes of monitoring its develop-

ment. These indicators cover most of the court agenda, are comparable with the past, and allow an immediate comparison of whether the average duration of proceedings in basic agendas is becoming shorter or longer. Given the current unsatisfactory condition of the judicial system, the shortening average length of court proceedings can be interpreted as a positive development. Although this indicator appears to be purely quantitative, it indicates not only the number and duration of court proceedings, but also the quality of organisation of work of the courts. These values are also well comparable with foreign countries.

2. Method of calculation of the indicator

The average length of court proceedings is undoubtedly an appropriate indicator for the assessment of the performance of the judicial system. Based on the current reporting practice in the justice sector, court proceedings are initiated upon the receipt by the court of the action, and concluded upon registration of the legal force of the court verdict. The length of proceedings thus includes not only the time during which the court of first instance conducted the proceedings, but also the time during which an appellate court conducted appellate proceedings, as the case may be, and the time necessary for the delivery of the court verdict to all parties with the statutory period of fifteen days for appeal.

The time of court proceedings is thus often adversely affected by external influences, namely the substandard work of the mailing service which fails to deliver court verdicts to the parties (for example, the service of the process abroad affects the length of proceedings very significantly). The length of court proceedings is further affected by an appeal to the verdict of the court of first instance. The statistics of the Ministry of Justice for 2007 indicate that about 13.9% of all persons sentenced in criminal proceedings filed an appeal, while in commercial cases appeals were filed in approximately 15% of cases, and in civil cases in about 6.6% of disputes.

The criminal agenda indicator is stated in days as the average length of all criminal proceedings concluded with final effect by district, regional or high courts in given year.

The civil agenda indicator is stated in days as the average length of all civil proceedings and proceedings in curatorial agenda concluded with final effect by district, regional or high courts in a given year.

The commercial agenda indicator is also stated in days as the average length of all disputed commercial proceedings concluded with final effect by regional or high courts in a given year. This indicator does not comprise data on the length of processing applications for registration in the Commercial register. In 2005, initial registration took about 75 days and changes to or the dissolution of a business take 125 days. Act No. 216/2005 Coll., amending Act No. 513/1991 Coll. (the Commercial Code) and other related laws, changes the method of registration in the Commercial Register and adjusts the deadline by which the court must effect the registration to five working days. We therefore do not include the time of processing applications for registration in the Commercial Register in the indicator of commercial agenda.

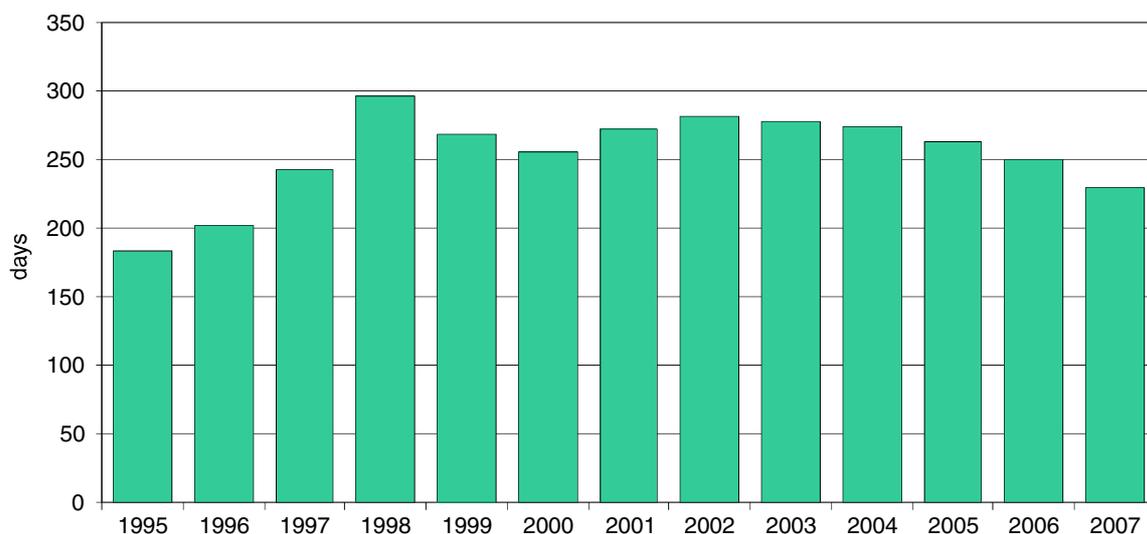
The indicator does not comprise the bankruptcy and composition agenda as the Ministry of Justice does not keep records of the data relating to the duration of bankruptcy proceedings from the filing of petition in bankruptcy until the legal force of the final verdict. The Ministry of Justice, while monitoring the agenda of bankruptcy and composition, focuses on information of operational nature (how many new petitions were filed, how many were processed, how many are pending, and how long a case is pending).

3. Assessment of the indicator

a) Development of the indicator in the Czech Republic

The criminal agenda has been monitored on a long-term basis and the Ministry of Justice has a sufficient amount of statistical information. The chart below shows development in the length of the handling of criminal agenda by district and regional courts between 1995 and 2007.

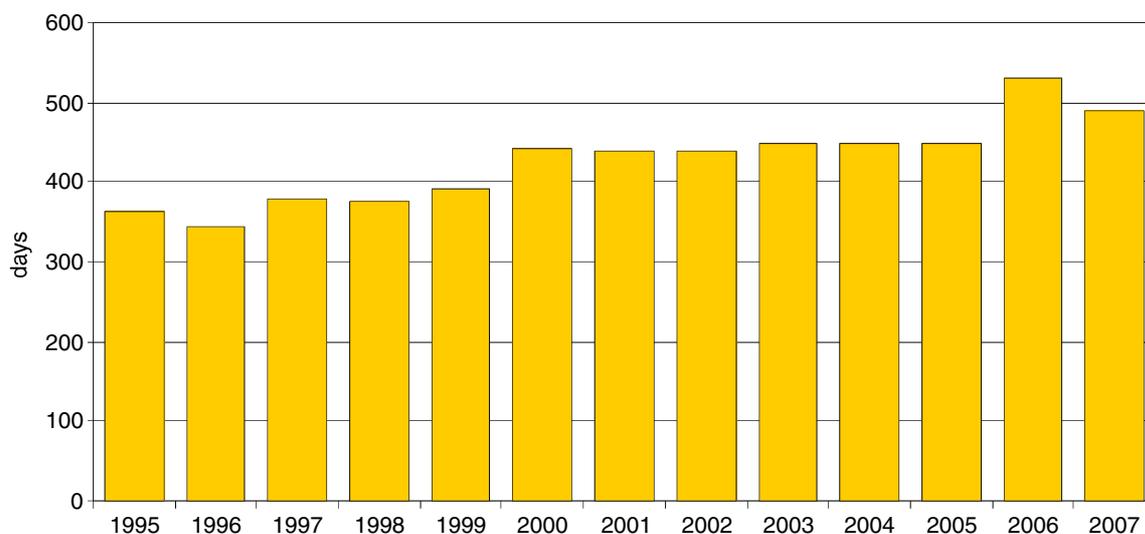
Chart VI.C.1: Length of criminal proceedings before district and regional courts, Czech Republic, 1995–2007



Data source: Ministry of Justice of the Czech Republic

The handling of civil agenda has also been monitored on a long-term basis. The chart below shows the development of the indicator of civil agenda between 1995 and 2007. The indicator is calculated as the average length of all civil proceedings and proceedings under the curatorial agenda, which the district or regional courts or the high court conclude with final effect in the relevant year.

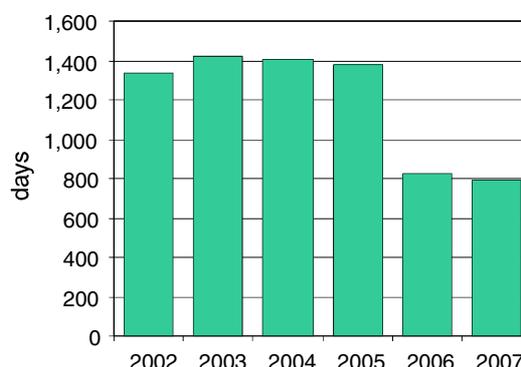
Chart VI.C.2: Length of court proceedings in civil cases before district and regional courts, Czech Republic, 1995–2007



Data source: Ministry of Justice of the Czech Republic

The commercial agenda was included in the jurisdiction of general courts in 1992, following the dissolution of state arbitration. The Ministry of Justice has monitored the development of this agenda only in respect of operative proceedings. The conditions of statistical monitoring were adjusted in 2001 so that it is possible to indicate the average length of commercial proceedings handled by regional courts. Despite the relatively short time sequence it is obvious that commercial disputes handled by Czech regional courts take excessively long. In 2003, the average duration of proceedings before the commercial sections of regional courts was 1,420 days, with the subsequent years showing a decrease.

Chart VI.C.3: Length of court proceedings in commercial cases before regional courts, Czech Republic, 2002–2007

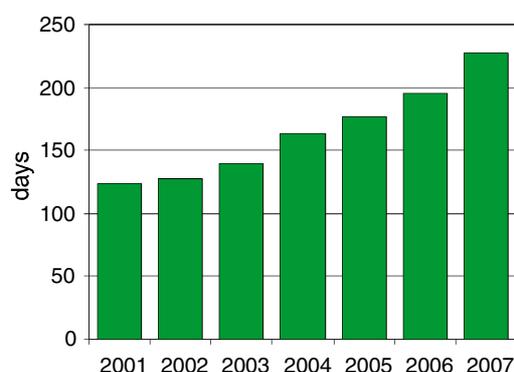


Data source: Ministry of Justice of the Czech Republic

b) International comparison

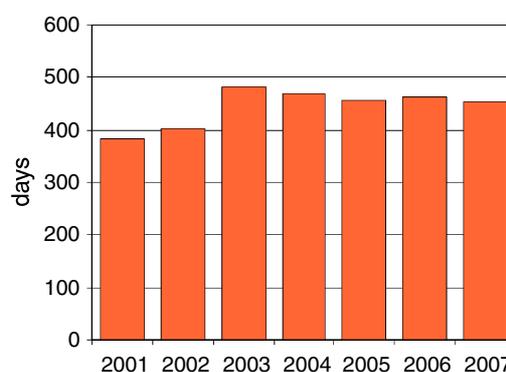
International comparison is possible with Slovakia and is interesting due to the shared juridical past but differing developments over the period in question. Comparison with other EU countries is not possible for various reasons without weighting the report down with extensive annotations, as both the juridical structures and process institutes often differ and there is some lack of willingness to share sensitive information. The method of monitoring statistical data used in Slovakia is identical to that of the Czech Republic except the below exception concerning commercial cases.

Chart VI.C.4: Length of criminal proceedings before district and regional courts, Slovakia, 2001–2007



Data source: Ministry of Justice of the Slovak Republic

Chart VI.C.5: Length of court proceedings in civil cases before district and regional courts, Slovakia, 2001–2007



Note: The Slovakian judiciary keeps no separate records on commercial cases as opposed to typical civil cases, as the practice has been in the Czech Republic since 1992.

Data source: Ministry of Justice of the Slovak Republic

4. Main findings

All the cardinal measures taken in the Ministry of Justice department recently (such as the addition of judges and state attorneys, setting up of judges’ assistants’ positions on all levels of the judiciary, setting up of the position of public prosecutor’s assistant, computerisation of court proceedings, amendments of process rules) as well as currently proposed measures (shift of the heritage agenda

to notaries, redistribution of disbursement tasks between judges and disbursements, strengthening the role of the arbitration procedure, avoidance of disputes by out-of-court proceedings – mediation, arbitration, family therapy, etc.) are effectively directed at reducing the average length of a judicial proceeding.

Measures derived from the Government Agenda Declaration will be implemented over the next two years and their effect is expected to take place within three to five years at the latest.

VI.D COVERAGE OF THE TERRITORY OF THE CZECH REPUBLIC BY APPROVED TOWN AND COUNTRY PLANNING DOCUMENTATION OF MUNICIPALITIES

Petr Lepeška

1. Meaning and context of the indicator

Town and country planning documentation (TCPD) consistently and comprehensively provides for the functional use of a territory, sets out organisational principles, and co-ordinates the material and time aspects of construction and other activities influencing the development of territories. It creates conditions for providing continuous compatibility of all natural, civilisational and cultural values in an area, mainly in view of environmental considerations. TCPD is thus drafted with regard to all three pillars of sustainable territorial development. Any approved TCPD is legally binding on the owners of lands, and is relevant for the exercise of state administration in the field of town and country planning.

An approved local plan with clear, generally binding rules for the use of areas significantly affects the decision-making of the private sector as to where to invest its resources and how to participate in the development of the municipality or region. Town and country planning documentation is also one of the relevant materials underlying the allocation of public funds and the assessment of their economical use. Granting of funds from public budgets under specific legislation for making changes in the territory must not contradict valid TCPD. No obligation for a municipality to make TCPD is established by the Building Act; the principle of positive motivation is employed (investment security, easier zoning proceedings).

TCPD comprises primarily zoning plans (made after 2007), municipal zoning plans (made between 1998 to 2006), and zoning plans of residential clusters (made between 1976 and 1998), many of which have been undergone multiple modifications.

The land-use plan defines the fundamental concept of development of the municipal territory, protection of its values, its planar and spatial arrangement (i.e., urbanism), as well as the landscape arrangement and public infrastructure concepts. It delineates the built-up area, zones suitable for development, zones intended for changes in the existing development, restoration or reuse of devalued land, i.e., redevelopment zones. It delineates zones and corridors for publicly beneficial structures and measures and for reserve land. It sets conditions for the use of such zones and corridors. The land-use plan is made and published for the entire municipal area. For selected zones and corridors, the land-use plan may assign the examination of their functional changes by means of a land-use study or a development plan as a precondition for decisions on land-use changes.

2. Method of calculation of the indicator

This indicator represents the proportion of cadastral areas with approved and valid TCPD of municipalities to the total area of the country, expressed as a percentage.

Data for calculation of the indicator are available at the central database of the Registration of Town and Country Planning Activity in the Czech Republic (the "Registration"). Consistent data are available for the period after 1995.

The obligation to keep records of land use planning and related activities was imposed by Act No. 183/2006 Coll. on town and country planning and on building regulations (Building Act) as amended. It is implemented under section 162 of the Act and Section 23 of Ministry of Regional

Development (MRD) Ordinance no. 500/2006 Coll., on land-use analytical documents, TCPD and record-keeping of land-use planning activities. The record-keeping procedures of land-use planning authorities are further governed by the MRD TCPD Methodology. The database is available at <http://www.uur.cz/ilas/iLAS.asp>.

3. Assessment of the indicator

Table VI.D.1 and chart VI.D.1 below show the development of coverage of the territory of the Czech Republic by approved town and country planning documentation of municipalities (in %). Current coverage of the territory of the Czech Republic by approved town and country planning documentation of municipalities is 66.82% (as of 31 December 2007).

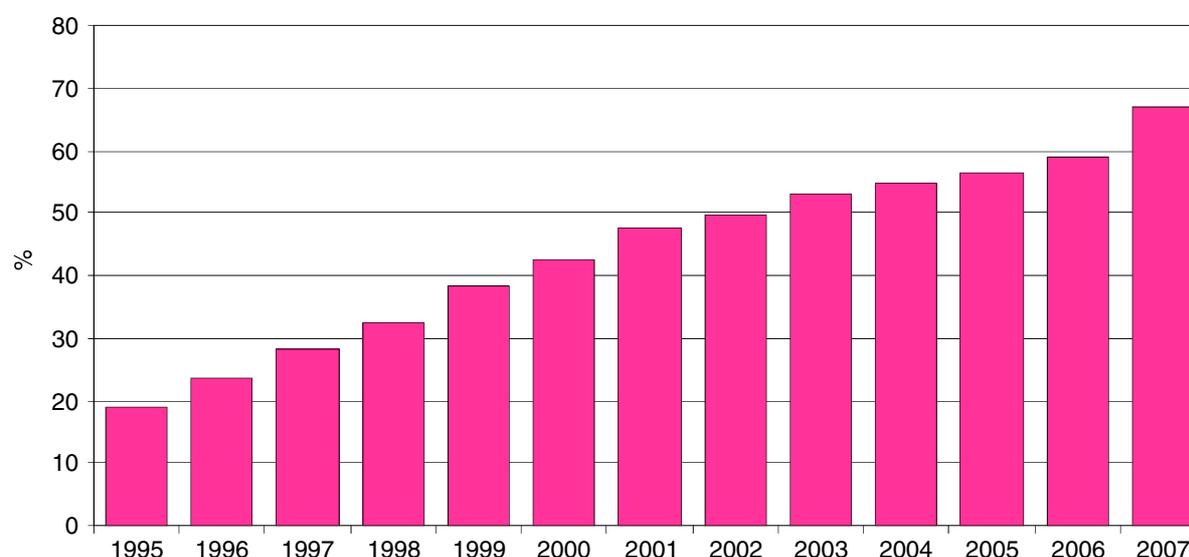
Table VI.D.1: Development of the coverage of territory by approved TCPD (in %), Czech Republic, 1995–2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Covered by TCPD (%)	19.10	23.37	28.15	32.47	38.11	42.33	47.75	49.55	52.96	54.90	56.54	59.12	66.82

Note: Data until 2006 are related to 31 March of each year, while they are related to 31 December of each year from 2007 onwards.

Data source: Records of town and country planning activities in the Czech Republic, Territorial Development Institute

Chart VI.D.1: Development of the coverage of territory by approved TCPD (in %), Czech Republic, 1995–2007



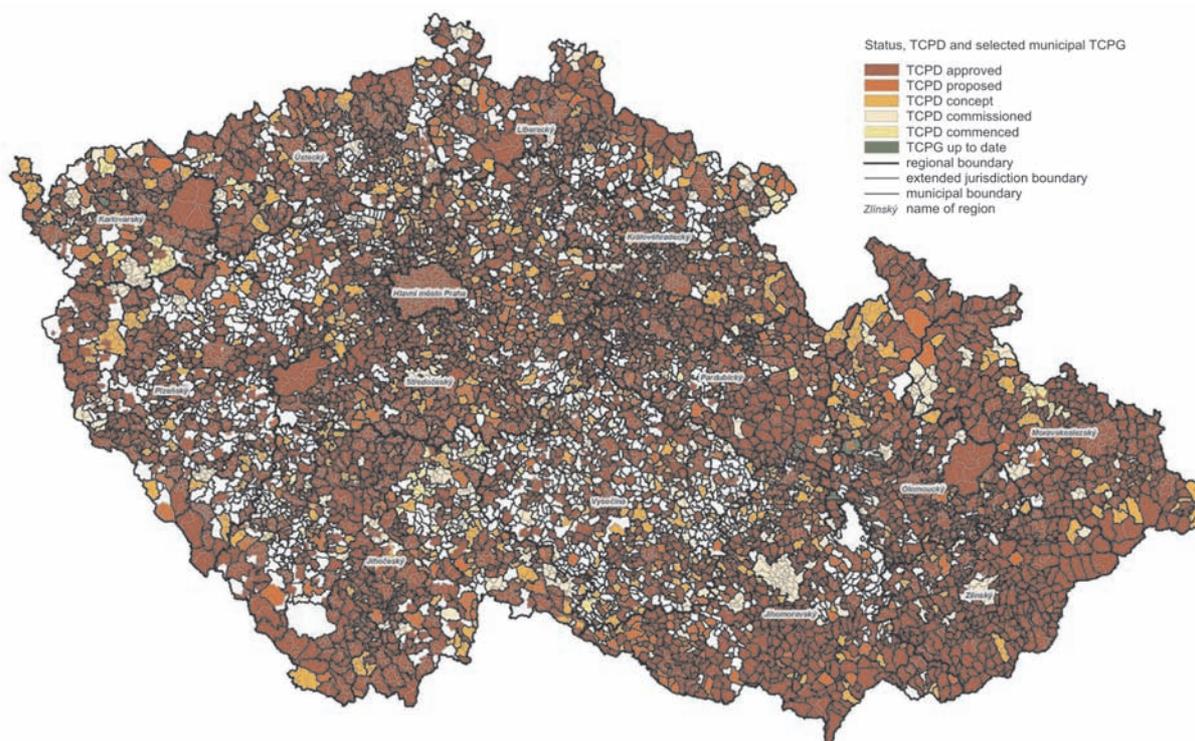
Note: Data until 2006 are related to 31 March of each year, while they are related to 31 December of each year from 2007 onwards.

Data source: Records of town and country planning activities in the Czech Republic, Territorial Development Institute

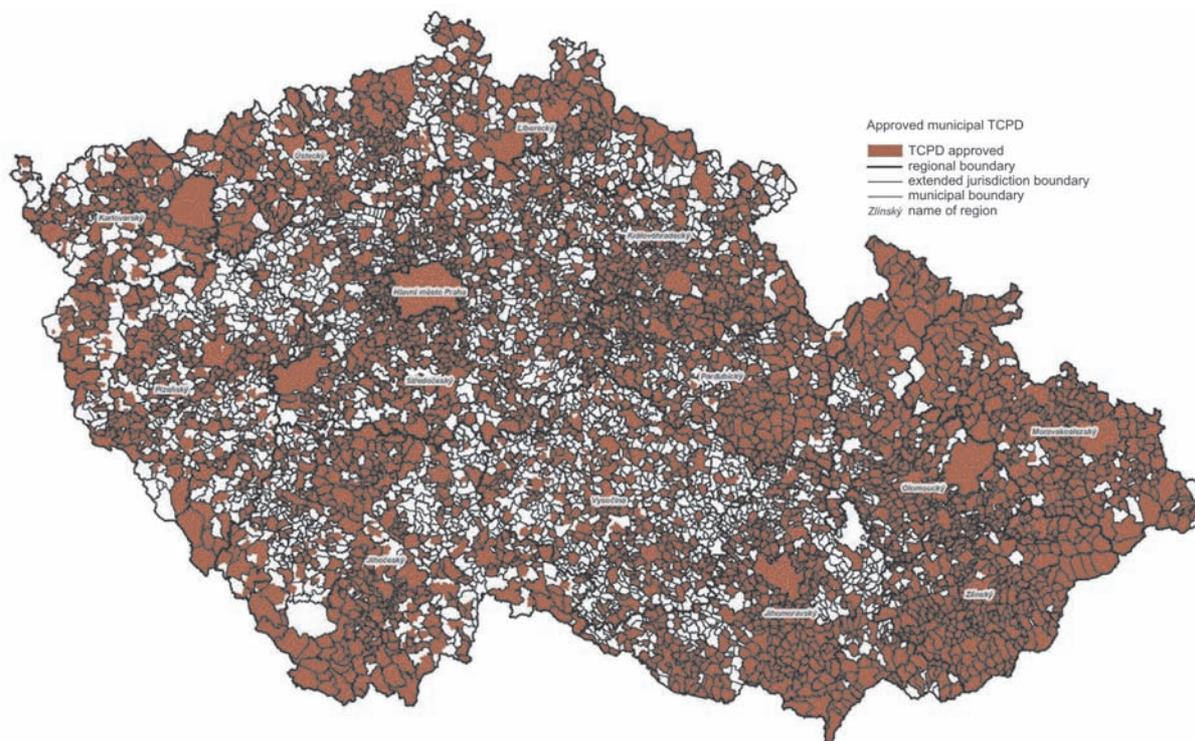
The coverage of the territory of the Czech Republic by approved town and country planning documentation shows a positive trend. The indicator value is expected to continue growing in connection to the escalating pressures on land development.

Two maps follow to give a picture of the status quo.

Annex 1: Approved town and country planning documentation (legal status), 2007



Annex 2: Approved and semi-finished town and country planning documentation (physical status), 2007



4. Main findings

The indicator Coverage of the territory of the Czech Republic by approved town and country planning documentation expresses the degree of systemic, planned land use at the municipal level (the preparation and regular updating of regional planning documentation is now obligatory under the current Building Act). The indicator has been showing a constant growth, meaning that increasing numbers of municipalities have been creating conditions for responsible treatment of their territories. Town and country planning documentation reflects both legitimate claims of the users of the land and the municipalities, and public interests protected by legislation, while the claims and the interests are harmonised with the planned activities in the planning process. The task of land-use planning that has to be fulfilled by the development of the TCPD is to protect and develop the values of the municipal territory and secure a permanent concord among activities using the land. Newly developed land-use plans (after 1 January 2007) contain an explicit sustainability impact assessment, which is retrospectively reflected in the land-use planning process, thus contributing to the specification and objectivity of setting the rules for securing the sustainable development of the territory.

VI.E CIVIL SOCIETY

Petra Rakušanová

1. Meaning and context of the indicator

Civil society is a term designating the space between private interests and the state. It refers to voluntary associating outside the market, state and private life, based on the recognition of integration of our world. The existence of civil society is based on the fact that any democratic political system is founded on the ability of the citizen to influence public affairs by direct participation.

2. Method of calculation of the indicator

For the purposes of the Participation index we define membership in non-governmental organisations as a civil participation indicator (calculated as the proportion of the number of NGOs and the adult population over 18 years of age in %), which, to get a clearer picture, is complemented by the indicator of political participation (measured in % using the average participation in elections to the Chamber of Deputies of the Czech Parliament and to regional bodies). This indicator is structured so that it permits the measuring of differences between individual regions of the Czech Republic.

3. Assessment of the indicator in the Czech Republic

The combination of civil and political participation contributes to a better understanding of the notion of participation, as both dimensions correlate. Between 1998 and 2000 and between 2002 and 2004 the rate of civil participation increased while political participation decreased significantly; both civil and political participation grew in 2004 to 2006. Table VI.E.1 summarises the development of civil and political participation in the Czech Republic.

Table VI.E.1: Civil and political participation, Czech Republic, 1998/2000–2004/2006

Civil participation	1998/2000	2002/2004	2004/2006
% of active adult population	0.92	1.04	1.14
Citizens per NGO	136.80	118.40	107.70
Political participation	1998/2000	2002/2004	2004/2006
Parliamentary elections	74.03	58.01	64.47
Regional elections*	33.64	29.62	29.62
Local elections*	45.02	43.39	46.31
Average	58.84	43.81	47.05

Notes: * 2004 regional elections, 2006 local elections

Data source: Czech Statistical Office, Government Council for Non-state Non-profit Organisations and ICN; author's own calculations

The overall increase in the political and civic participation in the Czech Republic can be understood as a positive step towards the citizens' greater involvement in the public affairs. The trend in the case of the political participation is caused by a 6% increase in the participation in the 2006 election for the Chamber of Deputies of the Parliament of the Czech Republic compared to the 2002 Parliament Elections. It remains a question whether this increasing trend will be confirmed by the 2008 regional elections, which are the next reference point for the index. The shift in the trend towards participatory democracy also suggests growing participation in local elections – the 2002 drop was followed by more than 3% increase in 2006. In the case of civic participation, the increasing trend is caused

by the overall increase in the numbers of non-profit organisations (largely citizens' associations) between 2004 and 2006.

Substantial differences exist among the regions of the Czech Republic in both civic and political participation. Comprehensive analyses of civic participation and the non-profit sector show that citizens in difficult life situations rely on the State in the regions with low rates of participation (such as the Moravian-Silesian and Zlín Regions). The traditional local communities have largely been eroded and replaced with increased passivity. Although the civil society and the non-profit sector evolve more slowly in such regions, they are very important because they present an alternative to the growing passivity. In a passive region, the State becomes an alternative rather than a framework for the civil society and social networks perform their vital tasks.

In contrast, the inhabitants tend to rely on the State the least in regions with a well-developed civil society and non-profit networks (such as Prague, Central Bohemia, and the Highland). The civil society, complemented by social networks in the smaller settlements, plays an important role in such regions. The individuals' activities play a more prominent role than the non-profit sector in the more individualised Prague. In regions with active populations, non-profit organisations become a natural complement to the traditional relations. Social networks continue to play a crucial role. For example, the Church and non-profit church organisations are important players with the non-profit sector in South Moravia.

The general knowledge of the terms civil society, non-profit sector, and volunteering is relatively high according to surveys made in 2003 and 2006 (93–95% of respondents said they knew the term non-profit sector; 75–84% knew the term civil society). The outcomes of an empirical survey also suggest that only about one half of the respondents understood the more abstract term civil society, while over two thirds of them understood the more concrete terms non-profit sector and volunteering.

Based on a comprehensive functional analysis of the Czech organised civil society, the organised segment of the civil society in the Czech Republic can be classified into a static and a dynamic component. While the static organisations largely perceive the European Union and the Europeanisation process as a threat to their own functioning, the dynamic organisation still largely see the EU as a potential source of funding. Although the two poles have to be viewed as ideal types or a range of opinions, the greater part of the organised civil society in the Czech Republic is closer to the static type. Additionally, a pair of scissors has been opening up between the dynamic and static organisations since the EU accession: while the dynamic organisations have been greatly improving in many cases, an increasing part of the static organisations have been losing hopes of shifting towards the dynamic type due to their lack of adaptive capacity. After eighteen years of evolution, the Czech civil society is anchored at the national level, but its ambitions within the European governance process are still very limited.

4. Main findings

Based on the presented results, we can conclude that the civil society in the Czech Republic is effective in creating a leeway between private interests and the State. The optimistic observation is that the Czech society has sufficient potential for participatory civil society, and has begun to realise it. Thus, the pessimistic visions of some foreign researchers, who explain the lower evolutionary stages of the non-profit sector and civic participation in Central and Eastern Europe to be an indicator of the shallow, procedural and formal character of the democracy in the CEE region, are failing. The low level of (political) participation is an indicator of the problematic relationship between the citizens and the State rather than an unstable democracy.

SUMMARY OF INDICATORS AND RESPONSIBLE INSTITUTIONS

	Indicator	Responsible Institution
I. Economic pillar: strengthening the competitiveness of the economy		
a	Gross Domestic Product per capita	Czech Statistical Office
b	Share of government deficit/surplus in GDP Share of government debt in GDP	Ministry of Finance
c	Current account of balance of payments/GDP ratio	Czech National Bank
d	Labour productivity	Czech Statistical Office
e	Transport intensity	Ministry of Transport
f	Energy intensity of GDP	Charles University in Prague
g	Total primary energy supply	Charles University in Prague
h	Share of energy from renewable sources	Charles University in Prague
II. Environmental pillar: protecting nature, the environment, natural resources and the landscape, environmental limits		
a	Greenhouse gas emissions per capita	Ministry of the Environment
b	Greenhouse gas emissions per unit of GDP	Ministry of the Environment
c	Material consumption	Charles University in Prague
d	Material use of waste	Ministry of the Environment
e	Consumption of basic nutrients in mineral fertilisers	Ministry of Agriculture
f	Consumption of pesticides	Ministry of Agriculture
g	Index of common species of wild birds	Ministry of the Environment
h	Defoliation	Ministry of the Environment
i	Share of organic farming in total farmland	Ministry of Agriculture
j	Expenditures on environment protection Public budget expenditures on environment protection	Ministry of the Environment
III. Social pillar: strengthening social cohesion and stability		
a	Life expectancy	National Health Institute
b	Mortality	National Health Institute
c	General unemployment rate	Ministry of Labour and Social Affairs
d	Registered unemployment rate	Ministry of Labour and Social Affairs
e	Employment of older people	Ministry of Labour and Social Affairs
f	Regional dispersion of the employment rate	Ministry of Labour and Social Affairs
g	Population living below poverty line before and after social transfers	Ministry of Labour and Social Affairs
IV. Research and development, education		
a	Highest level of education attained	Institute for Information on Education
b	Research & development expenditures	Institute for Information on Education
c	Access to the internet	Czech Statistical Office
V. European and international context		
a	Total international development co-operation	Ministry of Foreign Affairs
VI. Good governance		
a	Corruption Perceptions Index	Ministry of Interior
b	Availability of public cultural services	Ministry of Culture
c	Average duration of court proceedings	Ministry of Justice, Control Department
d	Coverage of the territory of the Czech Republic by approved town and country planning documentation of municipalities	Ministry of Regional Development
e	Civil society	Institute of Sociology, AV CR

AUTHORS' ADDRESSES

Vladimír Adamec Transport Research Centre Líšeňská 33a 636 00 Brno e-mail: adamec@cdv.cz	Jan Kovanda Charles University in Prague Environment Center U Kříže 5 158 00 Praha 5 e-mail: jan.kovanda@czp.cuni.cz
Stanislav Beránek Transparency International – Czech Republic Sokolovská 260/143 180 00 Praha 8 e-mail: beranek@transparency.cz	Alena Krejčová Ministry of the Environment Vršovická 1442/65 100 10 Praha 10 e-mail: alena.krejцова@mzp.cz
Petra Bradnová CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: petra.bradnova@cenia.cz	Martin Leibl Ministry of Agriculture Těšnov 17 117 05 Praha 1 e-mail: martin.leibl@mze.cz
Slavoj Czesaný Czech Statistical Office Na padesátém 81 100 82 Praha 10 e-mail: czesany@gw.czso.cz	Petr Lepeška Ministry of Regional Development Staroměstské náměstí 6 110 15 Praha 1 e-mail: petr.lepeska@mmr.cz
Ladislav Havlíček Ministry of Finance Letenská 15 118 10 Praha 1 e-mail: ladislav.havlicek@mfcz.cz	Michala Lustigová National Health Institute Šrobárova 48 100 42 Praha 10 e-mail: lustigova@szu.cz
Miroslav Havránek Charles University in Prague Environment Center U Kříže 5 158 00 Praha 5 e-mail: miroslav.havranek@czp.cuni.cz	Lucie Malíková Ministry of Labour and Social Affairs Na Poříčním právu 1/376 128 01 Praha 2 e-mail: lucie.malikova@mpsv.cz
Vladimír Hejduk Ministry of Foreign Affairs Loretánské náměstí 5 118 00 Praha 1 e-mail: vladimir_hejduk@mzv.cz	Martin Mana Czech Statistical Office Na padesátém 81 100 82 Praha 10 e-mail: martin.mana@czso.cz
Petr Hovorka Ministry of Finance Letenská 15 118 10 Praha 1 e-mail: petr.hovorka@mfcz.cz	Jan Mertl CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: jan.mertl@cenia.cz
Jiří Jedlička Transport Research Centre Líšeňská 33a 636 00 Brno e-mail: jedlicka@cdv.cz	Alena Mockovčiaková National Information and Consulting Centre for Culture Blanická 4 P.O. Box 12 120 21 Praha 2 e-mail: mockovciskova@nipos-mk.cz
Michaela Kleňhová Institute for Information on Education Senovážné náměstí 26 P.O. Box 1 110 06 Praha 1 e-mail: michaela.klenhova@uiv.cz	Bedřich Moldan Charles University in Prague Environment Center U Kříže 5 158 00 Praha 5 e-mail: bedrich.moldan@czp.cuni.cz

<p>Karel Mroček Ministry of Foreign Affairs Loretánské náměstí 5 118 00 Praha 1 e-mail: karel_mrocek@mzv.cz</p>	<p>Jan Šůsa CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: jan.susa@cenia.cz</p>
<p>Zdeňka Podhajská CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: zdenka.pohajska@cenia.cz</p>	<p>Jiří Valta CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: jiri.valta@cenia.cz</p>
<p>Jan Pokorný CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: jan.pokorny@cenia.cz</p>	<p>Miroslav Vančura Transport Research Centre Líšeňská 33a 636 00 Brno e-mail: vancura@cdv.cz</p>
<p>Eva Procházková Ministry of Labour and Social Affairs Na Poříčnickém právu 1/376 128 01 Praha 2 e-mail: eva.prochazkova@mpsv.cz</p>	<p>Lenka Vrtišková CENIA, Czech Environmental Information Agency Litevská 1174/8 100 05 Praha 10 e-mail: lenka.vrtiskova@cenia.cz</p>
<p>Vlastimil Rajnošek Ministry of Justice, Control Department Vyšehradská 16 128 10 Praha 2 e-mail: vrainosek@mzp.justice.cz</p>	<p>Evžen Woller Czech National Bank Na Příkopě 28 115 03 Praha 1 e-mail: evzen.woller@cnb.cz</p>
<p>Petra Rakušanová Institute of Sociology, AV CR Jilská 1 110 00 Praha 1 e-mail: petra.rakusanova@soc.cas.cz</p>	

ABBREVIATIONS

ATU	administrative territorial unit
AV CR	Academy of Sciences of the Czech Republic
BERD	research and development expenditure in the business sector
cu. p.	current prices
co. p.	constant prices
CATV	cable television
CBD	Convention on Biological Diversity
CEPA 2000	international classification of environmental protection activities
CO ₂	carbon dioxide
CPI	Corruption Perceptions Index
CRS	churches and registered religious societies
CSO	Czech Statistical Office
DAC	OECD Development Assistance Committee
DAS2002	central database for Zoning Activities Register
DFI	direct foreign investment
DIGROG	Spatial Planning Digital Register
DMC	domestic material consumption
DSL	digital subscriber line
ECHP	European Community Household Panel
EEA	European Economic Area
EMU	European Monetary Union
ESA 95	European system of national and regional accounts
EU	European Union
EU-10	new EU Member States after enlargement in May 2004
EU-15	the European Union before enlargement in May 2004
EU-25	the European Union after enlargement in May 2004
FC	final consumption
FEC	final energy consumption
Fibre/LAN	fibre local area network
FGMRI	The Forestry and Game Management Research Institute
GAERC	General Affairs and External Relations Council
GDP	Gross Domestic Product
GERD	gross domestic expenditure on research and development

GFCF	gross fixed capital formation
GFS	government finance statistics
GNI	gross national income
GOVERD	research and development expenditure in the government sector
GVA	gross value added
HDI	Human Development Index
HERD	research and development expenditure in the higher education sector
ICP Forests	International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests
ICT	information and communication technology
IDC	international development co-operation
IEA	International Energy Agency
ILO	International Labour Organisation
ISCED-97	International Standard Classification of Education
ISOH	Waste Management Information System
LUCF	Land-Use Change and Forestry
LULUCF	Land Use, Land Use Change and Forestry
Mt	megaton
MRD	Ministry of Regional Development
MSW	municipal solid waste
MTI	Ministry of Trade and Industry
NEP	National Energy Policy
NGO	non-governmental organisations
NPF CR	National Property Fund of the Czech Republic
NPP	nuclear power plant
NUTS	territorial statistical unit
OA	official assistance
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
p. p.	percentage point
PC	personal computer
PES	primary energy sources
PNPERD	research and development expenditure in the private non-profit sector
PPS	purchasing power standard
RES	renewable energy sources

SEP	State Energy Policy
SI	international system of units
SLFS	selective labour force survey
SMW	solid municipal waste
TCPD	town and country planning documentation
TCPG	town and country planning groundwork
TPES	total primary energy sources
TRIM	“Trends and Indices for Monitoring Data” programme
UIR-ZSJ	Territorial Identification Register
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UPBC	Uniform Programme for Bird Census in the Czech Republic
USA	United States of America
WG WPR	Working Group on Waste Prevention and Recycling
WHO	World Health Organisation

Progress Report on the Czech Republic Sustainable Development Strategy

Government Council for Sustainable Development

Ministry of the Environment

Edited by: Jan Kovanda and Tomáš Hák

Translation: Petr Kurfürst

Typography: EnviTypo®

Cover: Formata v.o.s.

1st edition, 186 pages

Progress Report

on the Czech Republic Sustainable Development Strategy

Government Council for Sustainable Development
Ministry of the Environment

Edited by: Jan Kovanda and Tomáš Hák

Translation: Petr Kurfürst

Typography: EnviTypo®

Cover: Formata v. o. s.

1st edition, 186 pages