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The UNECE Report

ON ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS IN EUROPE AND CENTRAL ASIA, 2012

UNITED NATIONS

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The various parts of the report were prepared by the staff of the UNECE, as follows:

Overview: Jaromir Cekota.

The macroeconomic context: Robert C. Shelburne. Additional inputs were provided by Jason Schachter.

MDG performance in the ECE region: Jaromir Cekota, Malinka Koparanova, Robert Shelburne, Claudia Trentini and Lukasz Wyrowski. Additional inputs were provided by Michiko Enomoto.

The role of metadata in the tracking of progress towards the MDGs: Taeke Gjaltema and Jessica Gardner (consultant).

Demographic pressures and the sustainability of social security in Europe and Central Asia: Jaromir Cekota and Claudia Trentini.

Statistical Annex. David Boko and Taeke Gjaltema.

Yves Clopt designed the cover and Margaret Muindi was responsible for the production layout.

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FOREWORD

While the international community has already started discussing the development agenda that will build on the Millennium Development Goals (MDGs) after 2015, it is all the more important to accelerate efforts at all levels for achieving the MDGs by the target date.

This report documents the degree to which the eight goals based upon eighteen targets are on track to be fulfilled by 2015 in the Pan-European region.

The focus of the report is on the former transition economies of Eastern Europe and Central Asia, but it also examines progress in all of the UNECE economies for several goals which still have not been achieved in the advanced economies of Western Europe and North America. Generally the report finds that significant progress was being made in almost every area prior to the global financial crisis of 2008-2009, but the severe downturn during the crisis and sluggish recovery since 2009 has resulted in slower improvement. The crisis increased unemployment and poverty in much of the region and has significantly weakened government finances so that less is available for improving the educational and health infrastructure and in providing income maintenance for low income families. The deteriorating sovereign debt situation in the advanced economies has resulted in a scaling back of official development assistance which is desperately needed in much of the developing world to close the financing gap for achieving the targets. Unfortunately the economic outlook for the coming year for the UNECE region is quite subdued, and some of the goals may not be achieved without a more focused effort by our member States.

The report highlights that in the UNECE region poverty, hunger and lack of access to education and health care are not endemic to the general population as in much of the developing world, but are increasingly confined to marginalized groups including ethnic minorities, indigenous peoples and migrants, persons with disabilities, the long-term unemployed, and in a few cases, women and girls more generally. Thus government policy should concentrate on creating more equitable societies with better designed policies for reaching these disadvantaged groups. There are some targets, especially in the environmental area, however, where the lack of progress is more widespread and there is a need for changes in policy and economy-wide activities; some of these goals remain unfulfilled even in the region's advanced economies.

The report concludes with two special chapters that examine in more detail some specific aspects related to the MDGs. The first deals with data issues; being able to accurately quantify targets is central to their analysis and to formulating policy recommendations. The second deals with population ageing in the region's emerging economies and its implications for the fiscal sustainability of social insurance systems; this presents a significant long-term challenge for the economic development of these economies.

UNECE remains committed to support the efforts of the countries in the region towards fully achieving the MDGs by the 2015 timeline.

Sven Alkalaj

Executive Secretary
United Nations Economic Commission for Europe

ABBREVIATIONS

ECE Subregions

South-Eastern Europe (SEE)

Albania
Bosnia and Herzegovina
Croatia
The former Yugoslav Republic of Macedonia
Montenegro
Serbia
Turkey

Eastern Europe, Caucasus, and Central Asia (EECCA)

Armenia
Azerbaijan
Belarus
Georgia
Kazakhstan
Kyrgyzstan
Republic of Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan

Economies in Transition (EiT) = EECCA + SEE

New EU post-transition member States (NMS)

Bulgaria
Czech Republic
Estonia
Hungary
Latvia
Lithuania
Poland
Romania
Slovakia
Slovenia

Emerging Europe and Central Asia (ECA) = EECCA + SEE + NMS

European Advanced Economies (EAE)

Andorra
Austria
Belgium
Cyprus
Denmark
Finland
France
Germany
Greece
Iceland
Ireland
Israel
Italy
Liechtenstein
Luxembourg
Malta
Monaco
Netherlands
Norway
Portugal
San Marino
Spain
Sweden
Switzerland
United Kingdom

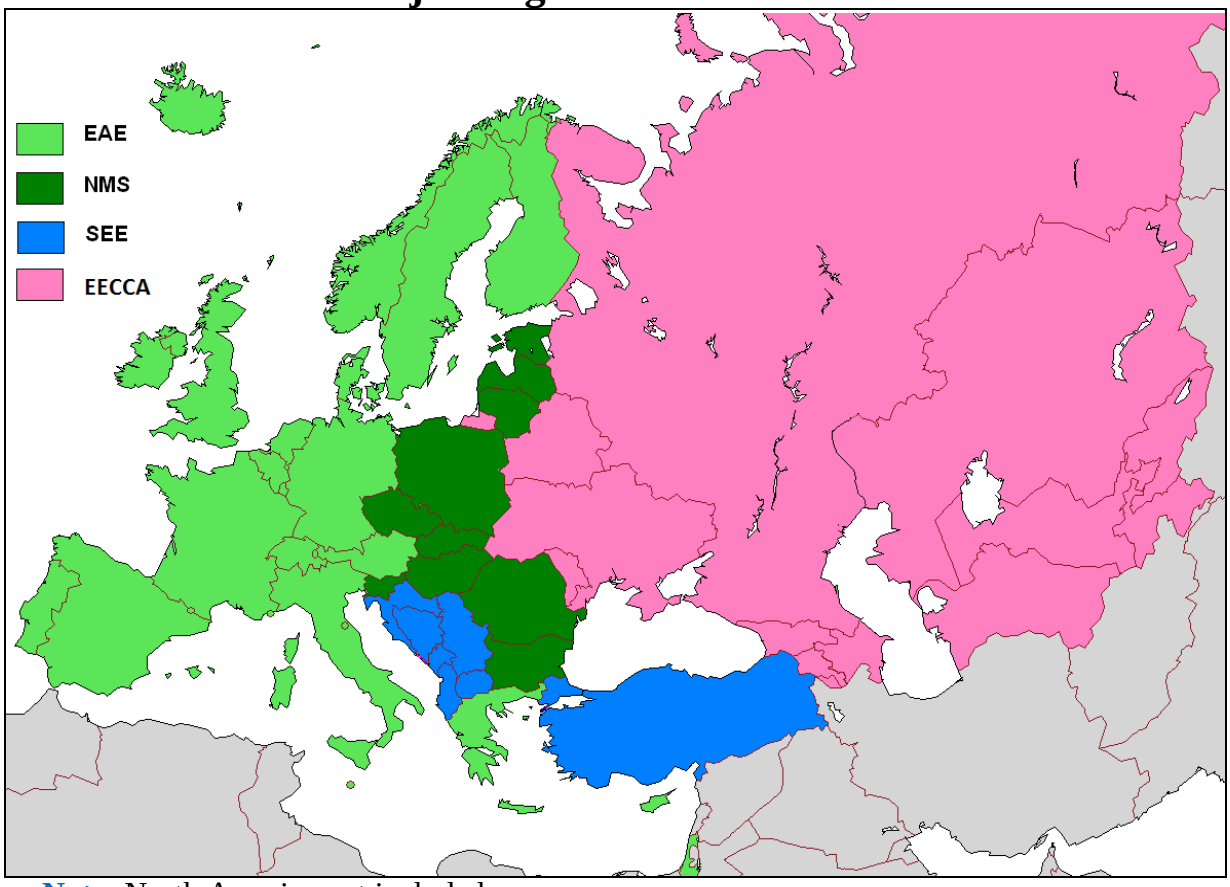
Pan-European Economies = ECA + EAE

North America (NA)

Canada
United States

ECE Advanced Economies = EAE + NA
ECE Economies = ECA + EAE + NA

Major Regions of the ECE



Note: North America not included

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EXECUTIVE SUMMARY

MDG performance

This report focuses on the Millennium Development Goals (MDGs) in 29 emerging economies in the ECE region. This group is quite heterogeneous in terms of the level of development, gathering 10 post-transition EU member States (NMS) as well as 12 post-Soviet republics in Eastern Europe, the Caucasus and Central Asia (EECCA) and 7 countries in South-Eastern Europe (SEE).[1] Some 478 million people live in the three sub-regions, including 102 million in the NMS (including 38 million in Poland), 281 million in the EECCA (of which 142 million live in Russia), and about 95 million in the SEE (including 74 million in Turkey). The region as a whole is characterized by high levels of economic and human development. However, the regional averages on MDG progress mask considerable disparities between countries and within countries. Therefore, making economic growth more inclusive and sustainable, and adopting social protection systems and policies that reduce social and economic gaps is an imperative for all countries of the region.

The report's findings show that policies for an acceleration of MDG progress are particularly relevant for the EECCA and SEE countries. While the report concentrates on the MDG progress in the ECE emerging markets, it also provides, where relevant, brief assessments of progress in high-income economies of Western Europe and North America. There are only a few MDG targets that apply to high-income economies, particularly in the areas of gender equality (MDG 3), environmental sustainability (MDG 7) and, to a lesser degree, poverty (MDG 1). In addition, these countries have also made a global commitment to help the developing world achieve its targets through financing for development, including ODA, and improving the world trading system (MDG 8).

The progress toward individual MDGs can be summarized as follows.

MDG 1. In all of the ECE economies there are vulnerable population groups living in extreme poverty. Abject poverty is more widespread in rural areas than in cities. It is usually found among the long-term unemployed, disadvantaged ethnic minorities, indigenous peoples, single parent households and persons with chronic health problems. Nevertheless, the problem of poverty (target 1.A), when defined in an absolute sense, is mostly restricted to the low-income and lower middle-income EECCA countries. The 2007 – 2009 global financial crisis known as the Great Recession had a significant negative impact on the livelihood in the region, including the most advanced economies, and is endangering the progress achieved in a number of EECCA and SEE countries and in some of the NMS. In particular, the adjustment strategies of low-income households saw cuts in discretionary spending on medical services and medicines. This trend is particularly worrisome in the MDG context. The recent financial turmoil in the eurozone threatens to increase poverty rates dramatically in a number of countries, including some EU member states and SEE economies linked to them strongly through trade and financial institutions. Target 1.B on decent work continues to be difficult to achieve in all sub-regions due to structural labour-market problems that have been exacerbated by the Great Recession. These problems are reflected in the high share of vulnerable and informal employment, as well as the extremely high unemployment

[1] The countries in each of the ECE sub-regions are listed on the preceding pages. The EECCA corresponds to what is sometimes referred to as the CIS region in other publications; EECCA-11 is the EECCA minus Russia. The SEE-6 is the SEE minus Turkey. Cyprus and Malta are grouped with the European advanced economies (EAE) and not with the NMS.

rates for youth and disadvantaged minorities. The problem of high informal employment is particularly severe in rural areas of the Caucasus and Central Asia. Malnourishment (target 1.C) is low to negligible in most countries of the region.

MDG 2. Not surprisingly, the best outcomes are in the areas of school enrollment and gender equality in schools because of the region's tradition of mandatory school attendance and equal access. However, the quality of education and educational equity remain unsatisfactory in a number of countries. Another problem is posed by high dropout rates of students from disadvantaged minority backgrounds.

MDG 3. Throughout the region, despite women's high education level, severe problems remain with respect to their labour market participation, especially in some EECCA and SEE countries. The majority of women still occupy lower-paid and unstable jobs at the lower end of the career ladder. Moreover, wage differentials remain a resilient challenge to equality in the region, ranging from an average of 20 per cent in the EU to between 40 and 50 per cent in the Caucasus and Central Asia. The unequal position of women is reflected in their low political representation. With the exception of the Scandinavian countries, women continue to be strongly underrepresented in both political and economic decision-making positions.

MDG 4. Child mortality in the ECE region is the lowest in the world, and there is an overall trend towards achieving target 4.A in the ECE emerging economies. In the EECCA countries the mortality rate has fallen in some cases by as much as 50 per cent over the last decade. Nevertheless, child mortality in these countries is still relatively high, and some of them might not reach the target. Furthermore, strong disparities in health outcomes within countries have continued to persist in Central Asia, Eastern and South-Eastern Europe and even in some of the NMS.

MDG 5. The most recent available data indicate that only a few countries in the EECCA and SEE sub-regions are on track to reach the target on maternal mortality. The widespread use of abortion as an alternative to contraception and the high rate of adolescent pregnancies continue to affect a number of countries with transition economies.

MDG 6. This MDG represents the largest challenge for many economies in transition, with HIV/AIDS and tuberculosis emerging as particular concerns. Not only is the HIV/AIDS infection rate high with its epicenter in the EECCA sub-region, but also in virtually none of the EECCA countries is there adequate antiretroviral treatment coverage for the infected although it has been increasing rapidly. The spread of tuberculosis, a disease linked to poverty, is also of concern as its incidence has doubled since 1990 in the EECCA region.

MDG 7. In spite of the significant decline in GHG emissions since 1990, MDG 7 remains a concern for the ECE region, especially because of the poor energy efficiency in a number of transition economies and the need in the coming years for greater improvements. Moreover, the increases of emissions per capita and the limited progress in improving energy efficiency over the last decade suggest that a number of countries are not on a sustainable path. Lack of access to safe drinking water and proper sanitation remain serious problems in many of the transition economies. This is primarily a problem in the poorest economies of the EECCA and SEE sub-regions, but is also a concern in rural areas of some of the NMS. Large segments of the population in the areas affected by armed conflicts in the former Soviet Union and former Yugoslavia continue to live in substandard informal housing, without any secured property rights.

MDG 8. The advanced economies which are able to provide ODA are primarily located in the ECE region. Unfortunately major donors did not meet the 2010 ODA/GNI targets they committed to at the Gleneagles G8 summit in 2005. The continuing economic problems and fiscal pressures in the advanced economies have made significant increases in ODA unlikely over the next few years. Concerning international trade, while the NMS and to a lesser degree SEE countries have now become reasonably integrated into the world economy, the EECCA economies have performed less well in this area, due to the limited progress achieved in diversifying their output and exports especially regarding manufactures. Another important factor limiting the integration of the transition economies into the world economy is the fact that a number of them have not yet acceded to the WTO, although Russia finally joined in August 2012. Landlocked EECCA and SEE countries need also to address a number of additional obstacles to trade with measures like improvement of regional transport infrastructure, simplification of border-crossing and transit procedures and harmonization of product and regulatory standards. Foreign investment remains depressed in the region following the global financial crisis, but given the vulnerabilities created by dependence on foreign investment, current levels may be more appropriate for achieving more stable economies.

Conclusions

With respect to the MDG progress, this report arrives at three principal conclusions. First, the MDG performance has continued to be highly uneven in the ECE emerging economies. Basically, two groups of countries can be identified on the basis of MDG indicators. The first group consists of middle and upper middle-income countries that have eliminated extreme poverty to a large extent and are likely to achieve most MDG objectives. This group is dominated by the new EU member States from Central Europe and EU candidate countries from South-Eastern Europe, i.e. by countries that have been relatively successful in their institutional transition to a society characterized by competitive markets and free elections. The second group includes mainly the lower middle and low income countries from Eastern Europe, Caucasus and Central Asia as well as the relatively less advanced transition economies of South-Eastern Europe. These countries, characterized by a more or less delayed economic and political transition, have been less successful in the pursuit of the MDGs.

The second major conclusion of this report is that the Great Recession has continued to have a strong negative effect on the achievement of the MDGs in most countries of Emerging Europe and Central Asia. Higher unemployment and/or lower incomes have forced households to economize not only on luxuries and conveniences but also on necessities. This adjustment has been especially regressive in the health sector because governments in a number of countries have reduced public spending or restricted access in this area while low-income families have cut out-of-pocket expenditures on medical care and pharmaceutical products. Only a handful of countries have attempted to compensate the poor for reduced access to healthcare. The education expenditure, both public and private, has been better protected, at least to date.

Finally, it needs to be emphasized that marginalized groups have been hit harder by unemployment, income losses and reduced accessibility of health services than the majority population. Such groups include disadvantaged ethnic minorities, persons with disabilities, indigenous peoples and migrants. MDG progress could be accelerated at minimal cost if the social and economic policies of governments would focus on improving the living standards of these disadvantaged groups.

I. OVERVIEW

Introduction

The 2000 Millennium Declaration and the establishment of the Millennium Development Goals heralded unprecedented global efforts towards the reduction of poverty. Significant progress has been made. For example, in aggregate terms, the global goal on access to safe drinking water has been met five years ahead of schedule and poverty rates as well as the number of poor have declined. Less progress has been registered with respect to environmental sustainability and, even on the social dimensions covered by the MDGs, there is still a long way to go to overcome the effects of discrimination based on gender, ethnicity, disability or residence.[2] Redressing such discrimination and associated inequalities will be essential, if global opportunities for progress are to be shared by those most in need of its benefits.

This report, prepared by the United Nations Economic Commission for Europe (UNECE), takes stock of the progress made in reaching the MDGs in the emerging economies of Europe and Central Asia. In addition to reviewing MDG trends, the report provides a brief overview of specific human development challenges in these economies, describes the changing macroeconomic context in which their governments have to operate, discusses the MDG metadata issues and presents a special chapter on the economic and social consequences of population ageing in EECCA and SEE economies. The final part of the report consists of the data annex with key MDG indicators.

Specific development challenges in Emerging Europe and Central Asia

The 2010 inter-agency report on the MDGs in Europe and Central Asia noted that these goals were mainly intended for addressing the challenges facing countries moving up from massive poverty and low stages of industrial development. The ECE emerging economies are not in this situation. They entered the 1990s with relatively high levels of industrialization and human development, as measured by the Human Development Index (HDI). However, for a number of former communist countries, the economic transition to a market economy has led to setbacks in development, causing serious hardship, displacement and social stress. A critical aspect has been the more or less rapid removal of structures and institutions that governed economic and social activity without the sufficient administrative capacity and social cohesion for the creation of new structures that would underpin long-term sustainable growth.[3]

Countries with transition economies experienced a major collapse in economic activity in the early 1990s. In addition, rising unemployment reduced the effectiveness of social safety nets which had been based on mandatory full employment during the period of communist rule. Also, almost one half of the transition economies became involved in some form of national or international conflict during the 1990s. By the middle of that decade the Baltic and South-Eastern European economies had experienced GDP declines in the range of 30 to 40 per cent while in the

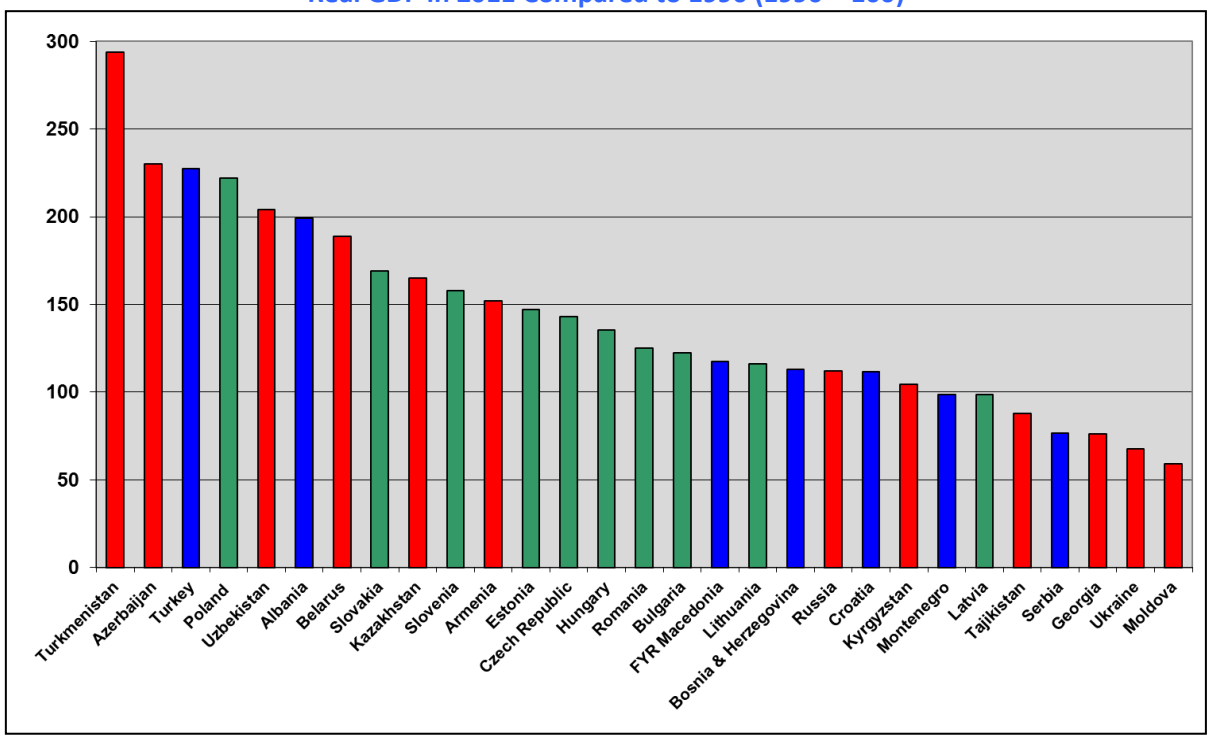
[2] A special chapter of the 2011 MDG report shows that discrimination based on ethnicity tends to perpetuate the social exclusion of the Romani minority in European post-communist countries. See UNECE (2011), *The UNECE Report on Achieving the Millennium Development Goals in Europe and Central Asia.* Geneva.

[3] See UNECE (2010), *The MDGs in Europe and Central Asia: Achievements, Challenges and the Way Forward*. New York and Geneva.

EECCA region the declines were in the 40 to 60 per cent range. Near the end of the decade most of these economies were able to establish market based institutions and were able to regain some degree of growth. Output recovery gathered pace in the 2000s when the ECE emerging markets grew faster than the advanced economies in North America and Western Europe.

By 2011, two decades after the beginning of transition, aggregate labour productivity in Emerging Europe and Central Asia (ECA) was some 50 per cent above the 1990 level. The subregional labour productivity growth over this time period amounted to approximately 33 per cent in the EECCA, 67 per cent in the SEE and 62 per cent in the NMS. However, the output levels remained subdued in a number of countries. Some energy-rich countries experienced rapid GDP growth while the Central European NMS had increased their national incomes approximately 50 per cent above their 1990 levels, but others (Eastern Europe and the Caucasus, the former Yugoslav republics, and the Baltics) had only returned to something similar to the 1990 level while a few economies (Georgia, Moldova, Serbia, and Ukraine) remained 20 per cent or more below this earlier level. Turkey, which did not have to go through the transition process but still had a severe currency crisis in 2000 and 2001, more than doubled its real GDP since 1990. Poland, an early starter in the transition process, managed a similar performance. Figure 1.1 shows the level of real GDP in 2011 as compared to the level in 1990 (the EECCA region is in red, NMS in green, and SEE in blue).

Figure 1.1
Real GDP in 2011 Compared to 1990 (1990 = 100)



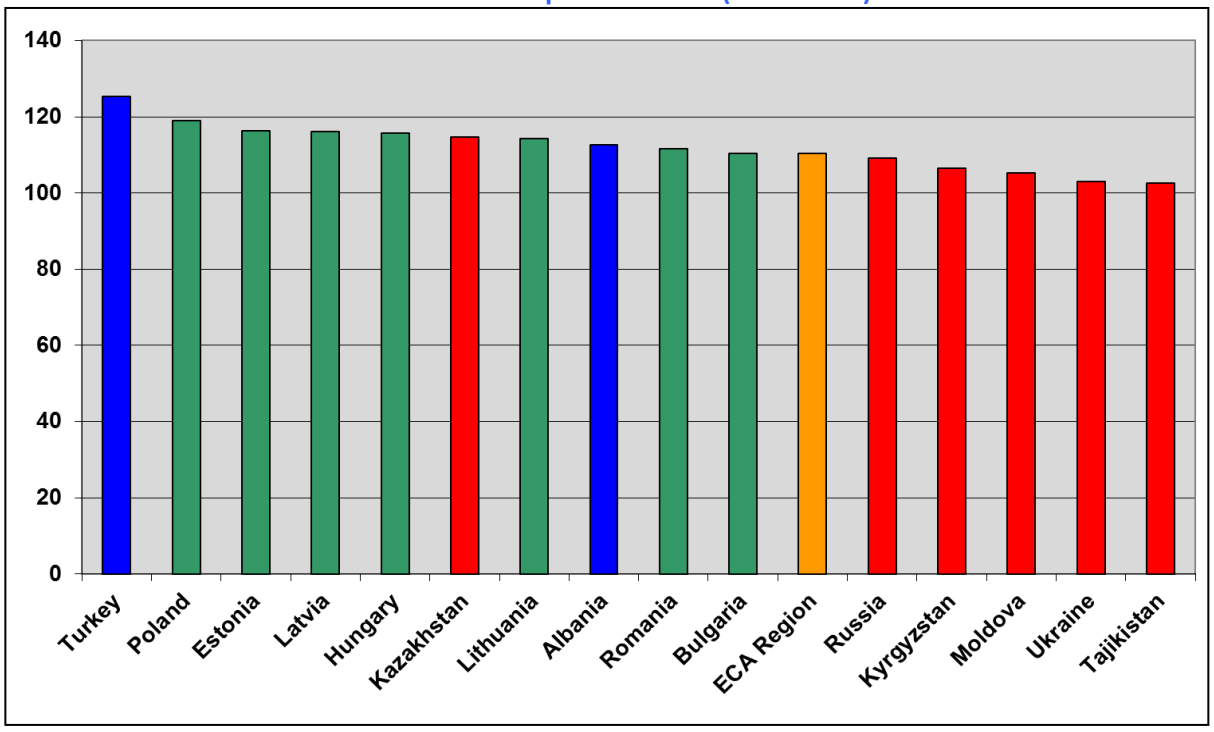
Source: UNECE calculations based on EBRD and IMF data.

Human development levels, measured by the Human Development Index (HDI), changed less spectacularly than real output levels over the last two decades. The HDI components include GNI per capita, years of schooling and life expectancy. Figure 1.2 shows that HDI increased moderately throughout the region, with the exception of Tajikistan where it declined. Turkey registered the greatest HDI growth in Emerging Europe and Central Asia (ECA) since 1990. It is

remarkable that some transition economies (Latvia, Moldova, Tajikistan and Ukraine) achieved modest HDI growth even though their national income in 2011 was lower than in 1990.

While providing a multidimensional measure of human development at country level, national HDI values mask discrepancies in social welfare *within* countries. Recent HDI estimates for households indicate that households with low education have consistently lower HDI scores than households with higher educational attainment because the former also tend to have lower levels of income and life expectancy. For instance, the HDI for the Romani population in Romania is significantly lower than the national average and similar to the level of HDI for Botswana, a country with a considerably lower HDI ranking than Romania.[4]

Figure 1.2
HDI in 2011 Compared to 1990 (1990 = 100)



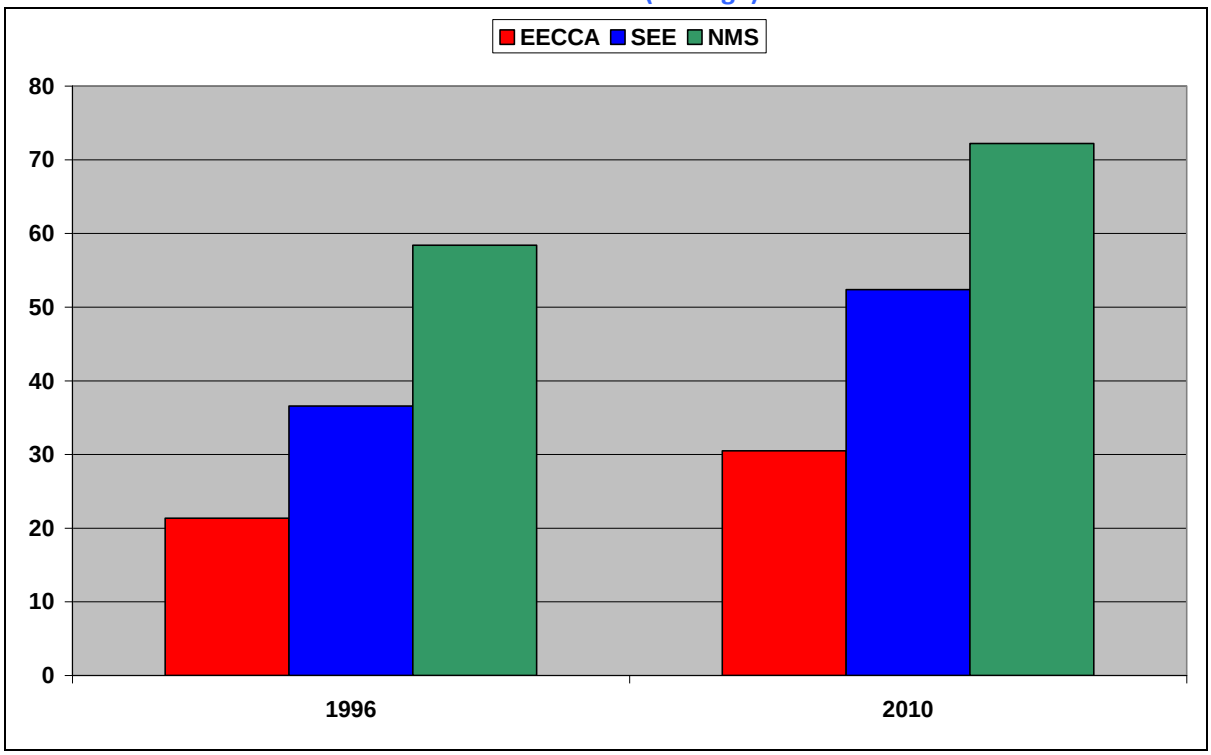
Source: UNECE calculations based on UNDP data.

The initial collapse of government capacity was apparently associated with the chaos prevailing in early phases of transition, especially in the countries that experienced violent ethnic confrontations and armed conflicts over disputed territories. In addition, a number of newly emerged countries had to set up central government institutions from scratch. However, according to the World Bank's governance indicators, government effectiveness has improved in all sub-regions since the mid-1990s (figure 1.3). These indicators are based on perceptions-based data that include surveys of firms and households, as well as expert assessments of commercial information providers, non-governmental organizations, multilateral organizations and other public-sector bodies.[5]

[4] See UNDP (2010), *The Real Wealth of Nations: Pathways to Human Development*. Human Development Report 2010, New York.
[5] For details, see D. Kaufmann et al (2010), "The worldwide governance indicators: Methodology and analytical issues." World Bank Policy Research Working Papers, no. 5430.

Figure 1.3 implies that government effectiveness in EECCA countries has continued to lag behind other transition economies. Because governance cannot be measured directly and the World Bank indices are based on surveyed perceptions, some economists have suggested that one should use more 'objective' indicators, e.g. the homicide rate. This indicator is supposed to reflect the degree of effective government control.

Figure 1.3
Government effectiveness by sub-region
Percentile rank (average)



Source: UNECE calculations based on World Bank data.
Note: Percentile rank indicates the percentage of countries worldwide that rate below the selected country. Confidence level equals 90 per cent. Sub-regional percentile ranks are expressed as the unweighted average of national percentile ranks. Higher values indicate better governance ratings.

The available homicide statistics confirm the existence of a large divide between EECCA and the other two sub-regions. Russia has the highest homicide rate in the region. However, following a sharp increase in the 1990s, the number of homicides in this country declined steadily until 2009 when it was 13 per cent over the 1990 level. The downward trend is consistent with a gradual improvement of socio-economic conditions and government effectiveness.[6]

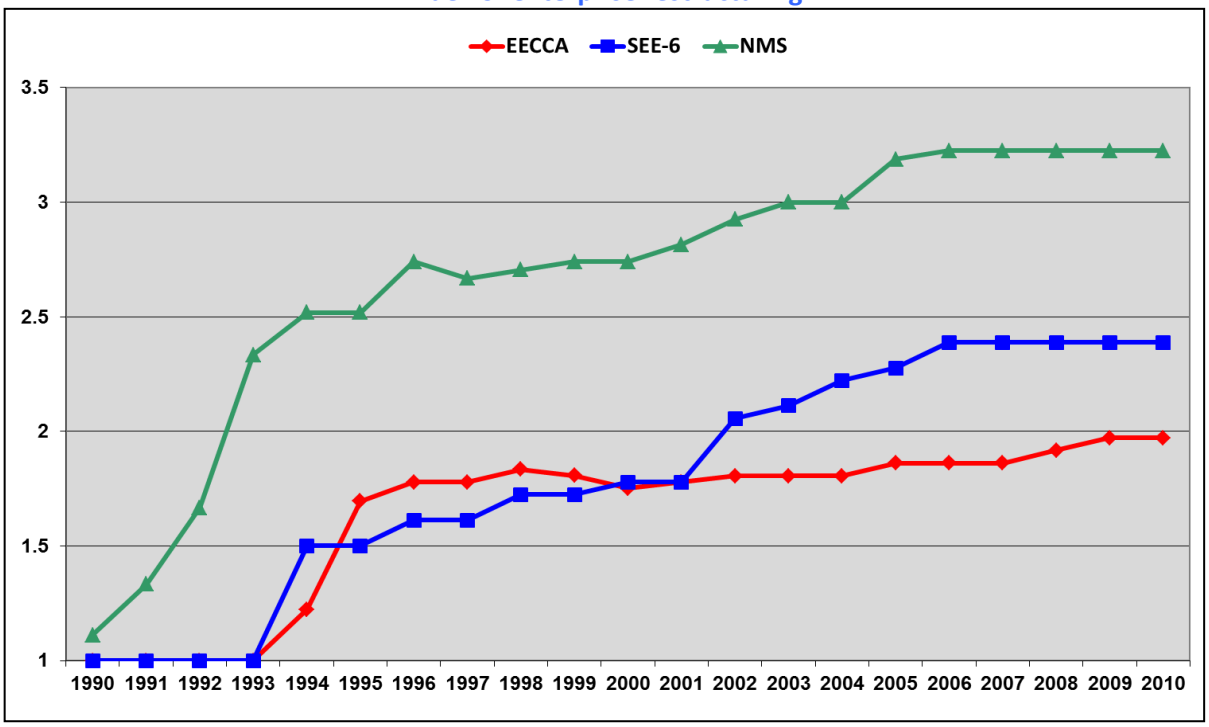
The economic restructuring in transition economies has correlated with the institutional changes described above. Generally, enterprise reforms have started earlier in the NMS than in the EECCA and SEE countries (figure 1.4). Since the mid-1990s, the enterprise restructuring index trended upwards in all three sub-regions. In the early 2000s, the pace of restructuring in the SEE picked up while remaining moderate in EECCA countries. Since the mid-2000s, the business

[6] A significant rise in homicides in early 1990s, followed by partial declines occurred in most former Soviet republics, except in Turkmenistan and Uzbekistan. See World Bank (2011), *World Development Report 2011*, Washington, D.C., p. 102.

governance gaps between the three sub-regions have remained quasi-constant. Other indices of economic restructuring, compiled by the European Bank for Reconstruction and Development (EBRD) to measure the progress of reforms in product markets, foreign trade and major infrastructure sectors, show similar trends.

The continued enterprise restructuring as well as continued improvements in governance are needed for further MDG progress in the region. Recent revolutions in Arab countries demonstrate that MDG progress without government accountability does not guarantee social stability. A genuine freedom of the press seems to be a necessary condition for sustaining this progress and reaching high levels of human development.

Figure 1.4
Index of enterprise restructuring



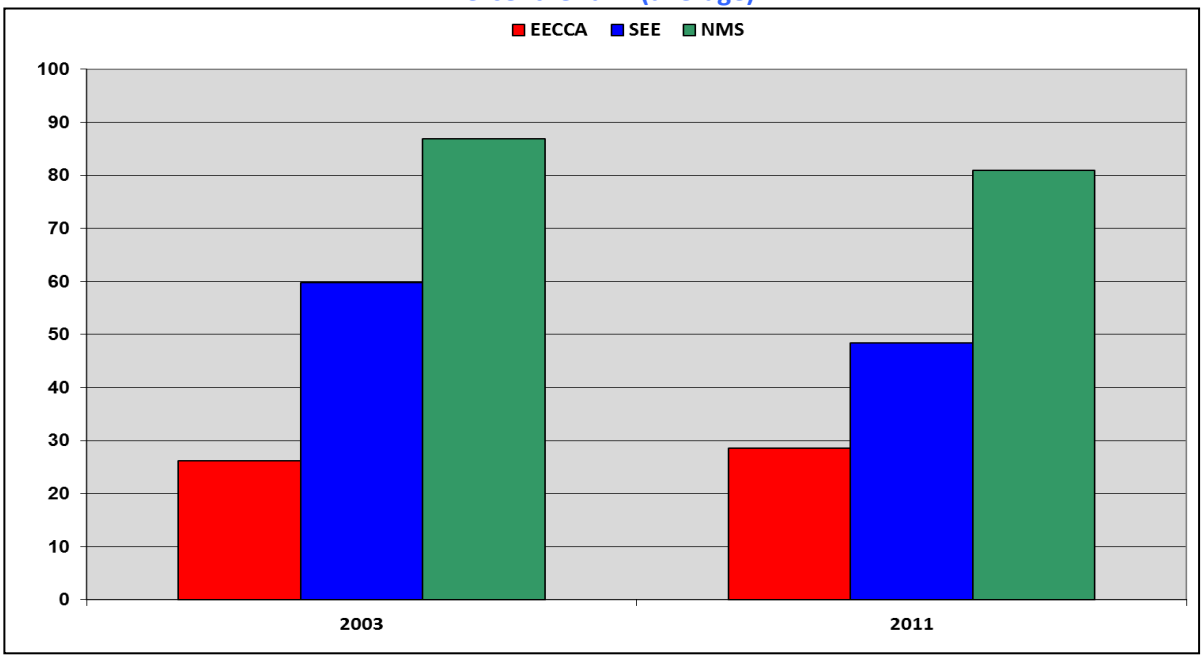
Source: UNECE calculations based on EBRD data.
Note: The enterprise restructuring index ranges from 1 (soft budget constraints) to 4+ (standards and performance typical of advanced industrial economies). The NMS sub-region does not include the Czech Republic.

Free press, or more generally independent media, provides society with the access to uncensored information that enables it to hold governments accountable for their actions. It is also considered to be a universal human right that should be respected by all UN member States.[7] The path-breaking *Human Development Report* of 1990 began with a definition of human development as a process of "enlarging people's choices." Such choices should be informed. The

[7] Article 19 of the Universal Declaration of Human Rights states that everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers. The United Nations has repeatedly reaffirmed the importance to development of respect for all human rights and fundamental freedoms, including the right to development.

collapse of communism meant initially the collapse of press censorship and other means of government control over the access to information. Since the early 1990s when state control of the media was considerably relaxed after the collapse of communist one-party rule, the culture of press freedom developed unevenly in the ECE emerging economies. Generally the press censorship was abolished sooner and to a larger extent in Central and South-Eastern Europe than in Eastern Europe and Central Asia. According to the press freedom indices published by *Reporters Without Borders*, a French-based non-government organization, since the early 2000s the status of press freedom improved somewhat in the EECCA while deteriorating in the NMS and South-Eastern Europe (figure 1.5).[8] However, the press remains less restricted in the NMS than in SEE and EECCA. This sub-regional ranking is also consistent with the freedom of the press data provided by Freedom House, a US-based non-government organization.[9]

Figure 1.5
Press freedom by sub-region
Percentile rank (average)



Source: UNECE calculations based on the annual press freedom indices published by *Reporters Without Borders*.

Note: Percentile rank indicates the percentage of countries worldwide that rate below the selected country. Sub-regional percentile ranks are expressed as the unweighted average of national percentile ranks. Higher values indicate better press freedom ratings.

In spite of the press freedom progress mentioned above, some EECCA countries (Azerbaijan, Belarus and Turkmenistan) are still among the twenty worst performers in the world. On the other hand, two EECCA countries (Armenia and Moldova) have press freedom scores that are better than the SEE average. The best NMS performers (Estonia and the Czech Republic) have press freedom ranks that put them among the best twenty performers world wide. The top press freedom scores have been achieved for the last three years by Finland and Norway, high-income Scandinavian countries with high HDI scores.

[8] Press freedom indices and recent reports on the freedom of the press in Europe and Central Asia are available at the website of *Reporters Without Borders* (http://en.rsf.org/europe-ex-ussr.html).
[9] These data are available online from http://www.freedomhouse.org/report-types/freedom-press.

Public participation and access to justice are important for the achievement of inclusive and sustainable development. An example of good practice at the regional level is provided by the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, known as the Aarhus Convention after the Danish city where it was signed in 1998. It has been described by the former United Nations Secretary-General Kofi Annan as 'the most ambitious venture in environmental democracy undertaken under the auspices of the United Nations.' An environmental democracy clearing house – aarhusclearinghouse.unece.org – was launched by the UNECE in 2004 with a view to highlighting and promoting awareness of issues covered by the Aarhus Convention. The clearing house showcases good practices in citizens' environmental rights and should make the implementation of the Convention more effective. In addition to information related to the Aarhus Convention, the clearing house also contains other information relevant to the implementation of principle 10 of the Rio Declaration on Environment and Development, adopted at the Earth Summit in 1992.

The Aarhus clearing house for environmental democracy provides information for a wide range of users, including governments, intergovernmental organizations, NGOs, students and researchers, and the general public. While the clearing house provides a mechanism for promoting access to information and widespread participation in the development of environmental democracy throughout the region and beyond, it should be complemented by information tools that enable the public to participate in the environmental planning, permitting, and regulatory decision-making processes at the local level. The Public Participation Guide to Air Quality Decision Making in California, available in English and Spanish at http://www.arb.ca.gov/ch/public_participation.htm, is an example of good practice at the local level.

Post-2015 development goals

The targets established under the MDG framework were set to be achieved by 2015. As this date approaches the world community has begun to discuss what type of development agenda should supersede it. More specifically should the MDG framework be extended and if so what form should it take? The MDG framework has provided a set of globally agreed goals forming a clear, simple, prioritized and feasible agenda for action. However, the MDG project does not comprise the full spectrum of development, focusing instead on critical aspects of social welfare and aiming at overcoming the most acute forms of deprivation embracing both income and other human development dimensions.

A number of gaps in the set of MDGs have become obvious with the assessment of their progress and of the impact of new challenges on global development. For instance, increasing realization of the threats to humankind posed by climate change necessitates more urgent action to mitigate the impact of human activity on the environment and to design climate resilient development models. In addition, human development goals will need to be formulated in terms of sustainably attaining certain levels, rather than reaching them by 2015.

At the 2010 MDG Summit, member States requested the Secretary-General to initiate thinking on how to advance the UN development agenda beyond 2015. He published his first report addressing this issue in August 2011. The Secretary-General subsequently requested Mr. Sha Zukang, Under-Secretary-General for Economic and Social Affairs, UN-DESA, and

Ms. Helen Clark, Administrator of UNDP, to establish the UN System Task Team on the post-2015 UN development agenda.

Launched in January 2012, and co-chaired by DESA and UNDP, the Task Team has brought together senior technical experts designated by the Principals of more than 50 UN system and other relevant organizations, including the ECE. Building on the lessons learnt from the implementation of the MDG agenda, the Task Team report was submitted to the Secretary-General on May 31, 2012. The report provides an assessment of key development challenges of the 21st century to be addressed and proposes initial ideas about possible contours of a post-2015 UN development agenda.

There are a number of on-going processes where negotiations leading to international agreements have taken and will take place, including, among others, the Rio+20 Conference, the 20 year review of the Programme of Action for the International Conference on Population and Development, and the 2015 Conference on Women. The consultations regarding the post-2015 development agenda will be guided by the progress made within those processes and by the multiple consultations that will take place at national, regional and global levels. Governments have called for an open and inclusive consultation process, led by member States, with early and wide participation of all relevant stakeholders.

The work of the UN Task Team has informed that of a High-level Panel of Eminent Persons that was appointed by the Secretary-General after the Rio+20 Conference. Three co-chairs of the Panel (Presidents of Indonesia and Liberia, and Prime Minister of the United Kingdom) have expressed their readiness to cooperate in order to draw up the post-2015 development agenda. The report of the High-Level Panel and the Secretary-General's own assessment will be conveyed to member States and form the basis of intergovernmental negotiations on a post-2015 framework.

Details of the post-2015 development agenda are impossible to predict precisely at this time. However, given the discussions that took place so far it can be expected that the MDGs will be reshaped and extended beyond 2015 in a way that prioritizes economic and social equity and environmental sustainability to a greater extent than the pre-2015 agenda. This is likely to make the post-2015 development goals relevant to all member States rather than to low-income and medium-income countries only. Assessing periodically the progress made towards development goals will thus become a comprehensive task, focusing on more countries, sub-regions and regions than ever before. Following the adoption of measurable targets and indicators for the agreed development goals, it will be therefore necessary to develop a concise, simple and focused monitoring framework. A special chapter on the MDG metadata issues provides a forward-looking contribution of this report to the discussion of post-2015 development goals and processes. Given that the ECE region is comprised of a significant number of advanced economies and assuming that the post-2015 sustainable development goals will address broader economic and development issues and give more emphasis to environmental and social issues, the relevance of this initiative for the region's economies should become even more important. In addition, given that a large portion of the UNECE's current programme activities already address what may become part of this post-2015 framework, these sustainable development goals could become a central unifying framework for the UNECE's programme of work. In this regard it should be noted that the outcome document from the Rio+20 conference in June 2012 emphasized the important role

of the UN regional commissions in achieving the sustainable development objectives highlighted in that document.

Population ageing is likely to be one of the issues to figure prominently in the post-2015 development agenda. Mortality rates have declined and longevity increased in most countries over the last century. As a result, the world population is ageing rapidly. By 2050, one in three persons living in developed countries, and one in five in what currently constitute developing countries, will be over 60 years of age. Demographic pressures on public pension and health systems present considerable challenges for policymakers not only in developed countries but increasingly also in transition economies and some developing countries. The challenges are manifold, including the needs to redesign pension systems so as to ensure economic security for all in old age while sustaining financial viability; to enhance health and long-term care services to keep ageing populations healthy and active; and to enhance opportunities for older persons to actively participate in society. This report devotes a special chapter to a discussion of demographic pressures and the sustainability of social security systems in emerging economies of Eastern and South-Eastern Europe, the Caucasus and Central Asia.

II. THE MACROECONOMIC CONTEXT

The global economic situation. The global economy has entered its fourth year of recovery since the Great Recession of 2008-2009, the largest peace-time economic downturn since the Great Depression of the 1930s. Although the recoveries in the developing world have been reasonably strong, they have been unusually weak in the ECE region. The level of GDP in the European Union and South-Eastern Europe is still below that prior to the crisis and is only 3 per cent higher in North America and 6 per cent higher in EECCA. This lack of income growth has translated into relatively high rates of unemployment in the ECE region; currently it remains elevated in North America and EECCA although falling slowly while it continues to rise in Europe where in a few economies it has reached quite worrisome levels. Throughout the region, youth unemployment is particularly high and there are unusually large numbers of people who have been out of work for over 6 months.

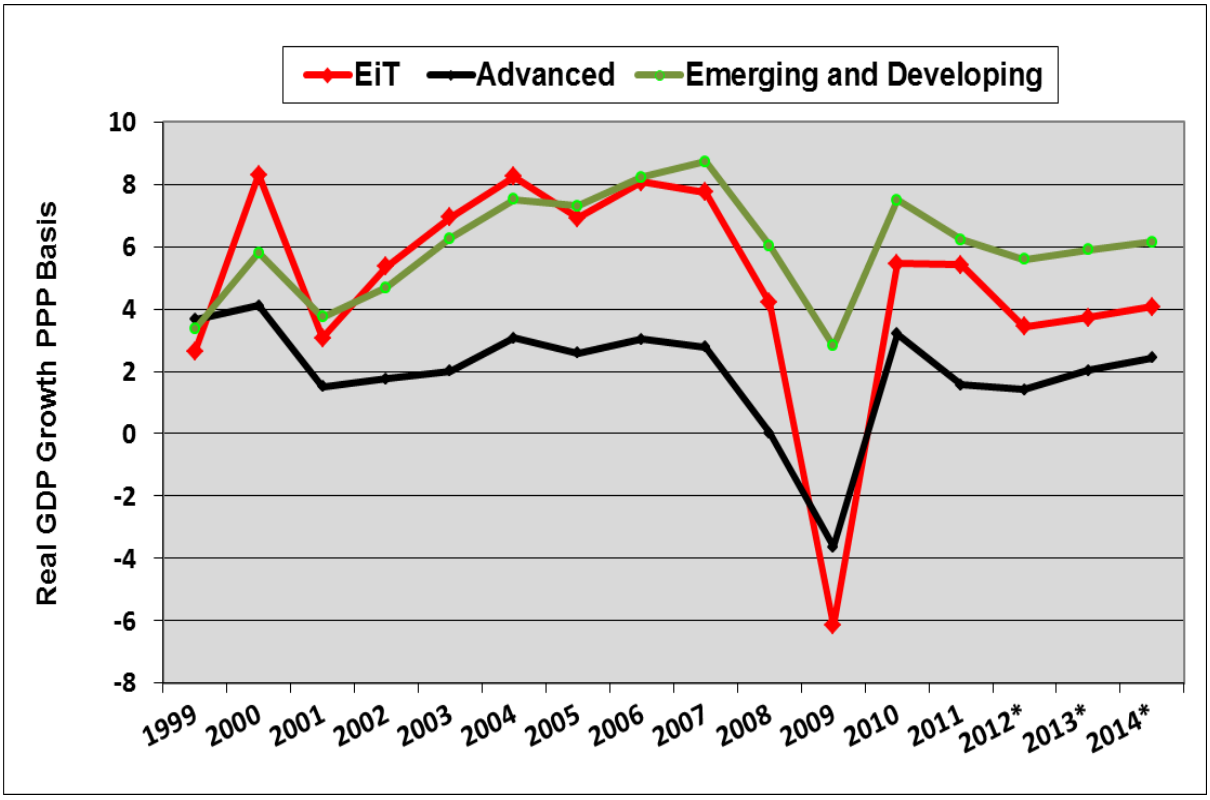
The crisis and slow recovery created large budget deficits and rising debt levels which resulted in several serious sovereign debt crises in the eurozone due to some peculiarities in its institutional design. This eurozone crisis remains ongoing as it has moved from one impending disaster to the next and now threatens the very existence of the monetary union. A eurozone breakup would not only have serious ramifications for Europe but could result in another global financial crisis. Even in a reasonable best case scenario, Europe is facing another one or two difficult years with extremely low growth, high unemployment, and financial instability. The austerity measures often resulted in some quite significant cuts in social and health programs which have not only lowered current social welfare but are likely to result in lower growth in the future. Excessive housing inventory remains a significant drag on the United States economy and until that market stabilizes growth there will remain sluggish. Recent growth in the EECCA has been stronger than in the advanced economies but still significantly below their pre-crisis trends.

The non-ECE economies, which account for about one-half of world output, were only moderately affected by the 2008-09 financial crisis and their growth over the last several years has been more robust. Although the developing economies have lower levels of per capita income, by many measures their economies have been outperforming the advanced economies over the last several years. For example, not only has growth been higher in the developing world for over a decade, but their average unemployment rate is lower (8.6 per cent in the OECD versus 6.0 per cent in the developing economies) and their fiscal deficits and debt levels are significantly lower. China has been a major engine for this growth in the developing world through its strong imports of natural resource products. In mid-2012 however its economy began to slow down but the Chinese authorities, unlike their counterparts in the advanced economies, had the policy space to respond quickly and aggressively with counter-cyclical macroeconomic stimulus in the form of lower interest rates and increased government investment. The latest expectation is that these policy actions should keep China and much of the developing world on a reasonable growth trajectory in 2013, unless there is a serious decline in economic output in either the US or Europe. Overall world growth in 2012 is forecast to be 3.5 per cent which is a slight decline from 2011 although it is currently expected to increase slightly in 2013 to about 4.1 per cent.

Even this subdued outlook may prove optimistic as there are numerous downside risks that could derail the global economy in the coming year; these include the further withdrawal of fiscal stimulus in the advanced economies, an unexpected slowdown in China, rising commodity prices that result in a less expansionary monetary policy, a military strike against Iran's nuclear facilities,[10] or worst of all a eurozone crisis that causes global financial markets to seize up as they did in 2009.

The global forecast is subject to much more uncertainty than usual as a few critical policy choices that will be made in the second half of 2012 especially in the eurozone will have extremely large implications for the global economy in the coming years.

Figure 2.1
Real GDP growth in major regions of the world 1999-2014



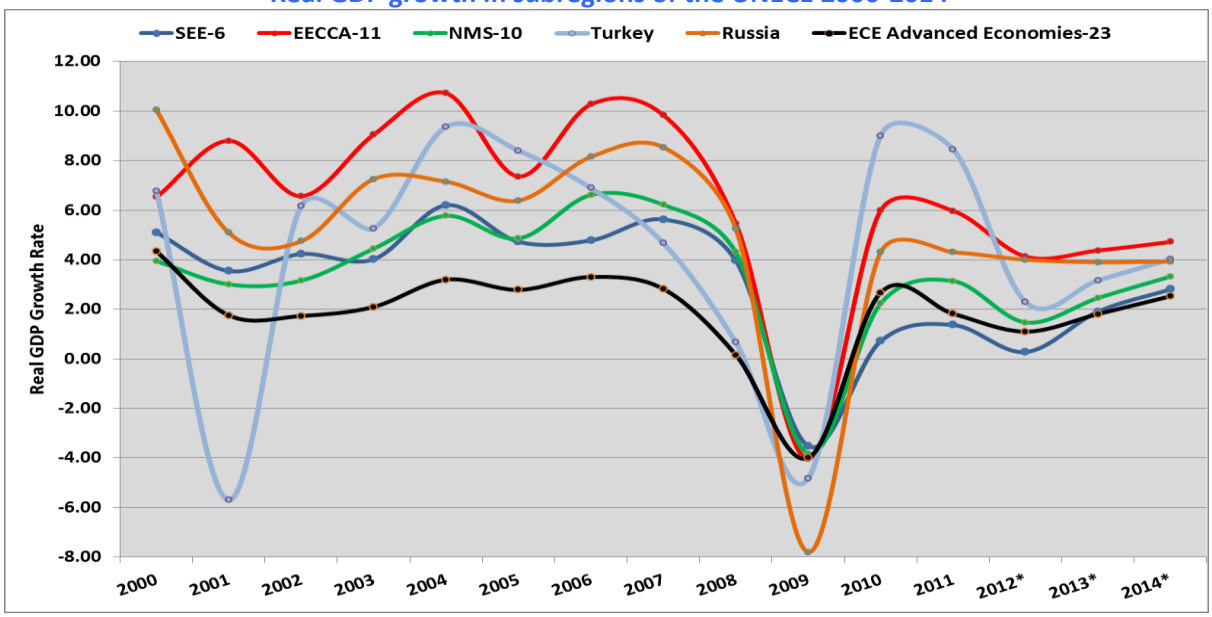
Source: Calculations by UNECE based on data from IMF 2012 WEO database.

Growth in the ECE region. Figure 2.2 provides the real GDP growth rates of the major subregions of the ECE with forecast through 2014. Prior to the crisis all of the ECA was growing rather strongly; only in the advanced economies was growth somewhat disappointing. In 2009 GDP declined by about 4 per cent in all the regions, except Russia where the decline was closer to 8 per cent. Since 2010 the general pattern of growth in these regions has returned to what it was prior to 2008 with the fastest growth in the EECCA-11 and Russia followed by the NMS and SEE-6 with growth weakest in the advanced economies;

[10] Russia and the other energy exporting EECCA would gain from higher oil prices but a more general global downturn would have numerous undesirable secondary effects.

Turkey's growth remains more volatile than elsewhere.[11] Although the pattern after the crisis is similar to that before the crisis, there is one significant difference; all of the regions are likely to have slower growth over 2010-2014 than prior to the crisis. Therefore the crisis not only caused a major downturn in 2009 but appears to have affected the more permanent growth trend.

Figure 2.2
Real GDP growth in subregions of the UNECE 2000-2014



Source: Calculations by UNECE based on data from IMF 2012 WEO database.

The Great Recession and sluggish recovery have had a much greater impact on the ECE regions than on the other regions of the world. Quantification of the extent of this difference is complicated by the fact that the crisis began in each region at different times, regions were growing at different rates prior to the crisis and the depths of the economic declines were not necessarily related to the strengths of the recoveries. One possible approach is to estimate how much current GDP is below what would have occurred had the growth trends prior to the crisis continued unabated. For the ECE region overall, current GDP is about 14 per cent lower than expected; this is roughly twice the 6 per cent for all of the non-ECE economies. However within the ECE region there is considerable variation. North America is only 11 per cent below the longer-term trend, while the eurozone is 13 per cent lower, South-Eastern Europe 14 per cent, the UK 17 per cent, and EECCA 35 per cent lower. A few economies such as those in the Baltics, Armenia, and Ukraine have incomes only about one-half of what would be expected had trends prior to the crisis continued; several Western European economies that have experienced debt crises such as Greece, Iceland, and Ireland have incomes about a third below trend expectations. Even Poland, which was the one EU economy to avoid a recession in 2009, currently has a GNP ten per cent below its trend rate. Clearly these estimates are sensitive to the time period used to estimate the long-run trend and must be interpreted cautiously as the pre-crisis trend in some economies may have been

[11] Because Russia dominates the EECCA grouping (accounting for 70 per cent of its GDP) and Turkey the SEE grouping (accounting for 82 per cent of its GDP), these two economies are taken out of these two regional groupings and treated separately in various parts of this report; thus at times the ECA is composed of EECCA-11, Russia, SEE-6, Turkey, and the NMS. Also note that the NMS as used in this report does not include Malta and Cyprus which are grouped with the European advanced economies (EAE).

characterized by unsustainable excesses. Using a longer time frame than five years would particularly reduce the estimated income losses for the transition economies while it might increase the losses for North America and Western Europe which had not grown especially fast in the five years prior to the crisis.

There is some uncertainty about how much of this decrease from trend represents a permanent decline from trend and how much of it can or could be made up once a strong recovery can be initiated. The long-run potential of economies is reduced by a financial crisis and slow recovery as public and private investments are not made, training, education and research are not undertaken, labor skills are allowed to depreciate from being unemployed, workers retire early or take disability, population health deteriorates, and sectoral shifts (such as the decline of the financial sector) destroy human capital. In some cases it may be possible to recover some of these losses; this is especially the case in countries where unemployment is high and there is a reasonable expectation that these currently unused resources can be redeployed. As for estimates of how much of this lost growth can be recovered, best estimates for the US, for which there is the most analysis, suggest that about half of its GDP decline from trend or about 5 per cent of GDP represents a permanent loss that will never be made up.

Table 2.1
Economic characteristics of the ECE subregions

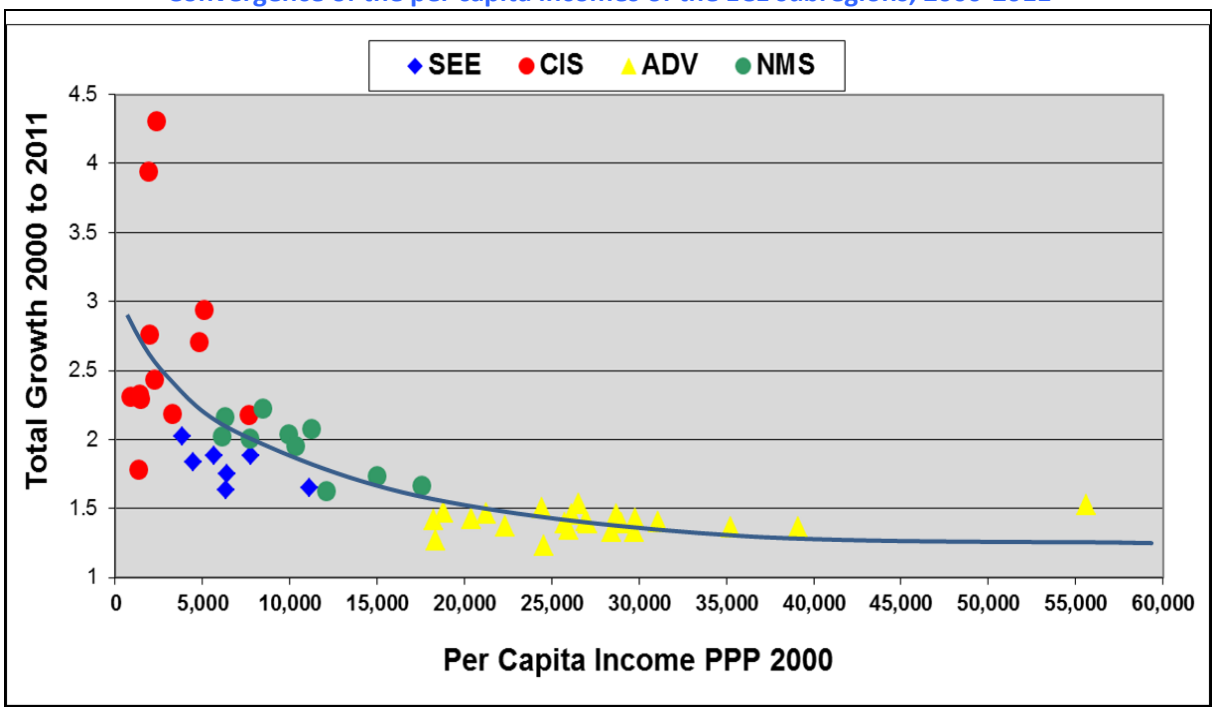
	2003-7 Annual Average Growth	2008-2012 Annual Average Growth	GDP Growth 2012	Per Capita Income 2011 US $ PPP	Population 2011 millions
Turkey	6.9	3.1	2.3	14,517	73.6
SEE-6 (Ex Turkey)	5.1	0.6	0.3	11,323	21.3
EECCA-11	9.4	3.5	4.1	7,192	139.0
Russia	7.5	2.0	4.0	16,736	141.9
EiT	7.6	2.5	3.4	12,465	375.9
NMS	5.6	1.5	1.5	18,992	101.9
ECA	7.0	2.2	2.9	13,857	477.7
EAE (European advanced)	2.4	-0.2	-0.1	35,595	421.4
NA (North America)	2.7	0.6	2.0	47,605	346.1
All Emerging & Developing	7.6	5.6	5.6	6,597	na
World	4.7	3.0	3.5	11,399	6,973.7

Source: UNECE calculations based on data from the IMF WEO 2011 database and WB World Development Indicators.

The transition economies experienced some very large declines in GDP during the 2008-09 crisis. The EECCA economies generally bounced back reasonably well so that for most, GDP levels in 2012 are above those prior to the crisis. In South-Eastern Europe, however, the recoveries have been quite slow and most of these economies still have not attained the GDP levels prior to the crisis. Nevertheless, it is in the EECCA where current incomes are so much lower than what would have been expected based upon trends; this is due to their much higher trend growth rates prior to the crisis.

Growth in Russia, Azerbaijan and Central Asia has been moderate since 2010 but remains significantly below the rates in the five years prior to the crisis. Their growth has been driven by continued high commodity prices, especially of oil and gas. Post-crisis growth in the European EECCA (Belarus, Moldova, and Ukraine) has been weaker than elsewhere in EECCA. Despite a currency crisis in Belarus in 2011 growth is likely to still be about 2.5 per cent in 2012; inflation, however, has escalated due to its currency depreciation and is likely to be over 50 per cent in 2012 as it was in 2011. The economies in South-Eastern Europe have performed poorly since the economic crisis and are forecast to have quite weak growth in 2012 as the eurozone crisis has slipped over into their economies due to their extensive trade and financial ties with southern Europe. Over 85 per cent of South-Eastern European exports (while over half of Turkey's) go to some other European economy. Growth is likely to be near zero in 2012 and remain weak in 2013.

Figure 2.3
Convergence of the per capita incomes of the ECE subregions, 2000-2011

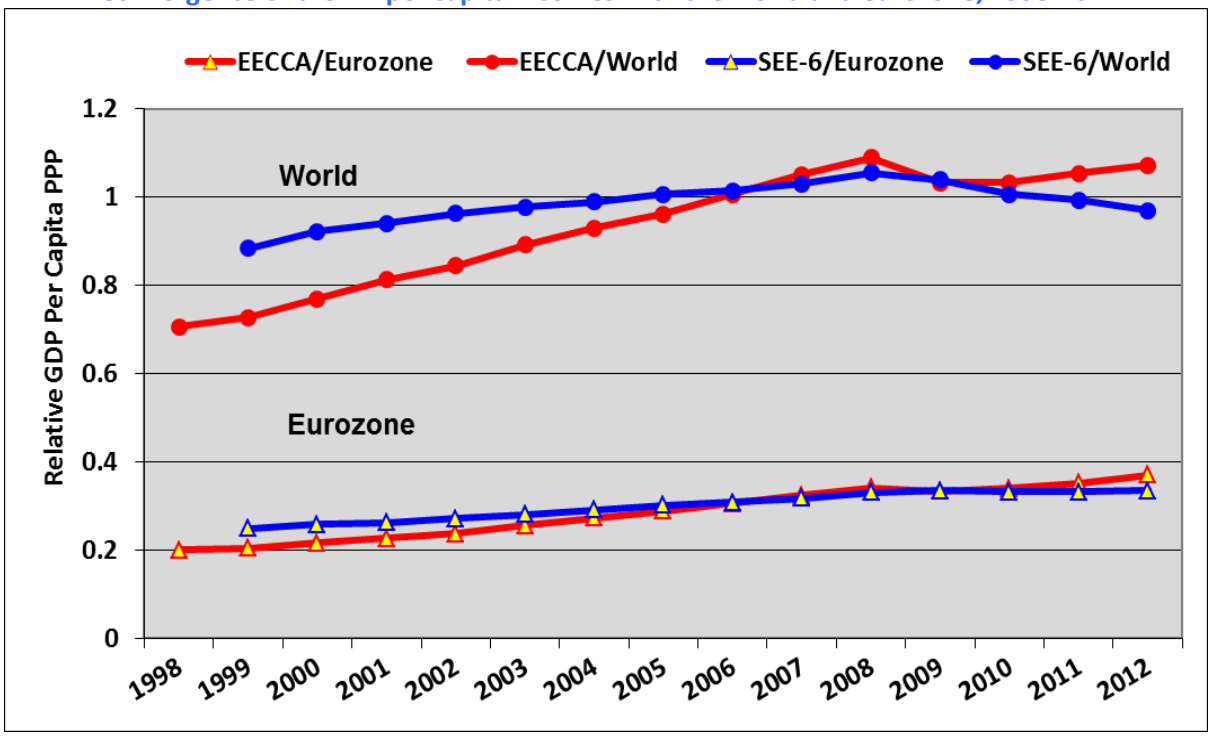


Source: Calculations by UNECE.

Long-run convergence. As shown in figure 2.2 the ECA economies grew faster than the advanced economies over the last decade, and within the ECA the EECCA grew faster than the NMS and SEE. In figure 2.3 the growth over the 2000-2011 period for the ECE economies is plotted against their level of per capita income in 2000. Generally the poorer economies have grown significantly faster than the richer ones and thus there has been some convergence in per capita incomes throughout the ECE region over the last decade.

The per capita incomes of the EiT have increased from being only about a fifth of the eurozone to over a third over the last 15 years. It is also worth noting that the SEE-6 and EECCA now have per capita incomes that are approximately equal to each other and also equal to the average of the world economy (figure 2.4).

Figure 2.4
Convergence of the EiT per capita incomes with the world and eurozone, 1998-2012



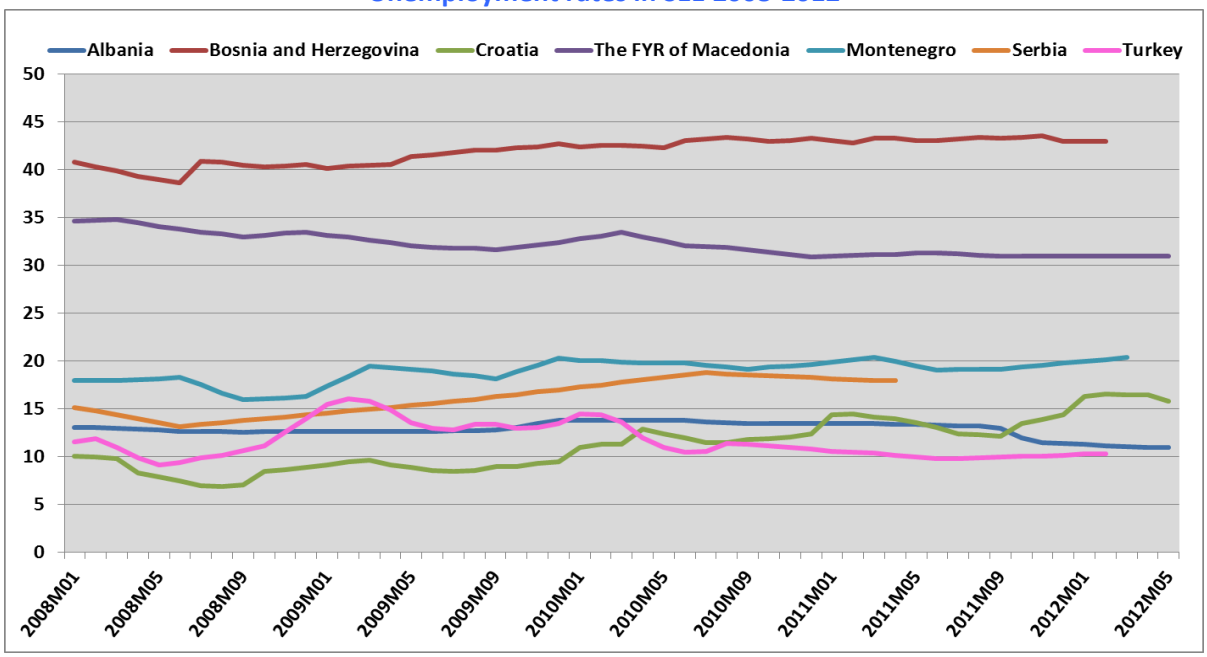
Source: Calculations by UNECE.

Unemployment. The crisis resulted in unemployment increasing substantially in much of the world and it remains elevated; currently the world needs to create about 50 million jobs just to get back to the employment to population ratio that existed prior to the crisis. Unemployment increased especially in the advanced economies of the ECE. In the US it more than doubled peaking at 10.0 per cent and has only slowly declined to about 8.2 per cent in mid-2012. In the European Union unemployment which was already elevated prior to the crisis increased less rapidly and then declined slightly in 2010 before increasing again as austerity packages were implemented. Over the last year unemployment has been rising and in mid-2012 reached 10.3 per cent in the EU and 11.1 per cent in the eurozone. Although unemployment is high in the EU, it does have a better social safety net than most other economies including those in North America and the EiT. Germany is one of the few advanced economies with lower unemployment in mid-2012 than prior to the crisis although at 6.8 per cent it is not particularly low; Germany has been well positioned to take advantage of the more robust growth in the developing economies as it is a major exporter of capital equipment to these regions. Over the last year, unemployment has been falling the fastest in the Baltic economies although this is just a partial reversal from the very high rates that occurred during the height of the crisis.

Although the economies of SEE were quite negatively impacted by the global crisis of 2008-2009, their unemployment rates did not increase initially as much as might be expected; and it is also the case that their unemployment rates have not declined appreciably with the recovery. Currently unemployment is above ten per cent in all of the SEE (including Turkey) and expected to stay elevated for at least several years. In Bosnia and Herzegovina and The

former Yugoslav Republic of Macedonia unemployment is above 30 per cent.[12] Unlike the high unemployment in much of the rest of the ECE region which is largely cyclical due to inadequate demand, the unemployment in this sub-region is mostly structural. The capital stock in much of the region was destroyed by the conflicts in the 1990s and insufficient investment in new facilities and education has resulted in a situation where the region lacks the needed production facilities and skilled labor. Reductions in unit labor costs, reforms in labor market policy, improved education and training facilities and more incentives for investment are needed to address this problem. In such a situation additional foreign direct investment (FDI) could contribute significantly towards reducing unemployment in these economies. However, FDI throughout the transition economies fell quite significantly during the crisis and remains depressed today (FDI trends are discussed more fully in chapter III, goal 8). This decline in investment is an important factor in explaining not only their current low growth and high unemployment but also their fairly weak medium to long run growth prospects. However, excessive reliance on capital inflows can become a source of macroeconomic vulnerability and must therefore be managed carefully.

Figure 2.5
Unemployment rates in SEE 2008-2012



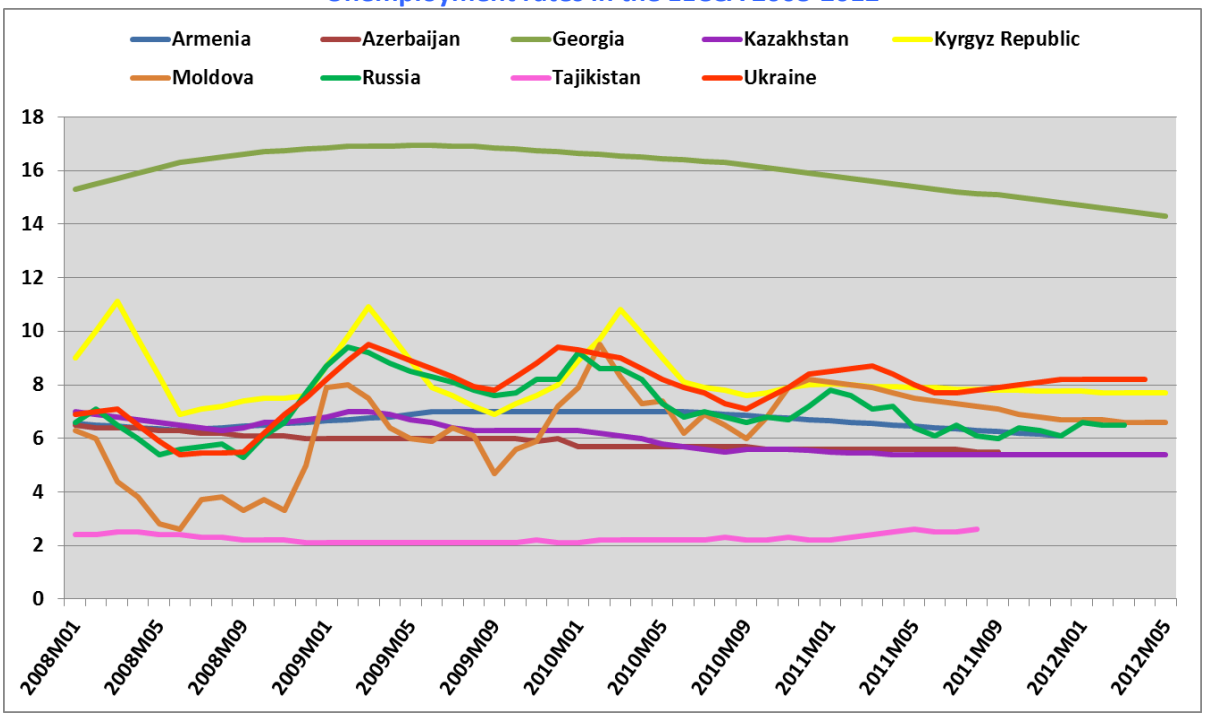
Source: Calculations by UNECE from various databases; estimates may not match official government figures. Cross country comparisons may not be appropriate as some of these series use different measurement techniques.

Figure 2.6 provides data on unemployment in the EECCA; unemployment varies considerably throughout the region and officially reported statistics provided by some countries (i.e., registered unemployment) generally underestimate unemployment as defined

[12] The monthly unemployment figures for Bosnia and Herzegovina in figure 2.5 are for registered unemployment; estimates using a yearly labour force survey are considerable lower, generally in the low 20 per cent range. The Republic of Serbia Institute of Statistics reported that unemployment in Serbia was 25.6 per cent in 2012 (annual release 136/12; 31/7/2012).

by the ILO.[13] Unemployment in Moldova, Russia, and Ukraine increased significantly during the global crisis with rates still slightly elevated. Despite the increases in their unemployment rates of several percentage points during the crisis, the declines were generally quite small relative to what might have been expected given their large GDP declines (see figure 2.7). For example, given Ukraine's decline in GDP of almost 15 per cent in 2009, their unemployment would have increased by 9 percentage points (instead of the 3 that did occur) if their labor markets had adjusted in a manner similar to the average for the ECE economies; correspondingly, the Baltic economies experienced a similar decline in GDP as Ukraine and their unemployment rates increased in the range of 8 to 9 percentage points.[14] Some of this stability in unemployment, especially in Russia, masked the dismissal of migrant labor often not eligible for unemployment benefits and either not counted in surveys or no longer in the labor force after returning to their home countries. Currently, unemployment remains moderate (single digits) with a downward trend in Russia, Ukraine and much of Central Asia; however it is particularly high in Armenia and Georgia.[15]

Figure 2.6
Unemployment rates in the EECCA 2008-2012



Source: Calculations by UNECE from various databases; estimates may not match official government figures. Cross country comparisons may not be appropriate as some of these series use different measurement techniques.

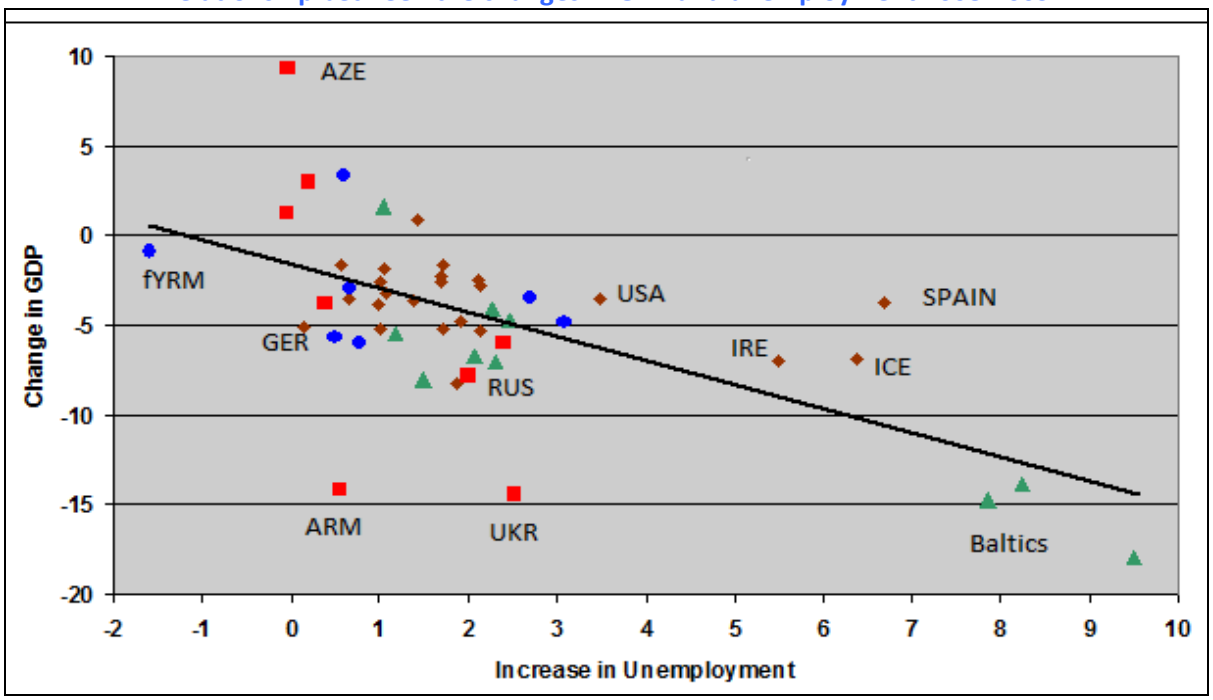
[13] For example, in 2009 in Belarus the official registered unemployment rate was reported to be about one per cent but according to estimates in the World Bank Development Indicators, unemployment (by international standards) was 11 per cent for those with only a primary education, 39 per cent for those with secondary education and 51 per cent for those with tertiary education. Likewise, Armenia's official unemployment in 2008 was reported as 6 per cent but the World Bank Development Indicators estimated it was 29 per cent.

[14] Figure 2.7 also shows the relative success of German labour market policies in containing unemployment during the crisis.

[15] Armenia's unemployment rate presented in figure 2.6 is based upon official registered unemployment; the IMF estimated Armenia's unemployment in 2012 was about 19 per cent.

Youth unemployment is high in both the European advanced economies (EAE) and in the ECA; in 2011 it was about 18 per cent in each. This is relatively high by global standards with only the Middle East and North Africa higher. In the EAE unemployment of male youth is higher than that for females while in the EiT the opposite is true. Youth unemployment is about 2.75 times higher than adult unemployment across countries and through the business cycle. Given this relatively constant multiple, the most effective strategy for lowering youth unemployment is to lower overall unemployment. In the EiT informal employment is high so many youth with jobs are nevertheless in situations which are not normally associated with having employment such as being without having social insurance and pensions.[16] More generally, economic studies find that those most disadvantaged to begin with are the most negatively impacted by recessions and higher unemployment; this includes ethnic minorities, the young and inexperienced, and less educated workers.[17]

Figure 2.7
Relationship between the changes in GDP and unemployment 2008-2009



Source: Calculations by UNECE, with EECCA in red, SEE in blue, the NMS in green, and ECE advanced in brown.

Inflation. One positive piece of good economic news for the region is that inflation has been quite moderate and generally close to central bank targets. In Europe and North America the target has been in the range of about 2 per cent while in EECCA the range has been higher but still well into the single digits. This price stability has been due significantly to the slack in labor markets which has kept wage costs under control despite significant price increases in many global commodity markets. In mid-2012 the price of food products especially corn and soybeans began increasing significantly due to the worse drought in the

[16] Informal employment is not only a problem for youth in the EiT but for the entire workforce. For example, in Kazakhstan informal employment accounted for one third of total employment in 2009; over one half of this was in the agricultural sector. About one half of those in informal employment in the non-agricultural sector were self-employed.

[17] Hilary Hoynes, Douglas Miller, and Jessamyn Schaller, Who Suffers During Recessions, NBER Working Paper No. 17951, Cambridge, Mass., 2012.

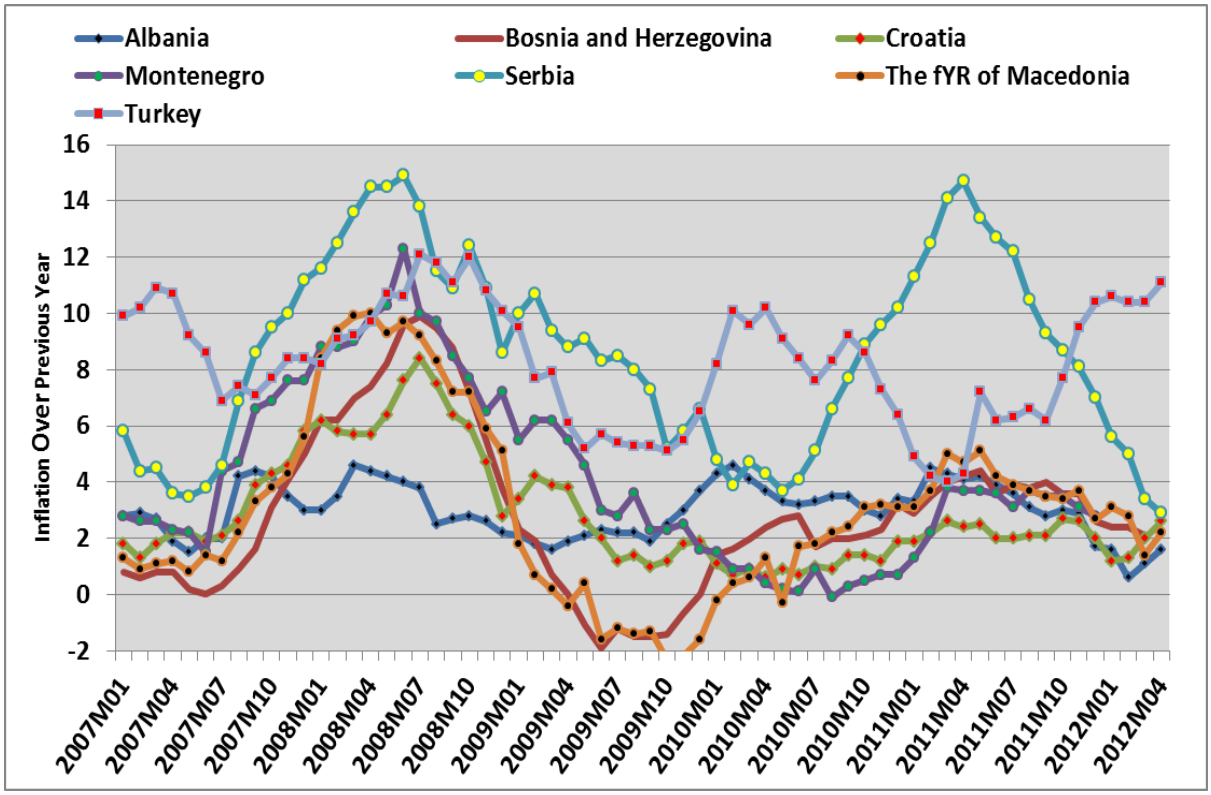
United States farm belt since 1956; the US accounts for approximately one half of world corn exports and 40 per cent of world soybean exports. Drought conditions also developed in 2012 in several other important corn producers including Ukraine, the world's third largest exporter, as well as in several economies in South-Eastern Europe. Higher commodity prices are likely to have only a minor effect on North American and Western European inflation; however the effect will likely be much greater in many of the EECCA where food represents a larger share of consumer expenditures. The low inflation combined with subdued economic growth and high unemployment in the advanced economies has allowed their monetary authorities to continue their quite accommodating monetary policy with interest rates in some economies such as the US and UK at historically low levels. In addition the central banks in the US, eurozone and UK vastly expanded their balance sheets over the last few years using "unconventional methods" in order to provide sufficient liquidity to still impaired capital markets.[18] Central bank assets as a per cent of GDP tripled in the US and UK from about 6 per cent of GDP in early 2008 to about 20 per cent by 2012. In the eurozone assets doubled from 15 per cent of GDP to over 30 per cent over the same period. There are concerns about the potential longer-run inflationary impact of these operations. However, the continued low inflation rates have so far allayed these fears and provided central banks with the policy space for additional unconventional monetary measures if economic conditions should warrant such action. In addition a little more inflation might actually be beneficial for the recovery in these economies by allowing real interest rates to be even lower. And with debt burdens in some eurozone countries approaching levels that cannot be repaid, higher inflation to erode the value of that debt may actually be a better option than outright defaults.

Inflation in SEE (figure 2.8) has also been fairly low due to currency pegs to the euro which four of the region's economies maintain. In the three with more flexible regimes inflation has been more variable, especially in Turkey and Serbia. Drought conditions in the summer of 2012 in several SEE economies (and in some NMS such as Hungary and Romania) will likely impact food prices in the last half of 2012.

EECCA inflation rates (figure 2.9) have historically been much higher than in the advanced economies, often in the 10 to 20 per cent range. Prior to the crisis in 2008 as world commodity prices were surging, the price levels in these economies were increasing substantially. The fall in commodity prices combined with the global downturn more generally brought inflation down to quite low levels and it has remained low since 2009. The large harvests in 2011 in Russia and Ukraine following the drought in 2010 have also contributed towards keeping food prices and inflation under control over the last year. However, drought conditions in the summer of 2012 in Ukraine and parts of Kazakhstan and Russia are lowing corn and wheat harvests and will likely impact food prices in the second half of 2012. In Belarus inflation has escalated due to its currency depreciation (following its currency crisis) and is likely to be over 50 per cent in 2012 as it was in 2011 (its inflation has been so high it goes off the chart in figure 2.9).

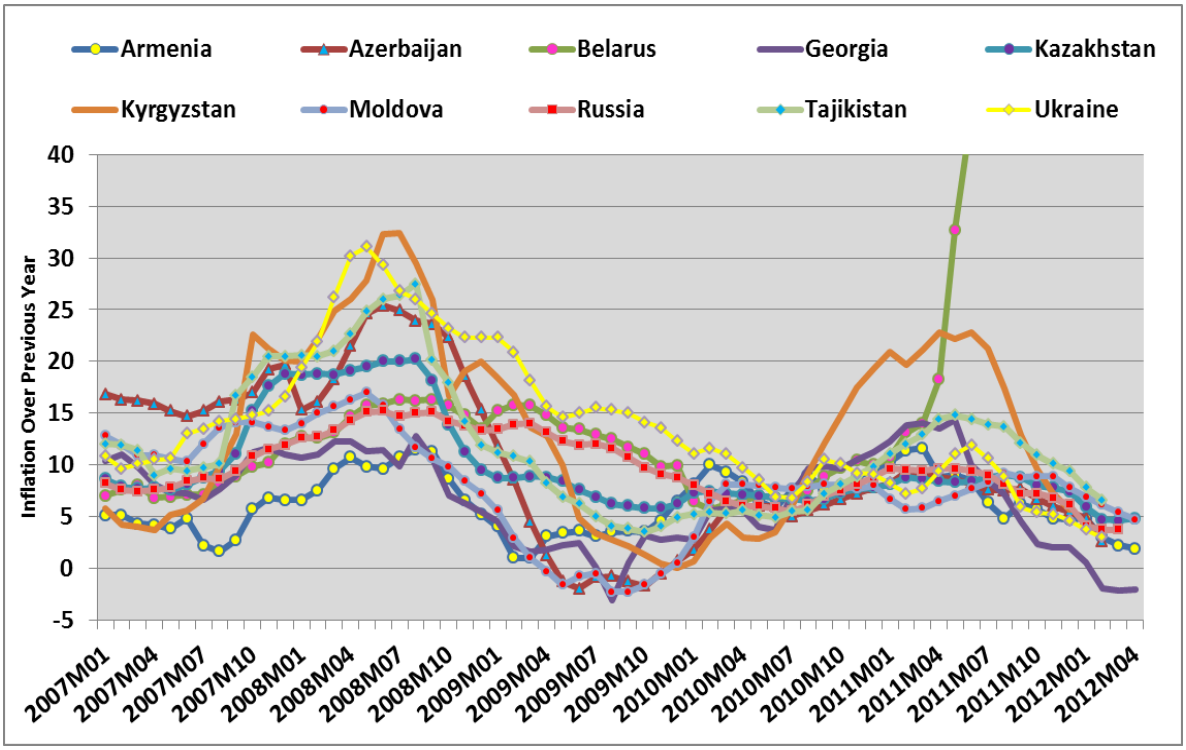
[18] In the US and UK this included quantitative easing which are open market operations with purchases of unusually long-dated securities. The US also used a policy from the 1960s referred to as "operation twist" where the central bank simultaneously sold short-term securities while buying long-term securities with the objective of flatting the yield curve. The ECB used neither of these but achieved basically the same objective by providing unlimited (subject to collateral) liquidity to its banks.

Figure 2.8
Inflation in SEE 2007-2012



Source: UNECE

Figure 2.9
Inflation in the EECCA 2007-2012



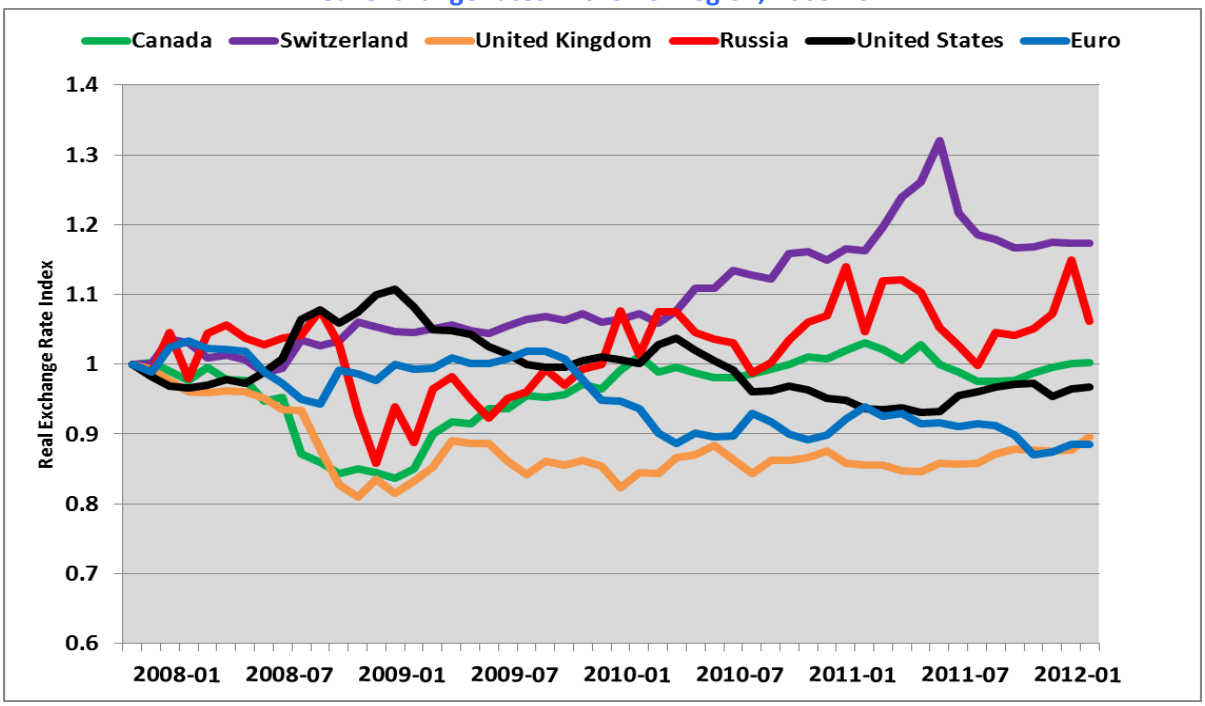
Source: UNECE

Exchange rates. Exchange rate volatility has been moderate since the beginning of the financial crisis (see figure 2.10). Since the beginning of 2008 the real exchange rates (nominal rates adjusted for inflation) of the major ECE advanced economies (dollar, euro and pound) have depreciated due principally to their very low interest rates. Although the US dollar appreciated during the height of the crisis due to its safe-haven status, it has since declined; the British pound has especially declined over this period. The natural resource exporters, Canada and Russia, however, have experienced slight appreciations due to firm commodity prices although both suffered short-lived large depreciations during the height of the crisis when commodity prices collapsed. The formidable Swiss franc which was already overvalued just kept rising. Over the last year (mid-2011 to mid-2012) the US dollar strengthened against most currencies; the Canadian dollar fell against the dollar but gained against the euro, and the euro and Russian ruble declined against most major world currencies. As concerns developed about the health and even future of the euro, traders and even central banks began to sell the currency, which led to its depreciation especially against safe haven currencies such as the US dollar and Swiss franc.

In Switzerland capital inflows and speculation were so large that the central bank (SNB) had to abandon its generally flexible exchange rate and fix it (on the upside) to the euro. This has led to substantial intervention and although this might ultimately lead to higher inflation, prices currently are stable. Despite this action, the franc remains overvalued and this continues to depress Swiss exports and tourism. Several of the NMS, all of which are committed to join the euro at some time, still have flexible exchange rates, but the longer-term movements in these currencies versus the euro have been relatively small, although short-term movements have been more significant. A comparison of rates in mid-2012 with those in 2008 finds little change for the Polish zloty, moderate depreciation for the Romanian leu and Hungarian forint, and a small appreciation for the Czech koruna.

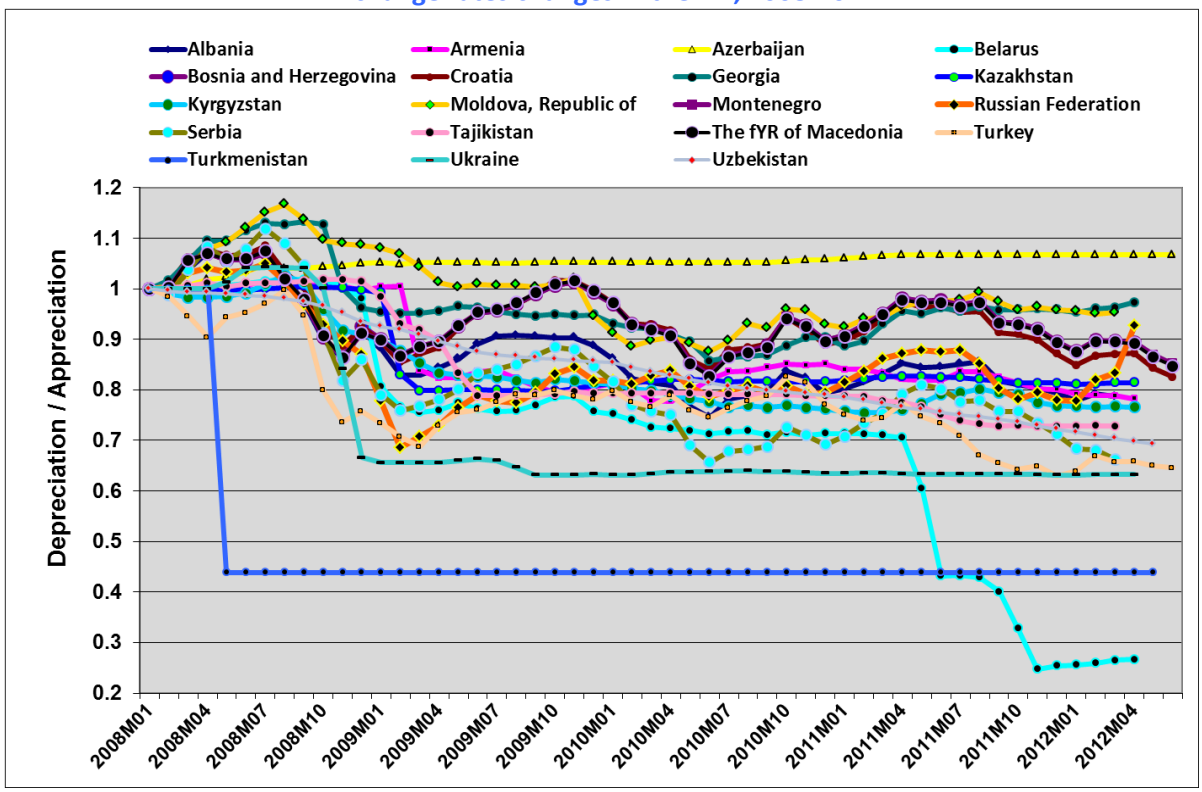
The currencies of the EiT generally declined relative to the US dollar as the global crisis deepened in late 2008 and early 2009 but have remained relatively stable since then. As figure 2.11 reveals there has been considerable variation in the amount of the depreciation but on average these currencies declined by about 20 per cent with most in the 10 to 30 per cent range. For several of these economies, especially those in SEE, the depreciation versus the US dollar primarily reflects the decline in the euro versus the dollar over this period since they were fixed to the euro throughout. These changes are nominal changes and given that inflation has been considerably higher in many of these economies, especially in EECCA, the change in their real exchange rates over this period would be less pronounced. When inflation occurs, trends in the real and nominal exchange rates can vary significantly. For instance the Russian ruble has depreciated versus the dollar in nominal terms in figure 2.11 but appreciated in real terms on a trade weighted basis in figure 2.10. There have been two really large depreciations over the last several years; the Turkmenistan manat depreciated by over 50 per cent in 2008 and the Belarusian ruble declined by three-fourths in 2011 as part of its currency crisis.

Figure 2.10
Real exchange rates in the ECE region, 2008-2012



Source: UNECE calculations based upon BIS data.

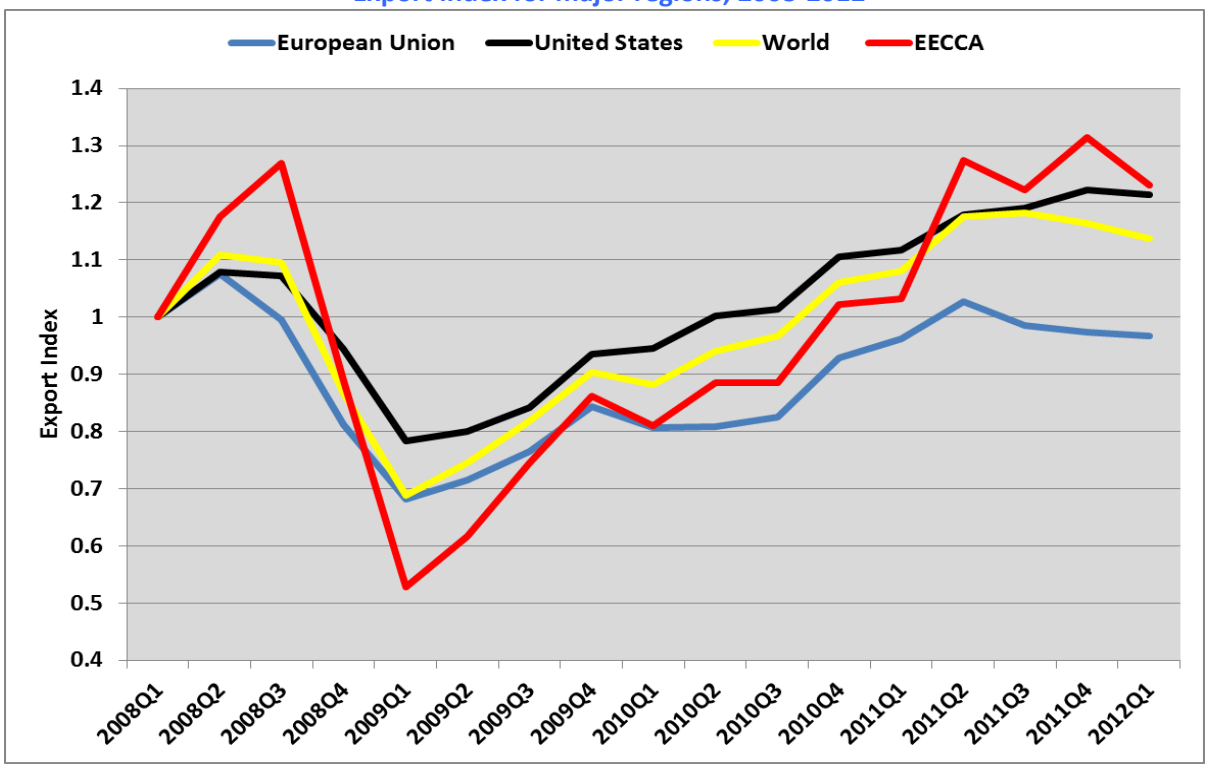
Figure 2.11
Exchange rates changes in the EiT, 2008-2012



Source: UNECE

Trade. World trade suffered a major collapse in 2009 with exports declining in the first quarter of 2009 by over 30 per cent from the level a year earlier. World exports grew steadily over the next three years and by the first quarter of 2012 (2012Q1) they were about 14 per cent greater than in first quarter of 2008. However, the value of world trade declined in the last quarter of 2011 and again in the first quarter of 2012 reflecting the slowing global economy (see figure 2.12). Exports from EECCA, the EU and the US have followed a similar general pattern but with some significant differences. Exports from EECCA declined by almost half in the first quarter of 2009 compared to 2008, but have recovered and by 2012Q1 were 23 per cent above their level four years earlier. The US experienced the smallest decline of these regions with exports falling only 22 per cent in 2009Q1, and by 2012Q1 they were up 21 per cent from 2008Q1. Exports from the EU declined at about the same rate as for the world but have recovered very slowly and by 2012Q1 they were still 3 per cent below their 2008 level. Given that approximately two-thirds of EU exports are intra-EU trade, the slow growth of EU exports reflects not a decline in global competitiveness with the rest of the world but their own lackluster economic growth.

Figure 2.12
Export index for major regions, 2008-2012



Source: UNECE calculations based on WTO data.

Figure 2.13 provides export growth from a select group of EiT economies between 2008Q1 and 2012Q1.[19] All of these economies experienced large declines in 2009 followed by recoveries of various degrees. Similar to the major regions described above, most of the economies began to experience export declines in 2011Q4 and again in 2012Q1. Export growth has been particularly slow in SEE with 2012Q1 exports below 2008Q1 levels in

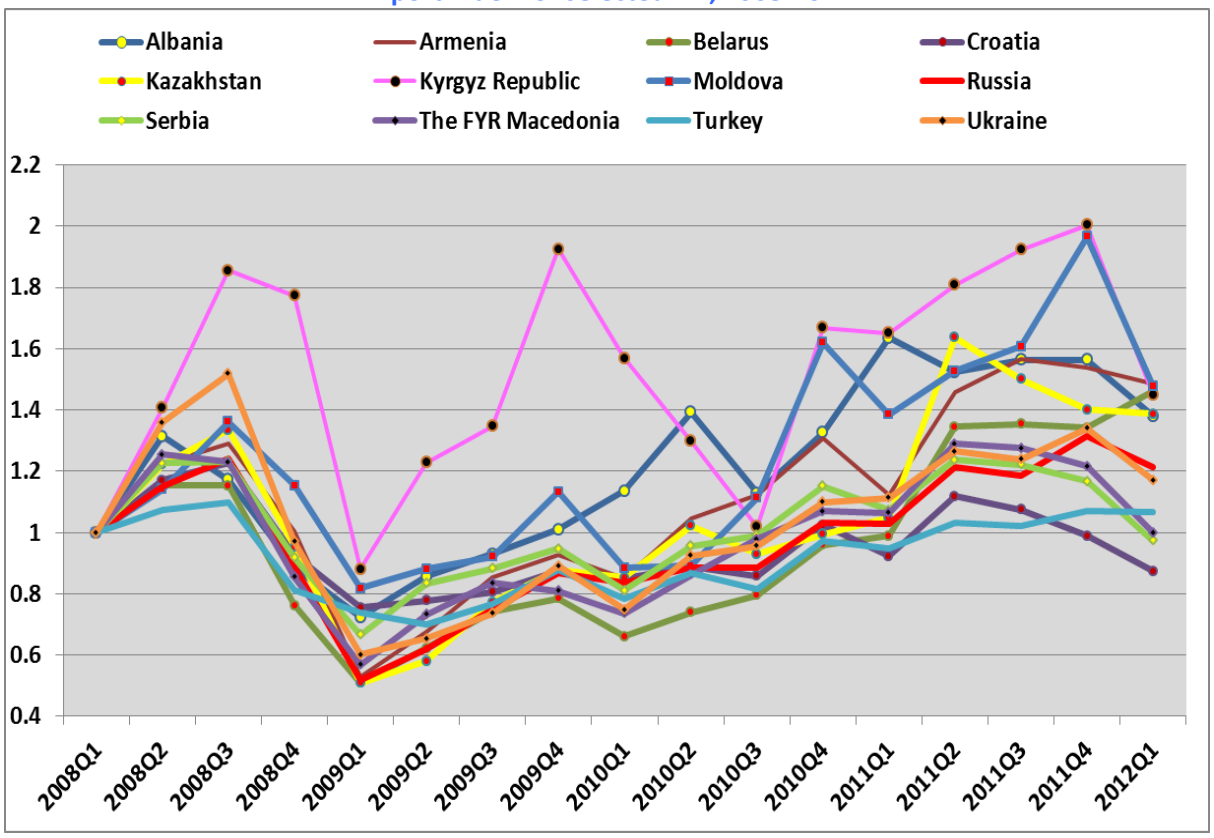
[19] Institutional developments regarding trade in the EiT are discussed in chapter III under goal 8.

Croatia and Serbia, while there was essentially no export growth by The former Yugoslav Republic of Macedonia and Turkey's exports increased by 7 per cent. Albania's exports, however, have grown consistently and increased 38 per cent over this period. All of the EECCA included in figure 2.13 had export growth over this period greater than the world average of 14 per cent. Russia and Ukraine experienced export growth of about 20 per cent over this period while Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Moldova had growth at about twice that rate.

The geographical distribution of exports by the major subregions of the ECE to the different subregions of the ECE is presented in table 2.1 below; the table also shows exports within subregions. Of particular significance is the fact that all of the ECA subregions export more than half of their exports to the EU. In fact in Europe import growth may be close to zero in 2012 and this will transmit Europe's economic weakness to much of the rest of the world including the ECA which are especially exposed.

The weakened economic recovery and slowing growth of trade flows have moderated global commodity price increases although the price of oil remains quite high given the geopolitical developments in the Middle East. The world's second largest economy, China, has continued its strong growth and through its demand for imported components has kept exports strong and thus growth high in most of Asia and in the natural resource exporting nations of Africa and Latin America.

Figure 2.13
Export index for selected EiT, 2008-2012



Source: UNECE calculations based on WTO data.

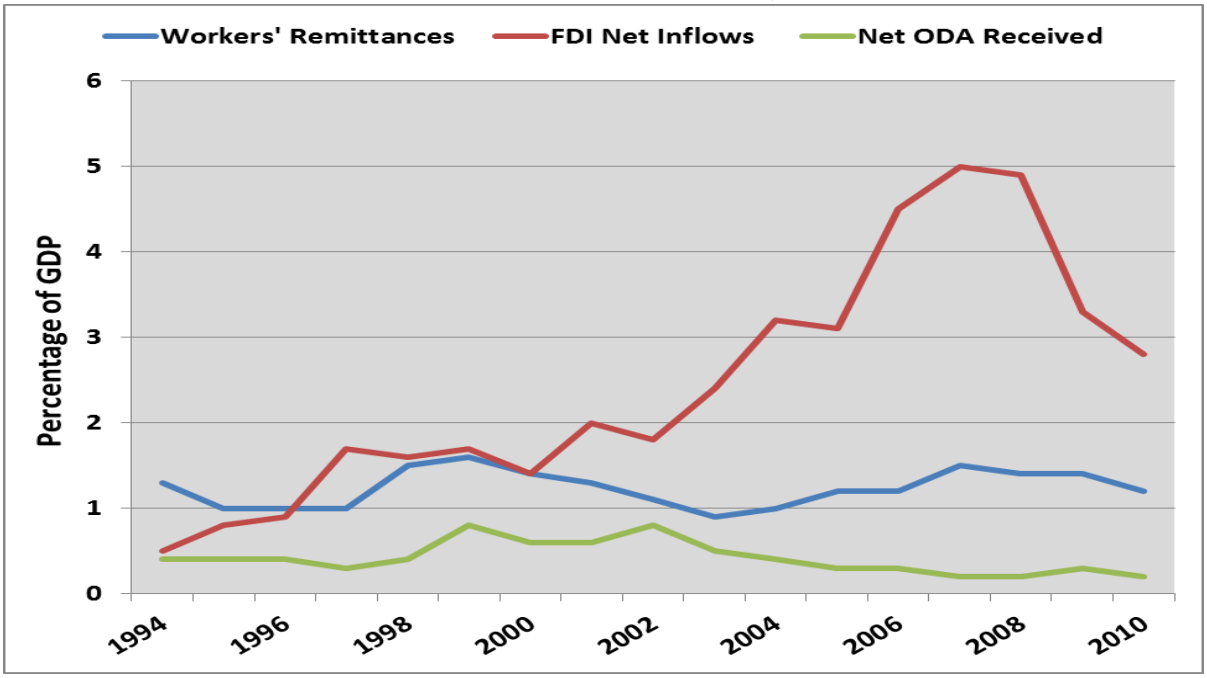
Table 2.1
Geographical export matrix for ECE subregions, 2010

Exports To (Across) \ From (Down)	Russia	EECCA-11	SEE-6	Turkey	NMS	Adv Europe	NA	ROW
Russia		15.0	0.4	5.1	11.3	43.7	3.4	21.2
EECCA-11	17.3	9.6	0.8	3.0	8.0	35.0	4.2	22.0
SEE-6	2.8	1.3	24.2	1.2	16.1	44.4	1.6	8.3
Turkey	4.1	5.6	1.4		6.9	44.1	3.7	34.1
NMS	4.2	3.0	2.1	2.0	19.3	60.6	2.2	6.5
Adv Europe	1.9	0.7	0.5	1.5	6.8	60.1	8.2	20.3
North America	0.4	0.2	0.0	0.7	0.6	18.3	32.3	47.5

Source: UNECE calculations based upon UN Comtrade (IMTS) data.

Remittances. Remittances are a very significant component of gross national income (GNI) for many economies in the ECA. As a percentage of GDP, remittances to Kyrgyzstan, Tajikistan and Moldova are among the highest in the world.[20] For some of these economies remittances represent a larger financial inflow than either private capital flows or foreign assistance. The relative size of remittance flows to the ECA economies are compared with two other external capital flows, net foreign direct investment inflows and official development assistance (ODA) in figure 2.14. For the ECA region overall, foreign direct investment inflows have been the largest financial inflow and in recent years have been greater than remittances and ODA combined. However, this conclusion results from the extensive weight given to the NMS and Russia in calculating a region average, for many of the poorer economies in the region remittances and ODA are much more important.

Figure 2.14
Financial inflows to the ECA economies, 1994-2010

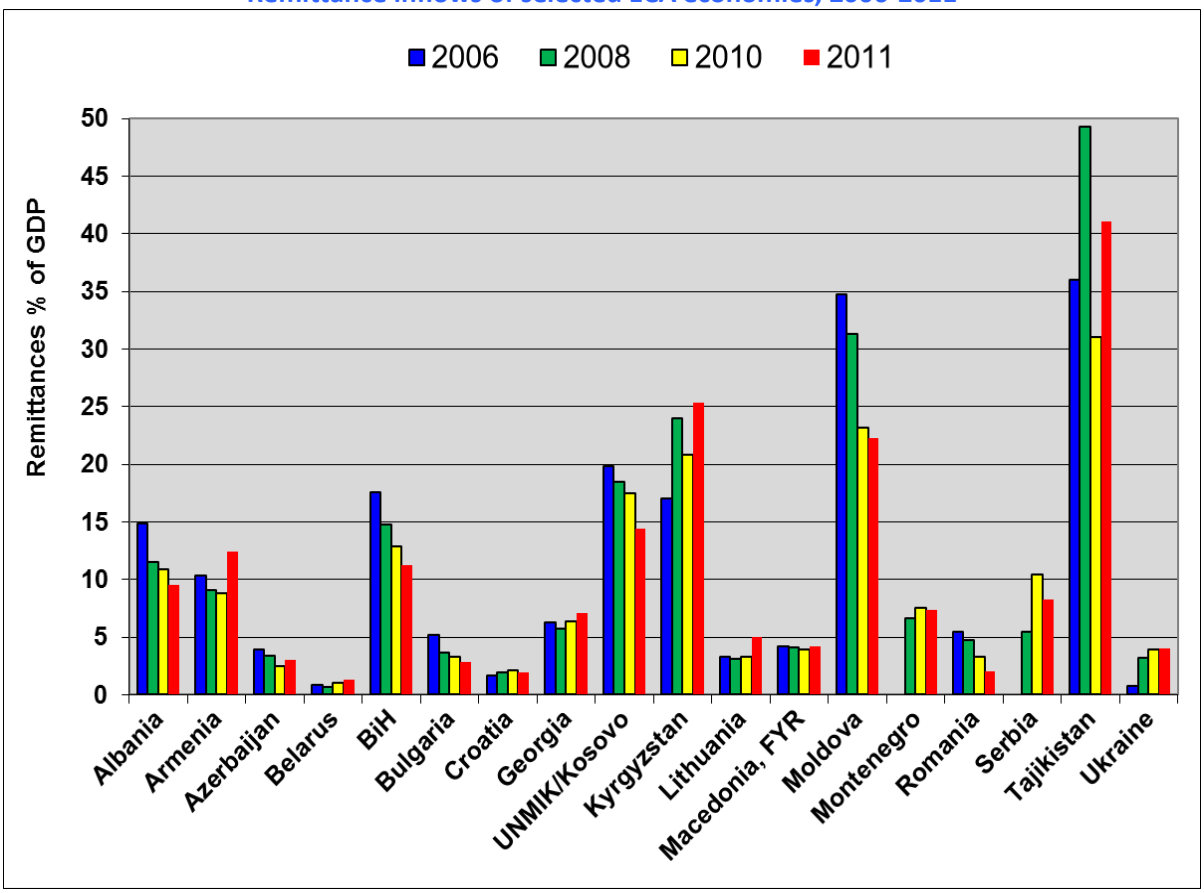


Source: UNECE calculations based upon data from the World Bank Development Indicators database.

[20] Remittances are not included in the calculation of GDP but are compared to GDP for scaling purposes.

Remittance inflows fell appreciably during the financial crisis during 2009 declining by 22.7 per cent in the ECA region which was considerably more than in any other major region of the world. They slowly began to increase in 2010 (by 3.7 per cent), 2011 (6.5 per cent) and 2012 (estimated at 10.4 per cent) but in many cases are still a smaller share of GDP than what they were before the crisis (see figure 2.15)[21]. In EECCA over 30 million people have emigrated to work in another country with Russia being the largest destination country. Russian remittance inflows and outflows are provided in figure 2.16 which also includes a breakdown between flows with the other EECCA and those outside EECCA. Over 80 per cent of Russian remittance outflows go to another EECCA economy while only 23 per cent of remittance inflows come from these economies. Registered labour migrants in Russia come primarily from Ukraine (17.6 per cent), Uzbekistan (16.3 per cent), Kazakhstan (14.8 per cent), Armenia (13.7 per cent), and Tajikistan (10.3 per cent).[22]

Figure 2.15
Remittance inflows of selected ECA economies, 2006-2011

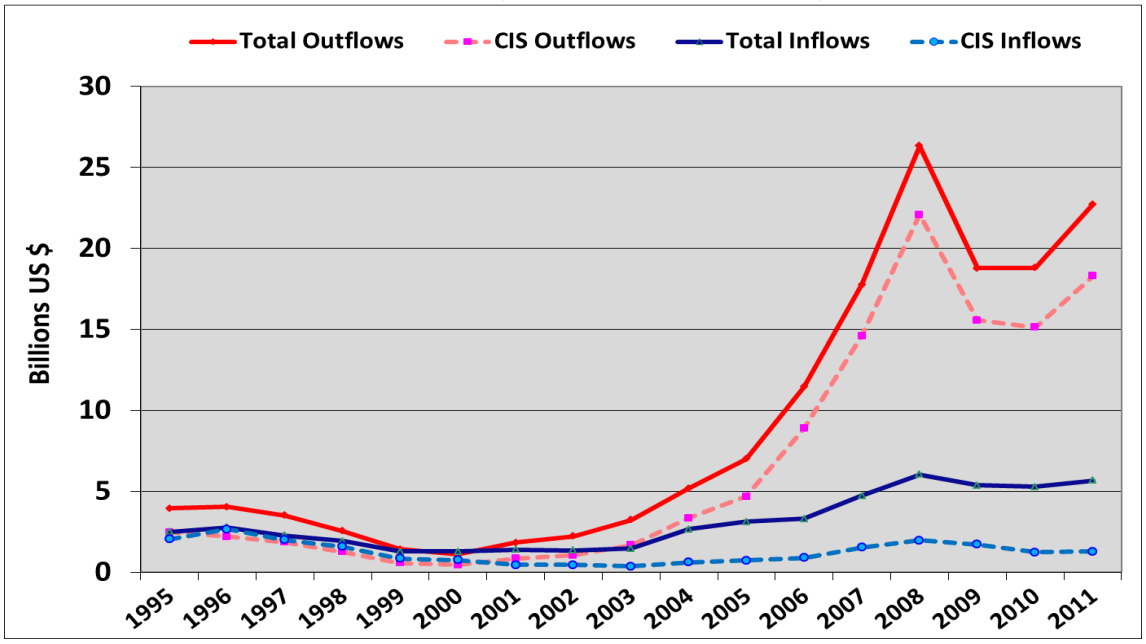


Source: UNECE calculations based on World Bank data.

[21] For a more complete discussion of remittances in the EiT see, Robert C. Shelburne and Jose Palacin, Remittances and Development in Transition Economies, chapter 8 in Robert Vos and Malinka Koparanova, Globalization and Economic Diversification: Policy Challenges for Economies in Transition, London and New York: Bloomsbury Academic, 2011.

[22] Data for 2010 from the Statistics Office of the Russian Federation (ROSSTAT).

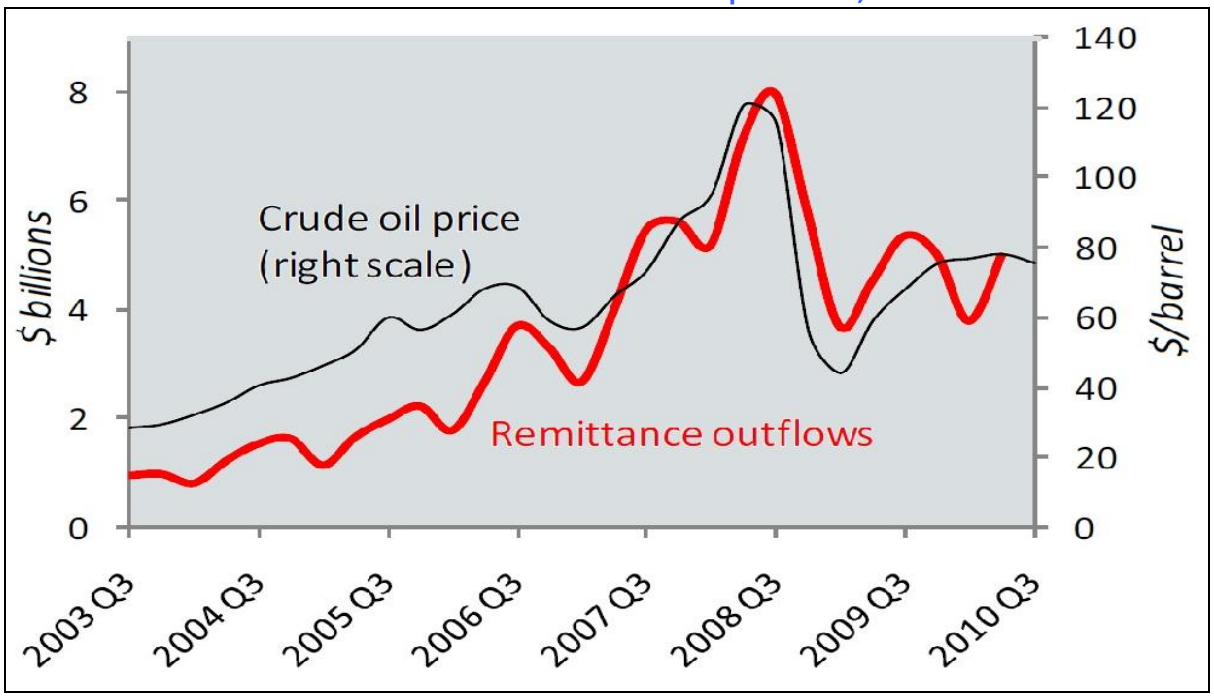
Figure 2.16
Russian remittances, total and with the EECCA, 1995-2011



Source: Calculations by UNECE based on data from the Central Bank of Russia.

Given the importance of Russia as a destination for workers in the EiT especially for Central Asia migrant workers, the level of remittances follows fairly closely the price of oil (see figure 2.17).

Figure 2.17
Remittance outflows from Russia and the price of oil, 2003-2010

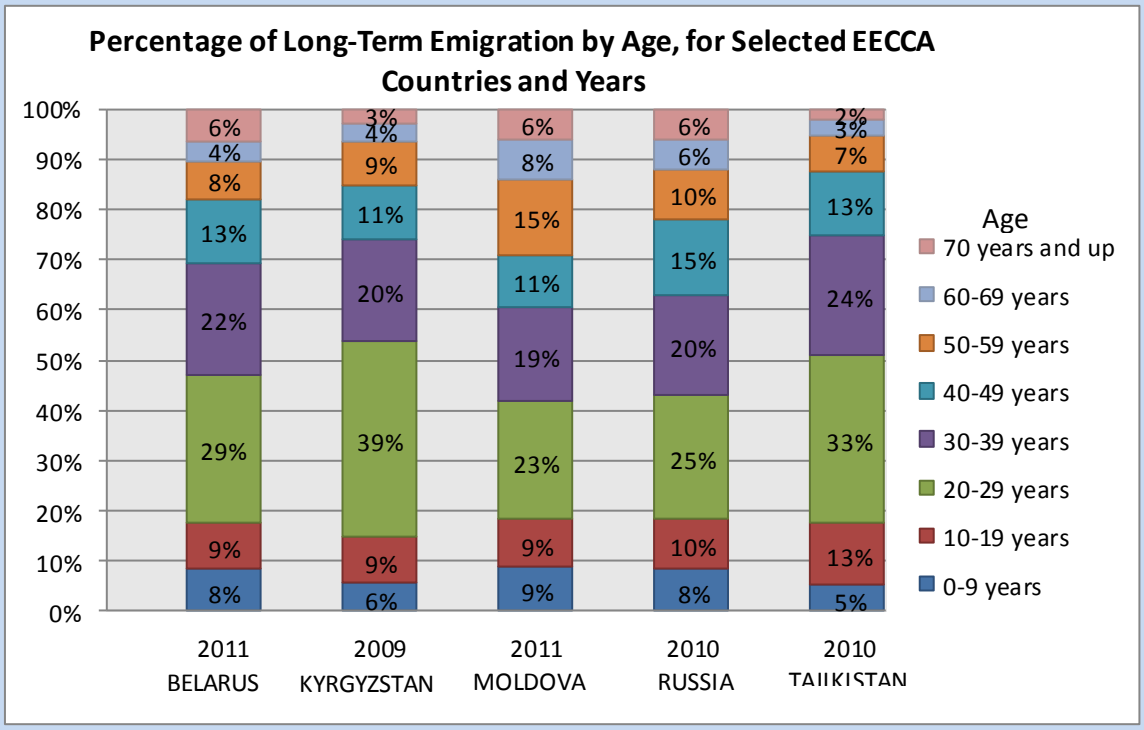


Source: World Bank, Migration and Development Brief 13, November 8, 2010.

Box 2.1. Emigration of youth from EECCA

High emigration of nationals, particularly of the young working-age population, is a salient issue in many parts of the world. Generally driven by a lack of economic opportunities in countries of origin, the outmigration of youth can reduce unemployment and stress on public services in countries of origin, as well as increase the income and standard of living of out-migrants and non-migrant household members (via remittances). On the other hand, high outmigration of youth, often working in specific industries and occupations, can lead to the loss of human capital, an economic dependency on remittances, and often leaves behind an older population; thus emigration may have an adverse impact on the countries' future development, employment opportunities, and public infrastructure.

Most of the EECCA countries have experienced high outmigration of population since the breakup of the Soviet Union, particularly to Russia. Data provided by UNECE's Clearinghouse on Migration Statistics database allows for the examination of age-specific emigration patterns for several countries. This database was created in 2011 as a means to facilitate the collection, dissemination and sharing of basic migration data from the EECCA. Tables on long-term emigration (away for at least 12 months) by country of next residence, citizenship status, and country of citizenships are available for some countries.



The figure above shows the age distribution of emigrants for the countries of Belarus, Kyrgyzstan, Moldova, Russia, and Tajikistan. For all countries emigrants are more likely to be between the ages of 20 and 39 years of age, with the highest percentage among 20-29 year olds. The most extreme example is found for Kyrgyzstan, where nearly 40 per cent of all emigrants in 2009 were between the ages of 20 and 29, and almost 60 per cent were between the ages of 20 and 39. Similarly, almost 60 per cent of all Tajikistan emigrants were between the ages of 20 and 39, though less than 35 per cent were in their twenties. Consistent with these findings, about half of all emigrants from Belarus, Moldova, and Russia were between the ages of 20 and 39, the majority of these being in their twenties. Not surprisingly, the persons least likely to have emigrated from these countries were those aged sixty and older.

The EU has 32.5 million foreign citizens which provided €31.2 billion in remittances in 2010; remittance outflows from the EU declined in 2009 but by 2010 were back to their level in 2007. Remittances proved to be a channel for the transmission of the crisis rather than a factor of stability in these low income countries which generally had a very limited direct exposure to international capital markets. Previous research had generally concluded that remittances are a stabilizing influence because they are much less volatile than capital flows. This resulted from the fact that the crisis situations examined were often domestic with the result that capital inflows ceased while remittances often increased as more unemployed workers migrated to unaffected countries or those already abroad increased their transfers to help relieve the increased hardship at home. This global crisis however was centered abroad and was much deeper in the major migrant destination country Russia than in many of the peripheral migrant source countries of the EECCA. Thus the economic situation during this crisis was significantly different from the situations that underlined this previous research; therefore the fact that remittances tended to amplify the crisis in some of the migrant source countries should come as no surprise. The importance of the Russian Federation as a source of remittances had some additional implications; foremost was the fact that Russia was one of the world's most negatively impacted economies. The sizable seasonal migration that was easily reversible and the sectoral specialization of migrants also explain the sharp reversal of remittances, which was further amplified by the devaluation of the ruble. The dynamics of remittances during the crisis showed that the excessive geographical concentration of migrant flows remains a factor of vulnerability for the low income countries in the region.

The cause of and solution for the economic slowdown. The slow recoveries in the advanced economies were generally anticipated. The Great Recession was not a typical recession, it was a financial crisis; historically economies recover much slower from financial crises than from the typical recession that is caused by a central bank increasing interest rates to address rising inflation. Thus instead of just having investment subdued due to higher interest rates, in this recovery there has been sluggish growth in all of the components of aggregate demand.[23] Due to high unemployment and falling equity and house prices, households find themselves excessively in debt and need to cut back on spending in order to restore their financial position; thus consumers are not spending.[24] The financial system is not lending because it remains impaired by exposure to questionable loans (sovereign debt and mortgages) and in addition needs to deleverage in order to meet recently proposed higher capital requirements. In addition, the monetary authorities have lowered interest rates to close to zero in order to encourage investment but with low inflation the real interest rate (the nominal interest rate minus inflation) is not sufficiently low enough to stimulate investment. Housing has historically been a leading sector during recoveries; this is because a house purchase is a very discretionary expenditure and is quite sensitive to the interest rate. Thus lower interest rates are effective in stimulating the demand for new houses, and when people buy new houses they have a tendency to buy new furniture and other things for their house. However, in the US and some of the European economies the crisis was preceded by a boom with excessive production of housing which has left large inventories of unsold houses and falling house prices. Thus this sector has not been able to play its traditional role during this recovery.

[23] Aggregate demand is the sum of consumption, investment, government spending and net exports, or more famously, Y=C+I+G+(X-M).

[24] For example, the median wealth of American families declined by 39 per cent from 2007 to 2010 and is now back to the level in 1992, as a result they are saving to try to build back some of this lost wealth.

When consumers and businesses are unable to maintain spending at a level necessary to maintain full employment, the government can step in, but to do so it must issue debt. If the recession and recovery is short the additional debt may not be all that significant and thus may not present a problem. However if the recovery takes a long time, as this one is doing, then the debt starts to mount up and at some point governments may find themselves constrained in their ability to keep issuing debt. This is what has happened in many ECE economies but especially some that were already heavily indebted even before the crisis began. Thus governments have recently been sharply cutting back expenditures and increasing taxes in an attempt to contain their growing indebtedness; but this is the exact opposite of what is required for a recovery. Although expansion of net trade (exports minus imports) could provide a source of stimulus, this can only happen if countries can improve their competitiveness. In the short to medium run the only way to do this is by depreciating one's currency. However, the exchange rates of the major economies of the region are not set by governments but are determined in foreign exchange markets. Although governments could implement some policies such as exchange market intervention to lower rates, this risks setting off a series of competitive devaluations as during the Great Depression, and that proved destructive.[25] In the final analysis net exports is a zero-sum game, so that for every country that gains there must be one that loses. Thus governments are reluctant to overtly attempt to improve competitiveness through market intervention.[26] In addition, a number of economies for which demand is especially low are in the eurozone and thus they do not even have the option of changing their exchange rates.

As a result aggregate demand remains insufficient to fully employ the region's labor supply. Unfortunately there is no reason to think that there will be any significant increase in any of these components of aggregate demand any time soon. If anything there is a concern that the government spending component will decline further in the coming year. In Europe a number of legislated austerity programs have yet to be fully implemented and in the US several important temporary tax cuts and spending increases are set to expire at the end of 2012. A strong fiscal stimulus, however, is the only policy tool left that could jump start growth in the advanced economies but the political support for such a policy does not appear to be present; and in the eurozone the institutional constraints built into the design of this monetary system further limit the possibility of using this option. A further complicating factor limiting a fiscal expansion in Europe is that it needs to be implemented throughout the region in a coordinated fashion. A fiscal expansion in only one European country would leak out to the rest of Europe and the world through increased imports and provide only a very moderate stimulus for the country implementing it. That country however would have to bear the full costs of the debt created to finance the expansion but would receive only a small part of the benefits. Therefore there is a clear free-rider problem regarding fiscal expansion in Europe. Therefore the countries most in need of additional stimulus, primarily those with high unemployment in the periphery, cannot unilaterally implement a stimulus that would be particularly effective. The low unemployment economies, which do not really need stimulus, thus do not see the benefits for themselves; their focus is instead on reducing debt levels

[25] Another non-cooperative option to increase net exports is trade protectionism, but just like a competitive depreciation, it is likely to result in a cycle of retaliations that ends poorly.

[26] This has of course not stopped China and as a result there has been considerable criticism of their behaviour. The Swiss have also intervened but have largely avoided condemnation due to the feeling that they are not attempting to depreciate below the equilibrium rate but are simply trying to stop an appreciation that is significantly over the equilibrium rate.

which were already high but rose further during the early stages of the financial crisis. As a result, there has not been the fiscal stimulus in Europe which is needed and at this point there is no prospect for one.

Ideally what is needed is a well-designed and regionally coordinated further fiscal expansion combined with legislation that would simultaneously ensure that budget deficits would be reduced significantly once robust growth was attained. The UN using its Global Policy Model has modeled the effects of such a program in its 2012 *World Economic Situation and Prospects*.[27] Such a program not only achieves higher growth and lower unemployment but also has better debt dynamics in the medium and longer run. This combination of an expansionary short-run policy with long-run fiscal discipline must be credible so as to assure financial markets that any increase in deficits would be temporary.

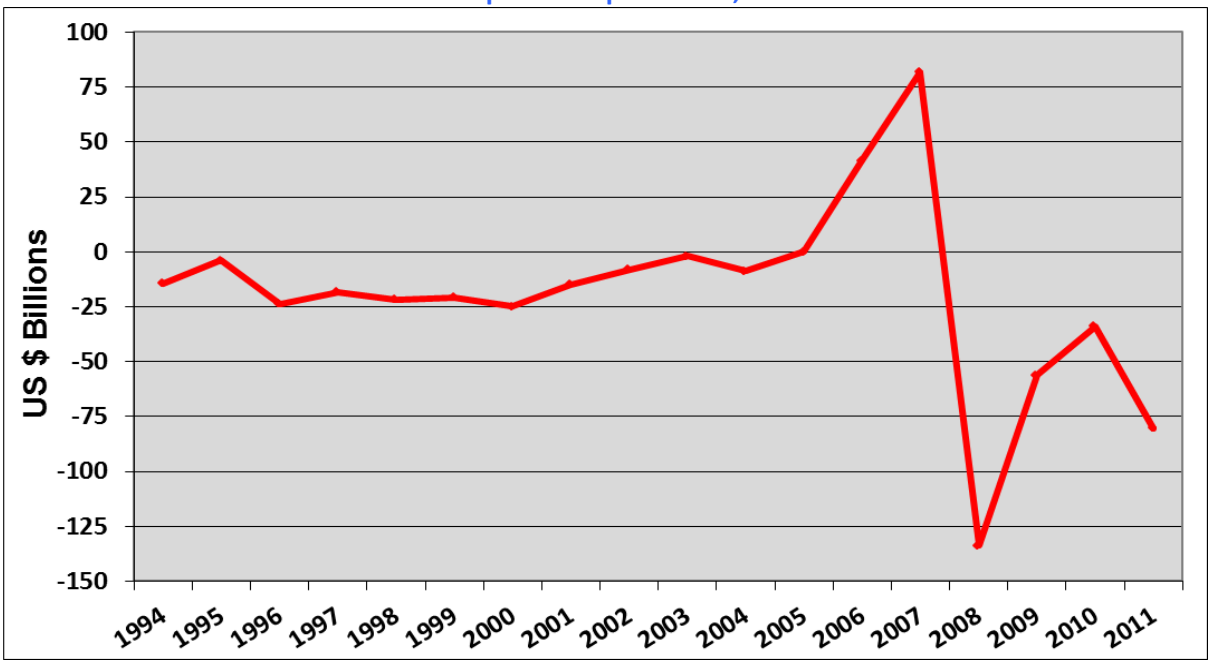
There has been significant political opposition for such a program by those that feel that the government sector is already too large; for them it does not make sense to increase government spending in the short-run when it needs to be reduced in the long run; nor does it make sense to cut taxes now when they need to be raised in the long run. The best response to this criticism is perhaps by analogy. If an overweight man comes to the hospital with pneumonia the doctor can either instruct the nurse to ensure that the patient gets plenty of good food until he recovers, or he can recommend to start immediately withholding food from the patient because he needs to lose weight. The European approach has been the latter, as a result in many economies the austerity medicine has been prescribed and the patient is further deteriorating. These austerity programs have not only resulted in economic decline and increasing unemployment but have not proven to be particularly effective in improving the debt dynamics of the affected countries. Under more normal conditions reducing government borrowing results in lower interest rates that stimulate investment while also increasing exports as exchange rates decline. The lower government purchases are thus compensated for by increases in investment and exports; as a result national income and employment may not be significantly impacted and with the government spending cuts the deficits decline. However, since 2009 the advanced economies have been in a liquidity trap with interest rates near zero. The austerity programs therefore did not result in lowering interest rates; thus there were no increases in investment and exports. Therefore as net government expenditures declined, national income declined and unemployment rose. The fall in national income resulted in declining tax revenues, in some cases the declines were as much as the original cuts in expenditures and thus the deficits have not fallen. Whether or not these austerity programs will simply make the debt situation worse or whether they will ultimately reduce debt, although at a huge social costs, remains a debatable theoretical point which will only be settled in time as the crisis plays out.[28]

Eurozone crisis. If the current crisis in the eurozone should deepen in the second half of 2012 or in 2013 it will have significant implications for the ECA. The UN *World Economic Situation and Prospects* provided some projections based upon this downside scenario and concluded that the ECA would be the most negatively impacted region of the world, with GDP declines in EECCA equaling those in the eurozone (-2 per cent growth) and in SEE

[27] United Nations, *World Economic Situation and Prospects*, New York, 2012.
[28] The case that ultimately austerity will work is provided by Daniel Gros, Can Austerity Be Self-defeating, *Intereconomics*, Volume 47, No. 3, May/June 2012.

considerably worse.[29] The large economic downturn in the transition economies during the 2008-09 crisis was due to several factors but most importantly their over-reliance on external capital to finance their development. If the eurozone crisis should further deteriorate into a full blown financial crisis where global credit markets seize up as they did in 2008-09, the region would once again be seriously exposed through trade and financial channels and through a general decline in business confidence. The strength of these channels varies considerably by region. The NMS in Central Europe (Czech Republic, Hungary, and Slovakia) have the strongest trade links with the eurozone while the southern NMS and the SEE economies (Bulgaria, Croatia, Hungary, and Romania) have stronger banking linkages and in some cases (Albania, Croatia, Hungary, Romania, and Serbia) a large share of foreign-currency denominated loans. Those economies with large current account deficits such as Turkey would be especially impacted by a credit freeze in global capital markets while the energy-rich EECCA (especially Russia) would be impacted through the decline in energy prices. Although the Central Asian economies have less intensive trade and financial ties with Europe and would be less directly affected, they have strong ties with Russia and would be therefore be impacted by less trade and lower remittances. Although the transition economies have made some progress in reducing their vulnerability to external events by reducing their reliance on capital inflows, their policy space for addressing any downturn is less today than in 2008 because of already high unemployment rates, weakened financial systems, and rising sovereign debt levels. Some countries such as Ukraine that remain severely depressed from the 2008-09 crisis would be particularly hard hit. A crisis would be expected, as in 2008-09, to lead to a significant fall in oil prices, a depreciation of the currencies of the region, and higher inflation and unemployment.

Figure 2.18
Russian net private capital flows, 1994-2011



Source: UNECE calculations based on data from the Central Bank of Russia.

[29] United Nations, *World Economic Situation and Prospects*, New York, 2012.

The eurozone crisis which has resulted in increasing and unsustainable sovereign interest rates in its periphery economies has so far not had a significant negative effect on the interest rates of most of the ECA economies. Although sovereign interest rates increased significantly in many of the ECA during the peak of the 2008-2009 global crisis, as that crisis subsided so did these interest rates. As the eurozone sovereign debt crises developed during 2010 to 2011 these interest rates remained generally stable but did begin to increase again in mid-2011 as the eurozone crisis intensified. More recently, however, in a few economies interest rates have declined. For example in mid-2012 sovereign bonds of the Czech Republic fell to an all-time low and those of Poland to a six year low. Even Hungary and Turkey which have some significant vulnerabilities, have seen their sovereign rates declining in 2012.

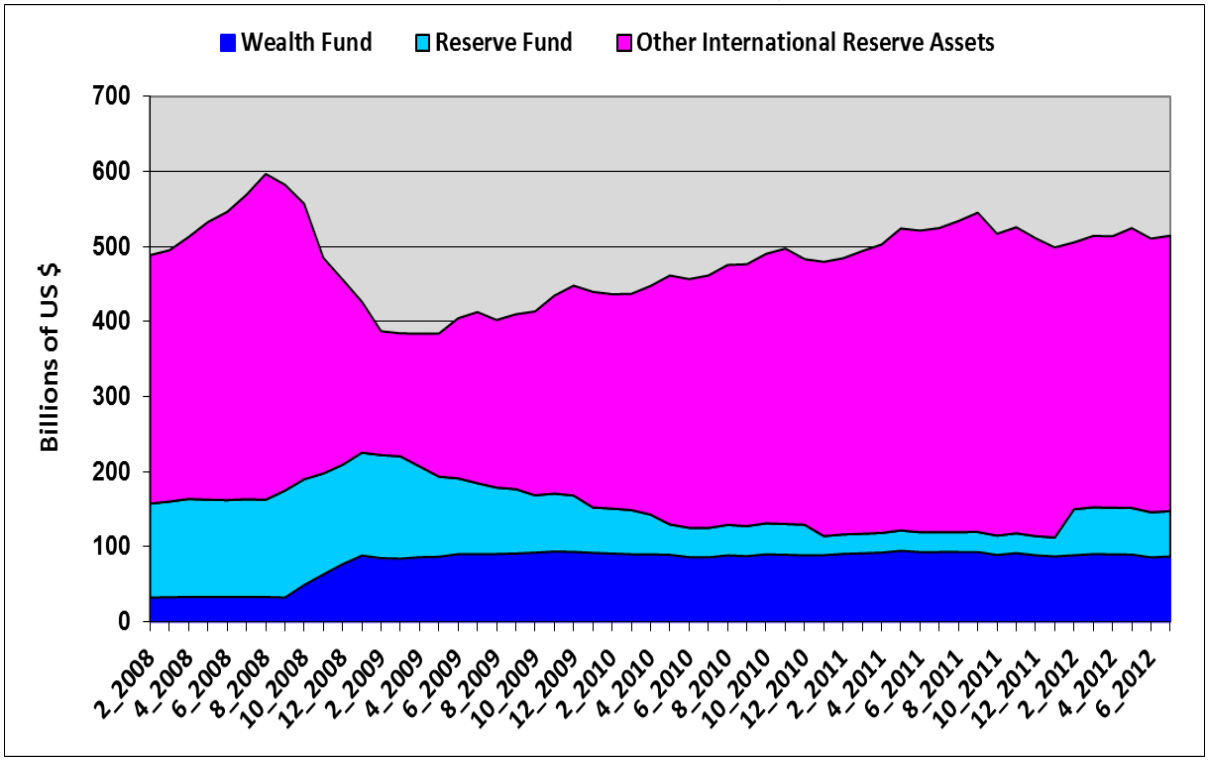
A systemic problem for the region appears to be capital flight especially when financial market conditions weaken; this is probably due to a history of hyper-inflation and bank defaults combined with weak rule of law. [30] Somewhat problematic has been the fact that capital flight continues to characterize Russia even during the current recovery phase as private capital outflows were $80 billion in 2011 (figure 2.18). Russian capital outflows are similar to US capital inflows in that both flows are somewhat perverse as the expectation would be the opposite with emerging Russia being a net recipient of capital and the US being a net lender.

The Russian financial sector has reduced its vulnerability by increasing its ownership of foreign assets so that its net foreign assets (total foreign assets minus total foreign liabilities) have moved from negative $100 billion in August 2008 to positive $44 billion in mid-2012. Thus in case the ruble depreciates (as it did in 2008-2009) the balance sheet effect on its financial sector would be positive instead of negative as was the case earlier. Also a net positive position would lower the probability and impact of a sudden stop of capital inflows from deteriorating global credit markets.

Several of the energy-rich EECCA, primarily Azerbaijan, Kazakhstan and Russia have sovereign wealth funds as well as significant amounts of other central bank foreign exchange reserves. These were used to varying degrees during the peak of the financial crisis to help stabilize their economies; their use of these funds appears to have been prudent. During the recovery they have been slowly re-accumulating assets. The Russian Reserve Fund had reached almost $143 billion in the autumn of 2008 and then dropped to only $25 billion at the beginning of 2011 before increasing back to $61 billion in July 2012. Russian overall central bank foreign exchange reserves fell from almost $597 billion in the autumn of 2008 to $384 billion in the summer of 2009 and were back to $514 billion in mid-2012 (figure 2.19). Although Kazakhstan's international reserves and National Oil Fund declined slightly in 2008-2009 the amounts in these funds have been increasing and are now significantly larger than prior to the crisis. Azerbaijan's central bank reserves have followed a similar pattern of slight declines during the crisis but strong growth over the last two years so that current assets are considerably higher than before. Overall, these energy-rich economies therefore appear to be in a generally similar or stronger position now than in 2008.

[30] The skittishness of investors in Russia is reflected by the fact that the Russian price/earnings ratio in its overall equity market is the lowest of any emerging economy tracked in the IMF's Global Financial Stability Report.

Figure 2.19
Russian reserve assets and wealth funds, 2008-2012



Source: UNECE calculations based on data from the Central Bank of Russia and the Russian Ministry of Finance.

The eurozone crisis also has significant implications for ongoing integration efforts in the EECCA. This may be especially true for EurAsEC as its proposed integration efforts are quite ambitious; there have even been discussions about creating a common currency for this group. Given that institutional design defects are a central cause of the eurozone crisis, it is important to fully understand these in order to avoid a similar outcome. Therefore an understanding and assessment of the situation in the eurozone is central to assessing the prospects for the ECA in the coming years.

The eurozone is experiencing a severe economic and political crisis; real GDP in mid-2012 is lower now than five years ago and industrial production is 12 per cent below its peak. Unemployment is at 11.1 per cent and rising; in Greece and Spain it could reach 25 per cent by year's end and youth unemployment is close to 50 per cent. Several governments are essentially insolvent; four have already turned to the EU or IMF for financial assistance and another one or two may follow. The financial system is impaired with numerous bank bailouts and more are imminent. European inter-regional private sector financial intermediation has ceased. Slowly moving bank runs have started in the periphery. A double-dip recession is underway and any recovery in 2013 and 2014 is likely to be quite weak. Long-term growth is being stymied by falling investment in education and infrastructure. The social situation has already deteriorated significantly and is likely to only get worse. In Greece suicides, homicides and theft have almost doubled, and heroin use, HIV infections and prostitution are up sharply.[31] Politically pro-European parties of the center are rapidly losing support to more

[31] Alexander Kentikelenis, Marina Karanikolos, Irene Papanicolas, Sanjay Basu, Martin McKee, David Stuckler, Health Effects of Financial Crisis: Omens of a Greek Tragedy, *The Lancet*, 378 (9801), pp. 1457-1458, 2011.

nationalistic extremist parties on both the right and left. As the last quarter of 2012 approaches there is a growing possibility that some countries will be forced out of the eurozone; there is uncertainty whether this can be managed in an orderly manner or if chaos will follow.

The similarities between Europe today and in the 1920s and 1930s are striking. 1) Each began with a global financial crisis that created a once-in-a-generation economic downturn resulting in high levels of unemployment and rising debt levels. 2) Each crisis revealed a dysfunctional monetary system that policy makers were reluctant to abandon or reform. Today it's the eurozone, then it was the gold standard. The design of both monetary systems constrained the effective implementation of macroeconomic policy. 3) In both cases the instability was compounded by the lack of an "international" lender of last resort. 4) Unit labor cost (or real exchange rate) misalignments were a central component of both crises, and the major adjustment mechanism used to correct these imbalances was wage deflation; in neither case did it work effectively, if at all. 5) Governments failed to enact the necessary fiscal stimulus because of ideological doubts about the effectiveness of fiscal policy and concerns about debt levels. 6) Harsh "reparations" were imposed on a debtor which inflicted severe damage; then the debtor was Germany, now it's the periphery of Europe. In both cases the repayment of these "reparations" was made extremely difficult by complications of the transfer problem.[32] 7) And finally and most importantly, countries made policy to maximize their own particular advantage instead of implementing a more coordinated European solution, and just as in a prisoner's dilemma in game theory, the result was that every country ended up worse off. As the great economic historian Charles Kindleberger wrote of the 1930s, "When every country turned to protect its national private interest, the world public interest went down the drain, and with it the private interests of all."[33] Most historians have concluded that the catastrophe of the 1930s was the result of numerous policy failures; the same appears to be unfolding today as this is a crisis caused by policy failures both at the national and European level: both in the institutional design of the eurozone and in the current conduct of macroeconomic policy.

There are several design defects in the eurozone that have contributed to this crisis.[34] The three most important are: 1) there is no lender of last resort. This has essentially turned eurozone members into emerging markets that must issue debt in what is essentially a foreign currency and thus has made them susceptible to currency/sovereign debt crises. 2) There is no adjustment mechanism for current account imbalances. They have neither fiscal transfers nor significant labor mobility as in a typical monetary union such as the US or Canada and must rely on a recession and wage deflation to restore competiveness. This adjustment mechanism did not work under the gold standard and was ultimately the major cause of the collapse of that monetary system and it does not appear to be working today in the eurozone. 3) A fully integrated monetary area requires a central regulator and a common system of deposit insurance; otherwise the banking system will be characterized by bank runs and financial instability. To solve the current crisis these three problems will need to be addressed.

[32] A transfer problem exists when a country must significantly reduce its terms of trade in order to make the financial transfer from debtor to creditor.
[33] Charles Kindleberger, *The World in Depression*, 1929-1939, 1973.
[34] Robert C. Shelburne, *Restoring Stability to Europe*, UNECE Discussion Paper No.2012.3, Geneva, 2012.

In most non-eurozone advanced economies the central bank acts as a lender of last resort. If the government is unable to pay back its debt, investors know that the central bank will print money if necessary to pay off the debt. Thus investors have confidence that they will be paid back. However, when the EU governments designed the European Central Bank (ECB) it was explicitly forbidden to carry out this function. As a result investors can become quite skittish about holding sovereign debt if there appears to be the slightest possibility that the government may not be able to pay off its debt. As the debt levels of several eurozone economies rose during the financial crisis, so did concerns about their ability to service this debt. In a nutshell this is the core of the eurozone sovereign crisis: the failure to have a lender of last resort.

If the ECB is not going to be allowed to be the lender of last resort, then an alternative needs to be designed that will provide a backstop for sovereign debt. The approach has been to set up rescue funds to back the sovereigns. First there was the temporary €440 billion European Financial Stability Facility which was set up to assist Greece, Portugal and Ireland; this was followed by the permanent €500 billion European Stability Mechanism (ESM) which was scheduled to become operational in the last half of 2012.[35] However with limited funds this approach will be tested repeatedly if large countries such as Spain or Italy need to borrow significantly from them. Exactly how these funds will be used is being continuously debated; for instance in mid-2012 some countries wanted the ESM to directly invest in problematic banks while others wanted the loans to only go to sovereign states (which could then lend them to their banks). Another mechanism that would provide additional security for sovereign debt holders would be to allow countries to issue not national bonds but eurobonds which the whole eurozone would back. Although this would likely lower the interest rates that heavily indebted countries would need to pay, it would also probably increase the interest rates that the less indebted would pay. Since countries would ultimately be responsible for the debts of others this would require some quite strict controls over national fiscal policies; there is obvious resistance to this approach from those economies whose interest rates might increase and resistance from those countries who would no longer be able to control their own fiscal policies. Another related idea was to create a temporary European Redemption Fund (ERF) which would issue eurobonds to cover all existing sovereign debt over 60 per cent of GDP. With strict limits on deficits, these would be paid off in time and the fund would then close down. Thus this would be a one-time process to get out of the current crisis but would not create any permanent eurobond. As of mid-2012 there was no agreement about creating any type of eurobonds or how they might function; there is also uncertainty over whether the ESM might be adequate by itself without having to go the next step to some form of eurobond.

The current adjustment process of unemployment and deflation in Europe appears to be quite dysfunctional. If a country has significant debts that need to be repaid, it ideally should be producing as much as possible so that it will have the resources to pay off the debt. Therefore it would appear to make no sense to implement policies that put 25 per cent of the labor force out of work, thus severely limiting what is available to be used for debt repayment. Yet that is what has happened. When there is an imbalance there are deficit and surplus economies. Because a surplus economy can run its surplus indefinitely and does not need to borrow from anyone it is under little pressure to adjust. However, the deficit country must adjust if it can no longer borrow. In addition the economic costs of reducing a deficit are

[35] Assuming that Germany's highest court rules that the ESM is legal in September 2012.

greater than the economic costs of reducing a surplus. Nevertheless the design of the eurozone has resulted in the costs of adjustment being imposed almost entirely on the debtor. This asymmetry has long been recognized as a very undesirable feature of a monetary system; for example Keynes had raised this issue at the Bretton Woods conference in the 1940s about how the global monetary system functioned. Deflation has an addition downside when there is significant debt as is the case in the eurozone periphery; it further increases the real value of the debt making repayment even more difficult. There are alternative more growth oriented policies that would result in more of the adjustment being borne by the surplus countries although they might experience higher inflation.[36] These policies include a more accommodating monetary policy and more spending; the latter could be more government spending or it could be funneled though some other channel such as the European Investment Bank. A more growth oriented policy package if properly designed need not worsen the debt situation and might actually improve it.

An integrated financial area requires a centralized supervisory authority which has the power and resources to close down or recapitalize banks and a region-wide deposit insurance system. A key issue at this point is whether this needs to be at the eurozone or EU level; the latter option appears less likely given the opposition from Britain. As the crisis has evolved so have concerns about the solvency of the European financial sector. These concerns can be divided into two types. Firstly, residents became concerned about the solvency of specific banks in the periphery economies because these banks held large amounts of their government's debt and the ability of the these governments to repay this debt was at the heart of the crises; the Greek default on its debt further augmented these concerns. A second concern was that the country might leave the eurozone. Normally what happens in these types of situations is that the government announces the departure from a monetary framework after the banks have closed for the night, then converts these deposits from the old currency into the new currency, and then depreciates the new currency. Thus when depositors wake up the next morning, they have maybe half the money (in buying power) that they had the night before. In either of these cases, the smart thing for a bank customer to do is to withdraw their money from the bank and keep it in cash or deposit it in another bank in another country. This is in fact what has been happening. Between the beginning of 2010 and mid-2012 Greek residents withdrew one third of their deposits from Greek banks and either moved those accounts to another country or tucked the euros in their mattresses. The same process has been going on in the other periphery economies as well. As this process goes on banks have few funds to lend out and thus borrowing and investment dry up. In addition in order to get the cash to give to their depositors, the banks must start selling their assets which can lead to a decline in their value which then further worsens the balance sheet of the banks and further encourages more deposit withdrawals. It has long been recognized that if this process is allowed to proceed, it generally ends in a full blown financial crisis. Thus the solution to the eurozone crisis will probably require significant reform in these aspects of the eurozone: an enhanced lender of last resort, a more symmetric and growth oriented adjustment mechanism and a stronger regional banking authority with region-wide deposit insurance. However, regardless of the specifics, at the most general level there will be a need for more economic integration and regional supervision which will require that eurozone members sacrifice more national sovereignty.

[36] Essentially this means that the ECB will need to consider employment and growth in determining monetary policy instead of focusing exclusively on price stability.

A significant dimension of the eurozone crisis has been the large current account deficits of the EU periphery economies. In fact, unlike budget deficits, that was a key economic variable they all had in common prior to 2008. Elimination of the periphery's current foreign borrowing largely requires the elimination of their current account deficits. Prior to the economic crisis in 2008, the three Baltic economies had even larger current account deficits than the periphery economies but these have fallen remarkably fast over the last several years. Therefore there has been considerable interest in what lessons could be reaped from these economies' experiences that could be applied to the periphery economies. These three economies had exceedingly large economic downturns in 2009 which were by far the largest in the EU; Latvia's over 20 per cent GDP decline over 2008-2010 was the largest in the world and roughly similar to that experienced by the US during the Great Depression. Despite reasonably solid growth in 2011, even today their GDPs remain significantly below pre-crisis levels and perhaps only one-half of what might be expected based upon pre-crisis trends. Their average unemployment rate tripled by increasing from under 5 per cent in early 2008 to almost 19 per cent by mid-2010 before staring a slow decline to about 13 per cent at the end of 2011. Also emigration has been extensive and worked to limit the increases in unemployment; Latvia's labor force declined by 5.5 per cent between 2008 and 2011. It remains uncertain at this point what will happen to their current accounts when their economies recover and unemployment falls back to its pre-crisis levels. Another very significant difference between the Baltics and the periphery was that the Baltic economies had very little sovereign debt prior to the crisis so that they were able to expand their debt levels to store up safety nets to support the adjustments while the periphery has had to cut theirs. In addition, their banking systems were not impaired by questionable sovereign debt, and in some cases even benefited from recapitalizations from neighboring economies. Thus the region provides no magic cure for current account deficits and in addition they benefited from some advantages that the periphery do not have. Thus their experiences instead highlight that the economic hardship that will need to be undertaken in the periphery will be quite severe under the current wage deflation process.

It should be noted that the United Kingdom (which is outside the eurozone) also introduced an austerity program which resulted in an economic downturn and rising unemployment. Unlike the situation in the eurozone where there were numerous institutional constraints and significant market pressure on a few economies, neither of these were present in Britain. Instead the motivation of policymakers was to decrease the size of government more broadly and slow down the country's increasing debt levels. However, as in the eurozone and many other historical episodes, austerity proved to be a rather inefficient process for improving the debt dynamics.

III. MDG PERFORMANCE IN THE ECE REGION

GOAL 1: ERADICATE EXTREME POVERTY AND HUNGER

Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar and twenty-five cents a day.

Extreme poverty is defined in the broader MDG framework as living on less than $1.25 (at purchasing power parity) a day. For most of the ECE emerging economies the percentage of the population living in extreme poverty is less than several per cent. However in a few economies it is much higher; in Georgia and Turkmenistan the percentage is in the tens, while it is in the twenties in Kyrgyzstan and Tajikistan and almost 40 per cent in Uzbekistan. In the ECA region the proportion of people living at this level amounted to 1.9 per cent in 1990, increased during the transition recession in the 1990s and then declined to 0.5 per cent by 2008.[37] The available estimates imply that the number of people in Europe and Central Asia living on less than $1.25 has remained unchanged since then.[38]

In the EECCA the proportion of people living on less than $1.25 has increased from 3 per cent in 1990 to 8 per cent in 1999 before declining to 5 per cent in 2005. Within the sub-region, however, there are two distinctly different trends: in Eastern Europe, those living in extreme poverty accounted for 1.6 per cent of the population in 1990 but had fallen to less than half a per cent by 2005; in the Caucasus and Central Asia, however, those with incomes under $1.25 a day amounted to 6 per cent of the population in 1990 and that increased to 22 per cent in 1999 and was still at 19 per cent in 2005.[39] In SEE (excluding Turkey) extreme poverty increased from 0.1 per cent in 1990 to 2 per cent in 1999 before declining to 0.5 per cent in 2005. In Turkey extreme poverty has been eliminated by 2006.[40]

The $1.25 numerical target is viewed by many as an inappropriate standard of extreme poverty in transition economies due to their relatively urbanized environment and the extra food, shelter, heating and clothing expenses associated with living in a cooler climate. The World Bank has therefore proposed a higher standard of $2.50 a day for defining extreme poverty; using this level the number of people in Emerging Europe and Central Asia living in poverty declined by more than half over the 2000 to 2007 period to approximately 30 million people. However, if high commodities prices persist, it is estimated that an additional 5.3 million people could be made poor (measured at the $2.50 level) because of higher food and fuel inflation, increasing the rate of extreme poverty from 5.5 to 6.7 per cent. This would represent a stronger negative impact on poverty than the one due to the 2006-2008 price increases because it is happening at a time where Eastern European and Central Asian countries just begin to recover from the global economic crisis.[41]

A number of researchers have advocated multidimensional poverty indicators. For instance, the Multidimensional Poverty Index (MPI) developed at the University of Oxford uses

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[37] See World Bank, *Global Monitoring Report 2012*.

[38] See the PovcalNet database of the World Bank (http://iresearch.worldbank.org/PovcalNet/index.htm?3).

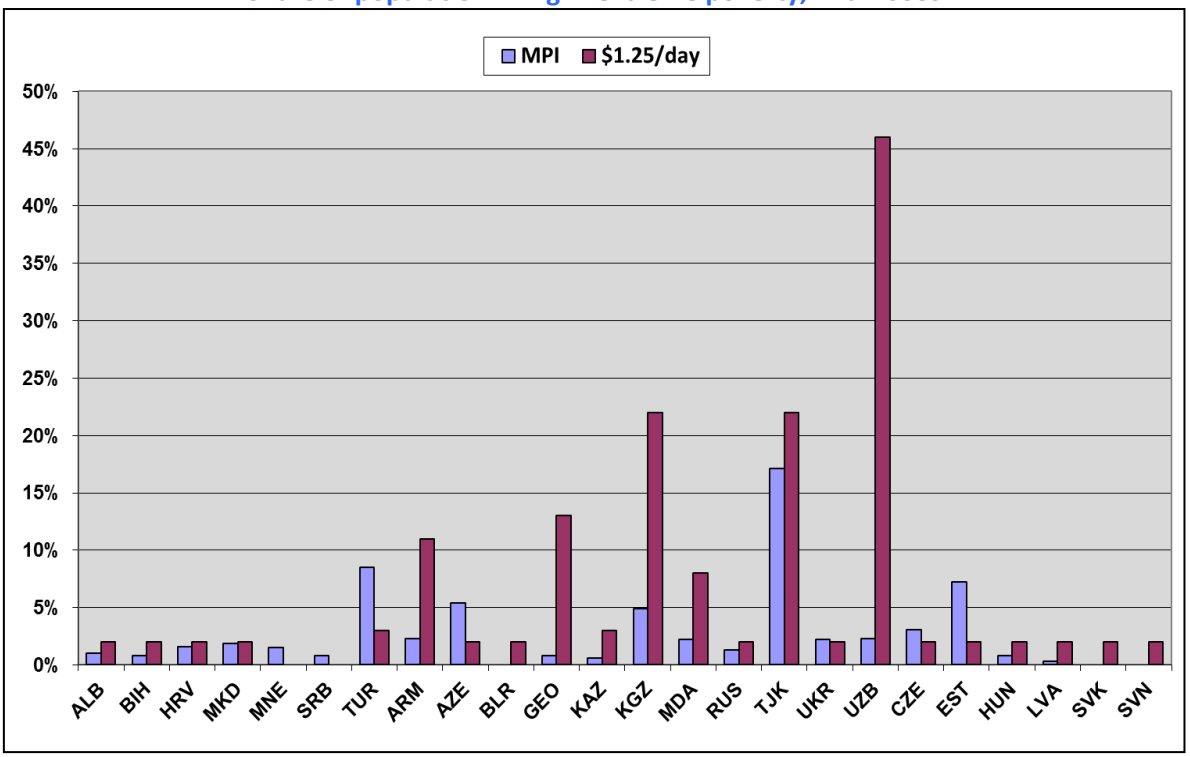
[39] See United Nations, *The Millennium Development Goals Report 2010*.

[40] See Turkish Statistical Institute, "Results of the 2009 poverty study," Press release, 6 January 2011.

[41] For more details see The World Bank Europe and Central Asia Region (2011), *Rising Food and Energy Prices in Europe and Central Asia*, Washington.

10 indicators to measure three critical dimensions of poverty at the individual level: education, health and living standards. These indicators measure deprivations in health and educational outcomes as well as key services such as water, sanitation, and electricity. The MPI values for a number of the ECA economies are shown together with the absolute income poverty measure in figure 3.1. In the mid-2000s the number of people living in extreme poverty in the 24 ECA countries with data was 12 million according to the MPI while 23 million lived on less than $1.25 per day. Multidimensional poverty was kept at relatively low levels in most EECCA countries where governments provided the population with subsidized essential services.

Figure 3.1
Alternative measures of absolute poverty
Share of population living in extreme poverty, mid-2000s



Source: Oxford Poverty and Human Development Initiative, Multidimensional Poverty Index, 2010.

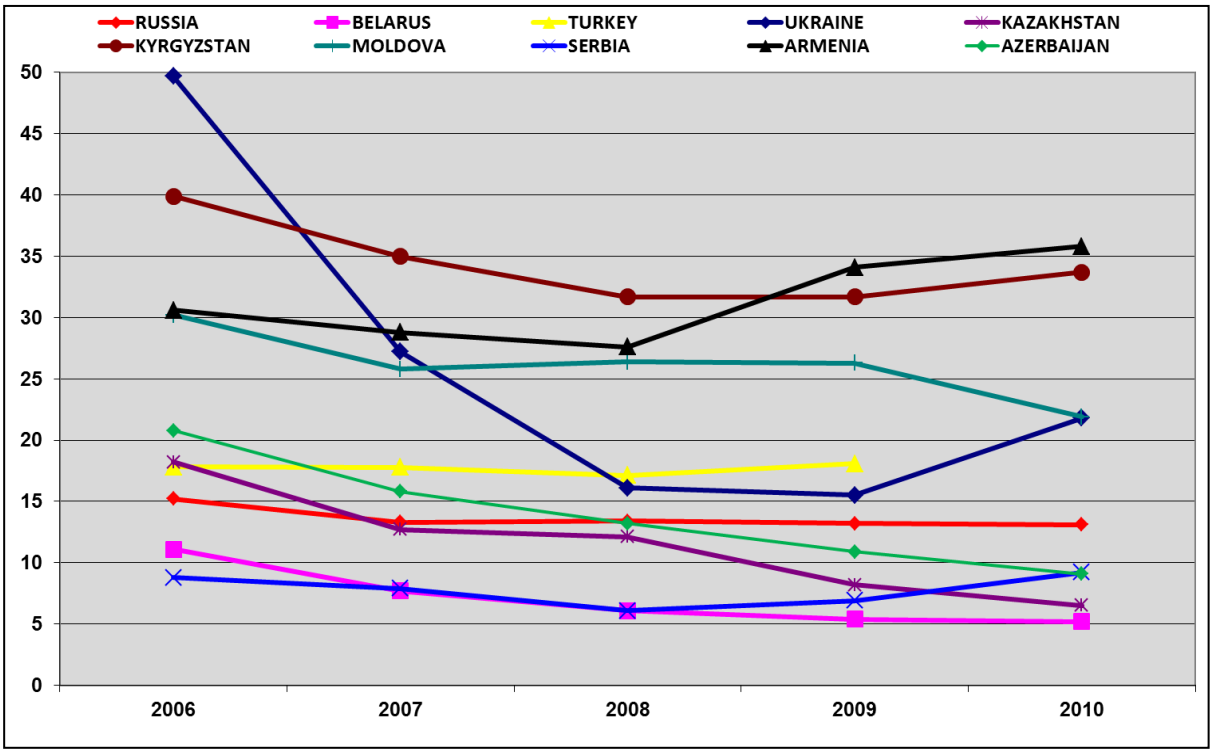
Most governments in the region use national definitions of poverty that are adapted to local circumstances. The available data indicate that population below national poverty line increased in 2010 in four reporting countries (Armenia, Kyrgyzstan, Serbia and Ukraine). By contrast, poverty declined noticeably some resource-rich economies with fiscal space, including Russia that saw a significant increase of the pension and social assistance benefits during the crisis (figure 3.2). It also declined in Belarus and Moldova.

The available data indicate that the *net* increase of the EiT population below national poverty amounted to some 2.5 million persons in 2010, reflecting to a large extent the rapid growth of poverty in Ukraine. The number of people in poverty in the United States increased by 2.6 million in the same year.[42] By contrast, the number of people suffering from severe material

[42] For details, see U.S. Census Bureau, "Income, Poverty and Health Insurance Coverage in the United States: 2010." 13 September 2011 (http://www.census.gov/newsroom/releases/archives/income_wealth/cb11-157.html).

deprivation in the European Union remained unchanged, reflecting uneven developments in the member states that saw rising material deprivation rates (e.g. in Hungary, Ireland and the Baltic States) as well as declining rates (e.g. in Germany and Poland).[43] The ranks of the poor in the ECE region thus grew by at least 5 million 2010. The actual increase was probably higher but the exact number remains elusive, given the limited availability of data. The underlying factors have included the persistently high unemployment in a number of the ECE advanced and emerging economies, reflecting both structural change and delayed job recovery (employment growth usually lags behind output growth). The proportion of long-term joblessness in total unemployment increased over the period 2007-2011 throughout the region with the exception of Poland and Russia where it declined. The poverty outlook remains uncertain, given the continued below-trend growth in most ECE economies (see chapter II).

Figure 3.2
Population percentage below national poverty line, 2006 - 2010



Source: UNECE database and national statistical agencies.

Social policies protected households to some extent from the impact of the crisis on their living standards. Such policies included labour market measures, social assistance, social insurance and special programmes to ensure the access of poor population groups to education and healthcare.[44] The importance of a social safety net in reducing poverty has been studied extensively; for instance, in the US it is estimated that without social safety net programs the poverty rate would be almost twice as high as it actually was (28.6 per cent of the population versus the actual rate of 15.5 per cent in 2010). A small portion of this reduction in poverty (2.3

[43] According to Eurostat, the severe material deprivation rate in the EU was equal to 8.1per cent in both 2009 and 2010. The indicator is defined as the percentage of population with an enforced lack of at least four out of nine material deprivation items in the 'economic strain and durables' dimension.

[44] For details, see World Bank (2011), *The Jobs Crisis: Household and Government Reponses to the Great Recession in Eastern Europe and Central Asia*, Washington, D.C.

per cent of the population) was due to temporary recession-fighting initiatives such as the extension of unemployment benefits, child tax credits, and enhanced food stamp benefits.[45] In a number of ECE emerging economies, the most vulnerable population groups were supposed to be protected by IMF-supported programmes.[46] However, some of these countries have implemented so-called efficiency reforms that have restricted the access to social services and benefits while reducing employment and/or wages in the public sector. Generally, the poor were hit most by rising unemployment and forced to adopt some risky adjustment strategies, including cuts in discretionary expenditure on health and education. According to the available information, disadvantaged ethnic minorities have been injured by the crisis more severely than the majority population.

A measure of relative poverty, known as the at-risk of poverty rate and provided annually by Eurostat for the EU member states and a few other countries, shows the percentage of population having a disposable income below 60 per cent of national median income. As shown in the annex table 1B, over the 2005 to 2010 period, these figures remain relatively stable except for some rather substantial increases in Bulgaria, Croatia, Germany, Latvia and Sweden. By contrast, social transfers have reduced the population at risk of poverty in Ireland and Poland and kept it more or less stable in other Central European countries.

A substantial number of the poor in transition economies are rural households and migrant workers. In the EECCA region, 31 million people have emigrated to work in another country, often another EECCA economy. In 9 of the 12 EECCA economies, more than 10 per cent of the population has emigrated. Due to the economic crisis remittances declined significantly, in some cases by more than 25 per cent; this has had negative implications for living standards and investment in health and education for the poorest segments of the populations in the remittance receiving countries. Migrant workers are often illegal. Even if legal, they are often not granted the same rights or given the same access to social benefits as domestic residents. As such these workers are often marginalized and exploited.

Following the social spending cuts in a number of advanced economies affected severely by the financial crisis, including Greece, Iceland, Ireland, Portugal and Spain, poverty has apparently increased among traditional vulnerable groups – children, the elderly, women and migrants – as well as the long-term unemployed. This new trend has not been reflected in the official poverty statistics yet, given the time lag between the collection and publication of data.

Target 1.B: Achieve full and productive employment and decent work for all, including women and young people.

Poverty in Europe and Central Asia is strongly linked to unemployment; generally those with jobs outside of the informal and agriculture sectors are able to escape from extreme poverty. Thus creating high levels of employment in the formal sector is of central importance for addressing poverty. The region has for almost two decades been characterized by anemic job

[45] Arloc Sherman, *Poverty and Financial Distress Would Have Been Substantially Worse in 2010 without Government Action*, Center on Budget and Policy Priorities, Washington, DC, November 2011.

[46] The following ECE countries have adopted IMF-supported programmes that should protect social spending, including social assistance for the most vulnerable population groups: Armenia, Belarus, Bosnia and Herzegovina, Hungary, Latvia, Romania, Serbia, Tajikistan and Ukraine.

growth and relatively high rates of unemployment. Between 1989 and 2003 total employment fell by 27 per cent in SEE excluding Turkey, 17 per cent in Eastern Europe and the Caucasus, and 17 per cent in the NMS. Over this period, employment increased by 15 per cent in Turkey and 10 per cent in Central Asia.[47] Unemployment rates remained high even in 2008 despite the relatively solid economic growth of the prior eight years. Overall unemployment rates in transition economies have generally been slightly higher for women but there are many important exceptions such as in Russia (see annex table 2).

Unemployment increased in most countries of the region in 2009 and 2010. The increase in unemployment is not unusual in the early phase of recovery, given the labour hoarding by business firms during cyclical downturns, a practice sometimes supported by government programmes. Other factors contributing to rising unemployment included the relatively slow pace of recovery and the increasing number of job seekers. In the second half of 2010 unemployment started to decline but two years later it remained well above the pre-crisis level in most ECE economies. However, unemployment rates have declined below pre-crisis levels in the resource-rich EECCA economies and Turkey (annex table 2).

The evolution of employment rates has been uneven across the region. High levels of employment have been maintained in Russia and a number of other EECCA countries with the aid of exceptional wage flexibility, low unemployment benefits and a lax implementation of labour code regulations. Employment rates in these countries have continued to be higher than in other parts of the pan-European region.[48] In a number of the NMS, employment declined significantly in the 1990s as a result of lower wage flexibility and relatively generous unemployment and early retirement benefits. However, labour market, social assistance and pension reforms in the 2000s improved the incentives to work and resulted in rising employment rates up to 2008 (figure 3.3).[49]

Subsequently, employment rates declined in a number of advanced ECE economies and NMS, reflecting at first the impact of the global financial crisis and then the slow pace of recovery. The structure of employment deteriorated, due to the increasing share of informal employment. Following the output recovery in 2010 and 2011, employment exceeded pre-crisis levels in all EECCA economies except Armenia, Moldova and Ukraine. By contrast, employment levels remained depressed in the NMS with the exception of Poland. In SEE countries, employment exceeded pre-crisis levels except in Albania, Croatia and Serbia. The principal underlying factors of employment growth included output growth (EECCA countries, Poland and Turkey) and labour market reforms (some SEE countries).

The comparatively high employment rate in the EECCA subregion is not altogether positive. Flexible labour markets in Russia and other EECCA countries have preserved a large number of low-wage, low-productivity jobs while slowing the process of enterprise restructuring. This was perhaps desirable in the short run, especially during the period of deep transition

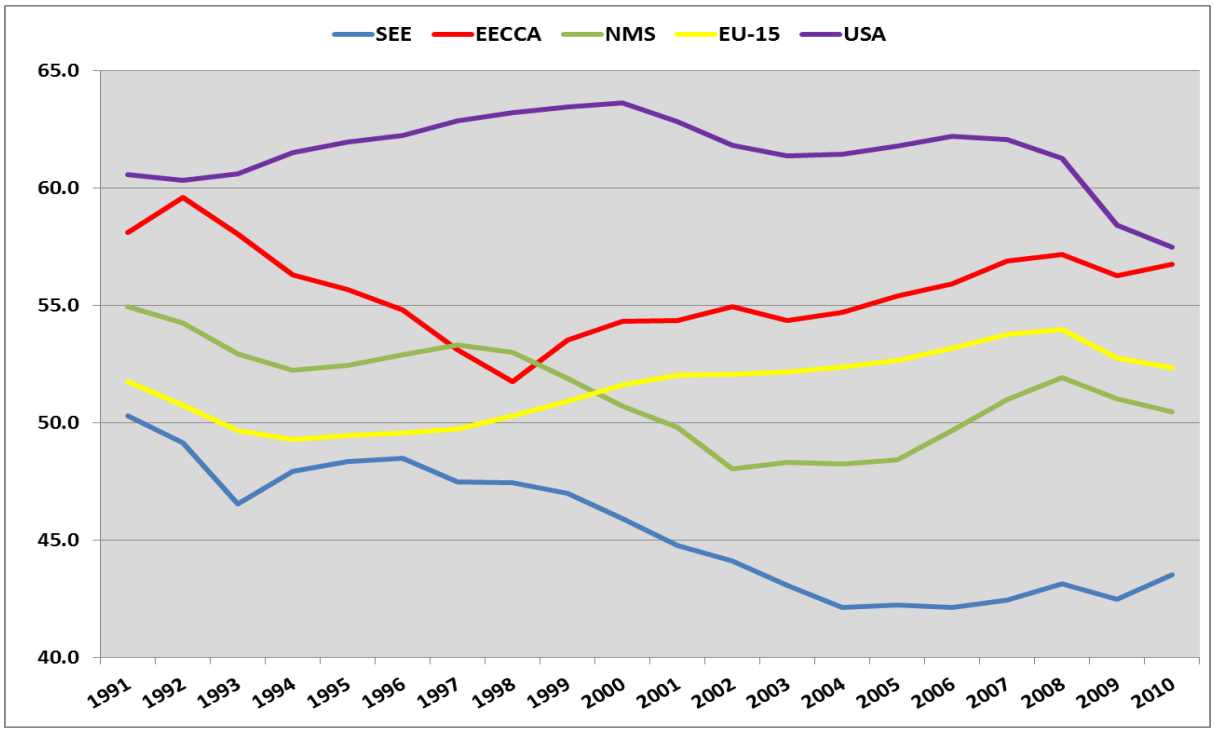
[47] UNECE, ***Economic Survey of Europe***, 2005 No.1, Geneva, 2005.

[48] See V. Gimpelson and R, Kapeliushnikov (2011), "Labor market adjustment: Is Russia different?" *IZA Discussion Paper Series*, No. 5588.

[49] For a discussion of these reforms, see B. Slay (2009), Social policy, labour market, and tax reforms: Some early lessons from new EU member states and possible relevance for the Western Balkans. Discussion paper prepared for the "Technical Conference on the Impact of the Economic Crisis on Social Protection Systems in the Western Balkans", held on 15-16 June 2009 in Zagreb.

recession in the 1990s. However, a more efficient utilization of human capital is needed to increase trend growth of wages and productivity.

Figure 3.3
Employment-population ratios, 1991-2010



Source: ILO KILM database.
Note: The employment-to-population ratio is the proportion of a country's working-age population (15 years and older) that is employed.

The official data may underestimate the employment impact of the crisis since discouraged workers often drop out of the workforce and are therefore not considered in the unemployment rate. For example in Tajikistan at the end of 2009 the official unemployment rate was 12 per cent but researchers have estimated the actual unemployment rate to be near 40 per cent and as high as 60 per cent in some areas. Given limited safety nets in the region and relatively high unemployment to begin with, the result of the crisis has been that a significant proportion of the population has been placed in a vulnerable position. The majority of households had to reduce consumption while spending savings of returning migrants and increasing production of food in their own backyards.[50]

The increase in joblessness during the crisis was especially large for the youth of the region whose unemployment rate increased by 3 percentage points to almost 21 per cent in 2009 before declining to 19 per cent in 2010. Although this rate is quite high relative to the world average of 12.6 per cent and to most other developing regions, it is slightly below that found in North Africa and the Middle East. The very high youth unemployment levels signal the danger of rising poverty levels and social conflicts.

[50] See H. Hemmings (2010), *The Effects of the 2008 Economic Crisis on Tajik Migrant Labor in Moscow.* Woodrow Wilson International Center for Scholars, Washington, D.C.

The shortage of jobs is especially prevalent for young workers and those with limited skills. Those unable to obtain regular employment are pushed into the unregulated informal or rural agriculture sectors where wages are low and benefits are limited. Poverty tends to be significantly higher in rural areas than urban areas. There is also an ethnic dimension to unemployment and thus poverty in a number of countries in the region, especially in SEE and in some of the NMS. Those displaced by internal conflicts have also had a hard time in gaining employment in the formal sectors.

Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

Malnourishment is moderate to low in most parts of Europe and Central Asia. The level depends on which of several measures of under-nourishment are used. In terms of the absolute level of under-nourishment, the percentage of the population with a caloric intake below the minimum dietary energy requirement (according to the FAO) is below 5 per cent in most transition economies but was reported to be higher than this (in 2006-08) in Turkmenistan (7 per cent), Georgia (6 per cent), Kyrgyzstan (11 per cent), Armenia (21 per cent), Uzbekistan (11 per cent), and Tajikistan (26 per cent).[51] Eight countries are classified as ODA eligible with recurrent net food trade deficit: Armenia, Azerbaijan, Georgia, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan and Uzbekistan.

By the onset of the Great Recession most of the countries in the region had made considerable progress in reducing hunger. Tajikistan and Turkmenistan have made measurable progress and may be able to reach the target; the Caucasus economies had already achieved the target by 2006. Food insecurity however, appears to have risen in Central Asia in recent years with the increases being most noticeable in Tajikistan and rural areas of Kyrgyzstan, Turkmenistan an Uzbekistan. The underlying factors include high international food prices, natural disasters and past environmental mismanagement. For Kyrgyzstan the WFP estimates that during the 2008 global food crisis, one in five households consumed inadequate diets in terms of energy and protein.[52]

Across the EECCA region, the economic growth that has been observed since 2000 has not translated into higher agricultural yields or improved productivity. In grain producing countries (Russia, Ukraine and Kazakhstan) agricultural production is still highly dependent on weather conditions and natural resources. Additionally, agro-technologies are not sufficiently developed to cope with the effect of natural factors. EECCA countries' capacity to produce different cereals including wheat – which is the main export product – is still limited and based mainly on the expansion of the planted area and low yields.[53]

Over the last few years, the affordability of food has declined in parts of the Caucasus and Central Asia due to the income losses associated with the Great Recession and the subsequent increase in commodity prices. In a number of transition economies consumers have to spend a

[51] FAO hunger statistics accessed on 3 July 2012.

[52] For details see WFP (2009) *Emergency Operation in Kyrgyz Republic*

[53] FAO (2011), *The Status And Challenges Of Food Security In Central Asia*, by David Sedik, Guljahan Kurbanova and Gabor Szentpali, as background material for the third Central Asia Regional Risk Assessment (CARRA) Meeting in Astana, Kazakhstan, 14-15 April 2011.

large percentage of their income on food; thus price inflation for food products translates into large declines in real purchasing power.

In 2012, the main cereals exporters in the region Russia, Ukraine and Kazakhstan are forecasted to experience a sharp fall in production; as a consequence in the EECCA the aggregate wheat inventories could decline by 8 million tonnes. In the Russian Federation and in Ukraine, export prices of milling wheat decreased slightly in May after having risen by 13 per cent in the period from January to April 2012. However, prices remain at relatively high levels, despite the drop recorded in the second half of 2011. The high level of prices in these countries is affecting domestic prices in the importing countries of the EECCA region, in particular Caucasus and Central Asia countries that are heavily dependent on regional cereal imports. However, the stocks accumulated in 2011 should help limit prices increases. In Central Asia domestic prices of wheat flour, which started to decline in the second half of 2011, have continued to fall moderately in the first months of 2012 in most countries. Although the April 2012 prices in Armenia, Azerbaijan, Georgia, Kyrgyzstan and Tajikistan were 15 to 20 per cent lower than their peaks in mid-2011, they remain well above their levels of two years earlier, reflecting rising cost of energy and fertilizer, as well as the trends in the export markets.[54]

As drought conditions intensified during the summer of 2012 in several major food producers, especially the US, the global price for corn, soybeans and wheat had nearly doubled from prices in early 2010; corn and soybean prices exceeded even the levels reached during the 2008 global commodities boom. These price increases translated quickly into higher prices for chicken, pork and beef due to the higher costs for feed stocks. As a result the affordability of food throughout much of the world is likely to fall over the next year.

GOAL 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION

Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

Universal primary education has been achieved in most parts of Emerging Europe and Central Asia. In general, school access and retention rates are very high, and grade repetition at the primary level quite low. Most transition economies increased real public expenditure on education since late 1990s; however, some of them have not yet reached the pre-transition spending levels.[55]

In countries for which data are available, the Net Enrolment Ratio (NER) averages 93 per cent and is above 85 per in all countries but Albania, Azerbaijan, Montenegro and Slovakia (annex table 3). Most countries of the region are within reach of achieving universal primary education. The available data for the ECA economies show that between 2000 and 2010 the NER increased in eight countries – Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey and Slovenia. The modest declines in the remaining countries with data illustrate the great difficulty faced by governments in reaching the last 10 per cent of children currently excluded from the school system. Since it is usually more expensive and difficult to implement initiatives

[54] FAO (2012), *Crop Prospects and Food Situation*, June 2012

[55] For details, see UNICEF (2011), *Demand for Education Innovation: Adolescent and Youth Perspectives on Education Quality in the CEECIS Region.* Geneva: UNICEF, pp. 41-42.

aimed at enrolling the hardest-to-reach children currently not in school, explicit political and financial commitments are needed to overcome obstacles to generalized access. On average between 5 per cent and 7 per cent of primary-school age children do not attend school. In some countries the number exceeds 10 per cent. Nonetheless, since 1999 the region has significantly reduced its out-of-school population.

In most countries of the region, almost all children who enrol in primary school complete the first cycle. In 2007, at least 93 per cent of young learners completed the last grade of primary school in all countries for which data were available. In many countries, this rate is close to 100 per cent. Such an achievement is encouraging news for governments, knowing that if they can enrol young learners into the first grade of school, their school systems are likely to allow them to complete the first cycle of education.

Nearly all youth in the region are literate. Despite the relatively low number of illiterate youth, there is still a large population in the ECA lacking the knowledge and skills to participate actively in society. In today's world, however, just learning to read and write is not enough. Young people need to continually upgrade their skills according to changing technologies; which reinforces the importance of quality literacy programmes.

In many of the transition economies enrolment rates are similar to those in the middle income countries in Latin America and South-East Asia and are approaching those of the advanced economies. One particular problem for the region is that actual school attendance rates are often significantly below enrolment rates.[56] Although in a few countries enrolment rates need to be increased, the primary concern is how to achieve high attendance rates and the quality of the education that the students are receiving.

Although this MDG target is primarily concerned with achieving basic literacy, as economies develop economically and work and life become more complicated and technologically challenging, the minimum level of education increases. The ECE emerging economies have therefore focused on increasing the enrolment in secondary and even tertiary schooling. For most of these there has been a considerable increase in the secondary and tertiary enrolment rates since at least 1999 (see annex tables 4 and 5).

Although the 2007 - 2009 global financial crisis hit Emerging Europe and Central Asia harder than any other region, education investments of most crisis-affected households were not reduced significantly and children not withdrawn from schools. This can be explained by the low opportunity cost of sending children to school in most parts of the region. Although there were no withdrawals from general schooling, crisis-affected households have reduced or postponed some discretionary education-related spending on transportation, tutoring and school supplies. This is likely to have a negative impact on the future educational attainment of affected children. Generally, government spending on education was better protected than spending on health. A few countries of the region implemented pro-poor measures, reducing out-of-pocket education expenses and protecting special programmes for students from disadvantaged backgrounds.[57]

Disadvantaged ethnic minorities have been hit particularly hard by the crisis and have thus been unable to protect their educational investment to the same extent as the majority population.

[56] This is discussed in more detail in UNECE, The Millennium Development Goals: The Way Ahead, Geneva 2006.

[57] For details, see World Bank (2011), *The Jobs Crisis: Household and Government Responses to the Great Recession in Eastern Europe and Central Asia*.

For instance, the Roma and Turkish minorities in Bulgaria withdrew their children from preschools and reduced other educational expenses in much larger proportions than majority households.[58]

The marginalization in education is the single biggest factor preventing the universal achievement of MDG 2 in Emerging Europe and Central Asia. It is a form of acute and persistent disadvantage rooted in underlying diverse social and economic inequalities. These include poverty, gender, culture, language, ethnicity, race, geographical location, disability, and health. The inequalities, which rarely operate in isolation, can multiply the chances of children being left behind. Not only do marginalized individuals and groups study for fewer years but the education they receive is also of poorer quality. In some countries of the region, such as Albania, Georgia, Tajikistan, Turkey and Uzbekistan, being born a girl still carries a significant educational disadvantage.

While countries facing difficulties in achieving universal primary education tend to be the poorest ones, some relatively wealthy ECA countries have not performed as well as could be expected. Overall, Turkey has made good progress in access to primary education with an enrolment rate which increased from 92.8 per cent in 1990 to 97.5 per cent in 2009, and is thus close to achieving universal primary education. However, according to the Demographic and Health Surveys, the eastern part of the country has a net enrolment rate of 79 per cent. Moreover, while the average number of years of schooling was 8.1 at national level, it was 6.3 years for the bottom 20 per cent of the population with the fewest years of education. In Russia, the educational attainment of small indigenous populations lags significantly that of the majority population. In Central and Eastern Europe, Roma are often excluded from the access to decent education.

Access to education is only one side of the coin. What and how pupils learn in schools remains a challenge. While in all countries with data the survival rate to last grade at primary level is over 93 per cent, poor quality education in some of them is jeopardizing the life chances of millions of young people.

The evidence from international assessments of reading skills illustrates the extent to which quality varies between countries. The Programme for International Student Assessment (PISA) measures performance in literacy of students with about eight years of education. Table 3.1 shows that only a few of the ECE emerging economies perform close to the OECD average. The performance is especially low in a number of countries of South-Eastern Europe and Central Asia. By contrast, four countries have achieved a statistically significant improvement in reading literacy over the period 2000 – 2009: Albania, Hungary, Latvia and Poland.

PISA tests identify students with reading literacy below level 2 as being at risk during the transition to work. In Kyrgyzstan, 83 per cent of students tested were below the reading level 2 that corresponds to 407.5 points on the PISA scale. The percentage of similarly performing students in other countries ranged from 13 per cent in Estonia to 73 per cent in Azerbaijan (figure 3.4). Between 2000 and 2009 the percentage of students below level 2 decreased significantly in Albania, Hungary, Latvia and Poland while increasing in the Czech Republic.

[58] Ibid.

Table 3.1
Performance in reading, mathematics and science literacy
Mean scores, PISA 2009

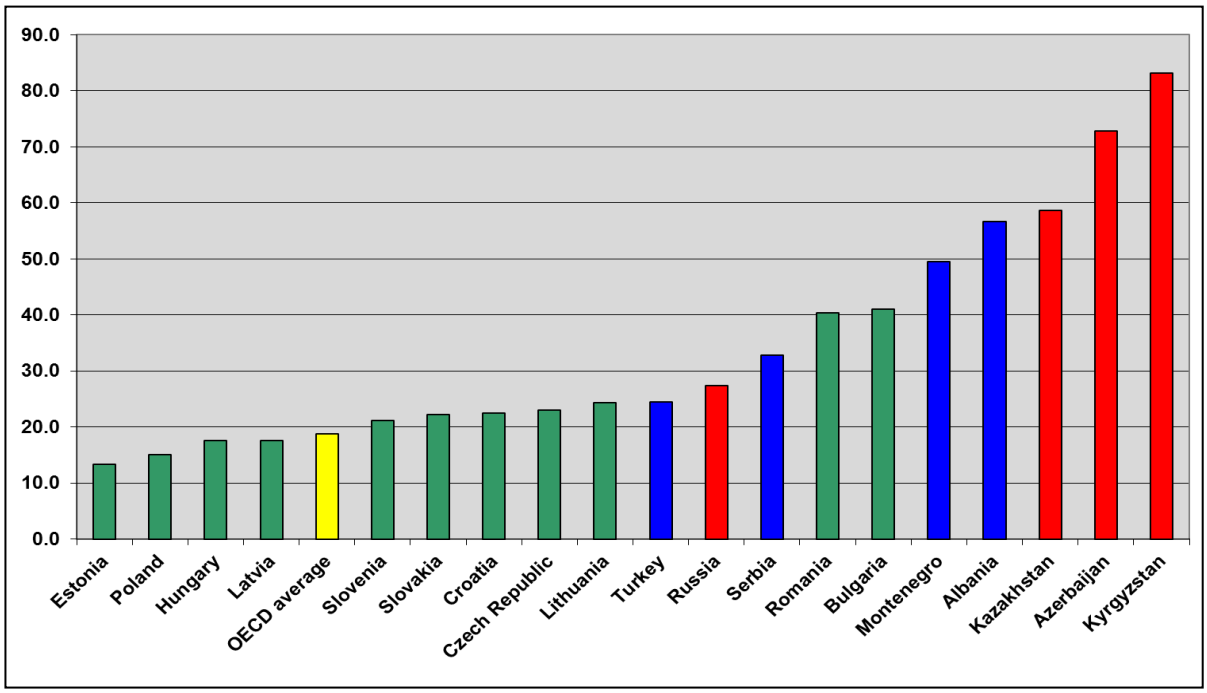
	Reading	Mathematics	Science	Average
Estonia	501	512	528	514
Poland	500	495	503	499
Slovenia	483	501	512	499
Hungary	494	490	503	496
Czech Republic	478	493	500	490
Slovakia	477	497	490	488
Latvia	484	482	494	487
Lithuania	468	477	491	479
Croatia	476	460	486	474
Russia	459	468	478	469
Turkey	464	445	454	455
Serbia	464	442	443	450
Bulgaria	429	428	439	432
Romania	424	427	428	427
Montenegro	408	403	401	404
Kazakhstan	390	405	400	399
Azerbaijan	362	431	373	389
Albania	385	377	391	384
Kyrgyzstan	314	331	330	325
OECD average	495	496	501	497
NMS average	474	480	489	481
SEE average	448	449	460	452
EECCA average	381	409	395	395

Source: UNECE calculations based on OECD data.

Learning outcomes measured by PISA and other tools imply the need to adopt a comprehensive approach to addressing the quality and relevance of primary education and improved learning environments. The countries that achieve consistently high scores in international tests have paid special attention to the students in the lowest quintile of achievers who often come from disadvantaged backgrounds. These efforts were successful because the school achievement problems have been addressed by competent, motivated and well-paid

teachers working in modern, well-equipped classrooms. By contrast, in many ECA countries the shortage of trained teachers and adequate school facilities resulted in poor educational outcomes. To reach universal primary education by 2015, additional primary school teachers will have to be recruited in about half of the 15 ECA countries with data. On the positive side, the pupil/teacher ratio has improved. In 2007, all ECA countries had ratios below the widely recognized ceiling of 40:1, and even below the world average of 25:1.

Figure 3.4
Share of 15-year old students below reading level 2
Per cent, PISA 2009



Source: UNECE calculations based on OECD data.

GOAL 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.

Gender inequalities exist in various forms across regions, countries and communities. Depending on a range of factors – political, economic, religious and cultural – these disparities can widen and destabilize society, reduce growth and bring distortions in everyday life with long-terms consequences for both women and men. The global financial and economic crisis has impacted heavily all ECE member States; the overall economic deterioration occurring as a result of job losses and reduction of household earnings has exacerbated gender disparities across and within countries. The differences between women and men in both paid and unpaid work, as well as the gender bias in allocating intra-household resources and time have widened. The austerity measures undertaken by the governments in many ECE member States, in particular in those suffering a deep crisis, have led to a bigger negative impact on women's lives. In Spain, for example, 21 per cent of women and 19 per cent of men are poor, and one third of elder women are at risk of poverty. Closing the gender gaps amid growing uncertainties in the international

environment and teetering national economies is becoming an even more compelling task that requires a special set of measures targeting women to be systemically included in solving the crisis.

Closing the existing gender gaps in education is an important step towards achieving further integration of women in the labour market, thus providing equal opportunity for women and men to develop and earn equal incomes. However, the specific indicators regarding the elimination of gender disparities at the various school levels need to be assessed along with the relative status of women in labor markets and the relative participation of women in the political process in order to identify the key steps in promoting gender equality.

Arguably MDG 3, with its focus on gender equality and empowerment, covers a more complex set of issues that are not adequately captured by the assigned target and indicators. In line with the target assigned to MDG 3 (target 3.A), the remainder of this chapter focuses on selected critical areas of women's empowerment, including qualitative measures of educational parity and employment status, paid employment, and representation and decision-making power at the national level.

Educational Parity in the ECE Region

Today, thanks to significant changes in education and gender equality legislation gender parity in education – narrowly defined as target 3.A (indicator 3.1) – has practically been achieved in the ECE region. The convergence to gender parity in primary education is observed in all countries of the region at the level of above 90 per cent enrollment ratio in the majority of them (see annex table 3). Girls and boys are equally enrolled in secondary education as well, with a few exceptions, such as Tajikistan. Regarding tertiary education, in around 85 per cent of ECE member States for which data is available, women outnumber men; the highest growth in the enrollment rates being observed in Eastern Europe (see annex table 5). In some NMS and South-Eastern European countries (Latvia, Cyprus, Montenegro) women make up about 70 per cent of university students and only in Luxemburg, Turkey and Tajikistan is their proportion lower than men's in higher education. In the majority of South-Eastern European countries of the ECE region, women make up around 3 in 5 university students.

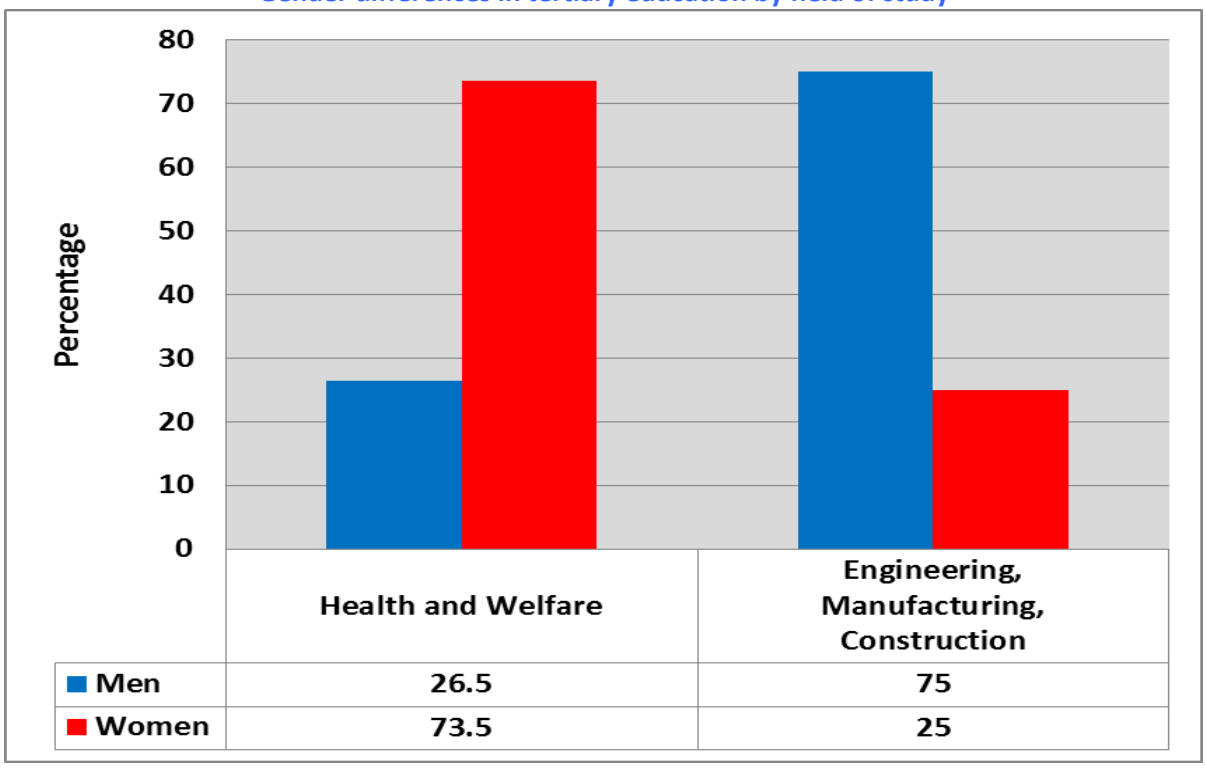
Despite the important achievements made in the countries with economies in transition in the field of education, including universal enrollment for basic schooling, free access (at least formally) to school and tertiary level institutions, with a strong emphasis on equity in access, progress has been uneven in these areas. The economic crisis that is spreading in these countries put many of these achievements at risk.

In the countries of the Caucasus and Central Asia, remaining gender disparities in education appear more pronounced in rural than urban areas, especially in countries with a significant rural population such as Azerbaijan, Kyrgyzstan, Turkmenistan, and Uzbekistan. Shortages in public funding, impoverishment of the population, and a return to traditional practices (especially marriage of girls at a relatively early age) are contributing factors.

In most countries in the ECE region (including Belarus, Bosnia and Herzegovina, Sweden, Ukraine and especially the Baltic States), women now outnumber men in tertiary education, with Tajikistan and Uzbekistan being notable exceptions. There remain, however, significant gender differences in the fields of study chosen. Men continue to be

overrepresented in the fields of science, technology, engineering and mathematics, while women are more highly concentrated in the fields of business administration, law, social sciences, journalism, humanities and the arts. Only 30 per cent of female students choose to pursue research in Science, Engineering and Technology subjects compared to 47 per cent of male students.

Figure 3.5
Gender differences in tertiary education by field of study



Source: UNECE Statistical Database, 2007-8 data
Note: Figure represents average of selected countries from the ECE region: Azerbaijan, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, and Finland.

Gender segregation with regard to educational choice is widely spread and has long-term consequences on the life of women and men; its cumulative impact risks reinforcing occupational segregation in the labour market and subsequently has the potential to perpetuate the gender pay gap as well.

Women's Labour Force Participation

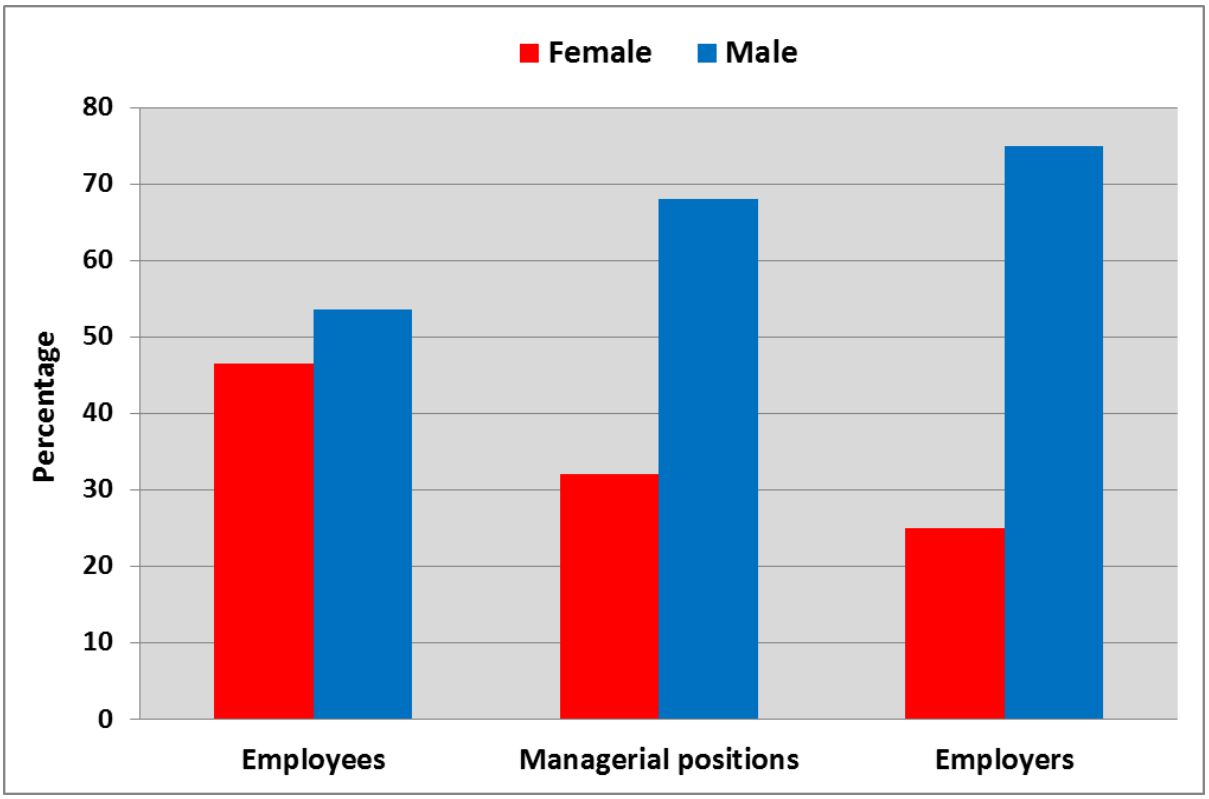
Women's labour market participation in the ECE region has increased in recent years and is the highest in the world. However, despite the importance of women as a source of new labour force and their high education level, severe problems remain both with respect to the quality of women's employment and their opportunities for career advancement, especially in countries of Eastern Europe, the Caucasus and Central Asia. Vertical and horizontal labour market segregation continues to be a major concern: the majority of women still occupy lower-paid, part-time or other forms of unstable jobs at the lower end of the career ladder, they are concentrated in fewer occupations, and have more career interruptions, largely due to caregiving responsibilities.

These differences contribute to lower earnings (gender pay gap) and slower career progressions. Furthermore, the disadvantages accumulate over the lifetime leading to lower pensions in old age.

Labour market access remains problematic for many women, especially those trying to find their first jobs after university or to re-integrate into the labour market after maternity leave. Thus, the higher educational attainment of women in many countries is not yet reflected in women's job quality and remuneration and therefore has yet to feed through to employment.[59]

In most of the ECE countries, women's economic activity rate is lower than men's; there are a few exceptions such as Latvia. The highest rate is found in Iceland where nearly 80 per cent of women of working age are economically active. In contrast, only about 25 per cent of Turkish women participate in economic activity. On average, the women's employment rate tends to be higher in the EECCA and the Baltic States than in the EU member States and the Balkans.

Figure 3.6
Gender differences in employment in the ECE Region



Source: UNECE Statistical Database, 2011 data or latest available.
Note: Unweighted average. *Employees* are all the workers who hold paid employment jobs; *Managerial positions* refer to Legislators, Senior Officials and Managers; *Employers* are workers who hold self employment jobs and have engaged, on a continuous basis, one or more persons to work for them in their business as employees.

The recent economic crisis severely affected the economies of ECE member States, eroding labour markets. While initially the number of unemployed men increased at a faster rate

[59] UNECE, Gender Gap and Economic Policies, 2009.

than the number of unemployed women, recent data show that women's unemployment is likely to increase at a rapid pace, while the rate of increase of men's unemployment is slowing. In 2011, unemployment of women has risen in some ECE countries above 20 per cent, such as in Bosnia and Herzegovina, Greece and Spain, thus widening the gender gap up to 6.4 percentage points for Greece (see annex table 2). Where female unemployment is lower than men's (in approximately one-third of the ECE member States, such as the Baltic States, Ireland, Bulgaria, Romania, Georgia, Moldova, Russian Federation and Ukraine), women are more likely than men to accept jobs below their qualifications or to retire from the labour market (Estonia, Bulgaria).

When jobs are not available in the formal sector, workers tend to find employment in the informal sector. In the EECCA in particular, many women continue to work in the informal economy, including in home-based market-oriented production of goods and services (sewing, souvenir production, home care services, etc.), and subsistence food production. Due to the rising job uncertainty reflected in atypical working arrangements and increasing incidence of outsourcing, self-employment has become a more and more important avenue for women to provide a steady income for themselves and their families.

Women in the EECCA countries have advanced in setting up and expanding their businesses. Although entrepreneurship is a relatively new phenomenon in this sub-region, women have strengthened their participation as employers providing new jobs and incomes to their and other families (see annex table 8). Positive developments in the legal and regulatory environment for entrepreneurs in this sub-region have provided opportunities for women to start their own businesses. However, women encounter greater barriers in access to finance, access to information and business education, greater time burden associated with business registration and administration than men, in particular in rural areas. Prevailing gender stereotypes are a key challenge to women's entrepreneurship development. Policies to tackle these obstacles need to be evidence-based and hence require enhanced knowledge about the situation and needs of women in this sub-region. UNECE has responded to this need (see box 3.1).

The Gender Pay Gap in the ECE Region

Despite widespread legislation against wage discrimination, women across the ECE region continue to earn considerably less than men holding similar positions. Some countries report a narrowing of the gender pay gap, but wage differentials remain a persistent challenge to equality in the region, ranging from an average of 20 per cent in the EU to about 30 cent on average in Central Asia and the Caucasus[60] (see annex table 6A). Frequently women earn less than men for work of equal value. One reason for women's lower remuneration may be gender-biased job and competence evaluations. In all countries there are important variations by sector (the gap tends to be higher in the private than the public sector), and by occupation and educational level (the gap is generally larger for people with higher education).

[60] International comparisons of the gender pay gap should be interpreted with care as there are variations in measurement across countries: http://www.unece.org/stats/gender/Welcome.html.

Box 3.1: Promoting women's entrepreneurship development in Central Asia at UNECE

At UNECE we pay special attention to the countries of Central Asia and the Caucasus (CCA) for a number of reasons. On the one hand, relative to other ECE member States, CCA countries face the biggest challenges in living up to the commitments of the Beijing Platform for Action (1995) as well as the Millennium Development Goals (MDGs); on the other hand, entrepreneurship is of particular importance for generating sustainable growth and poverty reduction in these countries. As a consequence, activities aiming at enhancing the business environment for women entrepreneurs, including through policies and measures to close the entrepreneurship gaps between women and men as well as capacity-building in gender-responsive budgeting, contribute both to an effective follow-up of the Beijing+15 Regional Review Meeting and to the achievement of MDGs 1 and 3.

In 2010-2012 UNECE conducted a project on the *Assessment of the Business Environment for Women's Entrepreneurship Development in Central Asia* which provided recommendations to policy-makers and other stakeholders on possible policy actions in support of women entrepreneurs in this subregion. Based on empirical evidence about the business environment for both men and women in Kazakhstan and Tajikistan, the Country Assessments serve as a basis to formulate gender-sensitive policies and address the role of women's entrepreneurship in overall economic growth and its impact on regional and sub-regional economic integration.

Activities undertaken under this project included: (a) conducting two country studies on the assessment of the economic and business environment for women and men entrepreneurs in Kazakhstan and Tajikistan, based on surveys of 250 women and 250 men entrepreneurs in rural and urban areas, with different education and sector activities, (b) organization of national workshop in Dushanbe, Tajikistan (May 2011) about the main barriers to women entrepreneurs, the differences in the perceptions of the business environment by women and men entrepreneurs and how government and business organizations support women's entrepreneurship, and (c) dissemination of the results of the studies through a sub-regional Policy Seminar on Women's Entrepreneurship Development in Central Asia held in the UNECE in Geneva (19 September 2011).

Through all these activities the project results provided a better understanding of the economic, regulatory and legal environment as well as the business environment for women entrepreneurs and in particular identified gender gaps and specific gender-sensitive policies needed to close those gaps in the countries of Central Asia.[61] An additional benefit was the opportunity to reach out to the constituency of UNECE and exchange the key findings on the demands of women entrepreneurs in order to facilitate their involvement in economic activities.

Another positive outcome of the project has been its contribution to strengthen the sub-regional cooperation in promoting women's entrepreneurship in Central Asia, which was highlighted as an important issue in the conclusions of the sub-regional Policy Seminar.[62]

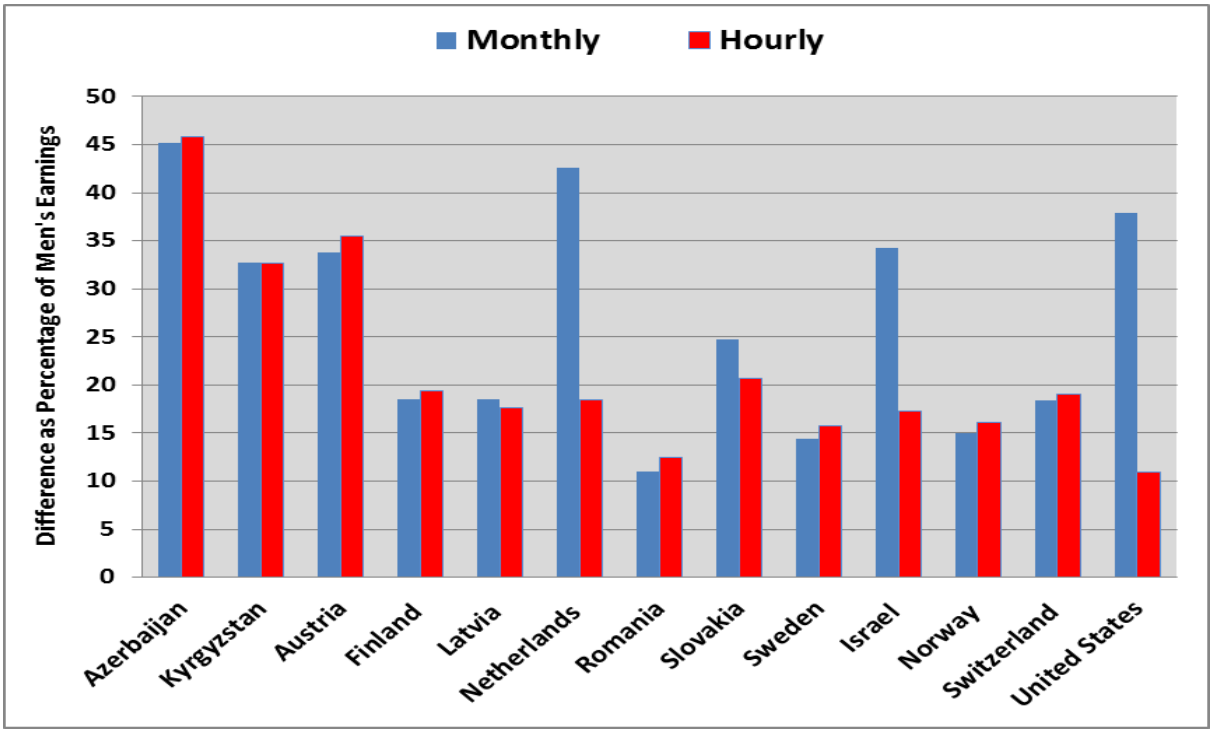
[61] Key findings of the project, including the two country studies on Kazakhstan and Tajikistan are included in the UNECE publication: *Empowering women through entrepreneurship development: the challenges in Central Asia (forthcoming).*

[62] The conclusions and policy recommendations of the sub-regional Policy Seminar on women's entrepreneurship development in Central Asia (September 2011, Geneva) are included in the Report and can be found at the web site of UNECE Gender: http://www.unece.org/gender/policyseminar.html

Annex tables 6A and 6B presents two indicators of the difference between men's and women's average earnings from employment, shown as a percentage of men's average earnings. Gender pay gap (GPG) indicators offer a synthesized view of earning differences, but can also convey a variety of interpretations depending on the way they are calculated and presented. The first measure of GPG (table 6A) refers to differences in gross monthly earnings from employment. This measure of GPG is arguably a more accurate indicator of overall gender inequality since it takes into account levels of participation in the labour market. The second measure (table 6 B) relates to differences in the hourly wage rate between male and female employees. This indicator is independent of the number of hours worked by either sex in any sector of economy. It therefore reflects overall inequalities which could stem from factors such as occupation (sector and seniority), qualification, and years of experience.

Generally, the earnings gap based on monthly data is wider than that based on hourly wages. As already mentioned, one factor affecting this is that women tend to work fewer hours than men. In fact, the difference between the two measures is a valuable source of information in and of itself. Looking at the pattern for Azerbaijan, for example, the overall pay gap is about 45 per cent for both monthly and hourly earnings. This indicates that patterns of full/part-time employment are similar between the sexes. There are therefore other factors that are determining the high GPG. In Poland, on the other hand, where the overall GPG is relatively low, up to a third of the disparity could possibly be attributed to differences in labour force participation of men and women. This highlights the importance of not focusing exclusively on the wage gap but considering it as one part of a more complicated picture.

Figure 3.7
Gender pay gap in monthly and hourly earnings, selected ECE countries
2010 or latest available



Source: UNECE Statistical Database.

The position of women on the labour market deteriorated in some countries in the follow-up to the financial crisis. In fact, the economic crisis led to an increase in female vulnerable employment and the wage gap. The lack of income generation opportunities in the formal sector and an oversupply of workers in the informal economy result in working arrangements in the latter that entail low wages and few benefits. Women tend to be more affected by recession-induced deteriorations in labor markets as they were generally more likely to work in the informal economy and were paid less than men before the crisis. Concerns that the existing gender pay gap might increase during this crisis have been confirmed by recent evidence from developed countries.[63]

Women's Underrepresentation in the Political Process

The weak position of women in many societies is reflected by the low political representation they have. While women's participation in economic and political decision-making has been increasing over the past five years in many countries across the ECE region, improvements in women's access to power have generally been rather slow and uneven and women continue to be strongly underrepresented in all areas of decision-making in most countries (see annex tables 7 and 9). Where women are given more political responsibility, it tends to be limited to socio-cultural issues. Although there are no legal barriers for women to vote and stand for elections in the ECE region, their significant under-representation in power and decision-making across the region implies that significant challenges to women's empowerment persist.

In most countries (e.g. Albania, Austria, Luxembourg, Canada, Croatia, Poland, Serbia, United States, Turkmenistan, Uzbekistan), between 15 and 25 per cent of members of parliament (MPs) are female (indicator 3.3). Just a few, including Belgium, Denmark, Netherlands, Spain and Norway report a share higher than 35 per cent. Only in Finland, Sweden and Iceland female participation in parliaments is close to parity, with female MPs between 42.5 and 45 per cent. The weakest representation of women in national parliaments is found in Georgia (6.5 per cent), Ukraine (8 per cent), Malta (8.7 per cent), Hungary and Turkey (9.1 per cent), and Armenia (9.2 per cent). In Albania, even though still relatively low, the share of women in national parliament has doubled after the 2009 election (see annex table 9).

In all ECE countries except Finland men outnumber women as ministers in national government. Female ministers tend to be responsible for social or cultural portfolios and rarely head the ministries responsible for the economy, infrastructure, home affairs, foreign affairs, and defense. Although the government sector is a large employer of women, they tend to be less represented in the higher administrative posts, especially in Western Europe where the share of female senior civil servants often does not exceed 30 per cent. In numerous countries (e.g. the Baltic States, Kazakhstan), this share equals more than 50 per cent. In some EECCA countries (e.g. Uzbekistan), affirmative action has been undertaken to ensure women's representation in power and decision-making. In others (e.g. the Russian Federation), the introduction of transparent competitive selection procedures of candidates for open vacant posts in governmental organizations has been viewed as an instrument to ensure fair gender competition and promotion.[64]

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[63] Ursula Hermelink and Claudia Trentini, *Gender-sensitive Economic Policies in the UNECE Region in the Context of the Economic and Financial Crisis*, UNECE Discussion Paper No. 2009.3, Geneva, 2009.

[64] UNECE, ECE/AC.28/2009/3, *Regional review of progress: Regional synthesis*, background document for November 2009 Beijing +15 regional review conference.

The Challenges Ahead

The recovery from the global economic and financial crises has been very slow; in those countries where economic growth resumed jobs generation has not subsequently followed. Some countries of the ECE region, such as Greece and Spain, went into a severe debt crisis leading to negative impact on employment patterns particularly notable for youth and women. All of this could endanger the achievements of past years and hinder the pace of progress by diverting issues related to women's rights and gender equality from the political, economic and social agenda of public authorities. At the same time a number of new challenges arising in the region have a gender dimension and a broader scope, such as women's participation in achieving sustainable development.

Empowering women and gender equality has to be a priority within a development plan in order to ensure the full and equal participation of women. UNECE works to contribute to exchange experience among its member states on how to address the various ways of economic empowerment of women in the region[65] in search of efficient patterns to achieve equitable allocation of resources between women and men, rural and urban areas and generations.

Health-related MDGs

Health indicators in Emerging Europe and Central Asia are generally better than in other developing regions of the world. Following a period of stagnation between late 1980s and mid-1990s, life expectancy in the NMS has improved continuously while remaining roughly 5 ½ years below the average of the EU-15 countries (figure 3.8). In contrast, life expectancy in the EECCA declined dramatically between late 1980s and mid-1990s, reflecting the difficult transition from a disintegrating system of Soviet central planning to a market-based economy. Life expectancy in the subregion fluctuated in subsequent years until mid-2000s and then apparently started to increase and reached the 1990 level by the end of the decade while remaining almost 12 years below the EU-15 average.

The country-specific health outcomes reflect to some extent the levels of government expenditure on health (figure 3.9). The public health expenditure in Emerging Europe and Central Asia averages 4 per cent of GDP and is below the internationally recommended standard (5 per cent of GDP) in most countries of the region. However, it is below 3 per cent of GDP in Albania and countries of the Caucasus and Central Asia with the exception of Turkmenistan. The inadequate public health expenditure has resulted in an increase of privately funded health services that are not accessible for the poor.

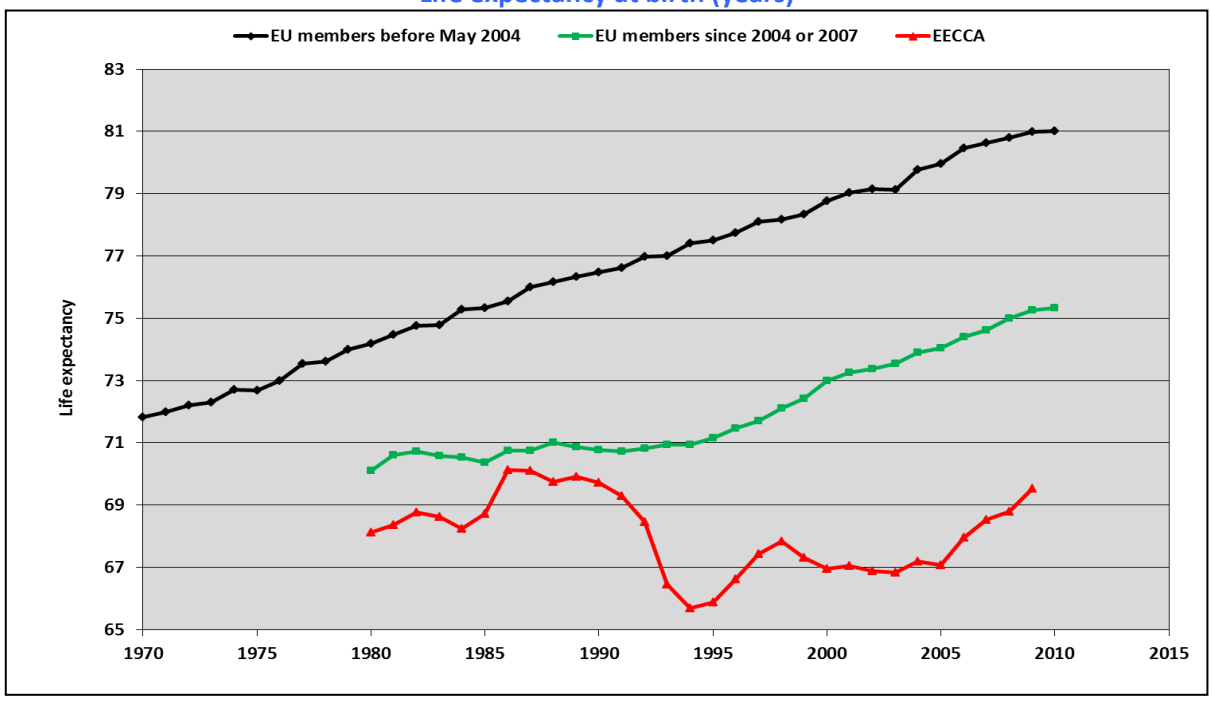
On the whole, the progress on health-related MDGs in the region is far from satisfactory. This reflects the fact that health outcomes deteriorated since 1990 in a number of transition economies, particularly in the poorer former Soviet republics that experienced a gradual deterioration of living conditions (the social determinants of health) and of essential health infrastructure as well as inadequate training and remuneration of physicians.[66] In most cases the low government investment in public health care has shifted the burden to patients. This has led to increasing inequities in health care access and consequently of health outcomes reinforcing the

[65] UNECE, 2012, *Promoting gender equality and women's economic empowerment on the road to sustainable development: good practices from the UNECE region*.

[66] For details see International Crisis Group (2011), *Central Asia: Decay and Decline*. Asia Report N°201.

growing income inequalities across the societies.[67] In addition, the global financial crisis hit the health sector in the ECE emerging economies particularly hard, both directly and indirectly. Most governments tried to preserve levels of public spending on education and health. A few countries even increased education and health spending in real terms (Armenia, Belarus, Kyrgyzstan, Moldova, Russia and Turkey). In the majority of countries, however, public education expenditure was better protected than health expenditure. A few countries reduced health spending significantly (e.g. Bulgaria, Latvia, Georgia and Ukraine). In Ukraine where total general government expenditures fell dramatically, public health expenditures nevertheless recorded an increased share in general government spending. In Georgia, the public health expenditures fell in 2009 in both absolute and relative terms, but this was compensated by private expenditures, which were the main source of healthcare financing in this country.[68] At the same time, households in EECCA and SEE countries reacted to the crisis by cutting out-of-pocket health expenditure much more than discretionary spending on education.

Figure 3.8
Life expectancy at birth (years)



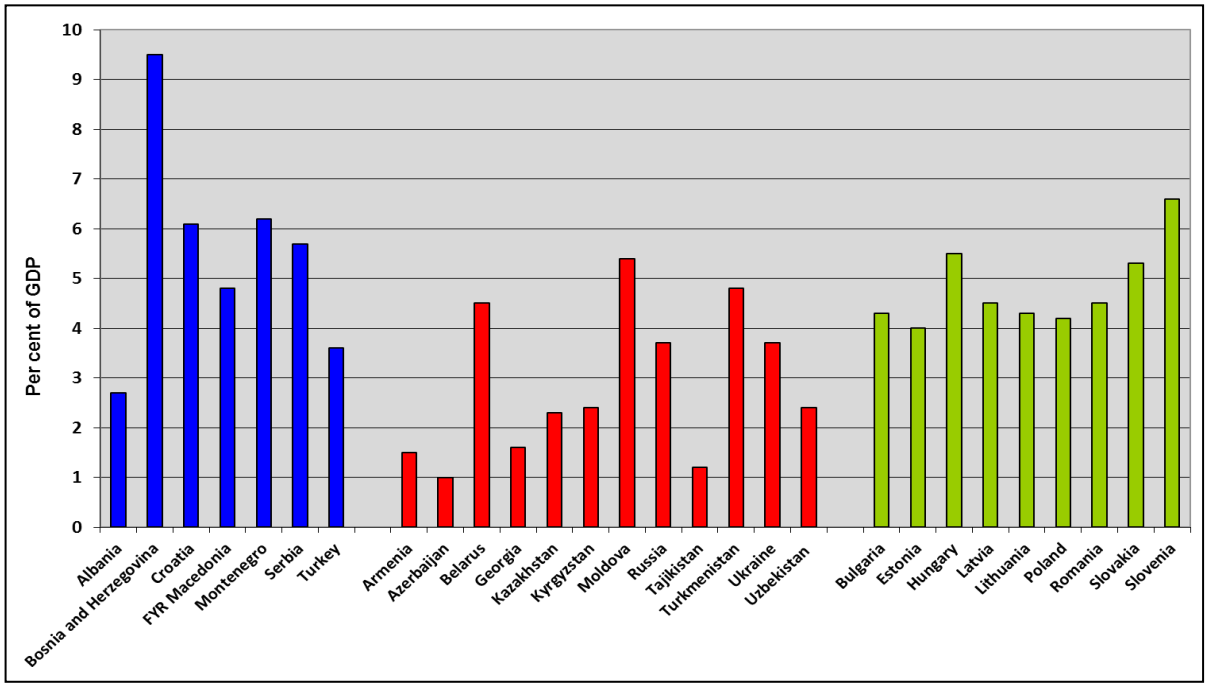
Source: WHO/Europe, European HFA Database, July 2012.

Some countries enacted so-called efficiency reforms of public health care systems during the crisis (Bulgaria, Hungary, Georgia, Latvia, Poland, Romania, Tajikistan, Kyrgyzstan and Turkey). Only a few governments have introduced specific measures to reduce the adverse impact of the crisis and health care reforms on poor households. Such measures have included a wider

[67] See for example Podvysotskaya et al (2011), *Does health Matter for Inequality in Transition Countries: the Case of Ukraine*, The wiiw Balkan Observatory Working Papers No 90.
[68] Chubrik A., M. Dabrowski, R. Mogilevsky, and I. Sinitsina (2011), *The impact of the Global Financial Crisis on Public Expenditures on Education and Health in the Economies of the Former Soviet Union*, CASE Network Reports No. 100/2011

coverage of health insurance for the poor in Georgia and the abolition of co-payments for health care and pharmaceuticals for poor patients in Latvia.[69]

Figure 3.9
Government expenditure on health
2008 or latest available year



Source: ECE calculations based on EBRD data.

Reforms and health spending reviews did not however address some of the structural issues influencing health care effectiveness and efficiency. For example, most of the countries in the EECCA region suffer from health staff – physicians and nurses - shortages. The main reason is a lack of incentives: state wages are not rewarding the long years (10-12 years for physicians) spent in medical schools. Many doctors choose the pharmaceutical industry or move abroad where health care staff is better paid.[70] Another issue is related to the inefficient management of medicines' stocks especially for diseases which risk becoming drug resistant if the treatment is interrupted (tuberculosis, especially if combined with HIV).[71]

GOAL 4: REDUCE CHILD MORTALITY

Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

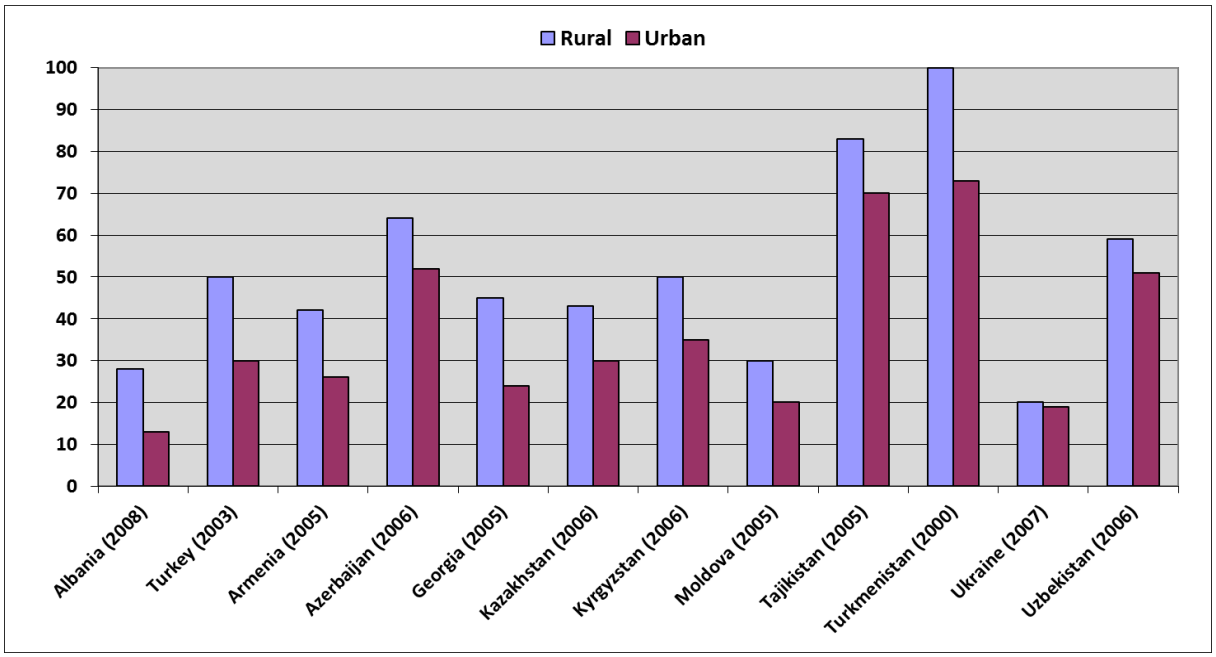
A critical indicator for assessing the health status of young children is the mortality rate for children under five years of age (U5MR). This MDG indicator not only measures the probability of survival of a newborn to his or her fifth birthday, but also reflects the socio-economic conditions in which the child grows up, and the access of households to basic social services and infrastructure.

[69] For details see World Bank (2011), *The Jobs Crisis: Household and Government Responses to the Great Recession in Eastern Europe and Central Asia*. Washington, D.C.
[70] Spinella E. (2012), *Low State Salaries at Heart of Doctor Deficit* , The Moscow Times, 12 May 2012.
[71] Winning A. (2012), *Fight Against TB Plagued by Shortfalls*, The Moscow Times, 9 June 2012.

For most countries in the region U5MR has dropped rapidly since the late 1990s and is amongst the lowest in the world. The regional average under-five mortality rate for Pan-European Region declined from 33 deaths per 1000 live births in 1990 to 14 in 2010.[72] The estimates reported for Emerging Europe and Central Asia in annex table 11 show that for some countries the reductions were impressive. In the EECCA subregion, the under-five mortality rate has fallen in some countries by 50 per cent over the last decade. Nevertheless, child mortality in these countries is still high, and five of them are unlikely to reach the target. Three more countries may reach it only with additional effort.

Not only progress in reducing under-five mortality is uneven, with some countries on track or close while other require a major scaling up of investments, but also there are great in-country inequities between urban and rural areas, between children of women with higher and lower levels of education, and between children in the richest 20 per cent segment of the population and those in the poorest 20 per cent.

Figure 3.10
Under-five mortality rate (probability of dying by age 5 per 1000 live births)



Source: WHO (2012). *World health statistics 2012*. Geneva, World Health Organization
Note: The year of data collection in parenthesis.

Infant mortality (i.e. mortality occurring before the first birthday) represents the main component of under five mortality, since the vast majority of the deaths for children under the age of five occur in the first year of life. In Pan-European Region, the estimated regional average infant mortality rate was 11 in 2010, down from 27 in 1990. Although the declines have been similar across country groups, rates still differ greatly between countries, varying from lower rates in the NMS countries to somewhat higher rates in the SEE countries and still higher rates in EECCA countries. [73]

[72] WHO (2012), *World health statistics 2012*. Geneva, World Health Organization and UN (2012). MDG Indicators – The Official United Nations site for the MDG Indicators: Children under five mortality rate per 1,000 live births.
[73] UN (2012), The Official United Nations site for the MDG Indicators: Infant mortality rate (0-1 year) per 1000 live births.

The estimated average measles immunization coverage for Pan-European Region in 2010 was 95 per cent, compared with the 1990 estimate of 80 per cent. Many countries in the region, including Kazakhstan, Kyrgyzstan and Turkmenistan, reached 99 per cent coverage in 2010. ECE countries with lower measles vaccine coverage include Azerbaijan (67 per cent), Malta (82 per cent), Austria (83 per cent) and Denmark (84 per cent).[74] Factors contributing to immunity gaps and recent outbreaks include social exclusion experienced by marginalized groups, low risk perception, lack of confidence in vaccine safety and quality, and perceived inconvenience.

GOAL 5: IMPROVE MATERNAL HEALTH

Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

According to the latest interagency estimates that include adjustments for misclassification and under-reporting, the regional maternal mortality ratio in Pan-European Region was 20 deaths per 100,000 live births in 2010. This was down from 44 in 1990. The percentage reductions for the countries that have already achieved MDG 5 by 2010 are: Estonia (95 per cent), Belarus (88 per cent), Romania (84 per cent), and Lithuania (78 per cent). Further, Poland and Turkey have experienced average annual declines of more than 5.5 per cent but because the Maternity Mortality Ratio in 1990 was less than 100 maternal deaths per 100 000 live births, they are not categorized as being on track.[75] In contrast, some countries which had very low MMR in 1990 experienced its increase over the period considered (Croatia, Georgia, Slovenia, United Kingdom) or achieved very little progress (Hungary, Kyrgyzstan).[76]

The presence of skilled healthcare personnel at childbirth is important for reducing both infant and maternal mortality (indicator 5.2). In Pan-European Region, the percentage of births assisted by skilled health personnel between 2005 and 2011 was 98 per cent. Few countries have adequate disaggregated data, but the available data highlights inequities experienced by the poor, rural residents, migrants, refugees, ethnic minorities and other socially excluded populations. For instance, DHS data for Armenia, Azerbaijan, Tajikistan, and Turkey show pronounced variations among rural and urban populations or across wealth quintiles.[77] While the proportion of births attended by skilled health professionals is generally high for the region, there is evidence of the persisting need to ensure the quality of the services provided across the reproductive, maternal, newborn and child health continuum of care.

Target 5.B: Achieve, by 2015, universal access to reproductive health.

Low contraceptive prevalence rates (indicator 5.3) and the unmet need for family planning (indicator 5.6) are important indicators for monitoring progress towards MDG 5, as a considerable proportion of maternal deaths could be prevented if women who desired contraception could have access to it. The contraceptive prevalence rate for Pan-European Region was 71 per cent for the

[74] WHO (2012), *World health statistics 2012*. Geneva, World Health Organization

[75] A country is considered to be "on track" if the average annual percentage decline between 1990 and 2010 is 5.5 per cent or more. Countries in the European and Central Asia region often are not categorized because they had a MMR lower than 100 in 1990 and it is considered difficult to reduce MMR starting from such a low ratio.

[76] WHO (2012b) *Trends in maternal mortality: 1990 to 2010; WHO, UNICEF, UNFPA and The World Bank estimates*, Geneva, World Health Organization.

[77] UNICEF, Childinfo [website]. Monitoring the situation of children and women.

2005-2010 period.[78] Contraceptive prevalence (using any modern method) has generally increased across the region since 1990. An average of 9.7 per cent women (of reproductive age who were married or in a union) had an unmet need for family planning in Pan-European Region during the 2000-2009 period. In some countries, abortion still causes more than 20 per cent of all cases of maternal mortality. It is estimated that half a million unsafe abortions were performed in 2008 in Pan-European Region, causing 7 per cent of maternal deaths.[79] However, as shown in annex table 14, abortion rates have been decreasing steeply in many countries of the region.

Adolescents are more likely to die or experience complications in pregnancy and childbirth than adult women (indicator 5.4). Moreover, the children of these young mothers have a higher risk of morbidity and mortality. In developed countries adolescent pregnancies are more prominent among populations experiencing poverty and social exclusion, including ethnic minority groups. In the 27 EU member States adolescent fertility rates are quite low, ranging between 4 and 22 births per 1,000 women aged 15 - 19, with the exceptions of Bulgaria (41), Romania (40 in 2009) and the United Kingdom (25). In the EECCA region, the return to old traditions and practices like early marriage is considered one of the factors contributing to the high rates in some countries (e.g. Azerbaijan, Georgia, Ukraine).

According to the latest estimates, in Pan-European Region as a whole, an average of 97 per cent of women received antenatal care from skilled health personnel at least once during pregnancy (indicator 5.5).[80] Azerbaijan and Tajikistan have noticeably lower coverage, at 77 per cent and 89 per cent respectively. Despite relatively high levels of coverage across the region, progress needs to be made for all women to receive the minimum number of four antenatal visits. Many countries do not have comprehensive data on the number of visits. However, available records point to inequities.[81]

GOAL 6: COMBAT HIV/AIDS, MALARIA AND OTHER COMMUNICABLE DISEASES

Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS.

In the Pan-European Region, there were an estimated 2.34 million people living with HIV in 2010. This number, compared with 1.03 million people living with HIV in Pan-European Region in 2001, implies that the incidence more than doubled during the 2001-2010 period. Of this 2.34 million, 1.5 million live in EECCA where the number of those living with HIV has more than tripled since 2001. Another 1.3 million were living with HIV in North America, a 33 per cent increase since 2001. Thus approximately 3.6 million people were living with HIV in the ECE economies in 2010 which represented slightly over 10 per cent of the 34 million people living with HIV worldwide. The adult prevalence rate is about 0.9 per cent in EECCA , 0.2 in EAE+NMS+SEE, and 0.6 per cent in NA. [82]

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[78] WHO (2012), *World health statistics 2012*. Geneva, World Health Organization.

[79] WHO (2011), *Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008*. Geneva, World Health Organization (http://www.who.int/reproductivehealth/publications/unsafe_abortion/9789241501118/en/index.html, accessed 27 July 2011).

[80] World health statistics data of the WHO indicate that countries with antenatal coverage below 95 per cent include Armenia, Azerbaijan, Latvia, Romania, Tajikistan, The former Yugoslav Republic of Macedonia and Turkey.

[81] For more details see UNICEF (2010), *Progress for Children: Achieving the Millennium Development Goals with Equity*. New York, United Nations Children's Fund.

[82] UNAIDS, World AIDS Day Report 2011, Geneva, 2011.

There has been significant global progress in controlling the spread of HIV were the number of new infections declined from 3.4 million in 1997 to 2.7 million in 2010; however progress has been disappointing in the ECA, especially in the EECCA region, where its incidence continues to rise despite quite large increases in funding by some governments.[83] Currently, "Eastern Europe and Central Asia is the only region of the world where HIV prevalence clearly remains on the rise."[84] In the Pan-European region there were approximately 190,000 new infections in 2010.

The number of diagnosed AIDS cases and AIDS-related mortality has recently begun to decline at the global level but has continued to increase in the Pan-European region as a whole, where an estimated 100,000 people died from AIDS-related causes in 2010 representing a five-fold increase since 2001. Most of these deaths, or 90,000, occurred in the EECCA region. The death rate of those infected (deaths due to AIDS divided by population living with HIV) is about 6 per cent in EECCA which is significantly above the 1 per cent rate in the EAE+NMS+SEE region or the 1.5 per cent in NA.[85]

Ukraine has the highest infection rate in the ECA region; at the beginning of 2010 it was estimated that 360,000 people aged 15 and over, or some 1.2 per cent of the adult population were infected.[86] Annual HIV diagnoses in Ukraine have more than doubled since 2001. Together with the Russian Federation which has an infection rate of 1.1 per cent these two countries account for almost 90 per cent of newly reported HIV diagnoses in the EECCA. The HIV epidemic in the Russian Federation also continues to grow, but at a slower pace than in the late 1990s. Newly reported HIV cases have increased in several of the countries in Central Asia, including Uzbekistan, which has the largest epidemic in the subregion.[87] In Central Europe Estonia had the highest HIV/AIDS infection rate (1.2 per cent) in 2008. Latvia also has a relatively high rate of 0.7 per cent.[88]

Just as the infection rate varies by country it also varies significantly in different geographical subregions of countries; for example in Ukraine the infection rate is 6 times higher in the east of the country compared to the western regions; and in Estonia infections are higher along the Russian border. In Russia the highest incidence is found in the large cities of St. Petersburg and Moscow. In the US infection is also concentrated in large cities; 12 cities account for 40 per cent of AIDS cases.

The HIV epidemic in Europe remains concentrated in key populations at higher risk with limited evidence of generalizing. Specific populations at higher risk of HIV exposure and

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[83] Seventeen countries in EECCA reported spending more than US$ 1.2 billion on HIV and AIDS in 2009, of which US$ 750 million was spent in the Russian Federation. UNAIDS (2011), *Aids at 30 - Nations at the crossroads*, Geneva. Joint United Nations Programme on HIV/AIDS.

[84] Michel Sidibé, UNAIDS Executive Director at the 3rd EECAAC Conference on Universal Access in Moscow, October 28, 2009.

[85] UNAIDS, World AIDS Day Report 2011, Geneva, 2011.

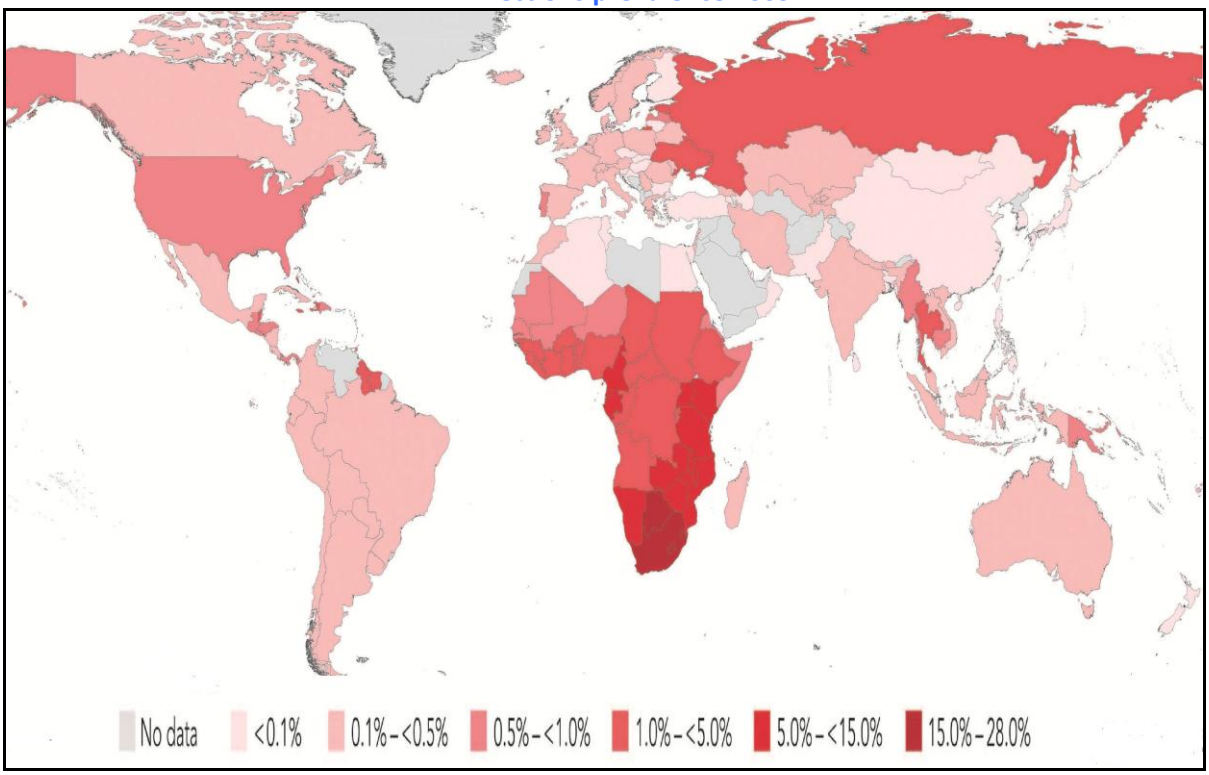
[86] See, Ukrainian Ministry of Health, (2010), *Ukrainian national report on monitoring progress towards the UNGASS Declaration of Commitment on HIV/AIDS*.

[87] UNAIDS (2010), *Global report on the global Aids Epidemic 2010*. *Geneva*, the Joint United Nations Programme on HIV/AIDS.

[88] UNAIDS - AIDSInfo online dataset. http://www.aidsinfoonline.org/

infection are people who inject drugs and their sexual partners,[89] men who have sex with men, transgender people, sex workers, prisoners and migrants.[90] Unlike in much of the rest of the world, HIV/AIDS in the transition economies is largely a male disease since 72 per cent of those infected are male.[91] More recently, the incidence of HIV/AIDS in women, especially in the very young age group 15-24 years, has been increasing due to sex with drug users accelerating the spread of HIV in the European region. For example, in 2009 an estimated 45 per cent of the people living with HIV in Ukraine were women compared with 37 per cent in 1999.[92] Heterosexual transmission is particularly high (around 50 per cent of infections) in Belarus and Moldova. The sex trade (which is generally illegal throughout the region) is also escalating the heterosexual transmission of HIV/AIDS. One quarter of the 3.7 million people who inject drugs in the ECA region and one third of the 1.8 million Russian injecting drug users are living with HIV. In the US new infections are concentrated among gay and bisexual men and heterosexual African-American women; African-Americans account for 44 per cent of new infections but are only 14 per cent of the population.

Figure 3.11
HIV infections prevalence 2009



Source: UNAIDS

[89] In EECCA more than 50 per cent of infections in 2010 were through shared drug-injecting equipment. See UNAIDS (2011), Aids at 30: Nations at the crossroads.

[90] WHO Regional Office for Europe (2011), *Regional Committee for Europe document EUR/RC61/19: Summary of the European action plan for HIV/AIDS 2012–2015*. Copenhagen, WHO Regional Office for Europe

[91] Joint United Nations Programme on HIV/AIDS, *At Great Risks of HIV/AIS: Young People in Eastern Europe and Central Asia* , 2005.

[92] UNAIDS (2010), *Global report on the global Aids Epidemic 2010*. *Geneva*, the Joint United Nations Programme on HIV/AIDS.

Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it.

Antiretroviral treatment (ART) is important not only for improving the lives and reducing the death rate from AIDS but is a key to preventing HIV transmission. Whereas many countries, especially in the Western part of the Pan-European region (and Croatia and Slovakia), have among the best ART coverage rates in the world, in 2010 a considerable number of ECA economies had a lower ART coverage rate than the global average of 47 per cent for low- and middle-income countries. Less than 19 per cent of the eligible population in need were receiving ART in Kyrgyzstan, Latvia, Tajikistan, and Ukraine; and between 20 and 39 per cent of those eligible were receiving ART in Armenia, Azerbaijan, Bulgaria, Hungary, Kazakhstan, Lithuania, Poland, Moldova, Russia, Serbia, and Uzbekistan.[93]

All of the transition economies have set national universal access targets for HIV/AIDS prevention.[94] However, though people who inject drugs account for the majority of people living with HIV in Eastern Europe and Central Asia, they account for less than 25 per cent of all people living with HIV and receiving antiretroviral treatment. Many countries have prevention programs specifically targeting sex workers, men who have sex with men, and persons who inject drugs. "Harm reduction" strategies that provide services for persons who use drugs have proven to be beneficial in a number of countries, including Azerbaijan, Kyrgyzstan, Moldova, and Ukraine.

Most of the schools in the region now provide some type of skills-based HIV education. This is an important development because knowledge about the transmission of HIV has been quite low in much of the region. Universal HIV/AIDS testing and immediate initiation of anti-retroviral therapy are considered the most effective approach for controlling this disease.[95] HIV testing of the general population is available in a number of countries in Eastern Europe as well as in Western Europe.[96] In the US it is estimated that approximately one-fifth of those with HIV/AIDS are undiagnosed and unaware of their infection and they account for the vast majority new infections.[97] A home testing kit for HIV (based upon a saliva sample) became available in 2012 and was approved for use in the US but they remain illegal in a number of countries.

Although current ART, if properly adhered to is generally effective in controlling HIV, there is evidence that the virus is beginning to develop drug resistance to standard treatments, especially in Eastern and Southern Africa. This often results from people failing to adhere to the drug regime. So far this is not a serious problem in the ECE region but could become one if not properly addressed with better management of treatment regimes.

Although ART is central to saving lives and lowering transmission, there are numerous other policies that can significantly reduce the spread of HIV. These include education programs of safe sex practices (e.g., condoms, vaginal gels), provision of legal opiates (e.g., methadone) as

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[93] UNAIDS, World AIDS Day Report 2011, Geneva, 2011.

[94] In October 2009 the 3rd HIV/AIDS Conference for Eastern Europe and Central Asia on Efforts Towards Universal Access was held in Moscow.

[95] Brian Williams (South African Centre for Epidemiological Modelling and Analysis), *Battling HIV/AIDS –Test All, Treat All?* American Association for the Advancement of Science Annual Meeting, San Diego, US, February 20, 2010.

[96] In October 2009 the 3rd HIV/AIDS Conference for Eastern Europe and Central Asia on Efforts Towards Universal Access was held in Moscow.

[97] Anthony S. Fauci, An Opportunity to End the AIDS Pandemic, *Washington Post*, July 27, 2012.

a substitute for injecting drugs, clean needle exchange programs, better regulation of the sex trade (e.g., requiring condoms), and male circumcision. Circumcision reduces a heterosexual man's risk of acquiring HIV by 50 to 60 per cent. Circumcision rates are quite high in Central Asia (except Kazakhstan) where they are over 80 per cent but very low in Eastern Europe; in Russia, Ukraine and the Baltic economies circumcision rates are below 20 per cent (although they are quite low in Western Europe as well). New evidence suggests that the use of antiretrovirals by high risk individuals as a pre-exposure prophylaxis can reduce the chances of becoming infected by up to 73 per cent, especially when combined with other safe practices. There are concerns, however, that use of such drugs to avoid infection could result in a false sense of security which might increase risky behavior and could result in the evolution of drug-resistant varieties.

Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

Considerable progress has been made since the 1990s in eradicating malaria at the global level and in the ECA region. Although there is a basic consensus that deaths from malaria have been declining since 2004 there is considerable controversy about the degree of the problem. According to the World Health Organization (WHO) approximately 655,000 people died of malaria in 2010 but other academic researchers estimate the death toll much higher at 1.24 million in 2010.[98] According to WHO, the number of reported cases has dropped dramatically from 90,712 in 1995 to only 102 in 2011 in Azerbaijan, Georgia, Tajikistan, Turkey and including a small-scale outbreak in Greece. The countries of Europe and Central Asia aim to interrupt the transmission of malaria and eliminate the disease from the remaining 5 countries affected by malaria by 2015: Azerbaijan, Kyrgyzstan, Tajikistan, Turkey and Uzbekistan. All affected countries have implemented intensive control programs and all have endorsed the Tashkent Declaration which has the aim of eliminating transmission in the region by 2015.[99] Turkmenistan attained malaria-free status in 2010, Armenia – in 2011, Kazakhstan – in 2012. Georgia recently initiated preparation for the certification process and an official request for certification will be submitted by the end of 2012. Turkey and possibly some Central Asian countries are expected to submit the request by the end of 2015.

In 2010 a milestone was achieved in mankind's centuries old battle against tuberculosis (TB) as the global number of those falling ill declined for the first time since global records have been kept and the number of deaths globally declined to 1.4 million from 1.8 million in 2003.[100] Nevertheless tuberculosis remains a quite important health risk in Eastern Europe and Central Asia, in particular, due to a huge increase in the incidence of drug resistant tuberculosis. The progress achieved in the control of TB during the Soviet era has been lost, and TB deaths doubled during the transition period, particularly among working-age men. Much of this increase is due to overcrowding in urban centers and prisons. By contrast, the NMS managed to control the incidence of tuberculosis after its peak in late 1990s. The incidence rate in the EECCA region

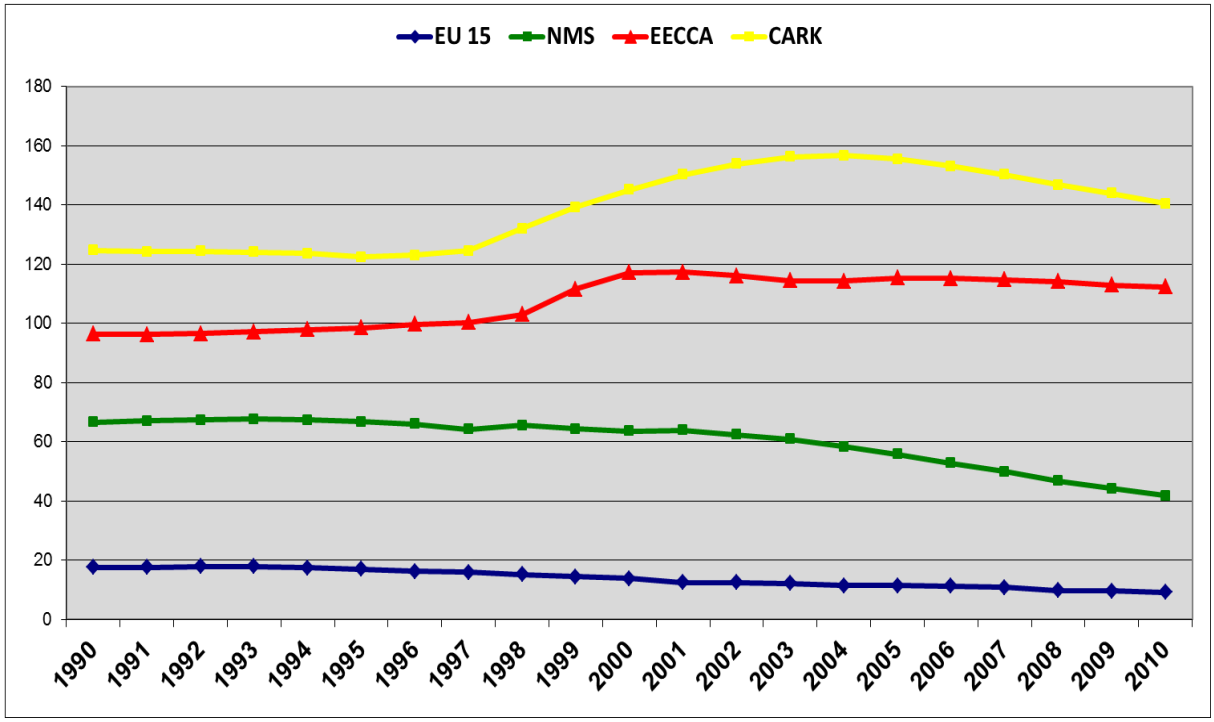
[98] Christopher JL Murray , Lisa C Rosenfeld, Stephen S Lim, Kathryn G Andrews, Kyle J Foreman, Diana Haring, Nancy Fullman, Mohsen Naghavi, Rafael Lozano, and Alan D Lopez, Global Malaria Mortality between 1980 and 2010: A Systematic Analysis, *The Lancet*, Volume 379, Issue 9814, pp. 413 - 431, 4 February, 2012.

[99] *World Malaria Report 2010*. Geneva, World Health Organization and WHO Regional Office for Europe web site on malaria: http://www.euro.who.int/malaria

[100] WHO (2011), Global Tuberculosis Control 2011. Geneva, World Health Organization.

(112 per 100,000 inhabitants in 2010) is more than 15 per cent higher than the level prior to the transition period. It is three times higher than in the NMS (41.7)[101] and almost ten times higher than in Western Europe. Within the EECCA region, the number of cases is highest in Central Asia; with the prevalence rate in Tajikistan (206 per 100,000) almost double that of Russia (106) in 2010. The TB treatment rate is lower and the death rate is higher in the EECCA region due to drug-resistant varieties and less aggressive treatment (annex table 17). Drug-resistant tuberculosis is reported to be the highest in Belarus, Moldova and Russia (although data for many countries are not available). In some areas (Arkhangelsk, Ivanovo, Kaliningrad, Murmansk, Pskov, and Vladimir oblasts) of Russia over 20 per cent of new TB cases are drug-resistant and over a third of previously treated patients have resistance problems. In Moldova 65 per cent, in Dushanbe, Tajikistan 62 per cent, in Belarus 60 per cent, in Lithuania 52 per cent, in Kazakhstan 45 per cent, and in Estonia 44 per cent of previously treated patients have resistance problems.[102] There has also been a significant increase in those with both HIV and TB infections in the EECCA region.[103]

Figure 3.12
Estimated incidence of tuberculosis per 100,000 in the ECE subregions



Source: WHO Europe dataset.
Note: CARK = Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan).

[101] However the NMS include several TB high priority countries: Bulgaria (prevalence rate of 40 per 100,000), Latvia (45), Lithuania (71) and Romania (125). The other TB high priority countries are: Armenia, Azerbaijan, Belarus, Georgia, Estonia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan. These countries represent 87 per cent of the TB incidence and 94 per cent of the mortality caused by TB in the Pan-European Region.

[102] Matteo Zignol, Wayne van Gemert, Dennis Falzon, Charalambos Sismanidis, Philippe Glaziou, Katherine Floyd, and Mario Raviglione, Surveillance of Anti-tuberculosis Drug Resistance in the World: An Updated Analysis, 2007-2010, *Bulletin of the World Health Organization*, Vol. 90, No. 2, February 2012, pp. 111-119.

[103] ECDC and WHO Regional Office for Europe (2012), *Tuberculosis surveillance and monitoring in Europe 2012*. Stockholm, European Centre for Disease Prevention and Control.

Pan-European Region faces significant challenges in reaching the MDG 6 TB targets. In 2010, there were a total of 309,648 reported cases of TB across 51 countries[104] of Pan-European Region, out of 418,000 estimated cases. Countries in the Central and Eastern part of the region had notification rates almost eight times higher than in Western areas. While the estimated TB prevalence fell from 80 to 63 per 100,000 population between 2000 and 2010, this is still far from the 48 per 100,000 population target for 2015.[105] Estimated mortality from TB decreased from 8.6 to 6.8 per 100,000 population between 2000 and 2010. To meet the MDG 6 target, TB mortality must decline to 6 per 100,000 population by 2015. In 2009, the proportion of new TB cases detected in Pan-European Region (assumed indicative also of those smear-positive cases targeted by MDG 6) was 80 per cent, above the global target of 70 per cent. However, the Pan-European Region has the poorest treatment outcomes in the world, with the success rates of 68.7 per cent and 47.6 per cent respectively among new and previously-treated smear-positive cases with a gradual decrease in treatment success during the last five years. It was announced in 2012 that an initial trail of a new three drug combination treatment (PaMZ) was quite effective against TB including drug resistant varieties but it has yet to be approved for general use and licensing.

GOAL 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

A number of the principles of sustainable development, in particular those pertaining to environmental issues – principles 10, 11, 13, 16, 17, 18, 19 (box 3.2) – are reflected in provisions of the UNECE multilateral environmental agreements (MEAs).[106] [107] The accession and compliance with these agreements can be seen therefore as an indicator for evaluating the integration of the principles of sustainable development into the national policies.

The EU leads with respect to accessions to the UNECE MEAs. As at the end of 2011 the rate of accession of EU countries was nearly 100 per cent for the Conventions and over 70 per cent for the Protocols. The opposite situation was in the EECCA region, where only about half of the countries acceded to the Conventions (except for Aarhus and LRTAP Conventions with

[104] No data are available for Liechtenstein, Monaco or San Marino.

[105] WHO (2010), *Global tuberculosis control – epidemiology, strategy, financing*. Geneva, World Health Organization.

[106] The 1972 Convention on Long-range Transboundary Air Pollution (LRTAP Convention) and its 1998 Protocol on Persistent Organic Pollutants, 1998 Protocol on Heavy Metals and 1999 Protocol on Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (for earlier Protocols see http://www.unece.org/env/lrtap/status/lrtap_s.html); the 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and its 2003 Protocol on Strategic Environmental Assessment; the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and its 1999 Protocol on Water and Health; the 1992 Convention on the Transboundary Effects of Industrial Accidents, and the 1998 Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) and its 2003 Protocol on Pollutant Release and Transfer Registers.

[107] The UNECE Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters was formally adopted and signed by 22 countries at the Ministerial Conference "Environment for Europe" in Kiev, Ukraine, on 21 May 2003. However, there have not been enough ratifications to date for this protocol to enter into force.

higher rates) and hardly any country joined the Protocols (except for the Water and Health Protocol that was adopted by 5 EECCA countries). The accession rate of SEE countries was in between of those of their EU and EECCA counterparts.

Box 3.2
Principles of sustainable development

PRINCIPLE 10: Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to the information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

PRINCIPLE 11: States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

PRINCIPLE 13: States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also co-operate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

PRINCIPLE 16: National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

PRINCIPLE 17: Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

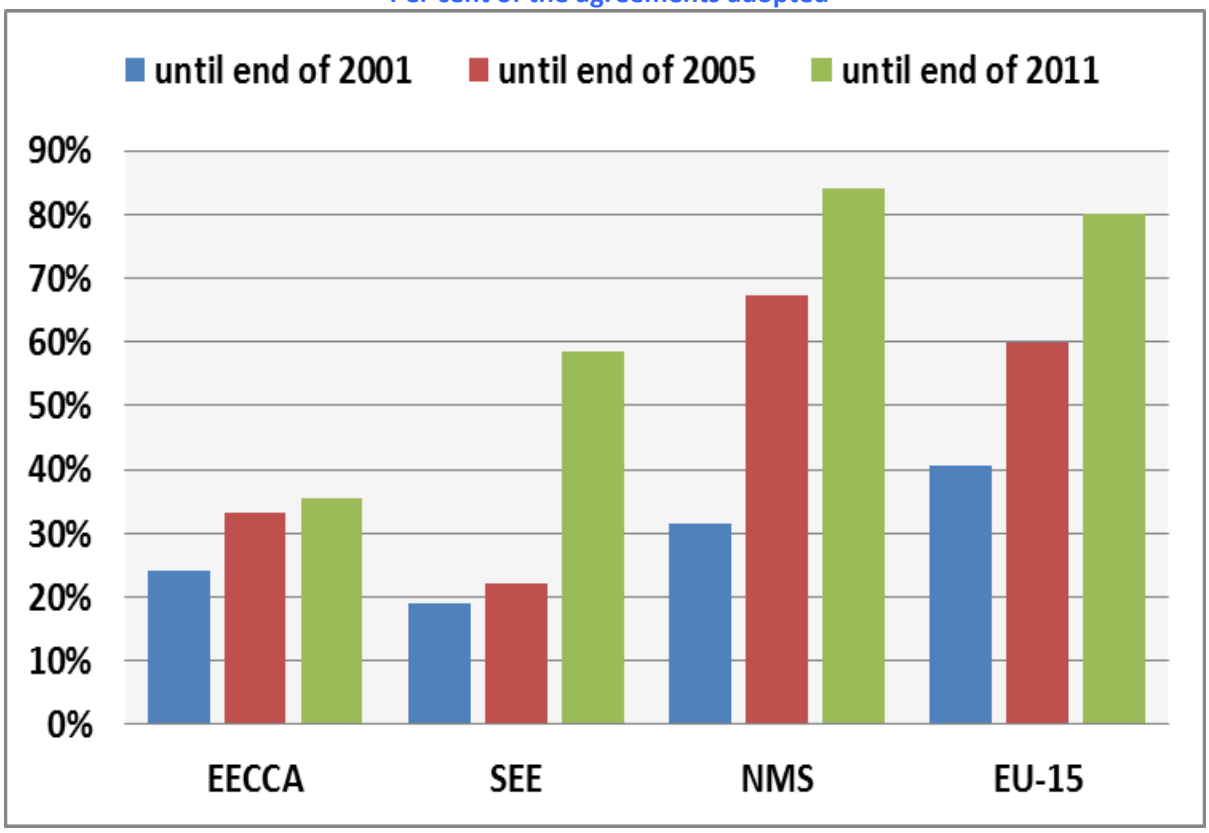
PRINCIPLE 18: States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

PRINCIPLE 19: States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

During the 2000-2011 period new accessions were only moderate in EECCA countries, whereas the rate of accessions more than doubled between 2000 and 2005 in the NMS and

between 2005 and 2010 in SEE (figure 3.13). The reason for the steep increase in the new accessions in the NMS can be linked with their joining the European Union in 2004,[108] prior to which they had aligned their policies, also those addressing environmental issues, with the EU *acquis communautaire* as well as with international legal frameworks. The SEE countries that have applied to join the EU[109] have been acceding to the MEAs to build on their provisions and introduce, in this case, legal environmental frameworks that would also ensure compliance with the EU environmental acquis communautaire. For this reason, the SEE countries have been actively participating in the programmes and projects held under the MEAs.

Figure 3.13
Accessions to UNECE MEAs by subregion
Per cent of the agreements adopted



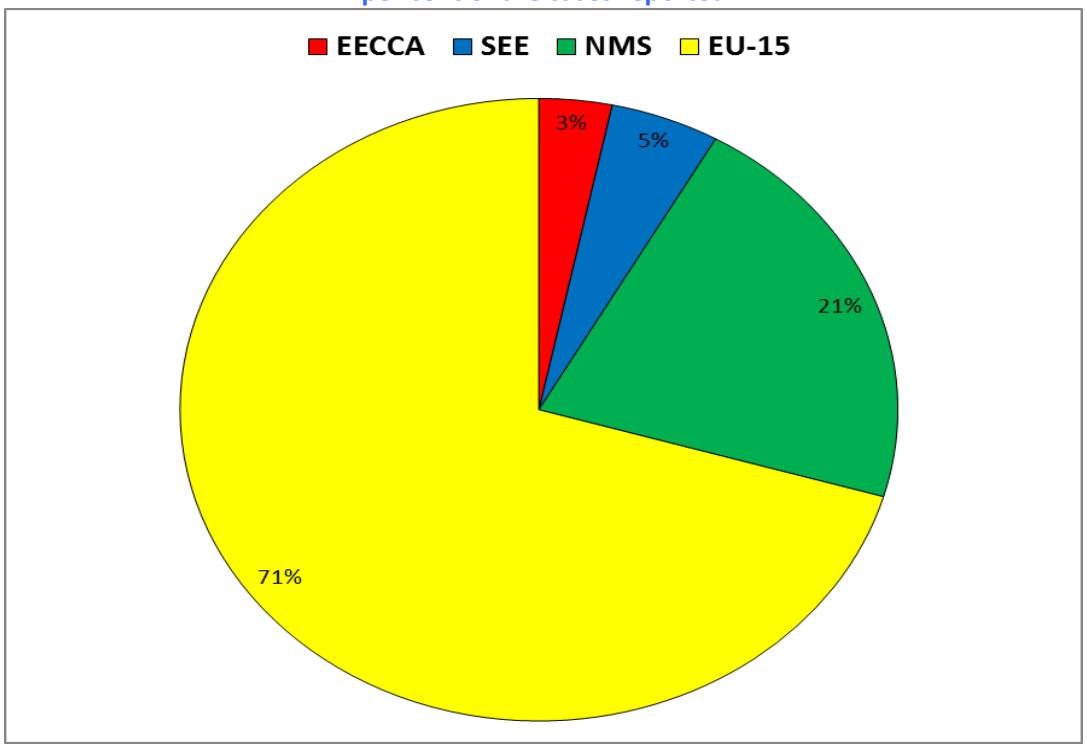
Source: UNECE calculations based on status of MEAs ratification, acceptance, approval or accession.

The countries of EECCA should follow the good practice of the NMS in acceding to UNECE MEAs with a view to ensuring a better integration of principles of sustainable development into national policies. Nonetheless, not only the accessions and subsequent introduction of improved national legislation are important. Great attention needs to be given to the enforcement or routine application of procedures in the countries. Recent reports on the implementation of the MEAs show that the enforcement can often pose challenges in EECCA and

[108] Bulgaria and Romania acceded to the EU in 2007.
[109] Croatia is an accession country and should join EU on 1 July 2013. Montenegro, Serbia, The former Yugoslav Republic of Macedonia and Turkey have the status of candidate countries while Albania, Bosnia and Herzegovina as well as Kosovo are potential candidates.

SEE countries.[110] The overview of the application of the transboundary environmental impact assessment (EIA) under the Espoo Convention (figure 3.14) shows that the procedure is routinely applied in EU countries but seldom used in EECCA and SEE countries where the number cases reported has been increasing slowly.

Figure 3.14
Application of the transboundary EIA procedure by Parties to the Espoo Convention by subregion, per cent of the cases reported



Source: UNECE calculations based on the cases reported to the secretariat for the period 2000-2011.

The improvements in the environmental policies are an important but unfortunately, as the experience shows, not sufficient precondition to reverse or at least stop the loss of environmental resources. The growth of population and economic development outweigh the progress achieved from the integration of the environmental considerations into policy making. Although the UNECE MEAs together with other multilateral agreements do contribute to improving the ecosystem vitality, in fact their implementation to date could only reduce the pace of degradation of the environment.

Currently, the use of the atmosphere as a dumping ground for the emissions of greenhouse gases (GHG) is of utmost concern. Their accumulations are altering the global climate and if not abated, will have profound effects on the world's biological, economic and social systems. With the first international agreement to control GHG emissions, the Kyoto Protocol, commitments were made by some signatories to reduce emissions in 2008-2012 from their 1990 level. Thirty of

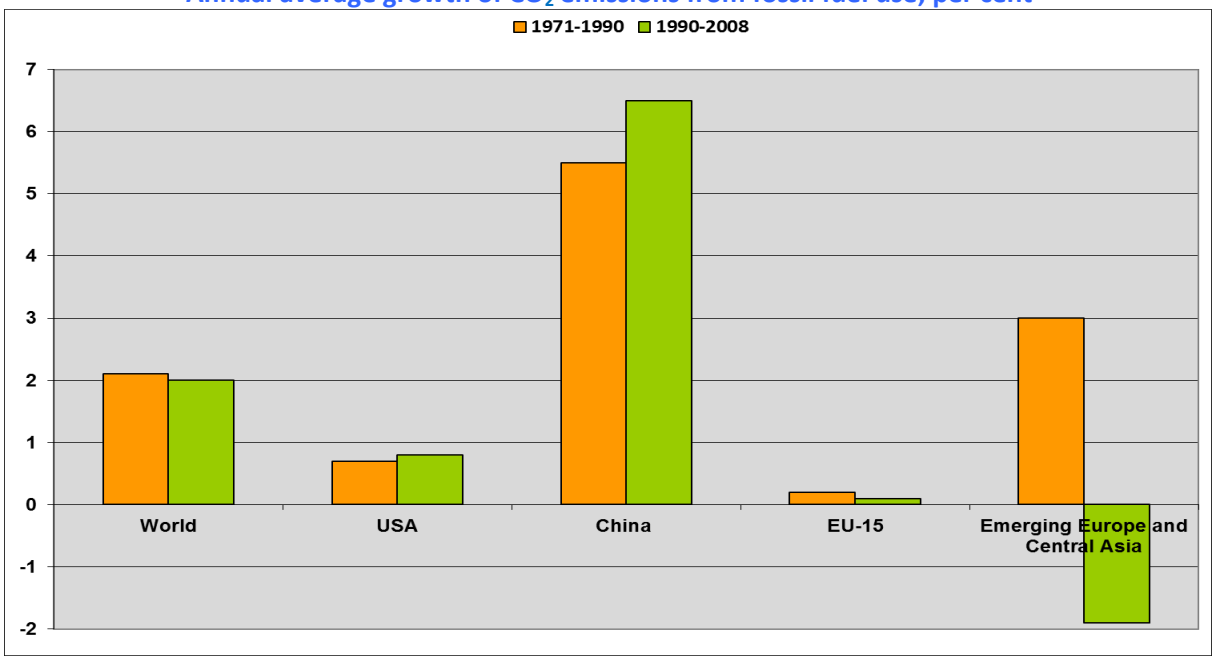
[110] For more details see reports on the review of implementation:
- Industrial Accident Convention:
http://www.unece.org/fileadmin/DAM/env/documents/2010/teia/ece.cp.teia.2010.3.EN.pdf
- Aarhus Convention:
http://www.unece.org/fileadmin/DAM/env/pp/mop4/Documents/ece_mp.pp_2011_7_eng.pdf

the 31 countries that made a commitment under the Protocol were UNECE members; three others committed to a target with Russia and Ukraine agreeing to no growth and Norway to a 1 per cent increase.

The ECE countries have been continuing to make commitments and implement programs and regulations to further reduce their GHG emissions,[111] despite the failure to reach an agreement at COP-15 in Copenhagen in December 2009 in this respect. However these commitments as well as other proposed national policies – if fully implemented – are sufficient to only stabilize GHG emissions by 2020, whereas the world emissions must decline by at least 50 per cent (and thus ECE emissions by even more) in order to limit global temperature increases to a manageable level (i.e., about 2 degrees centigrade). Thus although these newly proposed actions can further contribute towards reducing emissions, none of the economies of the region can be said to have put forth a national agenda that will be sufficient to reduce emissions to a level that is sustainable over the long run.[112]

The goal of reversing the loss of environmental resources, in particular due to GHG emissions, will clearly not be attained by 2015 in the ECE region and neither globally. It is expected that it will be a major challenge for all of the ECE economies for the next century (ECE region accounts currently for approximately one half of global GHG emissions and roughly similar percentage of global GDP). It is further expected that countries would develop programs, both nationally and internationally, through which the political, economic and technological challenges and the unsustainable patterns of production and consumption would be addressed with a view to reversing the environmental damage.

Figure 3.15
Annual average growth of CO_2 emissions from fossil fuel use, per cent



Source: EBRD (2011), *The Low Carbon Transition*.

[111] For example, the EU has committed to a 20 per cent reduction in GHG emissions from 1990 levels by 2020.

[112] A concise summary of climate change activities in the ECE region is available in UNECE, Catalysing Change: UNECE Responds to the Climate Countdown, Geneva, 2009.

It is important to note that the transition crisis saw a significant reduction in GHG emissions. The subsequent enterprise restructuring resulted in long-term energy efficiency improvements in former centrally planned economies that were generally characterized by wasteful use of resources. As a result Emerging Europe and Central Asia is the only region of the world in which emissions in 2008 were below their level in 1990 (figure 3.15). Thus while emissions of developing regions more than doubled and even trebled in the case of China, those in the ECA declined by approximately 30 per cent. This decline was achieved in spite of the significant increase of Turkey's emissions that have more than doubled since 1990. The emissions generated by the EU-15 and US economies have increased since 1990 by about 2 and 15 per cent respectively.[113] A comparison of the US with the EU-15 is complicated by the faster population and economic growth in the former. Essentially all of the difference between the trends in the two regions is accounted for by these two factors; slightly more than half is explained by higher population growth in the US and the remainder is due to higher per capita economic growth.

Most of the improvement in sustainability in the ECA reflects the falling energy intensity of production that declined on average by 40 per cent between 1990 and 2007 in the EECCA and SEE transition economies and by more than 60 per cent in the NMS.[114] During the early 1990s the falling use of energy in the goods-producing sector reflected mainly the impact of the transition recession. This was replaced by absolute decoupling in the second half of the 1990s when output levels increased while the energy use kept declining. Since the early 2000s relative decoupling prevailed, i.e. the energy use grew at a slower pace than production. During this period the decline in energy intensity has accelerated but this tendency has been overwhelmed by robust output growth.

The decoupling trends in transition economies reflect the combined effect of structural change of production from industry to services and efficiency improvements**.** Not surprisingly, new private businesses and foreign-invested firms tend to be more efficient than state-owned enterprises. In spite of the progress achieved over the last two decades, most transition economies still remain more energy intensive than comparable middle-income countries such as Chile.[115] This implies that major improvements in energy efficiency and sustainability are feasible in the ECA over the medium term, especially in transition economies that have delayed enterprise restructuring.

The progress in reducing emissions is more favourable when calculated in terms of emissions per $1 of GDP (annex table 18B). Most of the economies in the region have achieved sizable reductions in this measure which, among others, reflects the increasingly efficient use of energy. The energy intensity of GDP in Western Europe is approximately a third lower than in North America and less than half that in the EECCA (annex table 18A). Thus there is considerable potential for reducing emissions in North America and transition economies by increasing their energy efficiency to the levels of Western Europe. Especially in these two regions, but even in Western Europe there are numerous opportunities for increasing energy efficiency that have negative long-run costs; the challenge is to identify these opportunities and find sources of finance with which to implement them.[116]

[113] For details, see EBRD (2011), *The Low Carbon Transition.*
[114] Ibid.
[115] With the exception of Hungary and Slovakia that have more energy-efficient economies than Chile. See ibid.
[116] UNECE assists member States with energy efficiency programs, including its Energy Efficiency 21 Project.

It needs to be noted, however, that while national improvements in terms of emissions per $1 of GDP are very important and welcome, it has also to be analyzed how such targets are achieved. In cases where this is achieved by increasingly efficient use of energy e.g. through introduction of more energy efficient technologies by operating businesses, such improvements will have positive impact not only nationally but also globally, which is important in case of a global GHG problem. On the other hand if the improvements are reached by shifting from more to less energy-intensive activities, whereas the former ones are moved to other countries, such shifts, though having a positive national impact, may leave unchanged or even worsen the global situation with regard to GHG emissions. The latter can happen if the businesses would be moved to the countries with higher carbon footprint that use less energy efficient technologies or energy sources that are more GHG emissions intensive. In many OECD countries (the majority of which are developed ECE economies), the increase in GDP per unit of CO_2 emitted is at least partly explained by imports of goods with a relatively high carbon footprint from other countries, notably China. [117]

The recent economic crisis by reducing growth in the short run and perhaps in the medium-term may slightly reduce GHG emissions; however, this is unlikely to be important in the long run. There had been some hope that the recovery packages implemented during the crisis could be used to promote climate related initiatives as part of a "green new deal." And in fact some of the economies in the region did increase environmentally related spending or "green" tax credits as part of their fiscal expansions. However over the medium to long run, the extra government spending was not additional expenditure but was simply "borrowed" from the future. Thus over the medium term this represents no additional expenditure and considering that lower national income means lower government revenue and expenditure, the crisis has most probably reduced the total amount that governments will spend on climate related activities. In addition the private sector has also reduced its investments in climate related activities due principally to problems in obtaining finance. Thus overall the Great Recession has probably negatively affected progress in addressing climate change.

In order to achieve the necessary large reductions in GHG emissions, a major restructuring will be required in numerous industries including electricity production, transport systems and in housing design and urban planning. Thus progress in achieving the overall emission reductions can be monitored by examining the progress that is being made in these various sectors. Approximately 30 to 40 per cent of energy is used in buildings so that improving the heating and lighting in these can significantly reduce overall energy use and thus carbon emissions. Over the last several decades improved building techniques have allowed energy consumption per square meter to decline by 50 per cent; newer developments in passive housing promise even larger efficiency gains. Building techniques in many of the transition economies use older technologies and significant improvements would be possible if they used more recent technology and design.

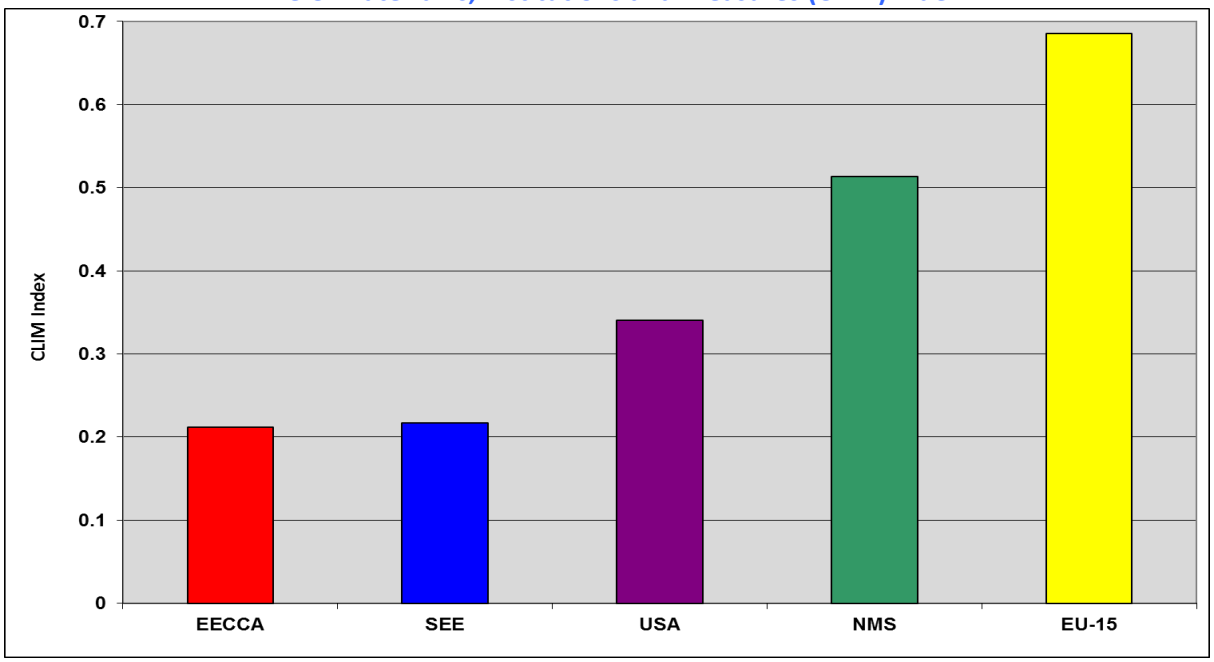
Globally the transport sector currently accounts for 23 per cent of world GHG emissions from fuel combustion and 13 per cent of total GHG emissions. [118] Approximately three-quarters of emissions are accounted for by road transport. The transport sector does not appear favourably when comparing the growth of emissions over time by sector or major economic activity. CO_2

[117] See Towards Green Growth: Monitoring progress, OECD Indicators (2011).
[118] For a summary of planned UNECE activities to reduce transport-related GHG emissions see ECE (2011), *Transport for Sustainable Development in the ECE region.*

emissions from transport measured in tonnes have increased by 23 per cent in the ECE region from 1990-2008. In several member States the CO_2 emissions have more than doubled. Other ECE countries have been able to reduce their CO_2 emissions. For example in Germany the emissions have been reduced by 6 per cent over the same period. Emission levels were inversely related to per capita income levels and were lowest in Tajikistan and the Republic of Moldova.[119]

The growth of GHG emissions, in spite of continuous increases in fuel economy, reflects the overwhelming impact of the rising number of vehicles and the number of miles driven per vehicle. Car ownership in Central and Eastern Europe tripled since 1990. Freight transport continues to grow and road and air freight keep increasing faster than the more efficient modes of rail and inland waterways. For example, air freight (road freight) emissions per tonne-kilometre are over 25 times (3 times) those of rail.[120] For passenger travel, bus transport is more efficient than car transport but it has its highest share in the poorest countries which suggest that it is viewed to be an inferior good with the implication that the bus share will decline with further economic growth.

Figure 3.16
The Climate Laws, Institutions and Measures (CLIM) Index



Source: UNECE calculations based on the national CLIM indices estimated by EBRD (2011), *The Low Carbon Transition*.

Note: The CLIM index is based on the aggregation of 12 variables with scores ranging from 0 to 1 that describe climate change legislation in four policy areas: international cooperation, domestic climate network, sectoral fiscal or regulatory measures and targets, and cross-sectoral fiscal or regulatory measures.

The industrial restructuring necessary for a sustainable reduction of GHG emissions should be supported by appropriate climate mitigation policies. Figure 3.16 shows that the EU leads with respect to the extensiveness and quality of climate change legislation. In principle, the emerging economies in EECCA and SEE subregions could adopt proven EU adaptation policies without adopting unsustainable Western lifestyles, high income inequality and subsidies of environmentally harmful activities. How this could be achieved in practice

[119] Ibid.

[120] European Environment Agency, *Transport at a Crossroads*, EEA Report No. 3/2009, Copenhagen.

depends on specific political economy constraints in each country, including the strength of the traditional carbon-intensive industrial lobbies and other vested interests.

In addition to climate mitigation, adaptation is unavoidable. This is because past emissions are causing warming that will continue for decades. Continued GHG emissions at or above current rates will induce further changes in the climate system, changes that are likely to be much larger than those experienced in the past century. Thus, mitigation will not substitute for adaptation but the extent of adaptation needed will depend on how much mitigation does in fact occur. Much of the adaptation needed to make the region more resistant to climate change will have substantial co-benefits. Improved water resource management, better performing water utilities and energy systems, and upgraded housing and transport infrastructure are crucially needed independent of climate change.

Both adaptation and mitigation policies implemented by one country usually have implications for other countries linked to it through trade, finance, migration, or other channels. Therefore, sustainable development challenges require the creation of viable schemes for regional cooperation. For instance, in Central Asia such schemes might replace the centralized national management of transnational water and biodiversity resources. The subregion also needs a proper maintenance scheme for large-scale energy and water supply infrastructures, including for irrigation. Over the past decade, the area affected by salination and water-logging has increased by between a quarter and a half. The Aral Sea has lost 90 per cent of its volume since the early 1960s and its biodiversity is probably irretrievably lost. Lack of progress in these areas is a cause of rising tensions between Central Asian countries.

Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

Biodiversity is concerned with the species variety and overall health of ecosystems. In 2006 the UN General Assembly declared 2010 to be the international year of biodiversity. Increased urbanization, large scale agriculture and other human related activities are producing stresses on the biodiversity in Europe and Central Asia. Habitat destruction and species extinction are associated with this declining biodiversity. Since there is no internationally agreed upon measure of biodiversity, different measures are commonly used to describe different types of ecosystems. The European Environment Agency has selected 26 indicators to measure biodiversity and set a 2010 target of halting the loss of biodiversity based upon these indicators; but it has concluded that this target cannot be met.[121]

One aspect of biodiversity concerns the size and variety of species in the forests in the region; two of the EEA's 26 indicators address forest biodiversity. While forest area has declined in many developing regions of the world, it has increased in the ECE region by 17 million hectares between 1990 and 2005. This included an increase of 12 million hectares in Western Europe and 4 million hectares in North America. The overall area of protected forests in the pan-European region is about 40 million hectares, 17.7 million of which are situated in Russia.

Forest maintenance and development are subject to severe challenges in the Caucasus and Central Asia where forest cover is low and must compete with other land-uses and for water

[121] European Environment Agency, *Progress towards the European 2010 Biodiversity Target – Indicator Fact Sheets*, Technical Report No. 5/2009, Copenhagen, 2009.

resources, while at the same time being subject to illegal logging. Forest as a percentage of land area (annex table 19) is particularly low in Kazakhstan (1.2 per cent), Tajikistan (2.9 per cent) and Kyrgyzstan (5 per cent).

Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Due to the fact that systematic testing of the microbial and chemical quality of water at national level is extremely expensive but also logistically complicated, the Joint Monitoring Programme (JMP) of WHO/UNICEF established a proxy indicator to measure the access to safe drinking water. This indicator measures the proportion of population with access to "improved" water sources, which have been defined as such that are protected from outside contamination, faecal matter in particular. [122]

According to the latest available JMP report *Progress on Drinking Water and Sanitation* (2012 update),[123] the drinking water target has been reached worldwide by 2010 with 89 per cent of the world's population using an improved water source. At the same time the report notes that huge disparities exist. They are visible between regions, but also within countries – between rich and poor or between those living in urban and rural areas. It also notes that due to the use of the proxy indicator, the number of persons using "safe" drinking water has probably been overestimated, since not all of the "improved" drinking water sources have provided "safe" drinking water, e.g. due to inadequate maintenance.

The JMP report shows that a number of ECE emerging economies have not been on track to achieve the national drinking water target. These include Albania, Kazakhstan and Uzbekistan for which the coverage rate in 2010 was below 1990 level and Tajikistan that was below 10 per cent of the 2010 rate required to meet the target. At the same it should be noted that both Albania and Kazakhstan had over 95 per cent of population in 2010 with access to improved source of drinking water; nonetheless, any negative trend should be avoided.

Despite the many efforts undertaken and progress achieved, over 15 million people (down from some 25 million in 2000) in the EECCA and SEE countries in 2010 had only access to unimproved sources of drinking water. A vast majority of these people – median value for the EECCA and SEE region is 91 per cent – live in rural areas (figure 3.17).

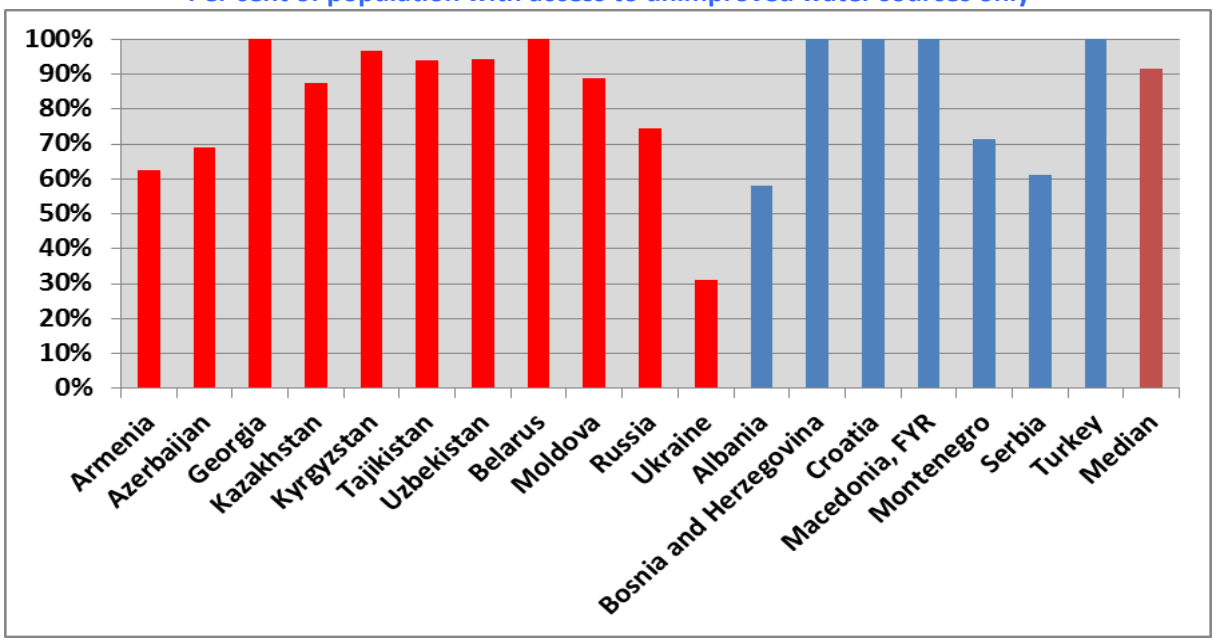
Even though it is not an official indicator for achieving the defined target with regard to the access to safe water, it is interesting to see the coverage rate for piped water to dwelling, yard or plot. Based on the JMP data, there had been over 87 million people in 2010 in the EECCA and SEE region – about 23 per cent of its population – without access to piped water to their premises. The range was from 60 per cent of population in Tajikistan, around 50 per cent in Azerbaijan, Kyrgyzstan or Moldova to less than 10 per cent in Armenia, The former Yugoslav Republic of

[122] JMP provides a detailed standard set of categories for improved/unimproved drinking water source. Improved ones include the use of piped water into dwelling, yard, or plot, public tap or standpipe, tubewell or borehole; protected spring, protected dug well, rainwater collection; unimproved ones include the use of unprotected dug well, unprotected spring, cart with small tank or drum, tanker truck, surface water (river, dam, lake, pond, stream, canal, irrigation channel), bottled water (considered to be improved only when the household uses drinking water from an improved source for cooking and personal hygiene).

[123] http://www.wssinfo.org/fileadmin/user_upload/resources/JMP-report-2012-en.pdf

Macedonia and Turkey. The number of people without access to piped water decreased by only some 8 per cent between 2000 and 2010. It is also not surprising that the majority of these people live in rural areas (median value of 80 per cent for the region in 2010).

Figure 3.17
Persons in rural areas using unimproved water sources, 2010
Per cent of population with access to unimproved water sources only



Source: UNECE calculations based on data from the Joint Monitoring Programme of WHO and UNICEF.

With regard to basic sanitation, it is measured by the JMP with an indicator showing access to improved sanitation, which is defined as one that hygienically separates human excreta from human contact.[124] According to the JMP 2012 report the world's sanitation target would not be reached by 2015 if the pace of change is not accelerated. Three countries of Eastern Europe (Belarus, Russia and Ukraine) and Georgia are not on track to meet the improved sanitation target.[125] This is in particular due to the fact that the coverage rate decreased or did not improve (Belarus) between 1990 and 2010 in these countries. In general however, as compared to developing regions, the coverage rate is relatively good for the EECCA and SEE region. It was about 85 per cent in 2010, or 93 per cent without the Russian Federation. The figure below shows the access to improved sanitation in 2000 and 2010. Only three countries (Albania, Azerbaijan and Uzbekistan) improved noticeably the access during this time period.

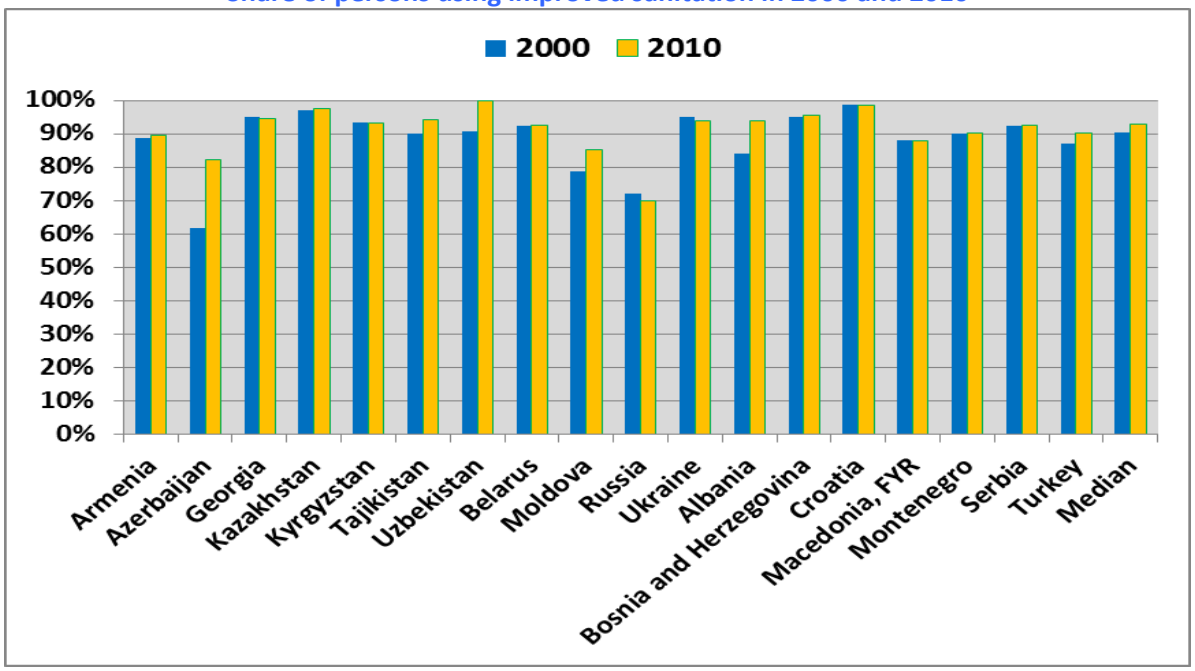
Based on the JMP data, the majority of people without access to improved sanitation live in rural areas. Nevertheless, the median value for unimproved sanitation was 60 per cent in 2010 which means that unimproved sanitation is also a crucial issue in the region for urban areas. As a

[124] JMP provides a detailed standard set of categories for improved sanitation. Improved ones are: use of flush or pour-flush to (i) piped sewer system, (ii) septic tank, (iii) pit latrine, ventilated improved pit (VIP) latrine, pit latrine with slab, composting toilet. Unimproved sanitation entails the use of flush or pour-flush to elsewhere (that is, not to piped sewer system, septic tank or pit latrine), pit latrine without slab, or open pit, bucket, hanging toilet or hanging latrine, shared or public facilities of any type, no facilities, bush or field, (open defecation)

[125] The progress was not assessed in the report for Montenegro, Serbia and The former Yugoslav Republic of Macedonia due to unavailable or insufficient data to estimate trends or assess the progress made.

matter of fact, the majority of people without access to improved sanitation in Belarus, Kazakhstan and Russia live in urban areas.

Figure 3.18
Share of persons using improved sanitation in 2000 and 2010



Source: UNECE calculations based on data from Joint Monitoring Programme of WHO and UNICEF.

Finally, taking into account that the service quality of water utilities in EECCA countries deteriorated throughout the subregion,[126] it is not surprising that diarrhoeal diseases attributed to unsafe water supply remain a leading cause of approximately 13,000 deaths per year. It is particularly worrying that the deterioration occurred during the period of high economic growth, reflecting the lack of maintenance of mainly Soviet-era assets. These findings confirm the JMP observation that the proxy indicator may show a level of access to safe water that is better than the real situation.

Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

According to the UN Habitat report *State of the World's Cities 2010/2011*,[127] "the slum target" has been achieved as lives of 227 million slum dwellers improved between 2000 and 2010. At the same time, the report stresses that despite surpassing the target 2.2 times and 10 years ahead of time, the number of slum dwellers[128] has increased by over 60 million over the same

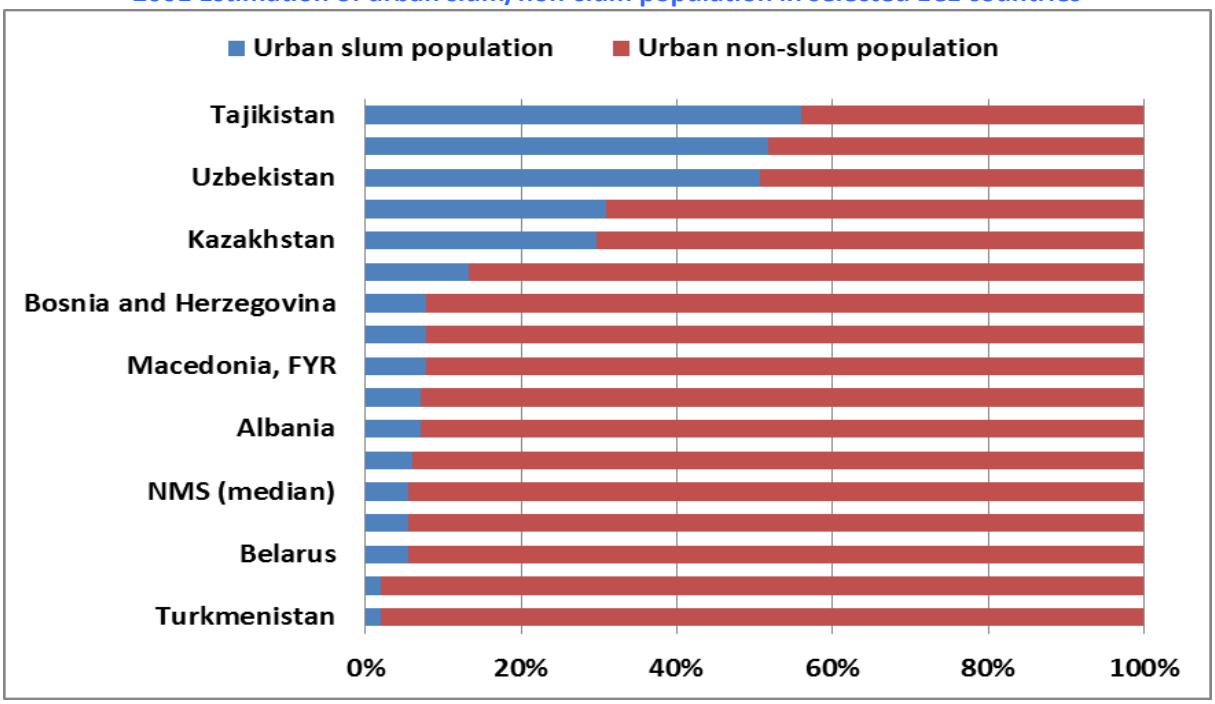
[126] See OECD, *Ten Years of Water Sector Reforms in Eastern Europe, Caucasus and Central Asia*, Paris, 2011.
[127] The report is available at http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2917
[128] According to UN Habitat a slum dweller is an individual living on his own or with others in a household under the same roof in an urban area, lacking one or more of the following five amenities: (1) durable housing (a permanent structure providing protection from extreme climatic conditions); (2) sufficient living area (no more than three people sharing a room); (3) access to improved water (water that is sufficient, affordable and can be obtained without extreme effort); (4) access to improved sanitation facilities (a private toilet, or a public one shared with a reasonable number of people); and (5) secure tenure (*de facto* or *de jure* secure tenure status and protection against forced eviction).

period in the developing world, pointing out that the achievement of the target cannot be considered satisfactory. The report, however, does not incorporate 'slums data' for the ECE region except for Turkey where significant improvements have taken place (the slum population was estimated to decrease by 30 per cent between 2000 and 2010).

An earlier UN Habitat report (*State of the World's Cities 2006/07*)[129] provides an overview of the slum situation in the EECCA region (referred to as the CIS). It informs that the number of slum dwellers was relatively stable (annual growth rate -0.1 per cent) with some 10 per cent of the population, i.e. over 18.5 million people living in slums (6 per cent in Eastern Europe and 29 per cent in the Caucasus and Central Asia) between 1990 and 2005. This report also assessed the performance of three EECCA countries (Georgia, Kazakhstan and Republic of Moldova) with respect to the slum target. Georgia was assessed to be on track whereas for the other two countries the situation was considered as stabilizing.

Disaggregated data on slums for the ECE region is difficult to come across. Slums are often not recognized as such and the countries in the region refer rather to the problem of informal settlements.[130] Nevertheless, in the 2003 report *Slums of the World: The face of urban poverty in the new millennium* [131] UN Habitat made an attempt to estimate the slum situation, among others, also in the ECE countries. The figure below presents the 2001 UN Habitat estimates of urban slum population for a number of EECCA and SEE countries as well as the median value for the new EU member states (except Cyprus and Malta).

Figure 3.19
2001 Estimation of urban slum/non-slum population in selected ECE countries



Source: UN Habitat Working Paper on Slums of the World: The face of urban poverty in the new millennium.

[129] The report is available at http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2101
[130] Housing units built without legal rights to the land and generally associated with the lack of complementary physical infrastructure such as sanitation and running water.
[131] The report is available at http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=1124

The situation might have improved since then in some countries, especially those that made significant progress on access to improved sanitation in urban areas (e.g. Uzbekistan).[132] On the other hand, the degrading multi-family housing stock or increasingly overcrowded housing (inadequate living space for a growing family) might have counterbalanced the progress achieved on access to improved sanitation.[133]

The deteriorating housing stock in many post-Soviet economies reflects privatisation mistakes. During the Soviet era the state provided housing and basic infrastructure free of charge to its citizens and was responsible for the maintenance and repair of the housing stock. With the transition and privatisation of the housing stock, residents received control over their apartments without the right to land and common areas, with the latter subject to increasing degradation due to the lack of clear responsibility for maintenance.

Already during the Soviet era the housing stock was low relative to population.[134] Relative to Western norms the amount of urban land reserved for residential use was quite low; for example, in Moscow and St. Petersburg approximately 35 per cent of the land was allocated for residential use while the average for cities in market economies was 65 per cent.[135] Given the small yearly additions to the housing stock, including a quite limited amount of rental housing and social or publicly subsidized housing, and a growing urban population, the overcrowding and informal settlements are likely to persist in a number of post-Soviet economies.

GOAL 8: DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT WITH TARGETS FOR AID, TRADE AND DEBT RELIEF

Goal 8 considers the degree to which the world's trading and financial system is conducive for economic development and what is needed in order to ensure that globalization becomes a positive force for all of the world's people. It is the supportive international pillar for the realization of the other goals 1 to 7. An evaluation of this goal is best performed at the global level but given the importance of Western Europe and North America in the governance structure of world economic institutions and the provision of development assistance these countries have an especially important role in fulfilling this goal. Since the targets in goal 8 are largely collective global level targets, a country level evaluation of each country's contribution to the global objective is generally not possible; the official development assistance (ODA) objective is an exception. Some of the targets are defined quite broadly which further makes an evaluation of progress for them particularly difficult. The UN MDG Gap Task Force was created to monitor the progress being made for MDG 8 and each year they release an annual report. Generally they have concluded that progress is being made in several areas but that important gaps remain in fulfilling

[132] UN Habitat used a method to classify household as slum/non-slum ones by adding slum indicators (access to water, sanitation, sufficient living area, durable housing, secure tenure) and avoiding duplication. According to UN Habitat 'lack of improved sanitation' was the dominant feature identifying slum households. At the same time according to JMP data improved sanitation is provided in Uzbekistan to 100 per cent of the population since 2007.

[133] Self-made cities, in search of sustainable solutions for informal settlements in the ECE region, 2009

[134] Jose Palacin and Robert Shelburne, *The Private Housing Market in Eastern Europe and the CIS*, UNECE Discussion Paper 2005.5, Geneva 2005.

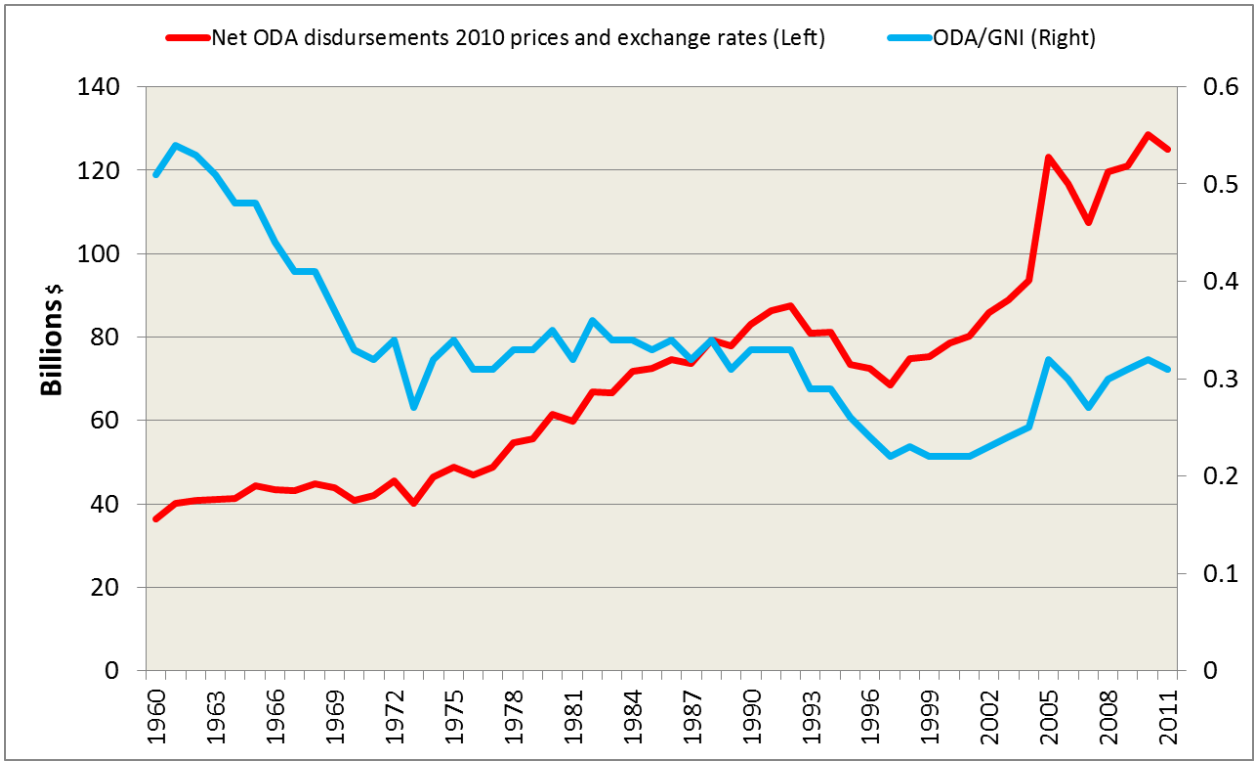
[135] World Bank, Russia Housing Reform and Privatization: Strategy and Transition Issues (Washington, DC), 1995.

the global commitments contained in this goal.[136] The recent economic crisis in 2008-2009 and a mild recovery since 2010 have resulted in a significant slippage on several fronts.[137]

Official Assistance

Central to MDG 8 is the recognition that many developing countries do not have the domestic resources that would be required in order to achieve their objectives. Thus aid, private sector financial resources and international trade are important ingredients for allowing countries to achieve their MDG targets. The advanced economies which are able to provide this aid are primarily located in the ECE region as these economies donate almost 90 per cent of total ODA supplied by DAC countries (Japan and Australia being the only major donors outside the ECE).

Figure 3.20
Official development assistance 1960-2011



Source: OECD-DAC database.

Since 1990 the real dollar amount of net ODA from the DAC donors has increased by 51 per cent but as a percentage of the GNI of the donors, the level in 2011 (0.31 per cent) is slightly less than it had been in 1990 (0.33 per cent). This level is also less than half of the level of 0.7 per cent of GNI which was first proposed as a target by the 1969 Pearson Commission on International Development.[138] In 2011 the real value of DAC-ODA fell by 2.7 per cent to $125.1 billion from $128.5 billion in 2010. The real value of total ODA fell by 7 per cent from $148.4

[136] The United Nations MDG Task Force reports are available online on its web site http://www.un.org/en/development/desa/policy/mdg_gap/index.shtml.

[137] See UNCTAD, "Successful trade and development strategies for mitigating the impact of the global economic and financial crisis" (TD/B/C.I/7).

[138] In 2011, Sweden (1.02 per cent), Norway (1.00 per cent), Luxembourg (.99 per cent), Denmark (.86 per cent) and the Netherlands (0.75 per cent) exceeded the UN target of 0.7 per cent of GNI.

billion to $139.4 billion as initial estimates of aid from non-DAC donors fell significantly from $7.2 billion in 2010 to $2.5 billion in 2011, although it is possible that not all non-DAC donors have been included in this total.

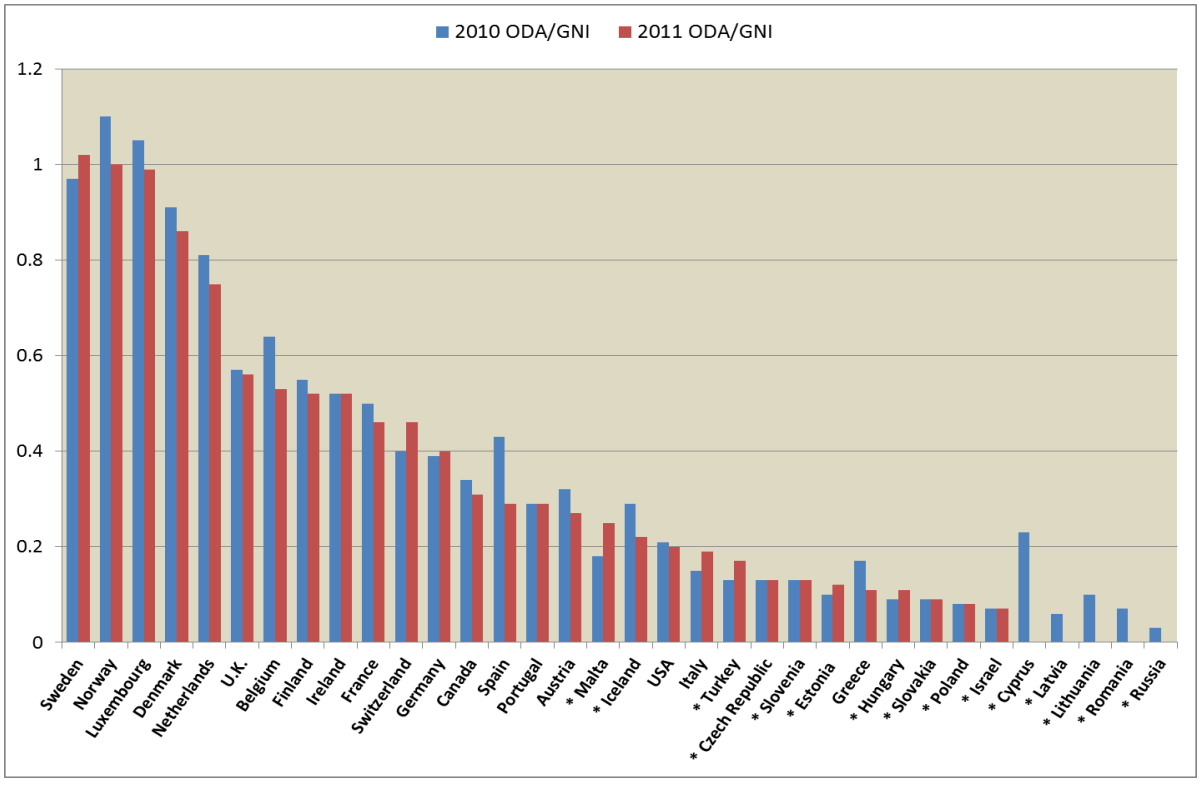
Table 3.2
Official development assistance 2010-2011, Billions $

	Constant 2010 Prices		Current Prices	
	2010	2011	2010	2011
Total Donors	$148.4	$139.4	$148.4	$148.7
DAC Donors	$128.5	$125.1	$128.5	$133.5

Source: OECD-DAC database.

The ODA to GNI percentages for the ECE donors are provided in Figure 3.21; those countries with an asterisk are not official DAC donors. Those countries at the right end of the figure (Cyprus, Latvia, Lithuania, Romania, and Russia) had not reported their aid for 2011 at the time this chart was completed. The ratio of ODA to GNI declined for over two-thirds of the ECE DAC members between 2010 and 2011; given the very low rates of economic growth for the European DAC donors these declining ratios in many cases also represent a real decline the amount of aid.

Figure 3.21
ODA percentage of GNI for ECE donors



Source: OECD-DAC database.

Most of the DAC donors have failed to increase their aid levels to ODA/GNI targets committed to at the 2005 Gleneagles G8 meeting and at the UN Millennium+5 Summit. Nevertheless the donor countries which are part of the Group of Eight (G8) reaffirmed their aid commitments at the G8 meeting in Deauville, France in May 2011. Also in May 2011 at the Fourth UN Conference on the Least Developed Countries the DAC members reaffirmed their commitments to increase their ODA/GNI to the LDCs. At the G20 meeting in Cannes, France there was recognition that there is a need for new innovative sources of development finance which might include things such as a transaction tax or airline ticket tax; however, there is unlikely to be an agreement on any of these new sources of funds in the next year or two.

The failure to meet these ODA commitments may be the result of the financial crisis; historical evidence shows that financial crises often lead to a decline in foreign assistance.[139] In current dollar terms, 2011 DAC net disbursements increased to $133.5 billion from $128.5 billion in 2010 and $119.8 billion in 2009 after declining from the $122.0 billion in 2008. Given the continuing economic problems in the advanced economies and the accompanying budgetary retrenchments, significant increases in ODA are unlikely and actual cuts may occur instead in the years ahead despite the nominal increase in 2011. The OECD expects aid to increase by 2 per cent per year over the next three years compared to an annual 8 per cent increase over the last three years. Nevertheless there is a distinct possibility that aid could decline as opinion polls in the advanced donor economies find that there is broad public support for reducing foreign aid instead of cutting domestic programs.[140] The EU aid budget has been somewhat protected from the economic crisis as it is set as part of a multi-year package that is reasonably protected until 2013; however the package for 2014-20 which is being negotiated in 2012 may ultimately reflect the consequences of the global financial crisis and the accompanying eurozone crisis. Assistance from non-DAC members, some of them emerging economies themselves, is now significant and despite the decline in 2011 is expected to become increasingly important in the coming years. Of increasing importance are the philanthropist contributions from private charities. Particularly noteworthy in 2012 was the $750 million provided by the Bill and Melinda Gates Foundation to the Global Fund to Fight Aids, Tuberculosis and Malaria.

Equally important to the level of aid is the efficiency with which it is used. To assess these issues is complicated and there are no simple quantitative targets for this purpose. Nevertheless the efficiency in the delivery and use of aid needs to be regularly monitored and assessed by both donors and recipients.

Eighteen of the ECE economies plus UNMIK/Kosovo are official recipients of ODA (see table 3.3 and annex table 22). Information on the amounts of net ODA to recipients is not produced as timely as ODA by donor and therefore the latest date available (for this report) by recipients is 2010. Table x provides data by recipient from all donors and from only the DAC donors in 2010 constant dollars. Although for the world as a whole the DAC donors provided 87 per cent of total donations in 2010 (and 90 per cent in 2011), for the UNECE recipients the DAC donors provided only 51 per cent of total donations. The DAC donors provide less than half of total donations for all the major regions, SEE minus Turkey, European EECCA, and Central Asian EECCA; the overall average exceeds 50 per cent due to the inclusion of Turkey which receives over 70 per cent of its ODA from the DAC donors. In 2010 the ECE economies and

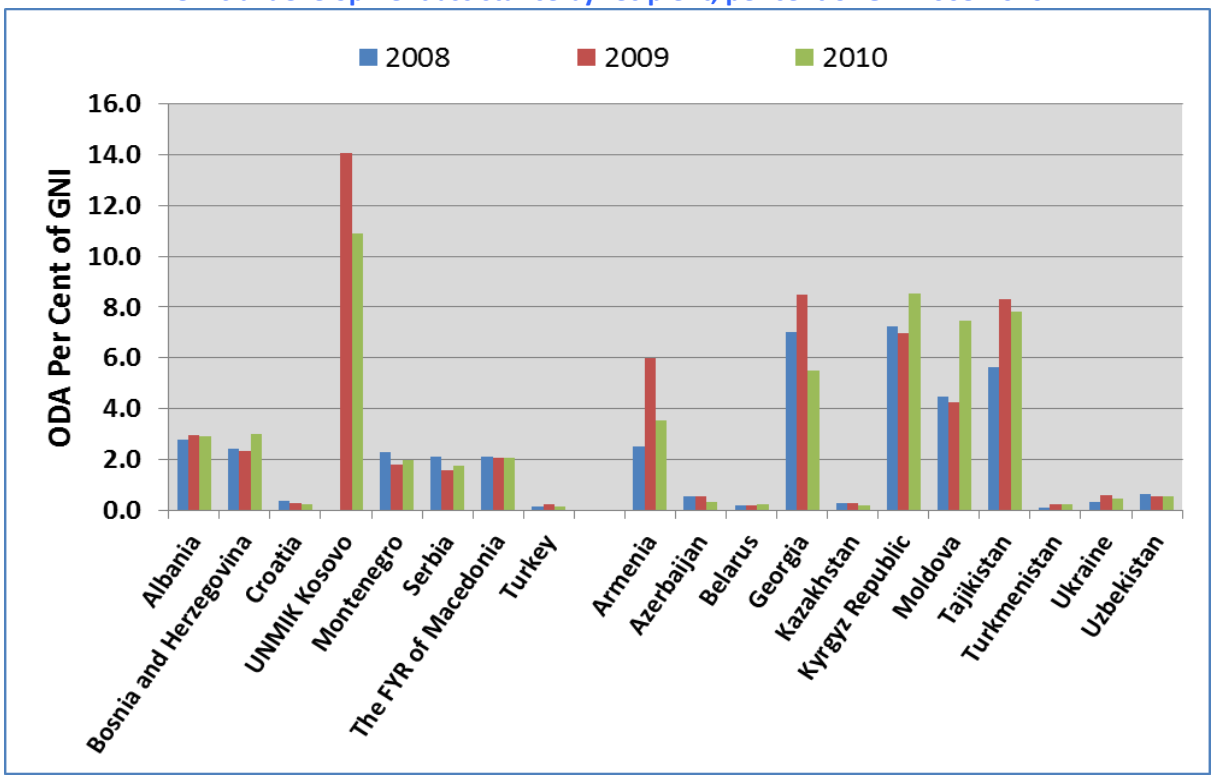
[139] Hai-Anh Dang, Steve Knack, and Halsey Rodgers, *International Aid and Financial Crises in Donor Countries*, Work Bank Policy Research Paper 5162, Washington, US, 2009.

[140] Based upon a 2011 FT/Harris poll in the US, Germany, UK, France, Italy and Spain.

UNMIK Kosovo received over $8.5 billion in total assistance or slightly less than six per cent of total world ODA. This was divided almost evenly between South-Eastern Europe ($3.6 billion) and the EECCA ($3.7 billion).[141] The largest recipient in 2010 was Turkey ($1.05 billion) followed by Serbia ($660 million), Ukraine ($626 million), Georgia ($625 million), UNMIK/Kosovo ($620 million), and Bosnia-Herzegovina ($510 million). Total ODA to UNECE recipients declined by 4.9 per cent in 2010 while DAC ODA declined 7.8 per cent.

If viewed in terms of their ODA as a percentage of their GNI the situation is remarkably different (see figure 3.22). In 2010 the region's largest recipients included UNMIK/Kosovo (10.9 per cent of GNI), Kyrgyzstan (8.5 per cent), Tajikistan (8.3 per cent), Moldova (7.5 per cent) Georgia (5.5 per cent), and Armenia (3.5 per cent). Turkey whose ODA was the largest recipient by value was the smallest percentage of its GNI at 0.1 per cent. Ten of the region's economies have ODA which is at or above 2 per cent of their GNI; about half of the approximately 100 countries that receive ODA have aid percentages of GNI at that level.

Figure 3.22
Official development assistance by recipient, per cent of GNI 2008-2010



Source: World Bank development indicator database.

In terms of ODA received per capita, the economies in SEE (except Croatia and Turkey) have received comparatively large amounts, often more than $100 per capita (see appendix table 22). All of the SEE countries, including Turkey, receive assistance from the EU pre-accession programme. In the EECCA region, Armenia ($111 per capita) and Georgia ($140) in the Caucasus, Kyrgyzstan ($71) and Tajikistan ($58) in Central Asia, and Moldova ($132) also receive considerable aid.

[141] These totals do not include the regionally provided ODA since it cannot be separated.

Table 3.3
Official development assistance by recipient 2008-2010, Millions $

	DAC Donations				Total Donations		
	2008	**2009**	**2010**		**2008**	**2009**	**2010**
Albania	256.7	239.8	226.7		347.2	349.4	340.7
Bosnia-Herzegovina	307.8	279.0	243.7		445.8	416.9	510.4
Croatia	46.7	30.0	36.9		226.4	162.4	150.7
Kosovo (UNMIK)	..	431.8	279.3		..	773.0	619.8
Montenegro	58.3	46.6	43.0		100.5	74.5	80.3
Serbia	525.2	272.1	313.1		932.5	601.6	659.9
The FYR of Macedonia	140.3	134.7	95.0		200.4	192.0	187.2
SEE minus Turkey	**1,335.0**	**1,433.9**	**1,237.6**		**2,252.9**	**2,569.8**	**2,548.9**
Turkey	676.1	557.2	734.6		1,102.7	1,327.5	1,047.2
SEE	**2,011.1**	**1,991.2**	**1,972.2**		**3,355.6**	**3,897.3**	**3,596.1**
Belarus	56.1	61.3	80.7		103.6	98.3	137.9
Moldova	113.0	97.9	90.4		288.3	241.6	470.4
Ukraine	281.8	400.4	392.6		592.7	664.6	626.4
European EECCA	**450.9**	**559.6**	**563.8**		**984.7**	**1,004.5**	**1,234.7**
European (SEE + EECCA) Regional	436.9	412.8	464.6		836.6	747.9	1,025.5
Total European (SEE+EECCA) Recipients	**2,898.9**	**2,963.6**	**3,000.5**		**5,176.9**	**5,649.8**	**5,856.3**
Armenia	216.0	238.8	205.8		307.0	530.5	342.8
Azerbaijan	116.8	122.3	60.5		228.8	232.9	159.1
Georgia	578.2	438.4	350.0		875.3	906.9	625.2
Kazakhstan	240.0	175.2	95.3		339.3	306.5	223.9
Kyrgyz Republic	142.4	141.7	158.5		353.3	321.4	380.4
Tajikistan	143.0	142.0	164.5		283.9	410.9	436.7
Turkmenistan	-1.6	13.5	11.4		17.0	41.1	44.7
Uzbekistan	118.7	77.9	84.3		190.8	191.8	230.9
Central Asian EECCA	**1,553.6**	**1,349.7**	**1,130.3**		**2,595.3**	**2,942.0**	**2,443.6**
Central Asian Regional	244.3	316.7	167.9		283.3	353.0	202.3
Total Central Asian Recipients	**1,797.9**	**1,666.4**	**1,298.2**		**2,878.6**	**3,295.0**	**2,645.8**
Total UNECE Recipients	**4,696.8**	**4,629.9**	**4,298.8**		**8,055.4**	**8,944.8**	**8,502.1**

Source: OECD-DAC database.

The developing and transition economies need external financial assistance in order to strengthen their social safety nets and fund health, education, environmental and social programmes for their populations. In order to ensure that these countries have the financial resources they need for addressing the MDGs, donor nations will need to fulfill their aid

commitments, especially those that promote further productivity increases such as "Aid for Trade."

In addition to financial assistance provided through ODA, there are a number of initiatives which attempt to provide governance assistance that will help in the more efficient management of emerging market economies. Of particular relevance to the EECCA is the voluntary Extractive Industries Transparency Initiative (EITI) which attempts to improve the management of natural resource revenues.

Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory multilateral trading and financial system.

Current Integration into the World Trading System

Prior to 1990, the ECA economies became segmented off from the global trading and financial system for over 40 years. Since the transition, the NMS (especially due to their membership in the EU) and to a lesser degree SEE have now become reasonably integrated into the world economy.[142] The growth of exports from the NMS nearly doubled after EU accession. Although the total value of the EECCA region's exports is approaching global norms, this is due to their extensive exports of natural resource products. The manufacturing sectors of these economies remain largely outside of global markets and global supply chains; their shares of manufactured exports are low relative to global norms. There has been limited progress in diversifying their export structures; in fact there has been a tendency for their export concentrations to increase. There is a need for these countries to review their national trade and economic policies with a view to elaborating new policies and strategies to build up competitiveness, enhance and diversify supply capacities and build up economic resilience to external shocks.

The export structures of these economies are overly concentrated both in terms of commodity structure and geographical destinations.[143] The geographical destinations for their exports are concentrated, with the countries of the EECCA region over-relying on others in the region as destinations for their manufactures exports (see trade matrix, table 2.1). Thus diversifying trading partners is also needed. Numerous export opportunities exist with the rapidly growing emerging economies of the South such as China, India and Brazil. Building economic and trade relations with developing countries would also widen possibilities for development cooperation. In the NMS FDI inflows have been found to be associated with increased exports and thus the ability of the EECCA to export more manufactures could be enhanced by encouraging more FDI into manufacturing sectors. Although the need for diversification is most apparent for the natural resource abundant EECCA, the remaining emerging ECE economies also could benefit from increased diversification The NMS and SEE are, however making some progress in increasing their export structures towards more high-skill and technology-intensive exports.

[142] Vitalija Gaucaite Wittich, *Some Aspects of Recent Trade Developments in South-east Europe*, UNECE Discussion Paper No. 2005.6, Geneva, 2005.
[143] Robert C. Shelburne and Oksana Pidufala, *Evolving Trade Patterns in the CIS: The Role of Manufacturing*, UNECE Discussion Paper No. 2006.2, Geneva, 2006.

The EiT and the NMS should implement trade and investment initiatives that will promote the diversification of their exports geographically and towards higher-value manufactured goods and business services. They should also develop trade and economic relations with the developing countries (i.e., South-South cooperation) to diversify their markets and widen development cooperation. They should further review their trade and development policies with a view to adapting them to the new realities of globalization as well as enhance their related domestic institutional and regulatory capacities. A liberal import regime by increasing competition and thus encouraging innovation can also be a factor promoting economic dynamism and exports.[144]

Market Access

One of the indicators concerning improving market access for developing countries and countries with economies in transition concerns the proportion of their exports that are admitted duty-free into the developed countries. Given the export structures of the EECCA economies, most of their exports have received duty-free treatment despite the fact that many of these economies were not members of the WTO and were not entitled to MFN-treatment in many of the world's economies. In 1996, 96 per cent of this region's exports received duty-free treatment in the developed economies (compared to 52 per cent for all developing market economies) and by 2010 this had increased to 99 per cent (compared to 82 per cent for all developing economies). As a result the EECCA now have better market access, as defined by this measure, than even the least developed countries (for which 90 per cent entered duty free in 2010). To some degree the high level of market access is due their concentration of exports of petroleum products which are often given duty-free treatment. Only 1 per cent of EECCA textile products and 32 per cent of clothing exports received duty-free treatment in 2010 compared to 34 per cent and 26 per cent for all developing countries.[145] For all industrial products, 92 per cent of EECCA exports received duty free treatment in 2010 by the developed market economies compared 86 per cent for all developing countries (see figure 3.23).[146]

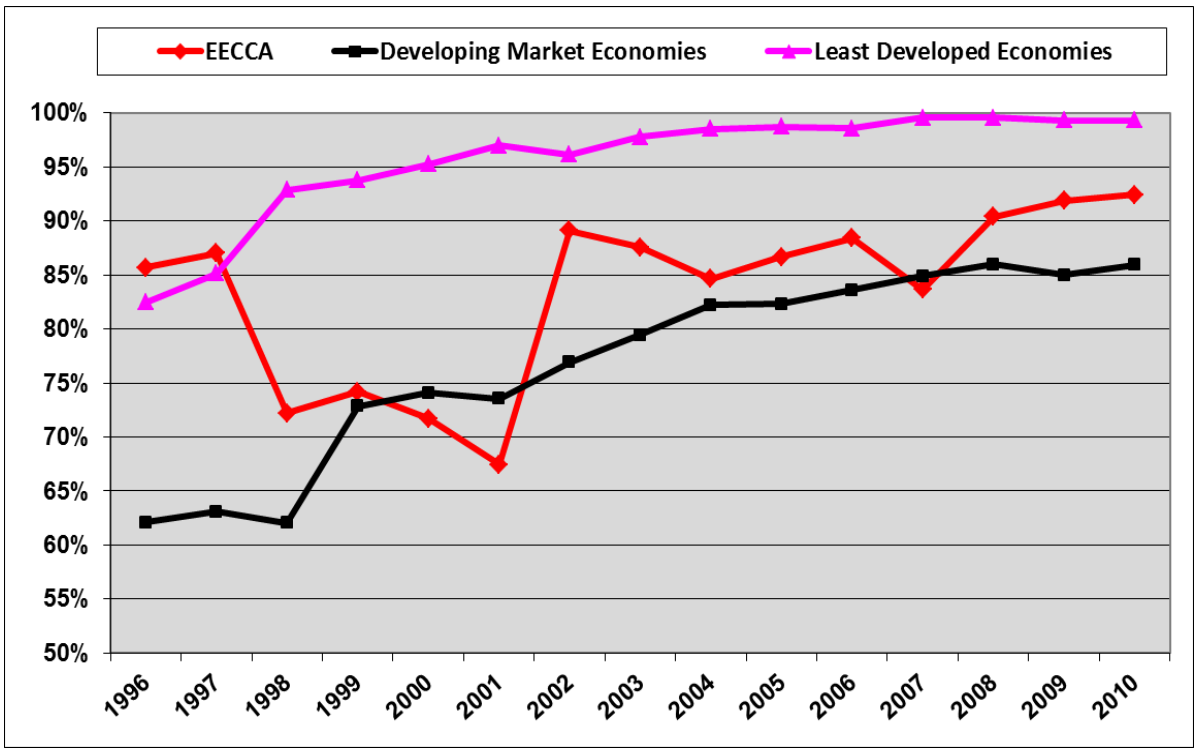
For those items subject to duty, the average tariff rate for EECCA exports in developed market economies was 4.2 per cent in 2010; for those entering under a preferential program it was 3.5 per cent. For industrial products, the EECCA faced a tariff of 1.9 per cent in 2010 which was fairly similar to that faced by the developing countries; for industrial products that receive some preferential tariff treatment, the rate was only 0.8 per cent in 2010 (see figure 3.24). What is apparent from these data is that tariffs represent only a minor burden on exporting by the EECCA; equal emphasis needs to be on lowering transport costs, improving border crossing procedures and on upgrading their ability to meet product standards in export markets. Nevertheless, the economies in transition need improved market access so that they can better reap the benefits of international trade.

[144] The UNECE provides recommendations to countries as to how to diversify their economies and increase their dynamism as part of its innovation performance reviews. Reviews for several of the EECCA have been concluded (see Innovation Performance Review of Kazakhstan, UNECE 2012 and Innovation Performance Review of Belarus, UNECE, 2011) and others are planned or in progress.

[145] The data on duty-free access and average tariff rates come from the ITC Millennium Development Goals database at www.mdg-trade.org.

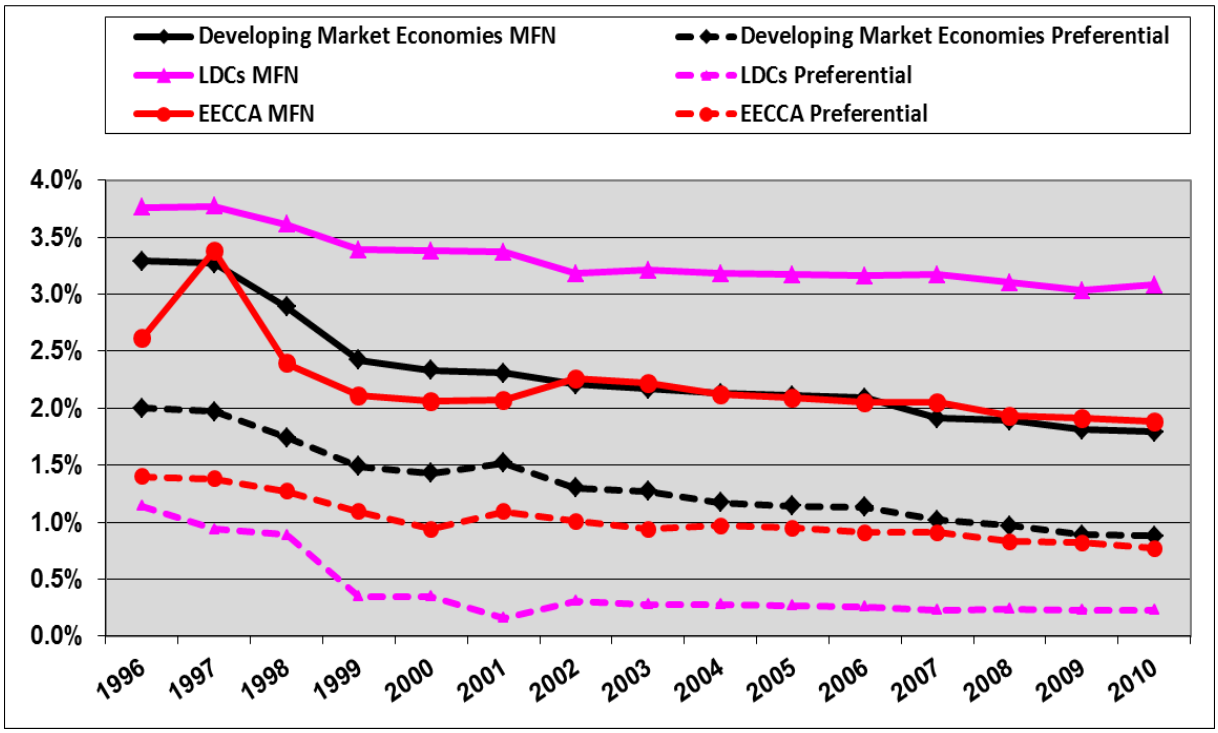
[146] The ITC/UNCTAD/WTO database used to also provide estimates of this for the central European economies but no longer does so. In 2008 they estimated that 91 per cent of exports from Central Europe (defined as the NMS minus Slovenia plus Ukraine) to the developed market economies received duty-free treatment.

Figure 3.23
Percentage of industrial imports receiving duty-free treatment in developed market economies



Source: ITC/UNCTAD/WTO Market Access Map, July 2012.

Figure 3.24
Average tariff on industrial products imported by developed market economies



Source: ITC/UNCTAD/WTO Market Access Map, July 2012.

WTO Accession and Conclusion of the Doha Development Round

A central objective in having target 8.A was the evolution of an open, rule-based, predictable, non-discriminatory multilateral trading and financial system which is essential for fostering sustainable trade growth. Another feature of the system which tends to be ignored but is inscribed in the UN Millennium Declaration is an 'equitable' trading system. The rationale for a fairer and equitable trading system has been strengthened by the damaging impact of the global crisis on employment, access to essential social services and poverty alleviation. It has made the case for a development-oriented multilateral trading system even more imperative and urgent. The emerging economies of the region could benefit if target 8.A were revised to promote an open, equitable, rule-based, predictable, and non-discriminatory multilateral trading and financial system; perhaps this might be included in the post-2015 sustainable development goals.

For many developing countries this requires changes to the trade rules inscribed in the agreements and procedures of the World Trade Organization (WTO) so as enhance the role that trade can contribute to the development process. For this reason the current round of trade negotiations which began in Doha in 2001 has been referred to as the Doha Development Agenda since a key objective was supposed to be to make the trading system fairer and development-oriented for developing countries. Many of the development objectives which the developing countries initially expected would be addressed in this trade round have been marginalized in the negotiation process and it is increasingly apparent that it will not be possible to conclude this trade round. There remains a slight hope that a scaled down set of agreements can be reached but even this may not be possible. The impasse has prevented realization of new trading opportunities badly needed to boost trade and sustain the recovery following the crisis. However, a conclusion of the Doha Development Round has less immediate importance for many of the EiT which have yet to gain accession to the WTO.

Nine of the EiT (Azerbaijan, Belarus, Bosnia and Herzegovina, Kazakhstan, Montenegro, Serbia, Tajikistan, Turkmenistan, and Uzbekistan) have yet to accede to the WTO and thus are not fully integrated into the multilateral trading system. The WTO formally approved the conditions for Russia's accession in December 2011 and Russia joined in August 2012. Russia had been the largest ECE emerging economy and the only G-20 country not in the WTO; Russia's accession took 18 years. Russia will lower tariffs on numerous manufactured goods such as clothes and consumer electronics and liberalize other markets over the next six years; Russian exports however generally have faced only minimal tariffs as its natural resource exports including oil and gas have been subject to only very low tariffs if any. It is generally believed that the admission of Russia to the WTO will not only increase trade flows over the medium run but will also substantially increase FDI inflows to Russia especially in the services sector and perhaps less in the mining sector.[147] It remains uncertain how the creation in 2010 of the Belarus, Kazakhstan and Russia customs union will complicate WTO accession for these other two economies.

Failure to join the WTO has limited the integration of many of the EiT into the world economy. Generally current WTO members have requested significant structural reforms (especially towards more market-based principles) in these economies as a condition for membership. Both existing WTO members and the EECCA and SEE acceding countries need to

[147] UNCTAD, *World Investment Report*, 2012.

be more accommodating in their negotiating positions so as to facilitate the accession of EiT non-members to the WTO so that they can benefit more fully from the multilateral trading system.

Regional Preferential Trade Agreements

An additional development which has contributed to increasing trade integration in the region has been the progress made in terms of regional integration agreements. Obviously the expansion of the EU to include the NMS has been vastly important as is the EU likely further enlargement into SEE. The Central European Free Trade Agreement has proven to be a quite adaptable institutional structure that has essentially shifted from being a preferential trade area in Central Europe to one in South-Eastern Europe. All of the SEE, except Turkey but including Moldova, are now parties to the agreement. There has been less progress in the EECCA where the Eurasian Economic Community (EurAsEC) has been the main institutional arrangement promoting trade integration in the region although several countries appear to have different visions regarding its objectives. Belarus, Kazakhstan, and Russia (B-K-R) moved ahead independently in creating a customs union in 2010, and a common economic space in 2012, and have plans for a Eurasian Economic Union by 2015. The B-K-R customs union has even adopted parts of the EU's *acquis communautaire* to harmonize regulations for the proper functioning of their customs union; this also will reduce the impediments towards future possible trade liberalization between the B-K-R customs union and the EU. Institutionally, in January 2012 they established the Eurasian Economic Commission which replaced the Customs Union Commission as the regulatory body of the customs union. Ultimately the Eurasian Economic Commission will oversee not only the operation of trade flows and import duty collection and distribution but will also address macroeconomic policy, investment issues, competition policy, government procurement, intellectual property, and labor migration. In October 2011 Kyrgyzstan announced its intention to join. There are a number of other important free trade agreements in the region including most importantly that between the EU and Turkey. The Ukrainian-EU free trade agreement and association agreement which has largely been negotiated and agreed upon remains unsigned due to ongoing political disputes. There are numerous other agreements in the region, often with overlapping memberships and scope.

Regional trade initiatives can promote development but they are more effective if they are designed to encourage open regionalism instead of being closed trading blocs. There is a need to make effective use of regional trade agreements, especially in the EECCA where current agreements are more limited in scope; these could be improved by consolidating many of the existing agreements into fewer but more viable agreements.

Improving the Regional Transport Infrastructure and Streamlining Border Control Procedures

Many of the EECCA and SEE economies, like other developing countries have a number of additional obstacles in expanding trade links to the rest of the world. Regional transport infrastructure is inadequate, border crossing procedures are cumbersome, and product and regulatory standards (i.e., health, safety, environmental, etc.) may be incompatible with global norms. These infrastructure and institutional issues can be quite significant in reducing both exports and in limiting the gains from importing cheaper or technologically superior inputs. These problems are compounded when countries are landlocked and therefore dependent on the transport infrastructures and border control policies of their neighbors (see target 8.C). The resulting high transport costs erode their competitiveness and reduce the volumes traded. Together these factors have reduced the pace and quality of economic development.

Compared to other developing regions, the EECCA and SEE have a more extensive transport infrastructure network although there are significant maintenance backlogs. The creation of new states after the disintegration of the Soviet Union and Yugoslavia meant that the existing transport network was no longer consistent with the new borders. This development cut off parts of the railway network while creating numerous enclaves without appropriate infrastructure connections with their national capitals. Consequently national investment programmes have favoured the construction of new transport links rather than regular maintenance of the already existing transport infrastructure assets.

However, these constraints do not affect progress in addressing institutional constraints or non-physical obstacles such as cumbersome export/import and regulatory procedures and regulatory standards. The lack of real progress in this area largely reflects a lack of commitment on the part of national governments to adequately address these matters. The World Bank's Doing Business report ranks countries in terms of the ease of doing business. Three of the EiT were ranked in the bottom 50 (out of 183) in the ease of doing business; this included Tajikistan (147th), Ukraine (152nd), and Uzbekistan (166th). However several of the EiT are among the top 25 countries which are the easiest for conducting business; this includes Georgia (ranked 16th), Latvia (21st), The FYR of Macedonia (22nd), Estonia (24th); four EiT (Armenia, Latvia, Moldova, and The former Yugoslav Republic of Macedonia) are listed among the top 12 making the most progress in improving the ease of doing business over the previous year's report. Almost all of the EiT were credited with making at least one regulatory reform over the last year that reduced the costs of doing business. Generally the region is found to have strong legal institutions but they are overly complex and costly for doing business.[148] The failure to make more progress is often blamed on special interest groups, poor governance, corruption, or simply the failure of national governments to focus attention on these issues.

One of the measures for assessing the ease of doing business regards the ease of trading across borders based upon the time and difficulty (i.e., number of documents, etc.) in obtaining customs clearances. Those making improvements in 2012 in this measure included Estonia and Turkey for improving electronic data interchange systems, and Russia for reducing the number of trade documents. Ukraine was cited for making trade across borders more difficult by introducing additional customs inspections.

The World Bank 2012 report also included a special case study of what The FYR of Macedonia had done over the last decade to improve its business climate. In regards to easing trade, it discussed the 2002 introduction of a risk-based inspection system and in 2008 the introduction of an electronic single window for submitting customs documents online, the introduction of mobile scanners, and a rationalized customs fee schedule.

Although progress has been made in the region in addressing impediments to trade, it has nevertheless been disappointing in many areas. For the infrastructure constraints, limited progress is to be expected since improving infrastructure involves significant investment and takes time to build. For instance improving the Euro-Asian rail and road systems for the Central Asian economies involves investments of tens of billions of dollars. Given financing constraints, all that can be expected for infrastructure improvements is slow but incremental progress.

[148] World Bank, Doing Business 2012, Washington, DC, 2012.

Increasing the EiT's integration into the global economy requires improving the regional transportation system; this is especially critical for the land-locked economies. Transport costs can be reduced by implementing international legal instruments, standards, norms and recommendations. Improving the pan-European and Euro-Asian transport infrastructure requires the active participation of member States. Improving border control procedures is an extremely cost effective method of improving trade performance. There is a need for transparent border-crossing performance measures and best-practice benchmarks and for improvements in transport data collection and statistics.

Addressing these issues therefore requires technical assistance and funding. The Aid for Trade (AfT) Initiative can play a substantial role in helping the EiT integrate into the global economy by addressing supply side constraints and building trade related infrastructure. At the global level AfT commitments have continued to increase and amounted to $40.1 billion in 2009; this was up slightly from 2008 and up more than 60 per cent from the 2002-2005 average.[149] Of this, $22.7 billion or 57 per cent was donated bilaterally by the DAC countries with Japan being the largest donor; and $16.9 billion or 42 per cent by multilateral donors, with the World Bank accounting for almost one-half. Of the $40.1 billion total, $7.1 billion was provided to multi-country programs and $33.0 billion to individual countries. Of the $33.0 billion donated to a specific country, $2.6 billion or 7.8 per cent went to the EiT. This percentage has fluctuated over the years but has been on a slightly downward path from the average 9.5 per cent during 2002-2005. In real dollar terms commitments to the EiT in 2009 declined by 12 per cent from those in 2008. In 2009 all of the EiT including UNMIK/Kosovo received some commitments although the amounts were quite small for some such as Belarus, Montenegro, and Turkmenistan.[150] In 2009, Georgia received by far the largest commitments of $526 million, followed by Ukraine with $293 million and Turkey with $284 million. However, over the 2006-2009 period Turkey was by far the largest recipient both of commitments and disbursements of the EiT, and over the 2002-2009 period was among the top 20 recipients in the world. On a per capita basis, Georgia was the largest EiT recipient of commitments in 2009 and was among the top 20 countries in the world. Approximately one half of AfT for the EiT goes to building productive capacity and the other half to economic infrastructure. Similar objectives in promoting trade and transport facilitation are incorporated into the Almaty Programme of Action which addresses specific trade problems of the EECCA and SEE landlocked developing countries (see target 8.C). For AfT overall, estimates suggest that each $1 of additional aid for trade facilitation results in an addition $1.33 of additional exports by recipient countries.[151]

External Financial Flows

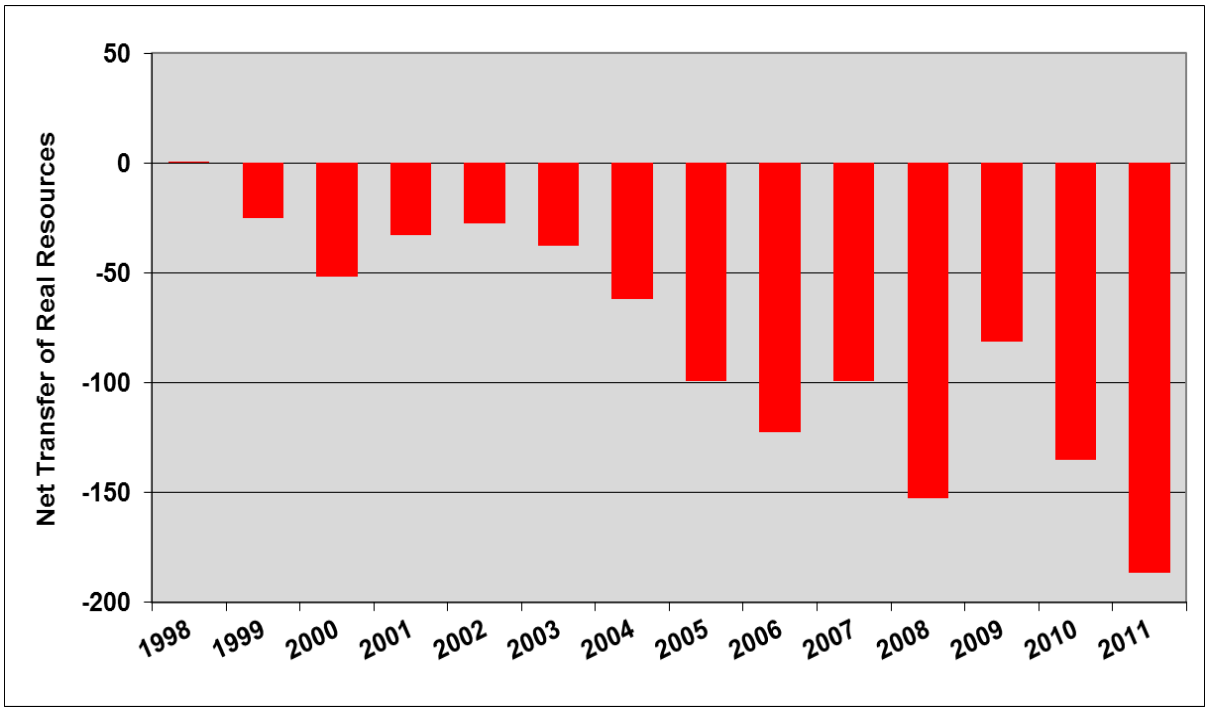
Target 8.A is also concerned with improving the access of developing countries to international financial markets as a source of development finance. In terms of integrating financially into the world economy the region has been rather successful but these flows are characterized by a number of anomalies. Prior to the transition private sector inflows were quite small with most borrowing being undertaken by government authorities. After the transition the privatization schemes that sold off state-owned production facilities began to attract significant

[149] Data for AfT commitments and disbursements is obtained from the World Trade Organization, *AID For Trade at a Glance*, OECD and WTO, 2011. This report is only updated every two years and the data in a report is fairly dated; thus 2009 represents the latest data available.
[150] Note that Russia is the only EiT economy which is not an official ODA recipient.
[151] Matthias Helble, Catherine Mann, and John S. Wilson, Aid-for-trade Facilitation, *Review of World Economics*, Volume 148, No.2, June 2012, pp. 357-376.

foreign investment. By the 2000-2008 period, the NMS and SEE were receiving very large net capital inflows and these were quite significant in contributing to the strong growth of that period. These external inflows allowed these economies to achieve investment rates much higher than would have been possible otherwise.[152] Net inflows of capital to the NMS and SEE which had reached over 8 per cent of GDP prior to the crisis were over twice the percentage level for other developing areas including even fast growing Asia. In 2006 and 2007 even the EECCA had net capital inflows greater than in any other world region except NMS+SEE.[153]

Nevertheless this reliance on external capital proved to be the most important underlying factor that caused the region to experience the economic crisis of 2007-2009 to a greater degree than any other region of the world economy. Not only was the region more dependent than elsewhere on capital inflows but the drop in capital inflows during the crisis was larger than elsewhere. While the private sector has been a large borrower of external financial resources, the public sectors of the energy-rich EECCA have been large loaners of financial resources primarily through their accumulation of international reserve (mainly US dollar and euro) assets. As a result the EiT without Turkey (EiT-T) overall have been net providers of goods and services to the rest of the world. Thus instead of the rest of the world providing the EiT-T with net real resources which would allow them to develop, the EiT-T have been providing real resources to the rest of the world. Thus in 2011 the EiT-T produced over $186.5 billion more than they consumed.

Figure 3.25
The net transfer of real resources by the EiT minus Turkey



Source: *World Economic Situation and Prospects 2012*, United Nations.
Note: In billions of US dollars.

[152] See, Robert C. Shelburne, Current Account Deficits in the EU New Member States: Causes and Consequences, *Intereconomics: Review of European Economic Policy*, March/April 2009, Vol. 44 (2), p. 90-95.
[153] Robert C. Shelburne, Financing Development in UNECE Emerging Markets, UNECE 2008 Annual Report, Geneva, pp. 13-23, 2008.

Capital flows to emerging /developing economies have been subject to a high degree of volatility over the last 40 years. The collapse of capital inflows to the European emerging economies in 2008-2009 had a number of strong similarities to a similar collapse in the capital inflows to East Asia in 1997-1998. Nine of the EECCA and SEE (Armenia, Belarus, Bosnia and Herzegovina, Georgia, Kyrgyzstan, Moldova, Serbia, Tajikistan, and Ukraine) and four of the NMS (Hungary, Latvia, Poland,[154] and Romania) were forced to turn to the IMF for some type of assistance during the 2008-2010 economic crisis.[155] These experiences suggest that, given the current design of the world financial system, an over-reliance on external capital flows to finance development is not a prudent development strategy due to the inherent volatility of global capital markets.[156] There is a need to limit excessive exposure to external capital markets and implement policies that will ensure that the private capital flows that do occur will promote long-run economic development.

Once source of external finance that has been both sizable and important for the ECA region, especially its poorer economies has been remittances. Remittance flows to developing countries were about $325 billion in 2010, an increase of 6 per cent over 2009 levels. Generally developing countries are increasingly aware of the potential for using remittances and diaspora wealth for increasing financial resources for development. Current trends for the ECA region are discussed in chapter II of this report.

Improving the Operation and Design of the International Financial System

Despite these concerns about the ability of the international financial system to continuously provide external finance, there have been several recent reforms in the design and operation of the international financial system that have made it slightly more "development friendly". Given the high volatility in private international capital flows and the large negative consequences during periods of reversals, the world needs a type of "lender of last resort" that can provide emergency funds to help replace private sector withdrawals. The IMF has primarily provided this service but its effectiveness has been limited because of limited resources. At the London G-20 meeting in April 2009 the resources of the IMF were quadrupled (including the SDR increases) and this should allow it to play an enhanced role in stabilizing the international financial system. The IMF had been highly criticized for the policies it had required (i.e., conditionality) for providing support for decades up to and including the Asian financial crisis. During the current crisis this conditionality was relaxed considerably (largely for the EiT) in order to minimize the economic downturn in the borrowing nations.[157] Most observers view this as a significant improvement in IMF operations and one that makes the use of IMF resources more likely and thus the international monetary system more stable. Most recently the IMF has suggested some support for the use of capital controls in order to reduce the boom/bust cycles or excessive currency volatility caused by volatile private sector capital flows. The IMF has also altered its quota allocations with additional reform likely. The MDG Declaration also proposed increased coherence and coordination between the UN agencies and the Bretton Woods

[154] Poland only requested a precautionary facility which was not used.

[155] The former Yugoslav Republic of Macedonia drew IMF resources in 2011 and Albania, Azerbaijan, and Turkey had outstanding loans from the IMF prior to the crisis.

[156] The EEE+NMS had been warned about the financial risks that were developing in the region several years before the current crisis but few policies to address these risks were implemented; for warnings see, UNECE, *Economic Survey of Europe*, 2005 No. 1, Geneva, 2005.

[157] This change in conditionality was largely the result of the IMF's own appraisal of its previous operations; IMF Independent Evaluation Office, *Structural Conditionality in IMF-Supported Programs*, Washington, DC, 2007.

Institutions; regular meetings between these have occurred since 1998. All of these changes in IMF governance, procedures and policy prescriptions are making the international financial system slightly more supportive of development. Various options for further reform of the international financial architecture have been proposed.[158]

The European Bank for Reconstruction and Development (EBRD) has assisted in financing 3,374 specific development projects in transition economies since its founding in 1991. The Bank provides loans and equity finance, guarantees, leasing facilities and trade finance; it also engages in policy dialogue and provides technical advice. The Bank invests only in projects that could not otherwise attract financing on similar terms and limits its investment to 35 per cent of the total project cost. During the current crisis the financial sectors in the EiT benefited considerably from the support of the EBRD and its current portfolio is about €35 billion. EBRD involvement in investment projects also contributes to the achievement of some MDG 7 goals as the organization requires that approved projects meet environmental standards. The European Investment Bank has also provided significant loans for specific projects especially in the NMS, South-Eastern Europe and the European EECCA. The Council of Europe Development Bank finances social projects primarily in the EU and South-Eastern Europe; in 2011 it approved 34 projects worth almost €2.1 billion. These projects are particularly relevant to MDG objectives and include such items as housing for low-income households, education, vocational training and job creation, construction of healthcare facilities, and environmental projects. The Eurasian Development Bank and the Asian Development Bank have financed major infrastructure investment projects in the EECCA, especially in Russia and Kazakhstan. Loans by these organizations contribute to the ability of both the public and the private sectors towards achieving the MDGs.

Given the potential risks of private sector capital inflows, other public sources of finance would be desirable for Emerging Europe and Central Asia. These funds could come from things such as a global carbon tax, a tax on financial or exchange market transactions, or on the exploitation of sea-bed resources. SDRs could be allocated based upon development needs instead of by IMF quotas. Currently, however, none of these proposals is under serious consideration and therefore none of these alternative sources of funding is likely by the MDG 2015 target date.

Global efforts are needed to reform capital markets to make them less prone to boom-bust cycles and to improve the assistance provided countries experiencing difficulties during crisis situations. The IMF should be encouraged to continue with its evaluation efforts on the necessary degree of conditionality it imposes for assisting countries in crisis situations. Employment creation and the provision of social services should be emphasized in designing IMF programs. The activities of regional development banks should be supported with increased funding.

Ensuring that Private Capital Flows Promote Development

Besides the level of capital inflows the structure of those inflows is also important. Generally it is viewed that foreign direct investment (FDI) contributes more towards economic development than inflows of portfolio equity or debt. This is because FDI is generally associated with inflows of technology and managerial talent and is less subject to volatility. As with capital flows generally, the ECE emerging economies were relatively successful in attracting FDI inflows. The stock of FDI inflows in the ECA increased by 736 per cent between 2000 and 2011

[158] See UNCTAD, Trade and Development Report 2009 (UNCTAD/TDR/2009).

from $183 billion to $1.5 trillion (see table 3.1). By subregion, the increase of 1,321 per cent was the greatest in Russia, followed by an increase of 1,232 per cent in SEE-6, 876 per cent in the EECCA-11, 630 per cent in Turkey and 515 per cent increase in the NMS. These increases are over twice as large as that recorded for the developing countries overall whose increase over this period was only 282 per cent. For all of the ECA, the percentage increase between 2000 and 2011 was the smallest in Kyrgyzstan whose FDI has yet to triple. The largest stock of FDI is in Russia ($457 billion), followed by Poland ($198 billion) and Turkey ($140 billion).[159] Although FDI has been rather substantial in the EECCA, the inflows have been largely associated with natural resource attraction. Increasing FDI in their manufacturing and services sectors could contribute significantly to making the EECCA more dynamic and diversified.[160] Although the increase in the stock of FDI in the NMS has been less than in the EiT, it has still been more rapid than for developing countries overall and as a share of these economies' output is quite high being in the range between 30 to 50 per cent of GDP.

The financial crisis has had a significant impact upon FDI inflows; not only did FDI decline by about half in 2009 from their peak levels in 2008 but FDI remained low in 2010 and only began increasing in 2011. As a result FDI inflows in 2011 still remained below 2008 in all of the sub-regions of the ECA; in 2011 inflows were down 29 per cent from 2008 levels. The largest declines in inflows were for SEE-6 (-47 per cent), NMS (-43 per cent), and Russia (-29 per cent) while Turkey (-19 per cent) and EECCA-11 (-2 per cent) had smaller declines. Despite these overall depressed levels, several economies have bounced back faster and had larger inflows in 2011 than in 2008; this included Albania, Azerbaijan, Belarus, Kyrgyzstan, Latvia, Poland, Turkmenistan, and Uzbekistan. Overall 2011 FDI inflows increased by 33 per cent in the ECA and 30 per cent in the EiT over 2010 levels; preliminary data suggest that FDI inflows are likely to increase further in 2012. The largest inflows in 2011 were in Russia ($53 billion), Turkey ($16 billion), Poland ($15 billion), and Kazakhstan ($13 billion). Of the EiT's total inflows of $108.0 billion in 2011, $69.8 billion was greenfield investment and $40.3 billion was the result of mergers and acquisitions. Greenfield investment was primarily in the manufacturing sector while mergers and acquisitions were primarily in the mining sector. The EU countries were the largest investors accounting for slightly less than half of total FDI in the EiT while the other EiT accounted for about a fifth of this investment. While a significant amount of state owned assets have been privatized over the last 20 years, in some economies there are still considerable assets that remain to be sold off. During the global crisis this process slowed down as financing and obtaining good prices were problems, but as the world recovery strengthens more EiT state assets will likely be privatized.[161] It is notable that in recent years China has been increasing its investment in the natural resource sectors in Central Asia; both in terms of exploration and development as well as the construction of pipelines from the region to China.

It should also be noted that EiT FDI outflows increased by 20 per cent in 2011 to $75.6 billion; this was the largest in history as it passed the previous peak of $63 billion in 2008. EiT outflows are thus 70 per cent of inflows. Russia was the largest source of these outflows ($67.3 billion) accounting for almost 90 per cent of the total; outflows from SEE-6 are quite low accounting for significantly less than one per cent of the EiT total.

[159] UNCTAD, World Investment Report, Geneva 2011.
[160] Supposedly, this is an area that WTO membership improves.
[161] For example, even in Croatia which is set to join the EU in 2013, the government has a majority share in over 60 companies and a minority share in 600 companies.

The reforms required to increase FDI inflows are primarily domestic as there are at this point no meaningful proposals under consideration as to how the global financial system might be altered to promote additional FDI. Creating a more inviting investment and business climate has been one of the major challenges facing the EiT since the beginning of the transition and remains an important issue for these economies. For example in Russia the price/earnings ratio of its stock market is almost half that of other comparable emerging markets reflecting nervousness on the part of global investors about exposure to that market. Nevertheless slow but incremental progress is being made as judged by such indicators as the EBRD transition score, the World Bank's Doing Business rankings, or the World Economic Forum (WEF) competitiveness index. Further required domestic reforms include strengthening legal systems and the rule of law, strengthening intellectual property rights, and easing investment requirements. Bilateral investment treaties have also been shown to have a positive impact on increasing FDI and may be able to substitute for weak domestic institutions.[162]

Table 3.4
FDI stocks and inflows in the ECA

	FDI Inward Stock			FDI Inflows				
	2000	2011	Per Cent Increase 2000 to 2011	2008	2009	2010	2011	Per Cent Change 2008 to 2011
SEE-6	5.7	75.7	1,232	12.7	8.3	4.0	6.7	-47
Turkey	19.2	140.3	630	19.5	8.4	9.0	15.9	-19
Russia	32.2	457.5	1,321	75.0	36.5	43.3	52.9	-29
EECCA-11	23.0	224.1	876	33.4	27.6	26.5	32.6	-2
EiT	80.1	897.6	1,021	140.5	80.8	82.8	108.0	-23
NMS	103.1	634.4	515	63.0	27.5	25.4	36.0	-43
ECA	183.2	1,532.0	736	203.5	108.3	108.2	144.0	-29

Source: World Investment Report 2011, UNCTAD.

Economic development is dependent on increasing investment and external private sector capital can provide an important additional source of finance for this domestic investment. However, inflows of speculative capital should be controlled while FDI is encouraged; but FDI should be minimized in the real estate sector.

Target 8.B: Address the special needs of the least developed countries.

and

Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly).

[162] Matthias Busse, Jens Königer, and Peter Nunnenkamp, FDI Promotion through Bilateral Investment Treaties: More than a Bit?, *Review of World Economics*, Vol. 146(1), April 2010, pp.147-177.

None of the ECE economies are part of the UN category of least developed countries but the poorest ECE economies are mostly landlocked economies so target 8.B and 8.C are considered together. There are 20 landlocked economies in the ECE region and possibly an additional one (Bosnia and Herzegovina) that is considered to be almost landlocked due to a very limited coastline.[163] Of these 12 are transition economies and nine of these (Armenia, Azerbaijan, Kazakhstan, The former Yugoslav Republic of Macedonia, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, and Uzbekistan) are considered to be UN landlocked developing countries. The three remaining landlocked EiT that are not considered UN landlocked developing countries include: Belarus, Bosnia and Herzegovina, and Serbia. Three NMS are landlocked, including the Czech Republic, Hungary and Slovakia.

Being a landlocked economy is considered to impose on a country an additional handicap as it limits an economy's access to world markets and the benefits that derive from that. Empirical analysis which controls for the other components of growth finds that being landlocked reduces economic growth.[164] In this regard, however, the experiences of the West European landlocked economies are of particular importance as they include some of the richest economies in the world.[165] Their experiences therefore suggest that any disadvantage of being landlocked can essentially be eliminated with well-designed regional trade agreements, trade facilitation procedures, regional transport networks, and national policies. Some of the transit-related problems of the landlocked economies in Central Asia are being addressed by the Almaty Programme of Action. This program has set out specific objectives for the landlocked economies, the transit countries, the donor community and the United Nations agencies. The programme assists both land-locked and transition countries in revising their regulatory frameworks to international conventions, establishing regional transport corridors, and modernizing existing infrastructure facilities, and improving the commercial orientation of the entire transport system. This includes rail, road, ports, inland waterways, pipelines, and air transport. The programme also establishes priorities for donors' official development assistance in terms of what types of projects to support and the criteria and procedures for evaluating them.

Regional initiatives that promote infrastructure development, reduce the cost of doing business, improve trade efficiency, and foster trade and economic cooperation are especially critical for landlocked and transit countries. Given externalities and public good characteristics of these programs they can especially benefit from external financial assistance, and regional cooperation.

Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.

Generally, the external debt levels of the EiT have been relatively normal and have not posed a significant problem. Most started the transition with limited external debt and slowly accumulated more over the 1990s. Between 2000 and 2008 debt levels as a percentage of GDP in most of the EiT were on a downward path. Of particular interest, the five most heavily indebted

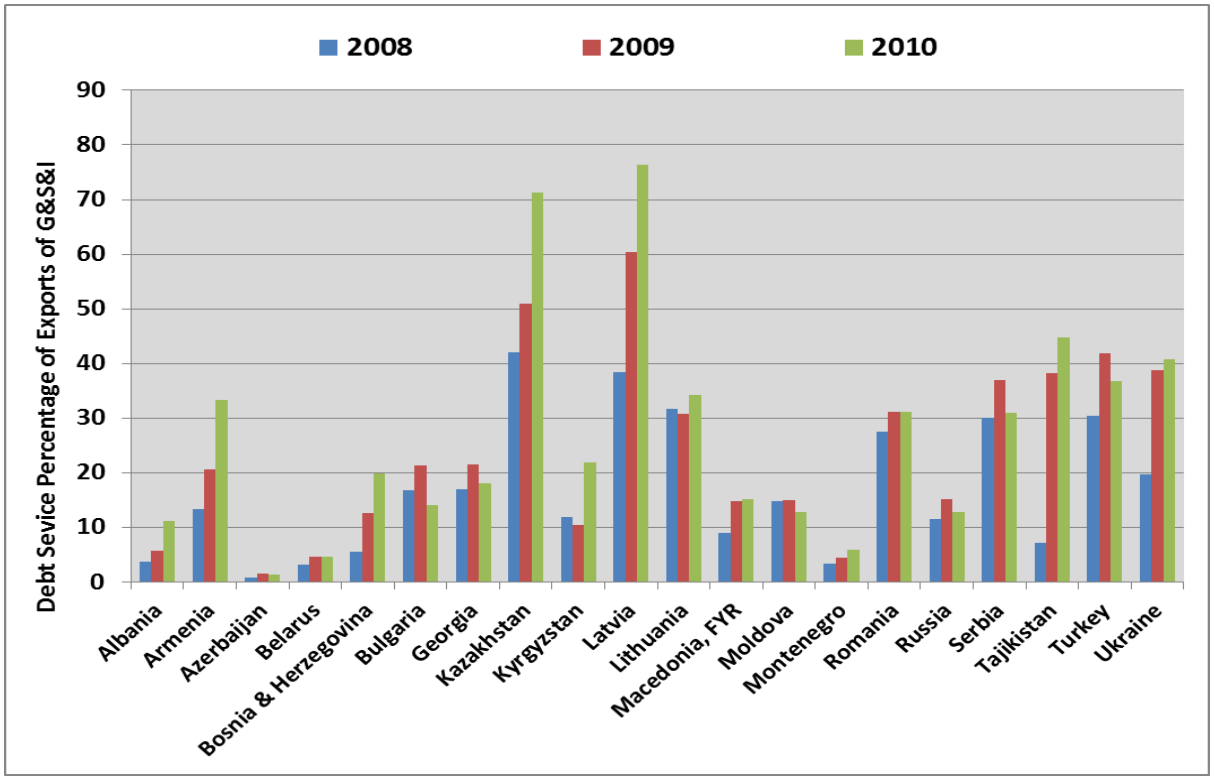
[163] Those with a coastline on the Caspian or Aral Sea are considered landlocked since access to that body of water does not give them direct access to world markets; however those with access to the Black Sea are not considered landlocked despite some limitations that might exist in terms of wider ocean access.

[164] Landis MacKellar, Andreas Wörgötter, and Julia Wörz, Economic Development Problems of Landlocked Countries, Vienna Institute for Advanced Studies, Transition Economies Series No. 14, 2000.

[165] The remaining UNECE landlocked economies include: Andorra, Austria, Liechtenstein, Luxembourg, San Marino, and Switzerland.

EiT (Georgia, Kyrgyzstan, Moldova, Serbia, and Tajikistan) had gross external debt that was more than 100 per cent of GDP in 2000, but the debt levels in all of these declined significantly by 2008. Since 2000 the level of public debt of the EiT had increased quite slowly or in many cases actually declined; most of the increase in external debt since 2000 was assumed by the private sector. However, due to the economic crisis the external debt of a number of the ECA has increased quite substantially as shown in annex table 23. Between 2008 and 2010 the external debt as a percentage of GDP doubled in Armenia and Belarus, and increased by 50 per cent in Romania and Ukraine. Many of the NMS increased their external debt ratios considerably during the five years prior to the crisis due to the large current account deficits they were incurring; a substantial proportion of this was private sector debt. Although the NMS debt was not viewed to be necessarily problematic in the long run, the need to refinance parts of this debt created a significant liquidity problem for some of these economies during the current crisis which required them to turn to the IMF for assistance. It is hoped that the deterioration in fiscal positions in the ECA associated with the financial crisis will not be allowed to reverse the longer-run progress that was being made on reducing debt levels. In addition to excessive public debt, countries should also implement policies which will limit the external indebtedness of the private sector as this can become problematic on its own and recent history has demonstrated that private debt has a way of turning into public debt.

Figure 3.26
Debt service as a per cent of exports of goods, services, and income



Source: World Bank Development Indicators database.

Given that external debt of these economies is mostly denominated in foreign exchange, interest and repayment must be in foreign exchange which must be earned primarily by exporting

goods and services and from income earned abroad such as through remittances.[166] Therefore a more relevant measure of the ability of countries to service their debt may be the debt to exports ratio instead of the debt to GDP ratio; or given that the interest rate of debt can vary significantly by country an even more relevant variable may be the debt service to exports ratio. Figure 3.26 provides data on this variable for 2008, 2009, and 2010 for a select group of ECA economies. Debt service payments were greater than 30 per cent of export revenues in 2010 for Armenia, Kazakhstan, Latvia, Lithuania, Romania, Serbia, Tajikistan, Turkey and Ukraine.

Initiatives to reduce the debt burden of developing countries such as the Heavily Indebted Poor Countries have made significant progress; Tajikistan has benefited from this programme. The external debt levels of Moldova and Kyrgyzstan had been close to thresholds established for the Heavily Indebted Poor Countries Initiative of the IMF and World Bank but neither country was found to be eligible under that program.

Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.

In order for the private sector to invest in the development of new drugs they must be able to sell them at a price that allows them to recoup the research and development costs. At the same time there are clearly moral issues involved when those in need of treatment are unable to obtain it because they lack the income to purchase it. As such there is a natural "conflict" at least in the short run between global health and intellectual property law. This conflict took on a decidedly international dimension with the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement in 1994 which required that all WTO members standardize their intellectual property law by the beginning of 2005. Concerns that implementation of this agreement might negatively impact global health led to the Doha Declaration that the UN least developed countries were not obligated to implement it until 2016. In addition the declaration also introduced a provision that developing countries with a public health emergency could use compulsory licensing to produce generics domestically. This issue has been of particular importance for the entire ECE region since almost all of world-wide drug development occurs in the advanced economies of the region and the EiT have had a particular need for a number of highly expensive drugs used to fight AIDS and tuberculosis. Russia and Ukraine are members of the Technological Network on HIV/AIDS which has as its objective self-sufficiency in the development and production of antiretroviral drugs.

The design of intellectual property rights should consider the need for firms to receive compensation to cover the costs of their research and development, but must also consider the humanitarian consequences of various pricing schemes and the need for ensuring adequate and affordable access to essential drugs. Further funding for initiatives such as the Global Fund are needed so that all those that need life-saving drugs can obtain them.

Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.

Analysis of the global information and communications technology (ICT) sector reveals that there is a significant digital divide which is largely explained by differences in per capita

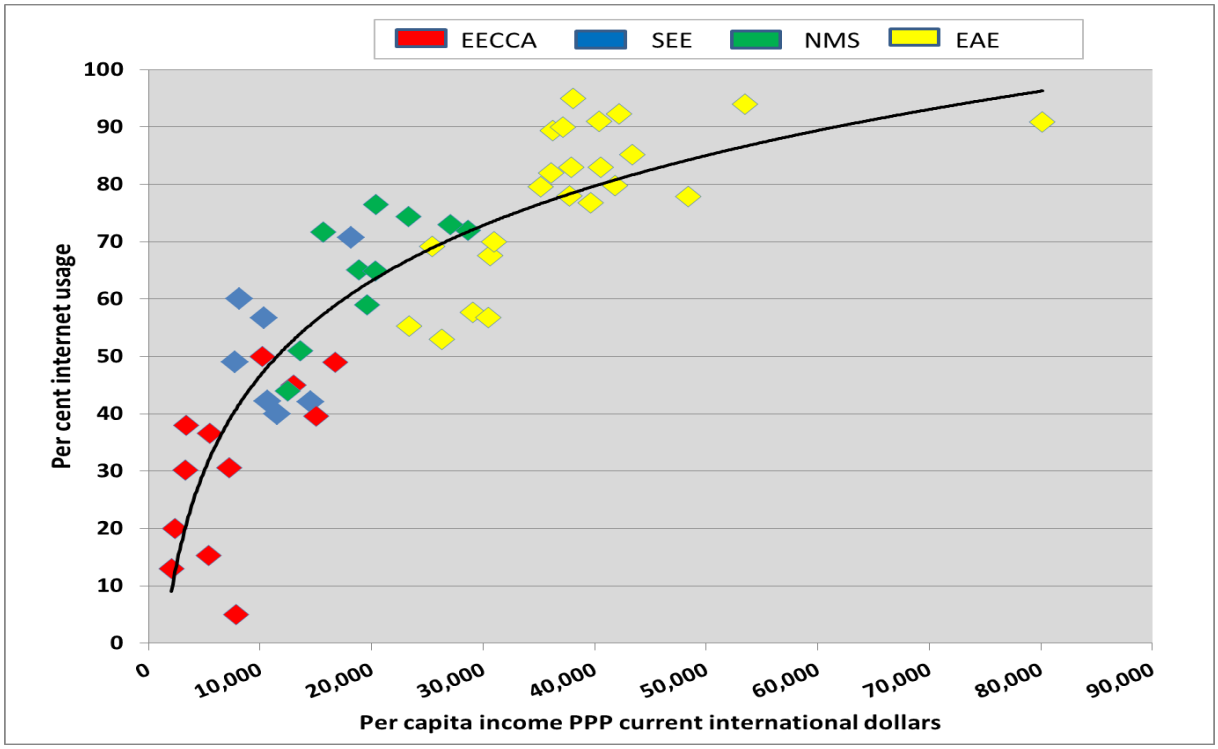
[166] Aid being another source of foreign exchange.

income; [167] this is true for the ECE economies as well.[168] Generally the middle income countries in the wider European region have digitalization scores somewhat higher than what would be expected based upon their per capita incomes. After controlling for per capita income, the factors that affect the level of digitalization appear to vary depending on the level of economic development. For middle income countries, improvements in the education system and the telecommunication infrastructure are important for increasing the diffusion of digital services. The digital divide has been gradually shrinking due to efforts undertaken by governments and civil society groups.

Several per capita measures are used to assess progress in this target including telephone lines and internet and computer use. Although data for these variables is somewhat limited in the poorer economies it has been improving in recent years. Internet usage is viewed as important as it provides individuals general access to information including educational material and job opportunities and can thereby prevent social exclusion. There has been a rather rapid increase in the number of internet users (annex table 24); in a majority of the EiT internet use doubled between 2005 and 2011. The rates of increase in the NMS are generally lower than in the EiT but their levels are much higher and are close to Western European levels. Currently internet usage in the NMS is in the 50 to 75 per cent range, in SEE it is in the 40 to 60 per cent range, in the European EECCA in the 25 to 50 per cent range, while it is generally below 20 per cent in the Central Asian EECCA. However, Turkmenistan's usage rate of only 5 per cent is particularly low (see box 3.x).

Figure 3.27

Per cent of population using the internet and national per capita income, 2011



Source: UNECE calculations.

[167] Margarita Billon, Fernando Lera-Lopez and Rocio Marco, Differences in Digitalization Levels: A Multivariate Analysis Studying the Global Digital Divide, *Review of World Economics*, Vol. 146 (1), April 2010, pp. 39-73.

[168] Larissa Kapitsa, *Towards a Knowledge-based Economy –Europe and Central Asia: Internet Development and Governance*, UNECE Discussion Paper No. 2008.1, Geneva, 2008.

In the NMS for which there is more detailed data, there had been a gender difference with men having higher usage rates than women but that difference has been declining and is almost non-existent for the younger age groups. In addition to internet availability there are other technologies such as personal computer use, voice and data mobile telephony and digital television for which there is a divide. However, the number of mobile cellular subscriptions per 100 inhabitants increased dramatically over the last decade in the Caucasus and Central Asia and the region now has more than the world average. The availability of ICT varies greatly within countries with those living in rural areas or the poor often not having access.

Significant impediments towards further reducing the digital divide is the legacy of state control over knowledge production and dissemination as well as state monopolies over ICT infrastructure. Increasingly the problem of limited physical access to the internet is being replaced by the issue of political access to it. Some of the EiT have laws limiting what web sites its populations can view; related is the issue as to how to protect children from harmful web sites. In July 2012 Russia passed a new law eliminating web sites devoted to child pornography, pedophilia, illegal drug use and suicide. The United Nations Human Right Council's 47 member states passed a resolution in 2012 upholding the principle of freedom of expression and information on the internet. The resolution also acknowledged the value of the internet as a driving force in accelerating progress towards development and called on all member states to facilitate and improve global access to it. This resolution reaffirmed a similar principle adopted by the U.N. International Telecommunication Union in 2003. Access to information is not only an important human right but is also a critical factor in spreading technologies that can increase economic growth. State control over knowledge production and its dissemination and government monopolies over ICT infrastructure hamper the development of digital technologies. The use of private-public partnerships offers a way of overcoming a limit on public financial resources. Provision of digital services in schools, libraries and community centers is a cost-effective approach that allows large numbers of people to get access to digital services.

Box 3.3: Capacity-building support on ICT policy and legal issues

Information and communication technologies (ICT) have been a key driver for enhanced competitiveness and sustainable development during the several decades. These technologies, if efficiently applied, and if supported by appropriate policies, have the potential to transform the economy, enabling innovation and productivity increases, as well as the society by increasing the public's access to information. Through these channels ICT can contribute significantly to reducing poverty and achieving the MDG goals. At the same time, their application gives rise to a variety of legal and regulatory challenges for policymakers.

Within the framework of the UN Special Programme for the Economies of Central Asia (SPECA), the UNECE's Economic Cooperation and Integration Division (CECI) has been actively supporting capacity-building for policymakers in the transition economies in their endeavor to reform existing legal frameworks in order to meet new legal challenges related to ICT. So far, CECI has organized high-level national and regional events on ICT policy and legal issues in Azerbaijan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. These capacity-building events allowed policymakers to better understand and address ICT challenges related to legal certainty, security, intellectual property rights, and protection and deterrence against ICT related crimes. CECI has produced a publication, *ICT Policy and Legal Issues for Central Asia – Guide for Policymakers* to supplement these efforts.

IV. THE ROLE OF METADATA IN THE TRACKING OF PROGRESS TOWARDS THE MDGS

Without any accompanying information, a number is just one or a combination of several digits. Data are meaningless without for example knowledge about what they represent, in what units and for which period. By describing and defining data, metadata turns numbers into actual meaningful information. Providing metadata alongside data is therefore indispensable. This information is vital to understanding and interpreting statistical data correctly. Data labels, definitions, descriptions of methodology, legends, source information, and footnotes are all examples of metadata. Data, and metadata, can be presented inside a text, in graphs or in tables of a publication or presentation. Whether it is on paper, in a digital format or on-line, data should be always accompanied by adequate metadata.

If we want to interpret and analyse statistics, such as in this publication, we need more than just basic information such as the definition and the unit of measurement. We have to know if it measures what we think it measures and need information on issues such as the reliability of the data and the method of computation. This is especially so if we want to make comparisons across time or between countries. If we can't judge whether a change is real or reflects just a random error of measurement or is due to bias in the data, then the information about its magnitude is not useful.

For MDGs, targets were set. Most of these are set in relative terms of change since 1990. For example, Target 1A under Goal 1: 'Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day', or Target 4A under Goal 4: 'Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate'. Even though many countries have adopted the global Targets as national ones, they were not set for individual countries but for regions. Data therefore has to be aggregated to (sub)regional levels. This means that in the case of tracking development progress in the MDG framework, we face additional challenges. Further, many MDG indicators use complex methodologies that can vary depending on the primary data sources that are available for a specific country. In several cases, there are also different data sources available. Data is also produced by several actors at the national and international levels and their estimates often differ in magnitude and sometimes even in the direction of change. The MDG indicators are furthermore used to channel funds and to develop or adjust policies. Users are often not specialists and the producers of the data are in general not involved in the interpretation of the data. This makes providing adequate metadata all the more important in the case of MDGs.

Taking into account the above, the Statistics Division of UNECE is maintaining a data repository with extended metadata and publishes all relevant metadata available from official National MDG Reports in its on-line regional MDG database.[169] However, in published official (and unofficial) data on MDGs, adequate metadata is often missing. To improve this, UNECE will publish a guidebook '*Making MDGs meaningful: Good practices in presenting metadata'* for interpreting development statistics. This handbook aims to highlight the importance of metadata and tries to contribute to the efforts to build capacity in producing and using MDG statistics and to provide valuable guidelines for producing and publishing metadata together with MDG indicators. Considering that official national and international

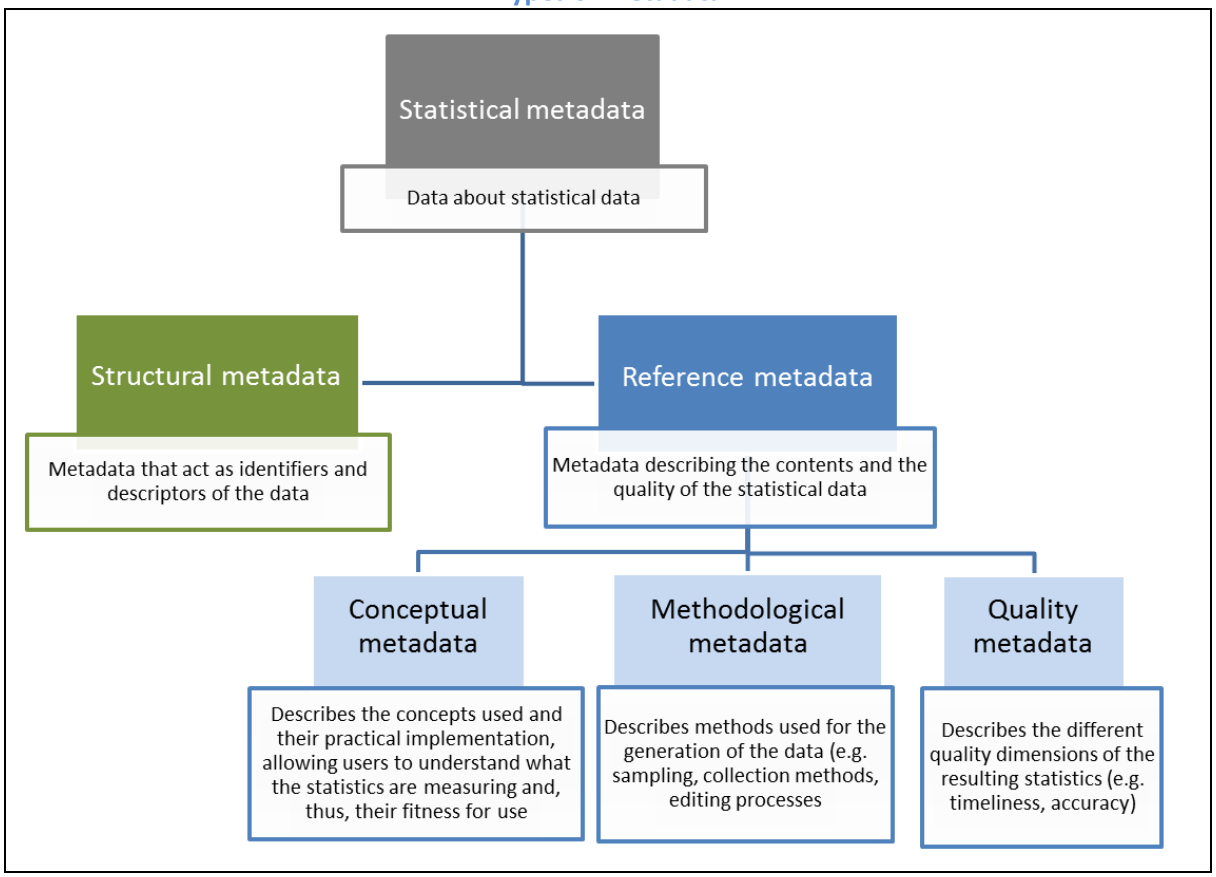
[169] http://w3.unece.org/pxweb/

estimates often differ, it will also contribute to reducing or explaining discrepancies between national and international data. This chapter only presents some of the issues discussed in the handbook that will be available later this year on-line from the UNECE. Please refer to the publication for more details.

Types of metadata

Two main types of metadata can be distinguished: structural metadata and reference metadata.[170] The first identifies and describes the data so that it can be identified and retrieved. For example, structural metadata provide names of columns or dimensions of database cubes. Reference metadata describe the contents and quality of the statistical data and are most relevant in the context of producing, publishing and using MDG data. There are three types of reference metadata: *conceptual metadata*, describing the concepts being measured; *methodological metadata*, describing the methods used to generate the data, such as sampling and collection methods; and finally, *quality metadata*, describing the quality dimensions of the data, such as timeliness and accuracy.

Figure 4.1
Types of metadata



Source: SDMX, 2009. *Content-Oriented Guidelines, Annex 4: Metadata Common Vocabulary Metadata Common Vocabulary.*

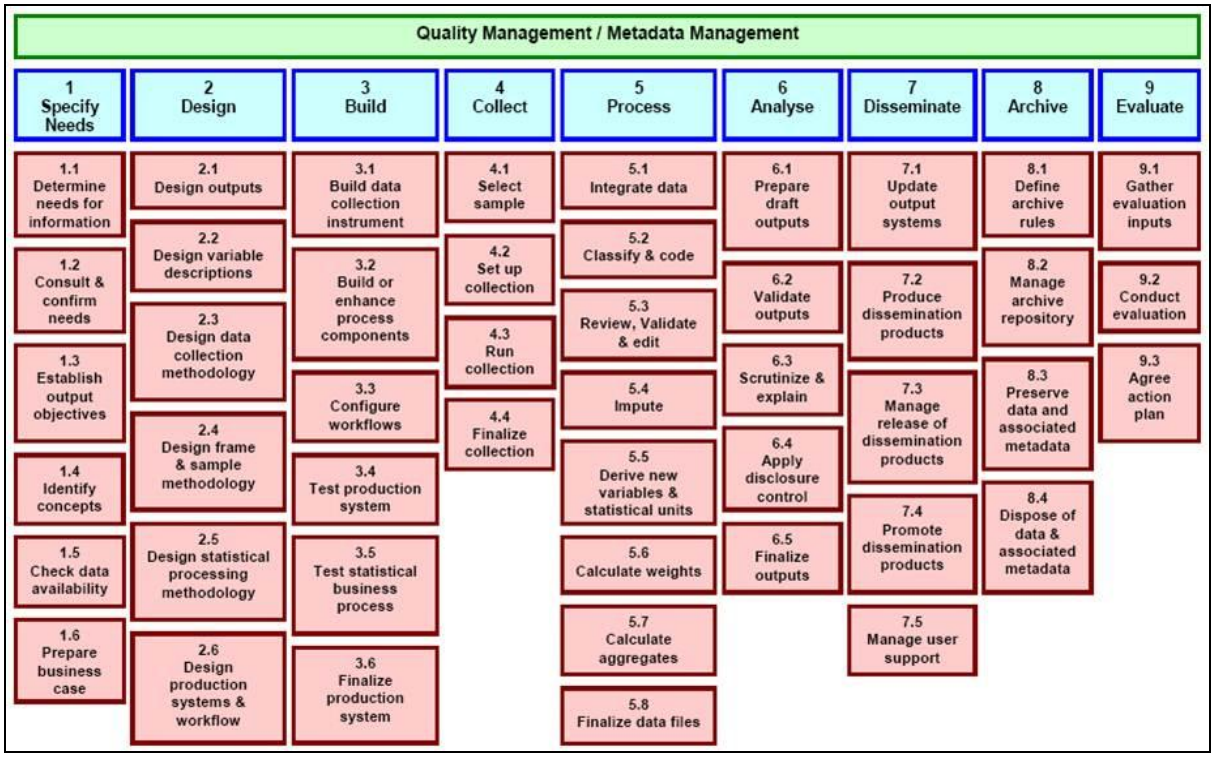
[170] SDMX (2009) SDMX Content-Oriented Guidelines Annex 1: Cross Domain Concepts. Available at http://sdmx.org/wp-content/uploads/2009/01/04_sdmx_cog_annex_4_mcv_2009.pdf

Often the metadata provided is restricted to the name or broad definition of the indicator presented, the year to which the data refer, the units in which they are expressed and source. It is important to note that metadata should provide more information that makes it possible to understand what the statistics are measuring. Issues such as the fitness for use and the accuracy of the data have to be addressed. Metadata should place data into a context and help to judge the comparability and reliability of the data.

Producing and managing metadata

At the minimum, metadata has to proceed with the data in each step in the process of producing statistical data. The Generic Statistical Business Process Model (GSBPM) is an ideal framework as metadata is produced and used at all stages of the statistical production process. As the schematic diagram of the Model (figure 4.2) demonstrates, producing statistics involves a number of generic steps or processes, regardless of subject matter. At each of these steps, metadata are created and re-used to drive, inform and monitor the production process.

Figure 4.2
Generic Statistical Business Process Model



Source: UNECE, 2009. *Generic Statistical Business Process Model (GSBPM).*

It is essential to capture the metadata, as soon as it is available, at the source. Ideally, metadata is collected, managed and produced in an integrated system that combines the structural and reference metadata. All persons across the organization should have access to this information which should be stored in one single source. When the data has to be published, relevant information can then be easily retrieved. There are many types of metadata and which of them should be presented depends on the context for which the empirical data is used. To aid in deciding which information should be provided with the data,

it is preferable that the system also contains information on the relevance and importance of the data.

To face common challenges in managing statistical information, countries and international organizations have collaborated to develop standards, guidelines and tools. In the ECE region, collaborative efforts in this area has been facilitated through the working group on Statistical Metadata – known as METIS – since the 1980's. The work and strategic direction of this group is managed by the High-Level Group on Business Architecture for Statistics (HLG-BAS), under the Conference of European Statisticians (CES). This group has developed the Common Metadata Framework, which provides a portal to the information related to managing statistical metadata throughout the statistical production process.

Several tools for managing metadata have been developed by the CES. There are also some tools available for disseminating metadata. Additionally, there have been significant efforts to develop shared metadata standards and models. Examples of the latter are SDMX and DDI. More information on these tools is available from the forthcoming UNECE handbook mentioned above.

Presenting metadata

Statistics provide essential information to measure progress in society, the economy and the environment. It is important that they are communicated clearly and succinctly so a wide range of audiences can understand and use the valuable information provided. Exactly what metadata has to be presented and in what shape and at which location depends not only on the data and its characteristics. Depending on the type of document and the audience that is targeted, the detail, format and location might differ. For example, reports on progress towards MDGs tend to be aimed at a broad audience of users not necessarily familiar with statistics. Metadata are often limited to a minimum of detail so as not to overwhelm or confuse the user with too much information. However, this approach risks disconnecting data with the information needed to interpret it correctly. A common solution to this dilemma is to include metadata in an annex to the report, or provide references and links to explanatory materials.

A guiding principle for publishing data is that tables, charts and maps should contain sufficient metadata so that they can "stand alone", meaning readers can understand what is being presented without having to read the supporting text unless they are clearly directed to do so. Users are much more likely to absorb and apply the findings correctly if all the information needed to interpret the data can be understood at a glance.

Sufficient metadata would include:

- **A clear title** that describes the data series, population, coverage and reference period
- **Labels** to describe the data, such as variable names and units of measurement, using words that can be easily understood
- **Footnotes** that include information needed to interpret the data accurately, such as definitions, excluded populations and other exceptions

- **Source of the data**, such as the collection method, the organization that conducted it and the dates of collection

It is helpful to think of the different levels of detail when presenting metadata. There is some information that must be presented alongside the data, such as titles describing the data in tables, charts or maps, units of measurement and footnotes on breaks in series. More detailed information, such as definitions or guides on methodology, may be provided in appendices or in a separate publication.

Metadata can be divided into four levels of detail:

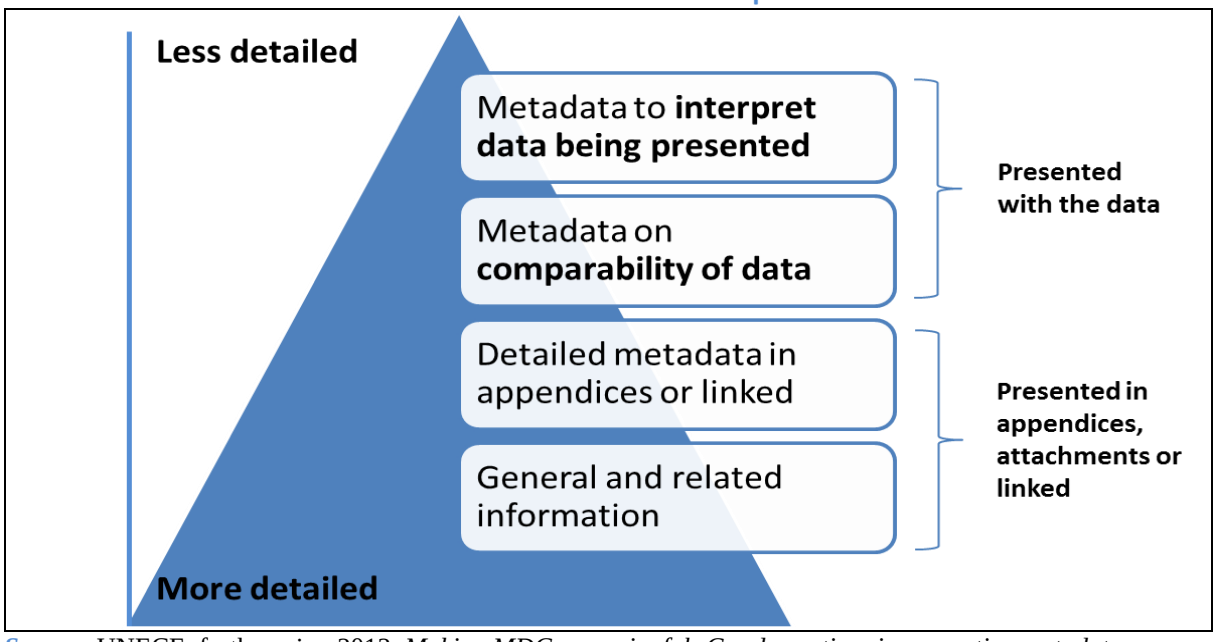
1. Metadata needed to interpret the data presented in a table, graph or text
   - Title, units, reference period, etc.
   - Important information about comparability, e.g. break in series/change in definition of data source that significantly influences the comparability.

2. Metadata needed for comparability with other data of the same indicator (from other countries or other data from the country itself that is not shown) or needed for the interpretation of the data in wider context. This also refers to the information regarding the reliability of the data, for example where reference periods of geographical areas differ for particular data values.

3. More detailed metadata that is relevant but that does not have an influence in the interpretation or the comparability of the data.

4. Other general information related to the data series being presented.

Figure 4.3
Different levels of detail in metadata presentations



Source: UNECE, forthcoming 2012, *Making MDGs meaningful: Good practices in presenting metadata*.

Distinguishing between each level of metadata and whether it should be presented alongside the data or in appendices and other publications is a subjective decision. Much will depend on the type of data being presented and the target audience(s). The aim should be to aid understanding, prevent misuse but not overwhelm users with details.

The amount of detail may increase as the level of metadata deepens, although as the information becomes more detailed it would likely become more general in nature. For example, level 1 metadata would relate specifically to the data values being presented, whereas level 4 metadata may related generally to all data in that series, such as sampling information or collection methods.

Internet and associated technologies pose challenges but they have also increased tremendously the possibilities for disseminating and presenting data and to provide access to metadata at all of the levels described above either directly with the data or through links.

Metadata for the tracking of development progress

As described at the start of this chapter, comparing MDG indicators in time and between countries is an integral part of the MDG framework. Demands for metadata are therefore particularly high. This becomes apparent, for example, when discrepancies between different estimates exist. Metadata should explain the reasons for this. The metadata provided in national and international reporting on MDGs is however often insufficient. The information needed to understand the data or that gives an indication of the quality and comparability of the data is often missing, incomplete or incorrect.

MDG-related data comes from numerous sources and is often compiled into reports by non-statisticians, who may be unfamiliar with standards for data and metadata presentation. The National Statistical Office or other producers and specialists of the data being presented, were in many cases not involved in the production of national MDG reports. Because of this, sometimes even the most basic metadata was not provided, leading to confusion and erroneous conclusions. Furthermore, the demands for development related data are high, but national coordination systems in developing countries are often weak, leading to multiple and inconsistent sources for the same indicators, and a lack of adequate metadata to explain the discrepancies.

In the previous section we have learned that determining the metadata requirements for MDG indicators can be difficult. Guidelines on producing MDG estimates are provided by the Inter-Agency Expert Group on MDG Indicators (IAEG-MDG).[171] The IAEG-MDG first published a comprehensive handbook on producing MDG estimates in 2003. Entitled *Indicators for Monitoring the Millennium Development Goals--Definitions, Rationale, Concepts and Sources* (United Nations, 2003), this handbook is currently under revision to incorporate new MDG indicators that were introduced in 2008. Although it does not explicitly

[171] Coordinated by the United Nations Statistics Division (UNSD), the IAEG-MDG comprises representatives of international agencies responsible for collating and producing reports on national progress towards MDG indicators. Members include UNICEF, UNFPA, WHO, ILO, World Bank, ITU, UNDP, UN Women, OECD, UNESCO, and United Nations Regional Commissions. Refer to http://mdgs.un.org/unsd/mdg/Host.aspx?Content=IAEG.htm for more details.

prescribe how metadata should be presented with MDG-related data values, this handbook does provide important guidance to countries on the types of metadata that are most relevant. Recommendations on metadata presentation for MDG-related data can be further guided by the dissemination practices of agencies responsible for reporting on MDG indicators.

Metadata standards should play an important role in recommending what information should be presented to describe MDG-related data. Being focused on dissemination, SDMX – the international standard for data and metadata exchange – is particularly relevant in this regard. For many countries in the ECE region, the Euro-SDMX Metadata Standard (ESMS) is the emerging standard for presenting metadata. There must be flexibility in the presentation of metadata so that statistical products have the level of detail appropriate for the target audience(s).

Based on metadata standards and the use of terms that are consistent with SDMX and ESMS, the forthcoming UNECE report on MDGs and metadata recommends three levels of metadata:

- Mandatory metadata that is always required;
- Conditional metadata that is required under certain specified conditions;
- Optional metadata that is permitted but not required.

Mandatory metadata are the metadata elements that should always accompany data presented in tables, charts and maps in MDG reports, online databases, or other formats. It refers to the title describing the data being presented. This includes the statistical unit, the reference area, the reference period and the unit of measure. Further, the data provider and the statistical concepts and definitions are mandatory metadata.

Conditional metadata are related to the reliability and comparability of the data. This can entail estimates from other primary data sources, comparisons across time, when comparing between countries or a combination. It further refers to symbols and abbreviations used in the presentation of the data.

Optional metadata refers to the range of other information that will be helpful in guiding the users in their interpretation and use of MDG-related data. This metadata could be provided in an annex or special section/page of the MDG product. Where it is not practical to include this level of detail in the data product itself, links and references to where the information can be found should be provided. It relates to more details about the primary data source and indications of the accuracy and reliability of the data. Contact information and references to other publications that elaborate on the indicator or documents related to the primary data collection of the data being used are optional metadata too.

In all cases, metadata should be clear and easy to understand by a broad audience, with technical terms either avoided or explained. Information on the limitations and reliability of data, such as sampling errors and non-sampling errors, should be provided in a language that is understandable to non-specialists.[172] Guidance on the interpretation of the data and metadata is also needed.

[172] Organisation for Economic Co-operation and Development (OECD), 2007, *Data and Metadata Reporting and Presentation Handbook*.

Metadata matters: Examples for MDG indicators

The metadata recommended above are applicable to any data. Comparability is important for all data but especially for MDG data. Improvement over time is at the core of the MDG Goals and Targets. Changes in definitions, methods and primary data sources have to be covered by metadata. International comparability is important for MDG-related data so that it is essential to specify deviations from the definition and methodology recommended by United Nations agencies. The performance of a country can only be judged in relation with improvements in other countries. Comparability is therefore also important when only evaluating progress in one country.

MDG indicators are based on different primary data sources and they are in general compiled by different organizations in the national statistical system. As becomes clear from the Generic Statistical Business Process Model, within these agencies several departments and persons work on the production of the data. Ideally, at each step in the process the competent specialist has recorded the metadata and indicated the relevance of the information. If this is not available, identifying the issues associated with estimating each MDG indicator is a good guide to determining the type of metadata that is relevant to correct interpretation. For example, the issues highlighted in the 'Comments and Limitations' section of the United Nations MDG Handbook (2003) point to common barriers to comparability where more detailed metadata would be useful.

If we want to interpret or compare the data, we need information on the method used and the quality of the primary data source. After it has been determined what metadata needs to be provided, the location has to be decided upon. Which information is needed depends on the situation, for example the type of data being presented, the type of publication, and the audience it aims at. In general, the less reliable the data, the more metadata one would expect and the more expert the audience, the more details would be provided in the publication itself. If a publication aims at a more general audience, essential metadata still has to be provided and users should be educated about issues with the data rather than hiding them. By adding references to more detailed metadata the users can be stimulated to further readings.

Below two indicators issues with metadata will be discussed in more detail. In several National MDG reports, basic Mandatory Metadata such as statistical units, the unit of measurement and the source or data provider is missing. The concentration here is on the reference period, statistical concepts and definitions and on the Conditional Metadata such as methodology, reference period and the primary data sources. These types of metadata are most relevant for data on MDG indicators and it is where most issues arise. The focus is on describing problems with the data in order to explain why metadata is important. The examples are not exhaustive but give an overview of some major and minor issues.

Indicator 1.1: Population below $1 (PPP) per day

One of the official international MDG indicators for measuring progress towards theTarget 1.A (Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day) of Goal 1 'Eradicate extreme poverty and hunger', is indicator 1.1, 'the proportion of population below $1 (PPP) per day'. The $1.25 a day poverty line measured in 2005 prices has replaced recently the $1.08 a day poverty line measured in 1993 prices that

had replaced earlier the $1 dollar poverty line. This change in exact definition and in the base year for the purchasing power parity (PPP) exemplifies the importance of providing adequate metadata. Definitions might also change in the future and metadata should cover any issues that might arise if this is the case. Although detailed information on how exactly the conversion to PPP was made would normally not be expected in a National MDG report, a reference to where such information is available is important if we would like to assess the comparability of poverty levels between countries.

Since the $1 (or $1.08 or $1.25) poverty line is only relevant for the least developed countries, it is not used in most countries in the ECE region. Instead various national poverty lines have been used. There is a wide range of national poverty lines and equally, a wide range of terms used for the same concept or the same term being used for different concepts. In some MDG reports terms such as 'relative poverty line', 'absolute poverty line', 'severe poverty line' or 'extreme poverty line' are used without any further specification about the exact definitions. Sometimes this information is given but hidden in the text and not with a clear reference or alongside the data. If no information is given on the reference year for a conversion of the poverty line in PPP, we do not know if national poverty data are comparable with data from other countries. We neither know if the data points presented in the time-series are all converted to the prices of the same base year. In some cases such a conversion has not been done or mentioned.

If other types of poverty lines are being used, we need the relevant specific information. A broad definition alone is not sufficient. For example, in case of a poverty line based on a food basket that represents a certain amount of energy, the Kcal value of the basket should be provided. The exact content can be included in the appendix or be covered with a reference to the detailed information. If the poverty line is based on basic needs, we need to know what is included and if changes were made to reflect the changes in needs and goods and services available at the time when the survey was held.

The percentage of people living below the poverty line is calculated using either per capita consumption or income data. It can be estimated from survey data and from national accounts. Each approach has its own issues and influences the comparability and accuracy of the data. Metadata thus has to clarify these issues. Again, detailed information on sample sizes of for example Household Budget Surveys, information on what is exactly measured as income or consumption and which weights are used for family members in the conversion from household income to individual income do not have to be provided directly with the data. However, it should be available either as an appendix or a clear reference to where these metadata can be found.

Nearly all estimates for poverty lines are based on Household Budget Surveys as the primary data source. The quality of such surveys differs widely. What is exactly included and how well non-market consumption or income is measured varies from survey to survey, even within the same country. Although survey methods have improved and become more standardized, differences in questionnaires and survey methods still exist and influence the reliability and comparability of the data. It is therefore important to have access to such information through references. Changes might even be so significant that these should be included as metadata in the document itself. Because such details are in general only known to the specialist involved at each step in the production process, it is essential that the

metadata is produced at each stage by the specialist and that from then onward it becomes an essential part of the data.

Figure 4.4 provides an example taken from a National MDG Report. Definitions are not clearly stated and the same name is used for indicators with different values for the same year. Because adequate metadata is missing, it is not clear whether the figures are wrong or whether they refer to different concepts. Although some basic information is given, it is incomplete and we cannot draw further conclusions. We neither know whether the data presented is reliable and/or comparable over time.

Figure 4.4
Example of missing metadata

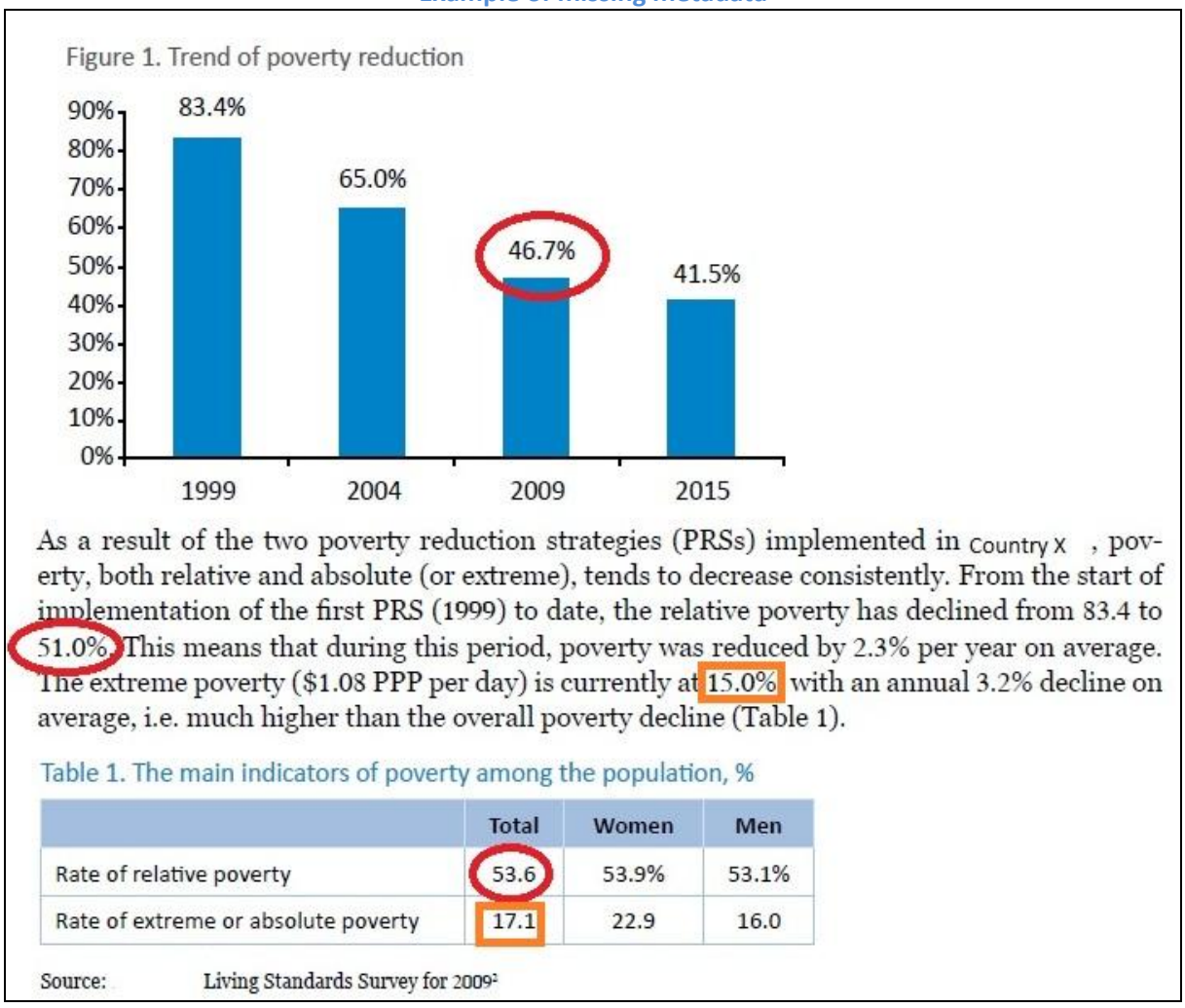


Figure 4.5 illustrates how important it is to include metadata in a National MDG Report. Details about definitions, methods and primary data sources should be given in the terms understandable to non-expert users so that they can understand important issues. Exact methods and further details about the primary data source can be provided in an appendix or through a reference.

Figure 4.5
Metadata in the National MDG Report of the Kyrgyz Republic

Box 2. How the poverty level is measured in the Kyrgyz Republic

The measurement of poverty in the Kyrgyz Republic is performed by the National Statistical Committee, which uses an objective approach based on the assessment of citizens' incomes, expenditures, and consumption. The basic source of information is the sample budget survey of 5,016 households, selected through representative sampling methods. The level of poverty in the Kyrgyz Republic is assessed in terms of the absolute poverty line, which is calculated on the basis actual consumption of goods and services by households.

In defining the cost of the food basket, NSC uses specific weights of food products. This method presumes that the consumption structures of families with average incomes (the 3rd–5th deciles) are defined, and that the expert evaluates the cost of a food basket that provides the agreed amount of food energy (2,100 kcal). The NSC uses the cost of the food basket as the extreme poverty line.

Regarding non-food items and services, in order to avoid arbitrary judgments on consumption norms for clothing, housing, and transport, the experts use the results of the household survey data. They calculate the share of expenditures on non-food items and services in the total expenditures for the basic household group, whose expenditures on food items are close to the extreme poverty line. In view of the fact that consumption of food products among these basic households is close to the physiological minimum, it is assumed that all non-food expenditures of such households are absolutely necessary.

The poverty line in the Kyrgyz Republic was first defined on the basis of the results of the sample household survey in 1996. In 2000, it was calculated based on the results of the household budget survey. In 2003, it was calculated based on the integrated survey of household budgets and workforce. Since then, the poverty line has been annually adjusted based on the Consumer Price Index.

	2000	2001	2002	2003	2004	2005	2006	2007
General poverty line, KGS per month	543.75	581.25	593.46	727.67	757.50	800.40	860.44	963.14
Extreme poverty line, KGS per month	362.33	387.33	395.47	457.49	476.22	509.56	557.97	640.10

Source: National Statistical Committee of the Kyrgyz Republic

Source: Administration of the President of the Kyrgyz Republic and the UN system in Kyrgyzstan, 2009. *The second periodic progress report on the Millennium Development Goals in the Kyrgyz Republic*.

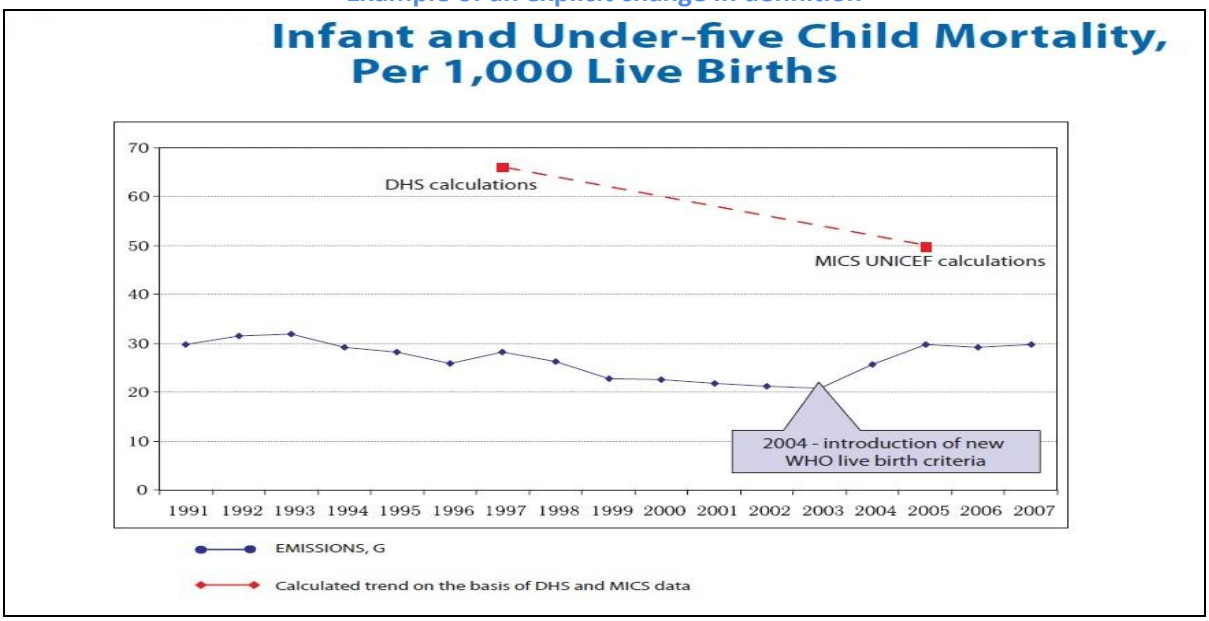
Indicator 4.1: Under-five mortality rate

Goal 4 'Reduce child mortality' has as a Target 'Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate'. The main indicator for measuring progress towards this goal, the under-five mortality rate, entails many issues that should be covered by metadata. There are for example several definitions and concepts in use for under-five mortality. Methods to calculate the indicator differ and estimates often do not refer to a single calendar year. There are several primary data sources with their own specific issues. Unfortunately, metadata covering these issues for this indicator are largely absent in official MDG reporting.

In general, only live births and deaths among live births are considered. The exact criteria for a life birth can differ and have changed over time in most countries. The international recommended definition of a live birth is 'the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life—such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles—whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.' However, several countries use a minimum period of gestation ranging from 20 to 28 weeks. Often additional weight and length criteria exist and sometimes only children surviving at least a certain time period after birth are included. For example, the definition used in the former Soviet Union excluded pregnancies that terminate at less than 28 weeks of gestation, and newborns weighing less than 1000 grams at the time of birth, shorter than 35 cm, or alive for less than seven days. This entails significant differences with the recommended definition. If the official internationally recommended definition is not

used, it should be noted explicitly in the metadata. But also if all data is based on the recommended definition, in order to be clear to users and to prevent confusion when the recommendation changes, it should be mentioned either with the data or in the appendix. No good example could be found in official National MDG reports for this indicator in the ECE region but some reports mentioned that the definition was changed (refer to figure 4.6).[173]

Figure 4.6
Example of an explicit change in definition



Source: UNDP Kyrgyzstan, 2010. *The Kyrgyz Republic. The second progress report on the Millennium Development Goals. Second edition revised and amended*. Bishkek.

Estimates of under-five mortality can be based on cohorts and on synthetic cohorts using life table techniques. The indicator can be a conditional probability, an estimation of an average rate or a real (hazard) rate that measures instantaneous risks. In case of synthetic cohorts, births in a certain period and data from different cohorts from the same period are used and there is no relation between births and technically the results are ratios rather than rates. Some countries seem simply to divide the number of deaths under five years of age in a certain calendar year by the number of life births in the same year. Surveys use questions on the birth history of women. Direct as well as indirect methods exist to estimate under-five mortality from retrospective survey data. Especially if the second method is used, it should be mentioned. Details about the life table used in this method can be provided in an appendix or through a reference. Unfortunately, metadata related to these issues are largely missing and users can only guess at the definition and method used.

The two main types of primary data sources available for estimating under-five mortality are civil registration systems of births and deaths and special household surveys (for example, Demographic and Health Surveys and MICS surveys). Each type and each individual source has its own issues. The reliability of surveys can among other things, suffer from a small sample size, recall bias by the respondents and evasion of sensitive questions by

[173] In the metadata provided with the MDG indicator data on the website of the National Statistical Committee of Kyrgyzstan, the definition in use before 2004 was clearly specified (Russian only).

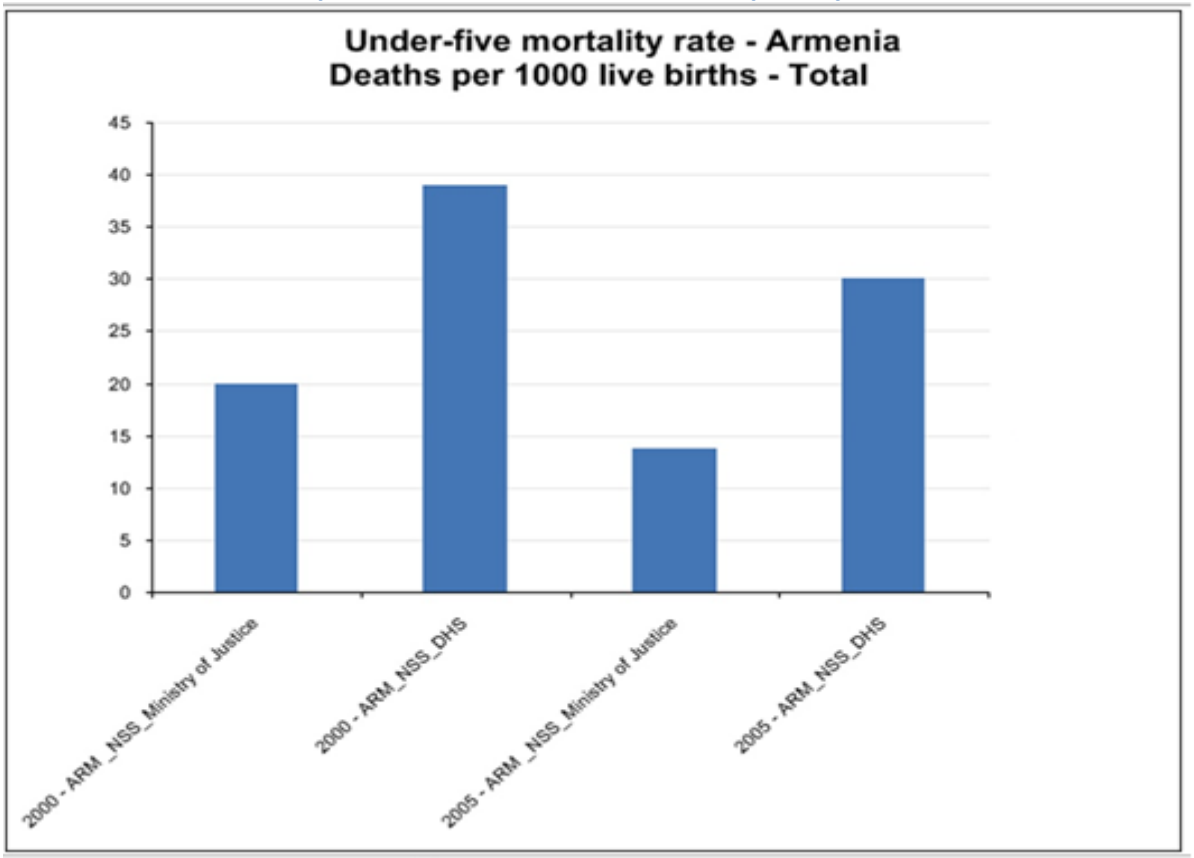
interviewers in surveys. Civil registration systems often suffer from an undercount of births and deaths, especially if the death occurs in the first days of life. Information on the primary sources and reliability of the data is therefore important. Some countries address uncertainty by showing estimates for the same period based on different primary data sources and by giving information on studies about the reliability of the primary sources (refer to figures 4.7 and 4.8 for examples).

Figure 4.7
Example of estimates from different primary data sources

Child mortality. As can be seen in Figures 1-4 below, Tajikistan's child mortality rates are in line with international norms for countries of comparable per capita income. The 2000 UNICEF MICS estimated the infant mortality rate at 89.0 deaths per 1000 live births – the highest in the former Soviet Union. The UNICEF SOWC estimated an under-five mortality rate 118 deaths per 1000 live births in the 2003. The most recent official figure, 13.5 in 2003 according to the Ministry of Health, is substantially lower and almost certainly underestimates the true scale of infant mortality rate in the country. Key risks to child health include low quality and inaccessibil-

Source: MDG Need Assessment UNDP Tajikistan, 2005. *Investing in sustainable development: Millennium Development Goals needs assessment. Full Report Tajikistan*. Dushanbe.

Figure 4.8
Example of estimates based on different primary sources



Source: Armenia National Statistical Service, *2012*. Armdeveinfo. Available at: http://www.armdevinfo.am/ last accessed at 20 July 2012.

Retrospective data obtained from surveys uses the information on deaths for the years prior to the survey (or to a certain reference data). In order to increase the number of cases, data is grouped together. In case of Demographic and Health Surveys and MICS surveys it is common practice to use the five year periods. In such a case infant and child mortality rates refer to the five years (and ten to five years) before the survey. If the survey was held between 1 and 20 November 2010, the exact reference period is therefore 1 November 2005 to 20 November 2010. Considering the uncertainty of survey data and the fact that respondents were questioned about past events, a reference to 2005-2010 would be the minimum information one would expect. Likewise, in case of a line graph the mid-year of the period would be used and not the year of the survey (and a footnote with further details). Again, exact details can be specified in the appendix or through a reference.

From the examples above it is clear that the producers of reports and their users have to be aware of all of these and other issues. In order to assess whether statistically significant progress has been made or to make a meaningful comparison of the situation between countries, such information is essential. Unfortunately, good examples are scarce and bad ones abound. By preparing a handbook on metadata and MDGs and maintaining a metadata repository and including all relevant metadata that is made available from National MDG Reports in the on-line regional MDG database, UNECE hopes to improve this situation.

V. DEMOGRAPHIC PRESSURES AND THE SUSTAINABILITY OF SOCIAL SECURITY IN EUROPE AND CENTRAL ASIA

Introduction

Social security provides the elderly in ECE economies with the principal source of income that enables them to escape poverty and lead productive lives. However, a number of studies indicate that population ageing poses a serious threat to the financial sustainability of public pension and health systems in EU countries, including the new member states.[174] But how serious are the long-term effects of population ageing in the emerging economies of Eastern and South-Eastern Europe, the Caucasus and Central Asia? To answer this question, this chapter considers some employment and fiscal implications of ageing in these countries.

The 2010 revision of the UN *World Population Prospects* (UN, 2011) implies that all countries of Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE) will experience population ageing over the period 2010-2050. The ageing process will be associated with rising dependency ratios as the share of the working-age groups in the total population shrinks. The combination of declining fertility and increasing longevity is bound to have an adverse impact on the effective labor supply, threatening to undermine the long-term sustainability of public pension and health systems.

In order to examine systematically the employment and fiscal implications of ageing in the countries investigated, we use a comparable framework. We propose a simple but robust model that can be applied to the available demographic and economic data and projections for population, employment and output trends. Model simulations confirm the severity of the consequences of rapid population ageing for long-term employment and fiscal sustainability of public pension and healthcare systems in a number of countries of the region. This implies the need for policy reforms with a particular focus on labor markets and public pension and healthcare systems.

Population trends

The population projections used in this chapter were taken from the 2010 revision of the UN World Population Prospects (UN, 2011). The future population of each country is projected starting with an estimated population for 1 July 2010. The UN population projections are based on assumptions regarding future trends in fertility, mortality and international migration. A number of projection variants are produced, based on medium, high and low fertility trends and alternative immigration flows. The medium variant used in our model simulations is based on the medium fertility assumption and normal migration assumption that projects international migration on the basis of past international migration estimates and consideration of the policy stance of each country with regard to future international migration flows.[175]

[174] See e.g. EU (2011).
[175] For more details on the UN population projections see Raftery et al (2009).

The medium variant implies that all EECCA and SEE countries will experience population ageing over the period 2000-2050 (table 5.1). In all of them the ageing process will be associated with rising old-age dependency expressed as the ratio of the population aged 65+ to working-age population (15-64 years).[176] The rising dependency ratio reflects mainly the impact of increasing longevity and gradual convergence of the fertility rate to a long-run equilibrium of 1.85 children per woman. The equilibrium value is based on the trends observed in advanced industrial economies and is lower than the replacement fertility rate that amounts to 2.1 children per woman in the ECE region.

Table 5.1
Median age in EECCA and SEE countries, 2000 - 2050

Country	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Eastern Europe, Caucasus and Central Asia											
Armenia	30.3	31.2	32.1	33.3	35.1	37.5	39.9	41.8	42.8	43.0	43.7
Azerbaijan	25.6	27.8	29.5	30.9	32.9	35.3	37.5	38.8	38.1	38.0	38.8
Belarus	36.3	37.4	38.3	39.2	40.3	41.9	43.6	45.4	46.0	45.5	44.5
Georgia	34.4	35.8	37.3	38.8	40.4	42.2	44.2	46.3	48.1	49.1	48.3
Kazakhstan	27.7	28.8	29.0	29.8	31.1	32.3	32.8	32.6	32.9	33.8	34.7
Kyrgyzstan	22.5	23.6	23.8	25.5	27.0	28.3	29.3	29.8	30.9	32.1	33.3
Republic of Moldova	32.3	34.1	35.2	36.3	37.9	39.8	42.4	44.9	46.7	47.8	47.9
Russian Federation	36.5	37.3	37.9	38.7	39.8	41.5	43.3	44.9	44.9	43.7	43.1
Tajikistan	18.4	19.0	20.4	21.7	23.0	24.2	25.5	26.9	28.5	30.0	31.8
Turkmenistan	21.6	22.9	24.5	26.4	28.4	30.4	32.0	33.6	35.2	36.6	38.1
Ukraine	37.7	38.9	39.3	39.9	40.9	42.3	43.9	45.5	46.1	45.3	44.2
Uzbekistan	20.9	22.5	24.2	26.2	28.3	30.5	32.5	34.5	36.1	37.7	39.2
South-Eastern Europe											
Albania	27.4	28.7	30.0	32.4	34.7	37.4	40.1	42.6	45.1	47.3	49.4
Bosnia and Herzegovina	35.1	37.3	39.4	41.3	43.2	45.0	47.0	49.0	51.0	52.3	53.2
Croatia	39.1	40.3	41.5	42.5	43.5	44.7	45.9	46.8	47.4	47.7	47.6
Montenegro	33.5	35.0	35.9	37.2	38.5	40.1	41.7	42.9	43.8	44.6	45.3
Serbia	35.7	36.6	37.6	38.7	40.1	41.6	43.0	44.4	45.3	45.9	46.5
The FYR Macedonia	32.5	34.2	35.9	37.7	39.6	41.6	43.4	45.2	46.8	48.1	49.0
Turkey	24.5	26.4	28.3	30.2	32.1	34.0	35.9	37.7	39.4	40.8	42.3

Source: UN World Population Prospects: The 2010 Revision, medium variant.

Table 5.2 shows that the demographic old-age dependency ratio is projected to reach by 2050 relatively high values (between 44 and 53 per cent) in six EECCA countries (Armenia, Belarus, Georgia, Republic of Moldova, Russian Federation and Ukraine) and six SEE countries (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia and The former Yugoslav Republic of Macedonia). The combination of an ageing and declining population is likely to reduce the effective labor supply. In comparison, the demographic dependency ratio in the European Union is projected to double from 26 per cent in 2010 to 52 per cent in 2050 (EC, 2011). By contrast, the remaining six EECCA countries in the Caucasus and Central Asia as well as Turkey are projected to have rising but comparatively low dependency ratios and could benefit from the demographic dividend in the form of rising working-age population until the 2040s.

[176] For a discussion of the underlying fertility trends in transition economies see UNECE (2000), chapter 6.

Table 5.2
Demographic old-age dependency ratio in EECCA and SEE countries, 2000 – 2050
Population 65+ over population 15-64

Country	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Eastern Europe, Caucasus and Central Asia											
Armenia	16	18	16	16	19	24	28	28	28	30	35
Azerbaijan	9	10	9	9	11	15	19	21	23	24	27
Belarus	20	21	19	20	22	26	29	31	33	36	40
Georgia	19	22	21	22	25	29	35	37	39	42	45
Kazakhstan	10	12	10	10	12	14	17	17	18	20	21
Kyrgyzstan	9	9	7	6	7	9	12	13	15	15	17
Republic of Moldova	15	16	15	17	21	25	28	29	30	32	38
Russian Federation	18	19	18	19	23	26	29	30	31	34	39
Tajikistan	7	7	6	5	6	8	9	10	11	12	13
Turkmenistan	7	7	6	6	7	9	11	13	15	17	20
Ukraine	20	23	22	22	25	28	30	31	33	35	40
Uzbekistan	7	8	7	6	8	10	12	14	16	18	22
South-Eastern Europe											
Albania	12	13	14	15	17	21	25	28	31	34	40
Bosnia and Herzegovina	16	19	20	21	25	30	36	40	44	49	55
Croatia	23	25	25	27	31	35	38	40	42	45	48
Montenegro	15	19	18	20	23	26	29	30	32	34	38
Serbia	21	22	21	22	25	27	29	31	34	37	41
The FYR Macedonia	15	16	17	18	21	24	27	30	34	38	43
Turkey	8	9	9	10	12	14	17	19	22	26	30

Source: UN World Population Prospects: The 2010 Revision, medium variant.

Labour market trends

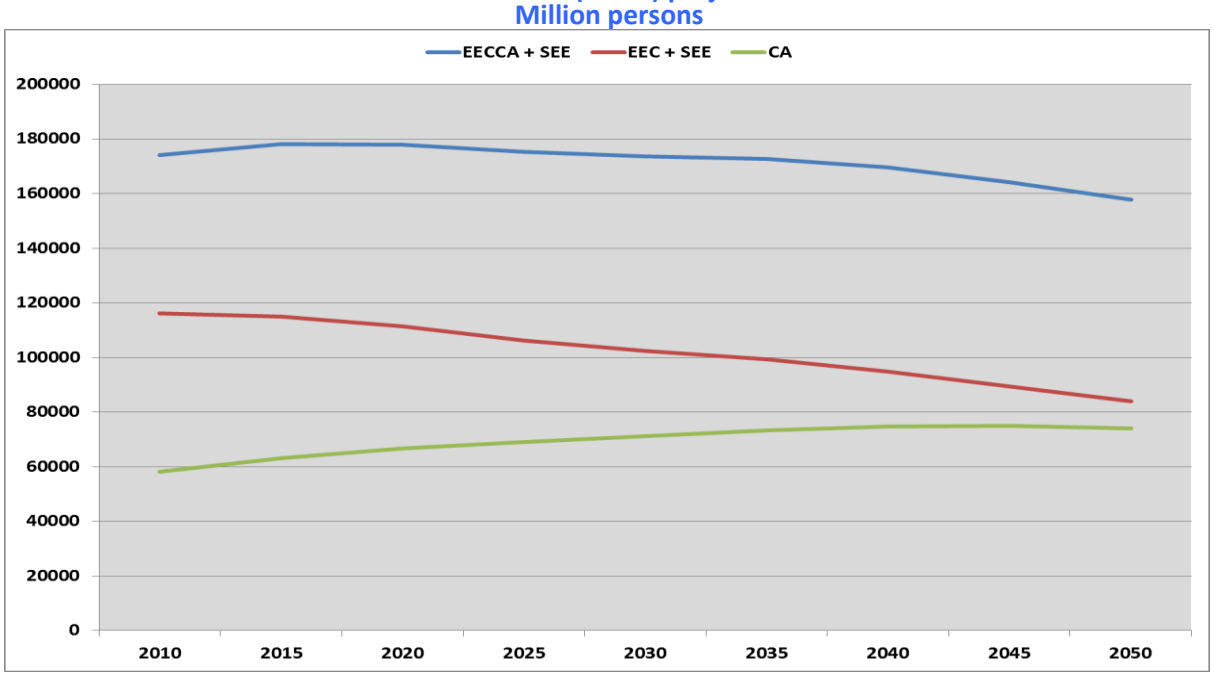
The labour supply and employment projections were derived as follows. The labour force was estimated with the aid of the ILO data on participation rates (ILO, 2011a) and the UN population projections mentioned above. We utilized ILO's estimates of participation rates for the male and female 5-year age groups for 2010 and their projections until 2020. Further, we assumed that the age and gender specific participation rates remain unchanged at their 2020 levels until 2050. Based on these assumptions, the labour force in the EECCA and SEE (aged 15-64 years) is projected to decrease from 174 million persons in 2010 to 158 million in 2050 (figure 5.1, blue line).

The regional trend reflects two subregional developments. In the rapidly ageing part of the region, consisting of 6 countries of Eastern Europe and the Caucasus and 6 countries of South-Eastern Europe, the labour supply is projected to fall continuously from 116 million persons in 2010 to 84 million by 2050 (figure 5.1, red line). In contrast to this subregion, the comparatively dynamic population growth in 5 countries of Central Asia, Azerbaijan and Turkey is projected to result in an increase of aggregate labour supply from 58 million persons in 2010 to almost 75 million in 2045 and decline subsequently to 74 million by 2050 (figure 5.1, green line).

Projections of employment are based on the assumption that the equilibrium rate of unemployment equals 5 per cent in 2010 and remains constant in subsequent years. Employment levels were calculated for the population aged 15-64 years. The estimated and reported employment levels in 2010 are shown in table 5.3. The differences between the estimates and official employment figures are relatively small (0 - 5 per cent) in the majority

of EECCA countries.[177] Such differences tend to be greater for SEE countries, reflecting the relatively high levels of employment in the shadow economy that could not be captured by official statistics. The usefulness of a particular employment measure depends on the purpose of investigation. We believe that our estimates capture actual employment levels at least as well or better than official statistics and are thus more useful for the derivation of long-term production possibilities than the official data. By contrast, official employment statistics capture mainly employment in the formal sector that is relevant for short-term analysis of the financial position of the social security systems financed by payroll taxes.

Figure 5.1
Labour force (15-64) projections
Million persons



Source: UNECE projections.
Note: EEC = Armenia, Belarus, Georgia, Republic of Moldova, Russian Federation, Ukraine. SEE = Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, The former Yugoslav Republic of Macedonia. CA = Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey, Uzbekistan.

Figure 5.2 shows the projected employment levels in 2030 and 2050. These projections reveal remarkable differences between the countries with relatively young populations that are expected to have positive employment growth and their counterparts with rapidly ageing populations. In particular, the countries of Central Asia and Turkey are characterized by a great potential for employment growth that reflects their relatively high fertility rates. In countries of Eastern Europe employment is expected to start declining already during the current decade and then continue to fall until 2050. In contrast, employment in the EU is expected to increase slowly up to 2020 and then decline gradually to 95 per cent of the 2010 level by 2050.[178]

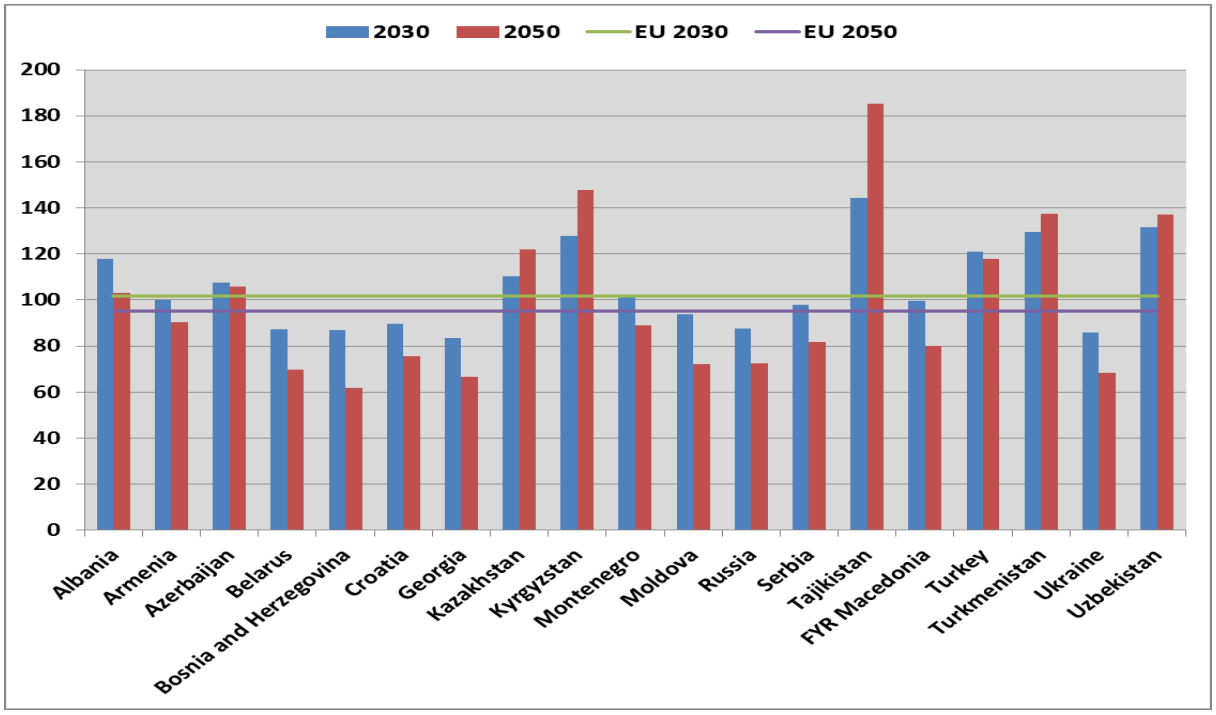
[177] No official employment statistics for Turkmenistan has been available. Therefore, table 5.3 shows no difference between estimated and reported levels.
[178] The latest EU Ageing Report projects employment as a residual variable, determined by Eurostat population projections and assumptions about future participation and unemployment rates. The EU-wide unemployment rate (15-64) is expected to decline gradually from 10.1per cent in 2010 to 6.7 per cent in 2045 and remain unchanged in subsequent years. For details, see EC (2011).

Table 5.3
Estimated and reported employment levels, 2010
Million persons

Country	Estimated level	Reported level	Difference (%)
Eastern Europe, Caucasus and Central Asia			
Armenia	1.3	1.1	15
Azerbaijan	4.3	4.3	-1
Belarus	4.3	4.7	-9
Georgia	1.9	1.6	17
Kazakhstan	8.1	8.1	0
Kyrgyzstan	2.3	2.2	4
Republic of Moldova	1.1	1.1	-1
Russian Federation	71.5	69.8	2
Tajikistan	2.7	2.2	18
Turkmenistan	2.0	N/A	..
Ukraine	20.4	20.3	1
Uzbekistan	11.0	11.6	-5
South-Eastern Europe			
Albania	1.3	1.1	22
Bosnia and Herzegovina	1.4	0.8	48
Croatia	1.8	1.5	17
Montenegro	0.3	0.2	22
Serbia	4.0	2.4	51
The FYR Macedonia	0.9	0.6	46
Turkey	24.7	22.6	9

Source: UNECE statistical database and estimates.
Note: Last column of the table shows the difference between the estimated and reported employment levels divided by their average.

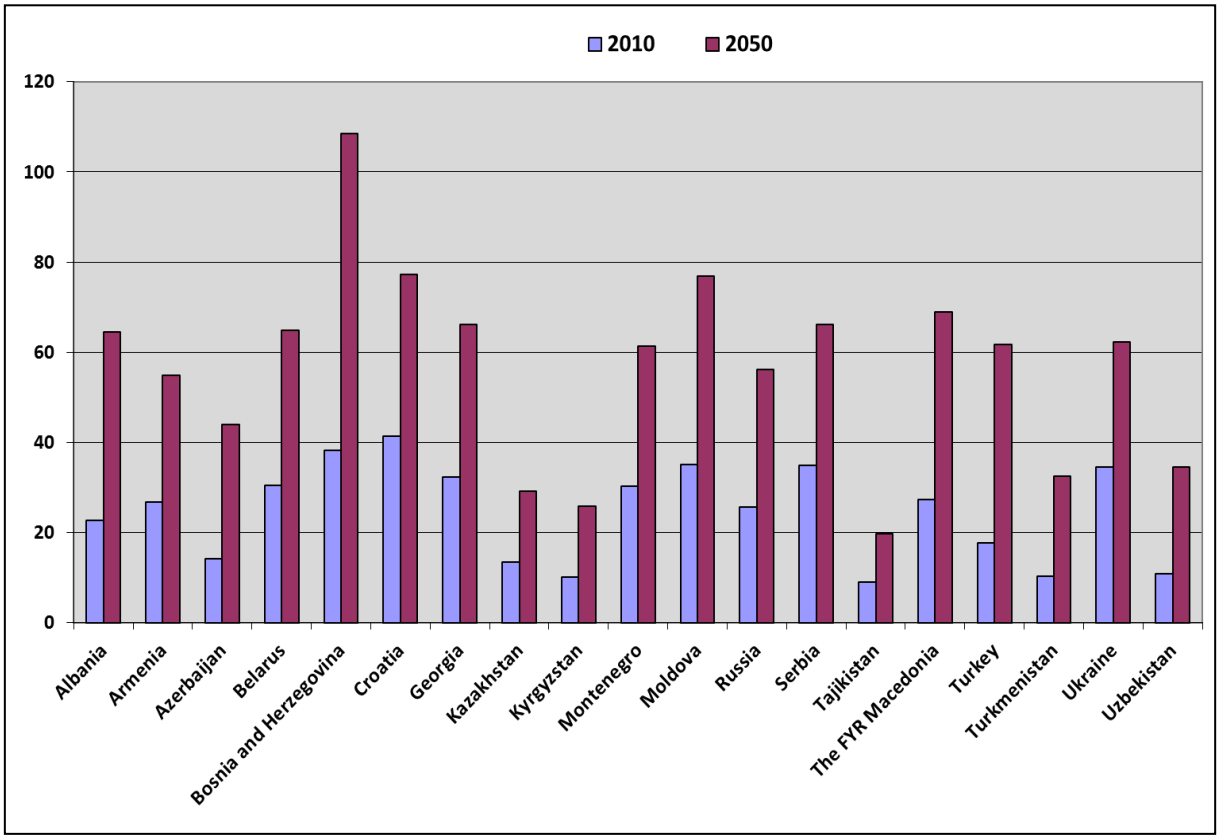
Figure 5.2
Employment (15-64) projections, 2010 = 100



Source: UNECE estimates and EC (2011).

Figure 5.3 shows that the economic old-age dependency, defined by the ratio of the elderly population (65+) to employment (15-64), is projected to increase in all economies investigated. Given the projected labour force participation rates and population trends, this indicator would exceed by 2050 the 50 per cent threshold, consistent with 2 workers per elderly person, in all countries of Eastern and South-Eastern Europe as well as two countries of the Caucasus. This implies that comprehensive pension and labour-market reforms are needed to make social security systems sustainable.

Figure 5.3
Economic old-age dependency ratio
Population 65+ over employed population 15-64



Source: UNECE estimates.

Aggregate output growth

Aggregate output growth is derived from the labour productivity and employment projections. The baseline scenario assumes that each economy investigated takes advantage of productivity catch-up opportunities up to 2050. The productivity catch-up model is defined by the following equation:

$$C(t) = (1+\alpha)*C(t-1) + \beta*[A(t-1) - C(t-1)].$$

C and *A* denote labour productivity, measured by GDP per worker, in the relevant EECCA or SEE country and the United States, α refers to the labour productivity growth trend of 1½ per cent per annum, *t* indexes time and β is a catch-up parameter equal to 1 per

cent. GDP levels in the base year are expressed in comparable purchasing parity terms in 2005 US dollars and available in the UNECE statistical database for all economies investigated. The productivity gap vis-à-vis the US economy is assumed to decline by 1 per cent per year, providing that the relatively high level of educational attainment and investment in the ECE emerging economies can be maintained. More optimistic convergence scenarios[179] assume implicitly higher productivity growth. In four countries (Kyrgyzstan, Moldova, Tajikistan and Uzbekistan) with comparatively low productivity (less than 10 per cent of the US level in 2010), the productivity catch-up parameter is set to 0.25 per cent per annum in order to avoid implausibly high growth rates.

It should be noted that the catch-up model does not allow for interactions between demographic or social policy variables and productivity. For instance, productivity growth depends on investment in new equipment but investment depends on expected after-tax returns. If pension expenditure models based on current parameters project rapidly rising deficits, potential investors might fear future tax increases and scale back investment plans. Therefore, productivity growth will not be independent of pension reform. This limitation should be kept in mind when going through the various scenarios.

Long-term employment and productivity projections are in any case speculative because no model can eliminate the irreducible uncertainty associated with any qualitative social change, including economic development. Instead of the simple catch-up model presented above, more complex models could have been chosen. However, such alternatives would hardly provide us with more reliable or realistic results. Given these constraints, the model chosen by the authors can be used to illustrate general trends and possible alternative scenarios.

In the countries with rapidly ageing populations output growth can be sustained even with declining labour force and employment, providing that technical change increases productivity at a faster pace. Assuming that transition economies continue to enhance the business environment and competitiveness over time, they should enjoy relatively strong investment and productivity growth over the next few decades. However, as the productivity gap continues to shrink, the catch-up model predicts that productivity growth converges towards the trend prevailing in advanced industrial economies. If the institutional transformation were to stall, then both productivity and output growth would slow down considerably. Table 5.4 illustrates these points for the Russian economy.

The countries with relatively young populations can benefit significantly from the demographic dividend that should enable them to have higher employment and output growth. Table 5.5 illustrates the impact of the demographic dividend on economic growth in Kazakhstan. The demographic impact is enhanced by strong productivity growth in the catch-up model that predicts higher growth rates for the economies starting from a lower productivity level.

[179] For instance, Dadush and Stancil (2010) expect that annual GDP growth in Russia and Turkey will average until 2050 3.3 per cent and 4.4 per cent respectively. Our catch-up model is consistent with average GDP growth rates in Russia and Turkey of 2.1 per cent and 2.9 per cent respectively.

Table 5.4
Growth rates of employment, productivity and GDP in the Russian Federation

		2010	2020	2030	2040	2050
Employment						
All scenarios	Index 2010 = 100	100.0	95.0	87.8	81.8	72.6
	Average growth rate (%)		-0.5	-0.8	-0.7	-1.2
Labour productivity						
Baseline (trend + 1% catch-up)	Index 2010 = 100	100.0	141.1	190.1	248.3	317.3
	Average growth rate (%)		3.5	3.0	2.7	2.5
Trend only (1.5% per annum)	Index 2010 = 100	100.0	116.1	134.7	156.3	181.4
	Average growth rate (%)		1.5	1.5	1.5	1.5
Real GDP						
Baseline	Index 2010 = 100	100.0	134.1	166.8	203.2	230.4
	Average growth rate (%)		3.0	2.2	2.0	1.3
Slower growth (no productivity catch-up)	Index 2010 = 100	100.0	110.3	118.2	127.9	131.7
	Average growth rate (%)		1.0	0.7	0.8	0.3

Source: UNECE calculations.

Table 5.5
Growth rates of employment, productivity and GDP in Kazakhstan

		2010	2020	2030	2040	2050
Employment						
All scenarios	Index 2010 = 100	100.0	105.4	110.3	119.4	122.0
	Average growth rate (%)		0.5	0.5	0.8	0.2
Labour productivity						
Baseline (trend + 1% catch-up)	Index 2010 = 100	100.0	151.2	212.3	285.2	371.8
	Average growth rate (%)		4.2	3.5	3.0	2.7
Trend only (1.5% per annum)	Index 2010 = 100	100.0	116.1	134.7	156.3	181.4
	Average growth rate (%)		1.5	1.5	1.5	1.5
Real GDP						
Baseline	Index 2010 = 100	100.0	159.4	234.2	340.6	453.7
	Average growth rate (%)		4.8	3.9	3.8	2.9
Slower growth (no productivity catch-up)	Index 2010 = 100	100.0	122.3	148.5	186.6	221.4
	Average growth rate (%)		2.0	2.0	2.3	1.7

Source: UNECE calculations.

Public pension trends

The combination of slowing GDP growth and rising dependency ratios can undermine the financial viability of national old-age support systems by reducing revenue growth and increasing public spending. The main components of these systems are public pensions and

health services. This section addresses some issues related to the long-term financial sustainability of public pension systems.

The main purpose of public pension systems is to prevent old-age poverty. However, social security does not only ensure minimum subsistence levels but it has broader aims such as social inclusion. The official poverty thresholds usually range between 40 and 60 per cent of median income. The 40 per cent benchmark is provided by the ILO 1952 convention on minimum social security benefits whereas the 60 per cent benchmark is used to define population at risk of poverty in the European Union countries. It is important to note that the share of population at risk of poverty in the majority of the post-communist NMS is approximately equal to the share of population living in material deprivation.[180] The situation is likely to be similar in the EECCA and SEE transition economies. At present older people in some EECCA and SEE countries are less prone to poverty than younger persons or even some working poor and often use their pension benefits to support their children and grandchildren.[181] It is unclear whether such voluntary intergenerational transfers are sustainable, when pension systems are exposed to increasing demographic pressures.

The previous sections show major differences in demographic and economic dependency ratios between the countries with rapidly ageing populations and those characterized by a delayed demographic transition. In the latter group of countries, consisting of the five Central Asian Republics, Azerbaijan and Turkey, the demographic crunch will not materialize before the middle of the century. By contrast, the remaining countries of the Caucasus, Eastern and South-Eastern Europe are much more exposed to adverse demographic pressures on social security and the reforms needed to ensure fiscal sustainability have become increasingly urgent.

Following Zeng (2006), we can express the pension deficit by the equation

$$D(t) = [B(t)*d(t)*(r(t)/e(t)) - C(t)]*W(t),$$

where D gives the deficit in per cent of GDP, B and C denote the average replacement and effective contribution rates respectively, W refers to the wage share in GDP, d is the demographic dependency ratio, e is the employment rate of the working-age population (15-64) and r the retirement rate (pension recipients over the population 65+), and t indexes time. The equation shows the impact of demographic and economic factors on the pension deficit but does not capture interactions between explanatory variables.

All countries of Emerging Europe and Central Asia with the exception of Kazakhstan operate pay-as-you go (PAYG) public pension systems in which pension contributions of the current generation of workers are used to pay current pensions, including old-age, disability and survivor benefits. This system, known also as the first pillar, provides defined benefits to participants. The amount of pension benefit is typically linked to the employment history and

[180] By contrast, material deprivation rates are significantly lower than relative poverty rates in the EU-15 countries (Zaidi, 2010).

[181] For instance, in 2008 some 8 per cent of Russian pensioners lived in absolute poverty compared to 13 per cent across the general population. The poverty rate of pensioners was reduced significantly by income redistribution through transfers consisting mainly of pensions and taxes. See OECD (2011b), p. 160-163.

contributions paid by the recipient. Pension rules stipulate that benefits are indexed either to wage inflation, consumer price inflation or a combination of the two variables. Nevertheless governments tend to impose ad hoc adjustments that are not rule based but reflect the political or economic cycles. The imposition of lower and upper limits on pension contributions and benefits in most PAYG systems favors low wage earners whose pensions are characterized by relatively high replacement rates. A number of public pension systems in the region also provide special pensions for certain categories of citizens, including the elderly poor and war veterans. In some countries such benefits are provided by the social assistance system rather than pension administration.

Detailed information about the age-related public expenditure, revenues and public debt was not available to the secretariat for most of the countries investigated. For 9 countries (Albania, Armenia, Bosnia and Herzegovina, Croatia, Kazakhstan, Moldova, Russia, Serbia, Ukraine) the IMF government financial statistics (GFS) available for recent years (up to 2009) report social security contributions as well as spending on public pensions. As expected the pension expenditure is comparatively low in countries with younger populations. The GFS accounts show pension deficits for all 9 countries in 2009. These deficits, reflecting to some extent the economic downturn that has reduced social security contributions, are difficult to analyze without additional information. The underlying problems however seem to be the relatively low retirement age as well as the decline of formal employment and rapid increase in early retirement during the post-communist transition.

Following the resumption of economic growth in late 1990s, the authorities in most countries of Emerging Europe and Central Asia responded to pension deficits by increasing the statutory retirement age (table 5.6). Nevertheless, only Bosnia and Herzegovina increased the statutory retirement age for both men and women to 65 years, a benchmark that has been often recommended by pension reform advocates and corresponds to the norm in most OECD countries. Four countries (Belarus, Russia, Ukraine and Uzbekistan) have not increased yet the statutory retirement age inherited from the Soviet era (60 and 55 years for men and women respectively). In Turkey the eligibility for a full pension during the 1970s and 1980s was based solely on the payment of contributions for 25 years of service so that the retirement age was as low as 45 years, assuming a 25-year period of employment from the age of 20. The standard retirement age was reinstated and gradually increased in the subsequent period (OECD 2011a, p. 21).

The effective retirement tends to take place somewhat earlier than the statutory retirement age, but relatively large numbers of pension recipients continue to work. Nevertheless, the following figure shows that even in Georgia, the transition economy with highest participation and employment rates of older cohorts, less than 5 per cent of the elderly continue to work beyond the age of 65 years.[182] The comparatively low effective retirement age in Russia, shown in the same figure, reflect probably the lower statutory retirement age for both men and women, poorer health of the elderly and comparatively high pension benefits.

[182] Following the launch of a government strategy to promote the employment of older persons in Georgia in 2006, the number of employed in the 65+ age group may have increased in recent years. Due to the lack of wage employment opportunities, 88 per cent of working pensioners are reported to be self-employed. See UNECE (2011b), p. 9.

Table 5.6
Statutory retirement age, years

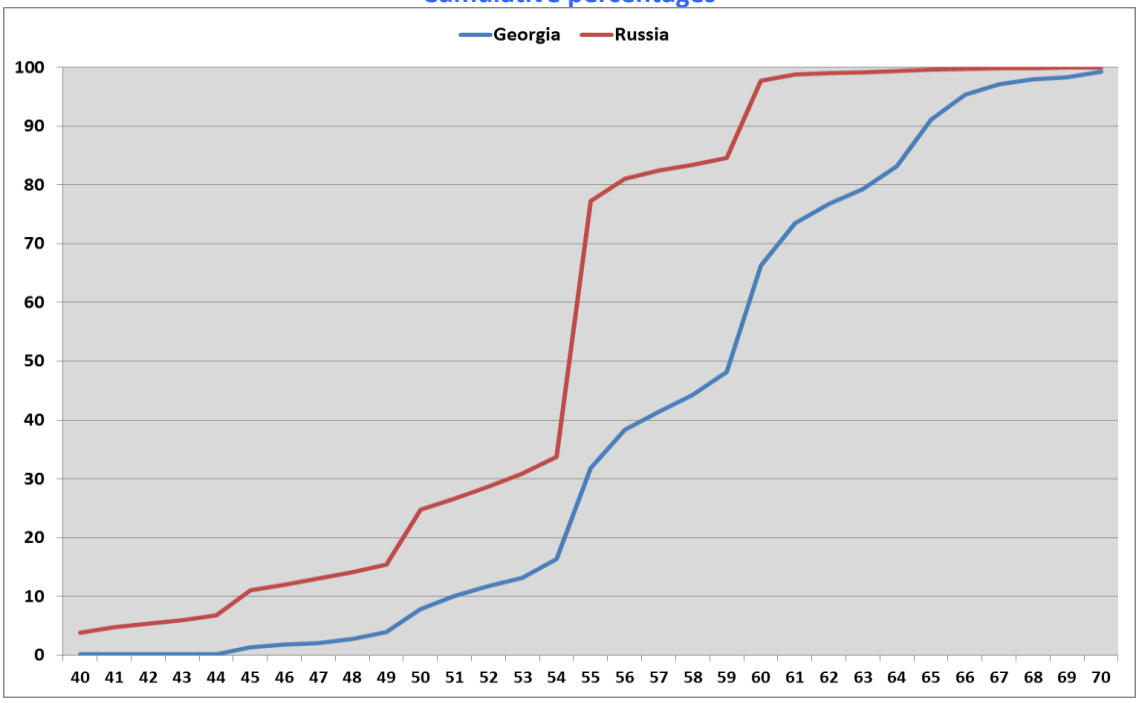
Country	Men 1989	Men 2010	Women 1989	Women 2010
Eastern Europe, Caucasus and Central Asia				
Armenia	60	63	55	61
Azerbaijan	60	62	55	57
Belarus	60	60	55	55
Georgia	60	65	55	60
Kazakhstan	60	63	55	58
Kyrgyzstan	60	62	55	58
Republic of Moldova	60	62	55	57
Russian Federation	60	60	55	55
Tajikistan	60	63	55	58
Turkmenistan	60	62	55	57
Ukraine	60	60	55	55
Uzbekistan	60	60	55	55
South-Eastern Europe				
Albania	60	65	55	60
Bosnia and Herzegovina	60	65	55	65
Croatia	60	65	55	60
Montenegro	60	64	55	59
Serbia	60	64	55	59
The former Yugoslav Republic of Macedonia	60	64	55	62
Turkey	45	60	45	58

Source: BRAAC (2010), ISSA (2010), OECD (2011a).

The pension deficit equation shows that the employment rate is a key policy variable. The replacement rate, i.e. the relationship between the size of pension benefits and wages is another important policy variable that can reduce the social security deficit. Table 5.7 illustrates these points in the case of Ukraine. Following the resumption of economic growth, the public pension deficit was close to 3 per cent of GDP in 2010. The gross replacement rate for a person with average earnings (average pension benefit over average gross wage) was equal to 46 per cent in 2010 while pension contributions amounted to approximately one-quarter of the wage bill. The corresponding net replacement rate estimated from the available data on wages and tax parameters was equal to 54 per cent. Given the redistributive nature of the Ukrainian PAYG system, a person earning one-half of the average wage prior to retirement would receive the minimum pension that would replace 62 and 71 per cent of his or her gross and net earnings respectively. The wage share in GDP in 2010 was close to 50 per cent. Assuming unchanged parameters and using projected numbers of pension recipients provided in BRAAC (2010), the pension equation predicts a gradual increase of the nation's pension deficit from 3 per cent in 2010 to 6 per cent of GDP by 2030 and almost 12 per cent of GDP by 2050.

Figure 5.4

The age of retirement, mid-2000s
Cumulative percentages



Source: UNECE calculations based on the Generation and Gender Surveys.

A gradual increase of statutory retirement age to 65 years for both men and women would considerably improve the financial viability of the public pension system. This scenario assumes that statutory retirement age is increased by 6 months per year until it reaches 65 years for men by 2020 and for women by 2030. However, the adverse impact of population ageing would still result in a substantial PAYG deficit close to 5 per cent of GDP by 2050. This outcome is more pessimistic than the estimates provided by two earlier studies according to which an increase of statutory retirement age to 65 would eliminate the PAYG deficit up to the mid-2040s (BRAAC, 2010) or mid-2050s (Lisenkova, 2011). Such discrepancies in long-term projections reflect differences in the models and data used. However, all three studies conclude that the Ukrainian PAYG system is unsustainable with current parameters.

Alternatively, a gradual decrease of the gross replacement rate by 0.2 percentage points per year to 38 per cent by 2050 would see the pension deficit grow to approximately 7 per cent of GDP by 2050. A stronger reduction of a replacement rate would be needed to make the pension deficit more manageable. This could be achieved by indexing pensions to consumer prices, a method often advocated by World Bank experts (see e.g. World Bank, 2009). Wages tend to grow faster than prices (twice as fast in Ukraine during the 2000s) so that the price indexing of pensions is bound to reduce the replacement rate and pension deficit. Assuming that real wages grow in step with productivity, price indexing could eliminate the pension deficit by 2020 when the gross replacement rate would decline to approximately 35 per cent. Further reductions of the replacement rate would be needed in subsequent years to balance the projected PAYG expenditures and revenues that are consistent with the baseline employment scenario. However, this approach to parametric reform of the pension system would undermine the adequacy of retirement incomes.

Table 5.7
Public pension deficit in Ukraine

		2010	2020	2030	2040	2050
Old-age dependency ratio	Population 65+/population 15-64					
All scenarios	Per cent	22.0	24.6	29.9	32.5	40.4
Effective contribution rate	Pension contributions/wages					
All scenarios	Per cent	25.0	25.0	25.0	25.0	25.0
Wage share	Wages/GDP					
	Per cent	50.0	50.0	50.0	50.0	50.0
Replacement rate	Average pension/average wage					
Baseline	Per cent	46.0	46.0	46.0	46.0	46.0
Lower replacement rate	Per cent	46.0	44.0	42.0	40.0	38.0
Employment rate	Employment 15-64/population 15-64					
Baseline	Per cent	63.8	67.6	66.5	64.9	64.7
Higher employment rate	Per cent	63.8	69.9	72.2	74.2	75.7
Retirement rate	Pension recipients/population 65+					
Baseline	Per cent	195.1	200.7	181.3	182.7	167.5
Higher employment rate	Per cent	195.1	169.0	146.8	149.3	140.6
Public pension deficit	Public pension deficit/GDP					
Baseline	Per cent	3.0	4.3	6.3	8.6	11.5
Higher employment rate	Per cent	3.0	1.2	1.5	2.5	4.7
Lower replacement rate	Per cent	3.0	3.6	4.6	5.8	7.3

Source: UNECE estimates.

Given the flat 15 per cent personal income tax and assuming modest tax credits for deductible expenses (e.g. private healthcare fees), the gross replacement rate of 35 per cent corresponds in Ukraine to the net replacement rate of 40 per cent for average wage earners and thus to the minimum standard specified in the ILO Social Security (Minimum Standards) Convention of 1952.[183] The statutory minimum and maximum pension benefits would ensure that the net replacement rate would be somewhat higher for low wage earners and lower for high income earners. The ILO minimum standard is by no means excessive. For instance, a net replacement rate of 80 per cent was considered to be adequate for the maintenance of living standards in retirement by OECD researchers (OECD, 2001). Most elderly persons in Eastern Europe and Central Asia have low savings and can supplement their meagre pensions with continued work for a few years only.

Four of the countries investigated have introduced the so-called second pillar of the public pension system.[184] The contributions of workers to their second pillar individual accounts are invested on their behalf by public or private pension funds while future pension benefits should be determined by investment performance. The following table shows some characteristics of these funded (defined contribution) systems. Kazakhstan stopped operating the first pillar PAYG system while honouring the pension claims accumulated under it. The other three countries continue to operate downsized PAYG (defined benefit) systems. The recent financial crisis had an extremely negative effect on the performance of the second pillar pension funds in all four countries. The relatively good rate of return on investment by

[183] The Minimum Standards Convention was ratified by all SEE countries. By contrast, no EECCA country ratified the Convention.
[184] The recent Ukrainian pension legislation foresees a creation of the mandatory funded pillar in the future, providing that the financial stability of the first pillar be restored first.

pension funds in Croatia probably reflects the comparatively advanced development of financial markets in this EU pre-accession country. Nevertheless, even in Croatia the rate of return earned by pension funds since the inception of the second pillar has only matched wage growth in the economy and been thus well below the OECD benchmark of 1.5 percentage points over wage growth that is often used in long-term projections.[185]

Table 5.8
Mandatory defined contribution systems

Country	Operational since	Contribution rate	Assets/GDP	Real rate of return
		2010	2010	(annual average)
Croatia	2002	5.0%	10.3%	2.0%
Kazakhstan	1998	10.0%	11.2%	-3.7%
Russian Federation	2004	6.0%	1.0%	-3.9%
The former Yugoslav Republic of Macedonia	2006	7.4%	1.3%	1.0%

Source: Altiparmakov (2011), Hirose (2011), OECD (2011b), National Bank of Kazakhstan, Rudolph and Holtzer (2010), and ECE estimates.

Note: The contribution rate refers to the percentage of pensionable earnings.

The disappointing performance of pension funds to date implies future liabilities for the government sector, given the mandatory nature of second pillar schemes.[186] However, the authorities expect that the second pillar will improve the viability of social security in the long term.[187] This may be too optimistic if the second pillar funds continue to invest predominantly in national government bonds, even if better regulation of pension funds would enhance competition and provide more investment opportunities. In principle the funds could improve their returns by investing in private or mixed (public-private) strategic infrastructure projects that would support sustained economic growth (see e.g. OECD, 2012a). In practice private investment in infrastructure remains rare in transition economies and it is unclear whether the public and governments are prepared to accept cost-reflective user charges that would make such projects feasible.

Even if the investment performance of the second pillar were to improve significantly and match the OECD benchmark mentioned above, the diversion of a portion of social contributions to individual retirement accounts is bound to increase financial pressures on the first (PAYG) pillar over a relatively long time period (40-50 years). During this transition pension entitlements are accumulated but not paid in significant amounts by the second pillar while the PAYG system has to provide benefits to a growing number of retirees.[188]

The alternative solution to the poor investment performance of funded schemes would be to downsize or abolish the second pillar and shift the corresponding payroll contributions to

[185] This benchmark is based on the investment performance of pension funds in OECD countries over the last three decades (Holzmann and Guven, 2009, p. 111).
[186] By contrast, participants in voluntary pension funds (denoted sometimes as the third pillar) are unlikely to be compensated by governments for poor investment performance and low payouts.
[187] See e.g. the special chapter on the Russian pension system in OECD (2011b).
[188] In Kazakhstan the pension benefits earned under the former PAYG system have been paid to retirees by the State Pension Payment Centre since the replacement of the system by a regime based on fully funded individual accounts in 1998 (Hinz, Zviniene and Vilamovska, 2005). After 2028 all public pensions are to be paid by the second pillar.

the first pillar. The downsizing option was recently tried in Estonia and Poland while Hungary decided to nationalize the second pillar. However, these measures, driven to some extent by the EU fiscal rules on government deficits, improve the pension system balance temporarily but may not be effective in the long run (see OECD, 2012b).

If the current public pension systems in some EECCA or SEE economies become unsustainable, then governments could reduce poverty in old age by establishing a social protection floor in the form of a noncontributory social pension to all elderly citizens. The level of social pensions for persons without alternative retirement incomes varies in the countries investigated, amounting e.g. to some 15 per cent of per capita GDP in Russia or 22 per cent in Croatia. Figure 5.5 illustrates projected budgetary costs of a noncontributory social pension for all persons in the age group 65+ years, assuming that it equals 15 per cent of per capita GDP. A lower level of 10 per cent of per capita GDP, advocated by World Bank (2007), seems to be inadequate for the countries investigated.

Although the cost of a noncontributory social pension system is by no means negligible and increases in societies with ageing populations, it could improve the fiscal position of general government by eliminating the budgetary transfers and administrative costs associated with current pension schemes and means tested social assistance. Financing of pensions from general tax revenues rather than earmarked payroll contributions would also reduce labour costs and could thus increase employment.

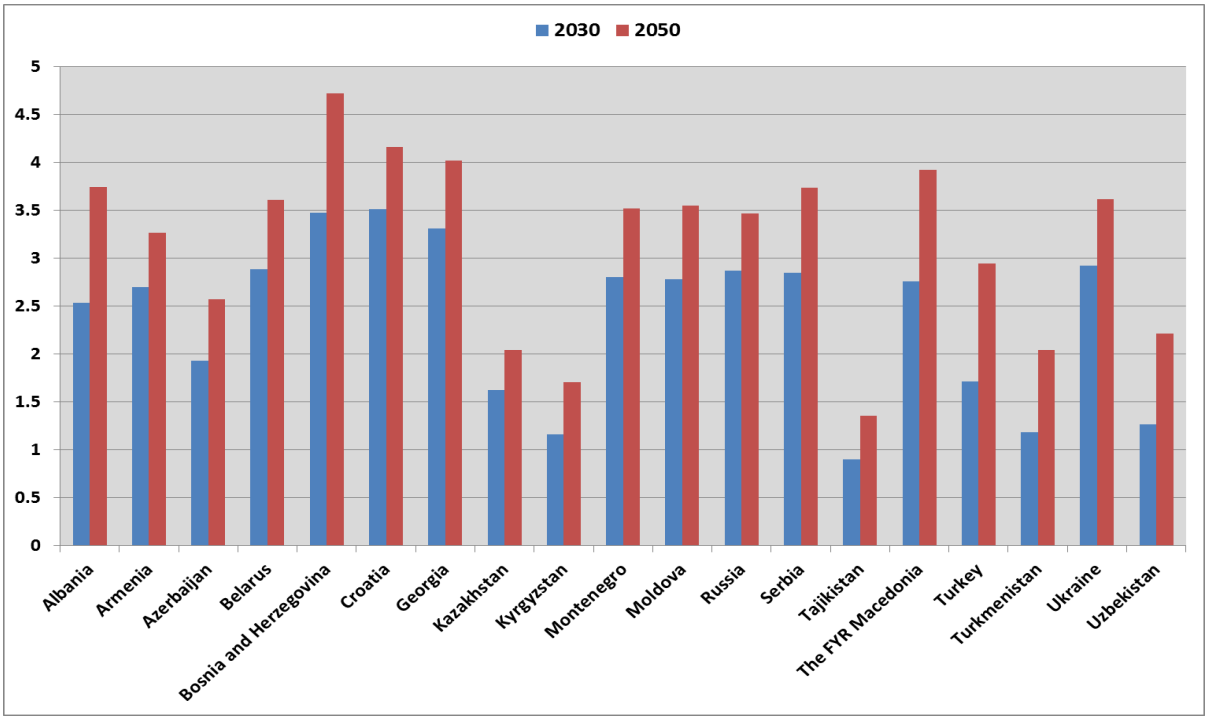
Public healthcare trends

A number of studies have forecasted future health expenditure across different countries (OECD, 2006; EU, 2011; IMF, 2010; World Bank, 2007); in light of the known demographic factors and in combination with other cost pressures and economic aspects most predicted an upward trend in public healthcare spending. Population ageing can potentially imply increasing future levels of expenditure due to the simple fact that elderly tend to use more public healthcare services than working age persons. However, this gloomy prediction has been challenged by some experts, assuming that longevity gains translate into additional years of good health ("healthy ageing") and considering that major health costs come at the end of life ("morbidity compression"). This questions the practice of forecasting future health costs on the basis of the past distributions of expenditures by age. In fact, the relationship between health spending and age differs widely among advanced countries (for which there is data) and is most likely changing over time, influenced by the interplay of technological advance, health policies and institutions, and the resulting population health status. In light of these considerations it becomes clear that any health expenditure prediction is somewhat arbitrary.

For example, one of the obstacles in predicting the impact of ageing on healthcare expenditures is estimating the demand for long term care as this is very sensitive to assumptions made about future rates of disability and dementia as well as the availability of formal care. Studies in developed countries have shown that assuming constant prevalence of disability may be optimistic and that to avoid escalating long term care costs it will be necessary to invest in cost effective delivery of public health services and management of chronic conditions that moderate disability or slow down the progression of dementia. This means that to contain the costs related to ageing and attaining a “healthy ageing” process will

imply – in any case – significant investments in the health sector.

Figure 5.5
Cost of a social pension equivalent to 15 per cent of per capita GDP
Per cent of GDP



Source: UNECE estimates.

Another important factor influencing health spending is the introduction of new – and often more costly – technology and medicaments. In developed countries, technological progress has been driving health spending often at rates faster than GDP. New medical progress could represent a cost pressure factor also for transition economies due to the fact that many of these countries experienced the collapse of their domestic pharmaceutical sector and are importing more expensive supplies. Moreover, most of these countries still need to invest in good primary health care. WHO (2007) acknowledges that in post-Soviet newly independent states "expenditure on health declined in the 1990s to levels that make running a basic system virtually impossible in several countries. More recently, funding levels have stabilized or even increased, but significant improvements in health outcomes have not followed."[189] In fact, current statistics on life expectancy and infant mortality suggests that an increase in the level and effectiveness of health spending would be urgently needed for improving population's health.

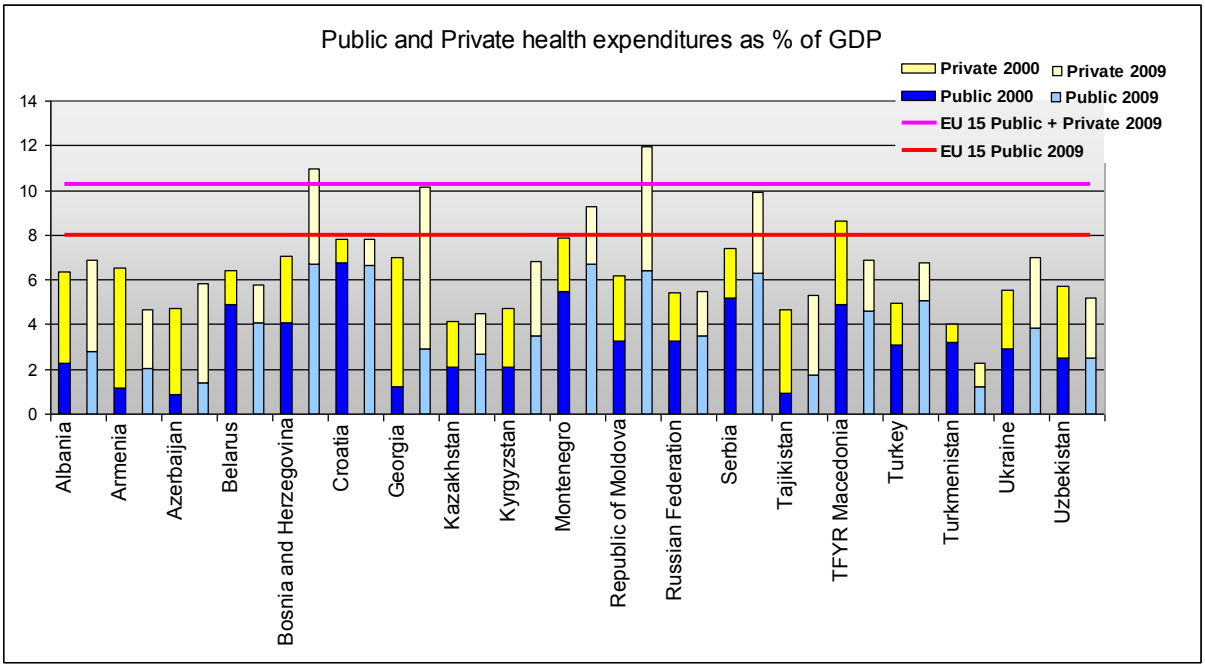
Figure 5.6 shows the public and private health expenditures as a percentage of GDP in the years 2000 and 2009. Public expenditures in SEE and EECCA countries are much lower

[189] In the post-Soviet transition, most of these countries had to reduce hospital facilities (Chubrik et al, 2011) and underwent health system reforms. The transition crisis implied a substantial decline in life expectancy. During the 2000s most of the former Soviet republics improved in terms of the life expectancy indicator; however, life expectancy is now much lower than in the EU-15 (10 years or more) and the new member states. For more details see Shelburne and Trentini (2009).

than the average public expenditure in EU-15 countries (8 per cent) whereas private expenditures are in general much higher, implying greater inequality in care access. Older people are among the most affected by health exclusion facing challenges in terms of appropriate long-term care services which are neither fully hospital-based nor reliant on informal family and kinship care (UNDP 2011).[190] In the last decade public health spending as a percentage of GDP has increased in most countries with some exceptions (Belarus, The former Yugoslav Republic of Macedonia, and Turkmenistan); out of pocket payments increased or remained constant through the decade in most countries.

Public health policy clearly includes many measures that benefit health but are not necessarily included in the health expenditure data. However, health expenditures do serve as a valid proxy for the priority health has in the public policy agenda. A study putting 2003 levels of health expenditure in SEE and EECCA countries within a more global picture (WHO, 2007) finds that "apart from a number of South Eastern European countries, the majority of EECCA countries were spending less than other countries at similar levels of economic development. At the same time, a comparatively high share of total health expenditure is paid privately at the point of service, implying that a comparatively low share of health expenditure is financed from public sources despite the formal role of governments in providing universal access to health care."

Figure 5.6
Public and private health expenditures, per cent of GDP



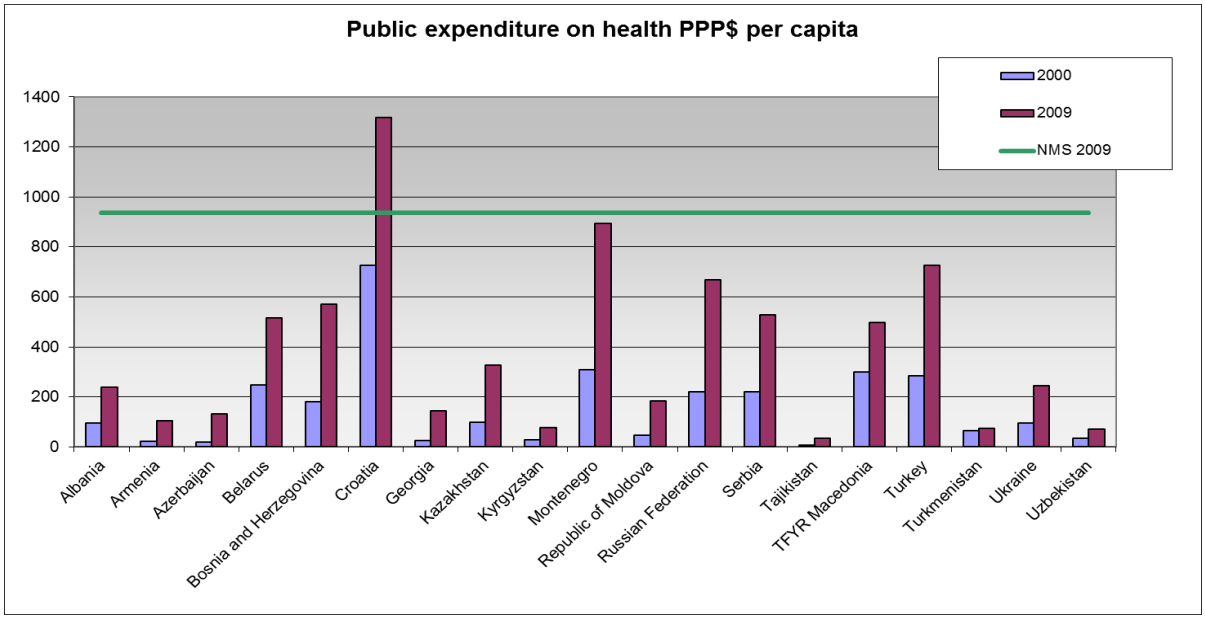
Source: WHO Europe Health for All dataset.

Health expenditures expressed as a percentage of GDP are the result of the trends in both health spending and GDP. Figure 5.7 shows the amount of public health spending per capita in PPP US dollars; this allows for a better understanding of the evolution of real

[190] UNDP (2011) reports that "the probability of not consulting a health professional when seriously ill is higher for those over 65 and for those with lower levels of education. Reasons include lack of money to pay for treatment; reliance on self-treatment; or distance to reach a health facility."

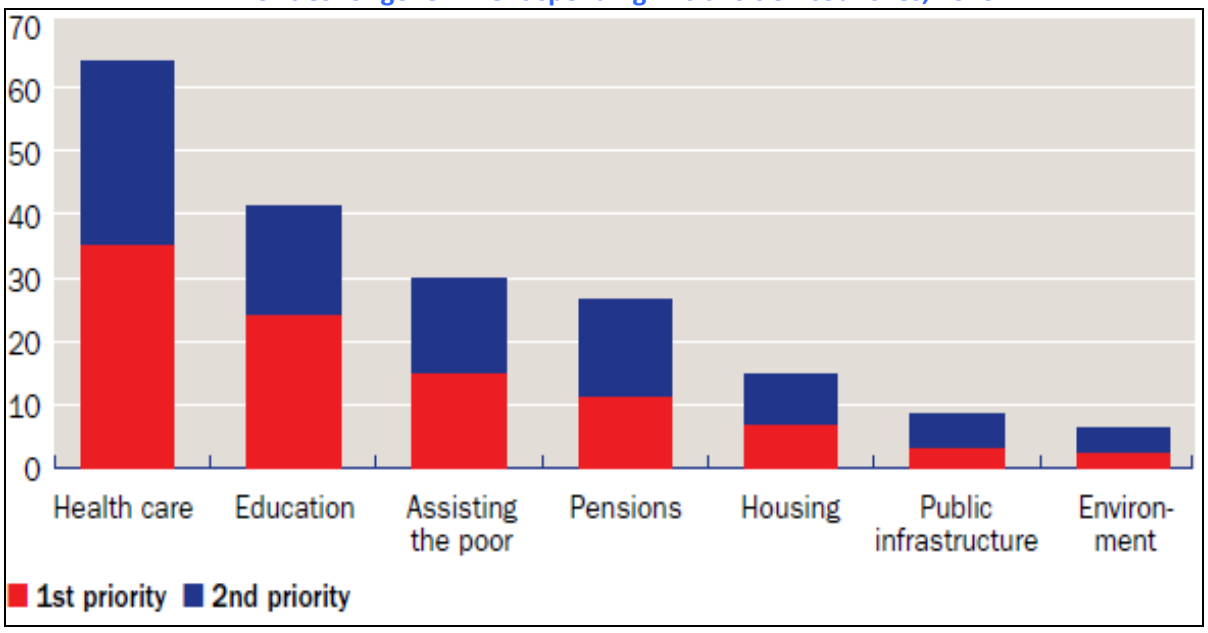
expenditure in different countries. SEE countries have expenditures similar or not too different from the NMS average (except Albania), while the EECCA countries with the exception of Russia and Belarus, are well below one-half of the NMS average.[191]

Figure 5.7
Public health expenditure, PPP $ per capita



Source: WHO Europe Health for All dataset.

Figure 5.8
Priorities for government spending in transition countries, 2010



Source: Life in Transition Survey II, EBRD (2011).
Note: Data corresponds to percentage of respondents' first and second preferences for priority additional government spending

[191] The old EU member States (EU 15) average public health spending in 2009 was about 3 times the NMS one.

The extremely low public spending in a number of countries is reflected in poor health outcomes and resulting concerns of the public about the healthcare system.[192] According to the latest EBRD survey on life in transition countries, citizens' rating of public healthcare systems is lower than in western economies. It is therefore not surprising that their highest priority for government spending is the healthcare sector (figure 5.8).

Forecasting health care expenditure

The factors driving healthcare expenditure in advanced economies can be broadly ascribed to:

(i) demographic trends and the costs related to an ageing population: the establishment of long term care facilities, the simple fact that elderly consume on average more health services than their younger counterparts;

(ii) non-demographic factors like technology, increasing incomes driving higher demand for health services, health policies and institutions. These factors are also known as Excess Cost Growth (ECG): the excess of growth in real per capita health expenditure over the growth in real per capita GDP after controlling for the effect of demographic change.

For advanced economies ECG has been driving health spending in the past decades and is expected to continue pushing public expenditure, while ageing – in spite of the bleak demographic trends – will only account for very limited cost increases, assuming that much of the gains in longevity will be spent in good health.

For non-advanced economies there are relatively few studies trying to project health expenditures; however, there is some evidence pointing to the fact that for emerging economies ECG will be a relevant source of cost pressure.[193] This might be brought about by the provision of services previously not covered, the adoption of modern health care technologies, and in some cases the replacement of external resources of financing with domestic ones. For example, many EECCA countries are not yet ready to efficaciously treat non-communicable and/or chronic diseases such as cancer, diabetes and heart disease which account for most of the total disease burden in the region (WHO, 2012). Moreover, it is likely that in the transition countries with dismal health outcomes, rising incomes will raise citizen's expectations of healthcare quality pushing for an increase in public health spending. These non-demographic factors would then perhaps impact more on health policies than the demographic trends described in the previous section.

In table 5.9 we report some projections of public health expenditure/GDP ratios assuming an ECG of 1 per cent yearly and the average cost of health services for the elderly (+65) of about 3.9 times (3.2 for women) the average cost for younger persons (0-64). This is roughly in line with the age-spending profile estimated by the European Commission for new

[192] There are of course exceptions like Albania and Moldova where public spending is low but health outcomes are relatively good.

[193] IMF (2010) predicts that excess cost growth in emerging Europe will follow the average level observed in advanced countries over 1980-2008 of about 1 per cent of GDP. A World Bank study on Russian health system predicts an increase of public spending to 6 per cent of GDP already by 2020 (World Bank 2008). Chubrik et al (2011) expect per capita spending in all economies of the former Soviet Union to increase significantly to improve lagging health outcomes.

Table 5.9
Projection of public health expenditure, per cent of GDP

	2010	2020	2030	2040	2050
Albania	**1.8**	**2.0**	**2.4**	**2.7**	**3.0**
due to ageing %		*4.1*	*12.7*	*17.7*	*23.3*
convergence to NMS		6.7	10.4	13.3	15.1
Armenia	**2.0**	**2.2**	**2.6**	**2.8**	**3.1**
due to ageing %		*2.7*	*11.7*	*12.3*	*16.9*
convergence to NMS		4.3	5.7	6.6	7.1
Azerbaijan	**1.3**	**1.6**	**2.1**	**2.4**	**2.9**
due to ageing %		*1.5*	*12.0*	*15.3*	*18.5*
convergence to NMS		2.9	4.1	5.1	5.8
Belarus	**4.4**	**4.7**	**5.3**	**5.7**	**6.3**
due to ageing %		*2.6*	*9.6*	*12.3*	*16.5*
convergence to EU27		7.0	8.8	10.1	10.9
Bosnia and Herzegovina	**6.9**	**7.7**	**8.8**	**9.5**	**10.2**
due to ageing %		*6.3*	*14.5*	*19.6*	*24.4*
convergence to EU27		8.8	9.9	10.5	10.5
Croatia	**6.5**	**7.3**	**8.2**	**9.0**	**9.8**
due to ageing %		*5.0*	*10.0*	*12.7*	*15.8*
convergence to EU27		7.5	8.2	8.6	8.8
Georgia	**3.3**	**3.4**	**3.8**	**3.9**	**4.1**
due to ageing %		*3.8*	*12.4*	*15.7*	*18.6*
convergence to NMS		5.5	6.5	7.0	7.2
Kazakhstan	**2.8**	**3.5**	**4.3**	**5.0**	**6.0**
due to ageing %		*2.4*	*7.9*	*10.2*	*12.8*
convergence to NMS		4.1	5.1	5.9	6.6
Kyrgyzstan	**3.2**	**3.9**	**4.9**	**6.1**	**7.3**
due to ageing %		*0.8*	*6.9*	*10.5*	*13.5*
convergence to NMS		9.5	14.3	18.0	21.1
Montenegro	**6.6**	**7.6**	**8.7**	**9.7**	**10.8**
due to ageing %		*5.3*	*10.7*	*13.2*	*17.4*
convergence to EU27		8.7	10.2	11.2	11.8
Moldova	**7.2**	**7.8**	**8.6**	**8.8**	**9.5**
due to ageing %		*5.6*	*12.7*	*14.3*	*19.8*
convergence to NMS		11.5	14.2	15.7	16.5
Russia	**3.5**	**4.0**	**4.5**	**4.8**	**5.4**
due to ageing %		*4.4*	*10.8*	*12.2*	*16.5*
convergence to EU27		5.2	6.3	7.1	7.7
Serbia	**4.3**	**4.8**	**5.3**	**5.9**	**6.5**
due to ageing %		*4.3*	*7.9*	*11.7*	*16.5*
convergence to EU27		7.0	8.7	9.8	10.5
Tajikistan	**1.8**	**2.2**	**2.9**	**3.5**	**4.3**
due to ageing %		*0.5*	*5.4*	*8.1*	*11.1*
convergence to NMS		9.3	15.0	19.4	23.0
The FYR Macedonia	**4.4**	**5.1**	**5.8**	**6.5**	**7.3**
due to ageing %		*5.4*	*11.4*	*16.5*	*22.0*
convergence to EU27		7.4	9.4	10.7	11.5
Turkey	**5.3**	**6.2**	**7.1**	**7.9**	**8.7**
due to ageing %		*4.3*	*10.6*	*16.8*	*23.0*
convergence to EU27		8.1	10.4	12.2	13.5
Turkmenistan	**1.1**	**1.3**	**1.6**	**2.0**	**2.3**
due to ageing %		*1.8*	*7.8*	*12.5*	*17.7*
convergence to NMS		3.1	4.5	5.6	6.4
Ukraine	**3.9**	**4.0**	**4.3**	**4.6**	**5.0**
due to ageing %		*1.8*	*6.7*	*8.9*	*13.6*
convergence to NMS		5.1	5.8	6.2	6.4
Uzbekistan	**2.4**	**2.9**	**3.7**	**4.4**	**5.2**
due to ageing %		*1.9*	*8.5*	*13.6*	*19.1*
convergence to NMS		7.4	11.2	13.9	15.9

Source: UNECE estimates.

member states (Przywara, 2010). We also report the ratios which were required for these countries to reach by 2050 a per capita expenditure similar to the average observed in the NMS or for the most advanced economies (the SEE without Albania, Russian Federation and Belarus) in the EU-27 in 2009.

For countries which are assumed to have comparatively low GDP growth rates and very low initial health spending levels, health expenditures will grow relatively little with respect to GDP. In the SEE only Albania will have a public health expenditure/GDP percentage below 5 by 2050 while all the other countries will approach ratios between 6.5 and 12.3. In the EECCA the picture is more varied with countries that had a ratio below 2 in 2010 (Armenia, Azerbaijan, Tajikistan, and Turkmenistan) maintaining public health expenditure/to GDP ratios below 5 per cent, while the remaining economies would experience more pronounced increases. In any case, our model implies that ageing will not play a major role in the evolution of public health spending in any of these countries until the mid-century.

It is interesting to note that for all countries investigated a more rapid convergence scenario implies much more substantial increases in public health spending. Under this scenario, by 2050 EECCA countries will have real per capita health expenditure similar to the NMS (EU-27) in 2009. This does not imply that in 2050 EECCA and NMS per capita health expenditure will be the same, but rather that they will be similar depending on how fast NMS expenditures would have grown between 2009 and 2050. It is difficult to predict which of the above scenarios is more likely to happen; this will also depend on the development process of these countries and the fiscal space they will have to increase healthcare investment. In any case, the impact will be profound. Even if the costs incurred in the period before death account for a disproportionate share of lifetime health expenditure, increased longevity will always lead to higher lifetime health costs.

The fiscal space to increase public health spending varies across the countries; for oil exporting countries it will be easier to invest in public health systems, the others should concentrate their efforts on making substantial improvements in efficiency in order to reduce the health gap with advanced economies. In particular, governments should focus interventions on preventive strategies which can reduce the impact of ageing on long term care. This is especially important for ages before retirement with a view to improving their employment rates

Summing up, there are several sources of cost pressure for health spending in SEE and EECCA countries which include but are not driven only by ageing. On the contrary, the most important ones seem to be related with the necessity of improving health outcomes and with rising citizens' expectations about the quality and accessibility of health services.

Alternative scenarios

High participation and employment rates are conducive to social cohesion and can enhance the sustainability of social security systems, providing that the bulk of employment is legitimate and payroll taxes paid. As pointed out earlier, a number of the emerging economies investigated have relatively high shares of informal employment. This poses a problem for the financing of public pension and health systems.

Another problem is posed by relatively low participation and employment rates, especially in SEE economies. Table 5.10 shows that employment rates consistent with our baseline scenario exceed the 70-per cent mark over the entire period projected only in Kazakhstan. In the case of Russia, the population ageing process is projected to reduce the aggregate employment rate below 70 per cent after 2030. The employment-population ratios in the other economies investigated are unlikely to reach 70 per cent without effective pro-employment policies.

Table 5.10
Employment-population ratio (15-64 years), per cent

	1990	2000	2010	2015	2020	2025	2030	2035	2040	2045	2050
Eastern Europe, Caucasus and Central Asia											
ARM	69.1	67.9	60.5	62.8	63.8	63.4	64.2	64.6	64.6	64.2	63.8
AZE	61.0	63.6	64.1	65.9	66.3	64.0	63.6	63.9	64.3	63.3	61.6
BLR	73.0	65.9	62.2	64.0	64.9	64.4	64.2	63.5	63.0	62.1	62.1
GEO	65.2	63.0	64.3	66.6	67.9	67.4	67.3	67.6	68.1	68.5	68.3
KAZ	72.0	72.3	73.5	75.0	74.8	72.4	72.2	72.8	73.5	73.9	73.4
KGZ	67.7	66.0	66.5	68.0	69.0	68.2	68.0	68.3	68.7	68.3	67.8
MDA	71.3	62.1	44.1	47.3	50.9	51.0	51.0	50.9	50.7	50.3	49.6
RUS	73.1	67.5	69.3	70.7	71.3	70.7	70.6	69.8	69.1	68.4	68.5
TJK	67.1	66.7	65.3	65.8	66.4	67.0	67.5	67.8	68.3	68.4	68.3
TKM	60.2	60.8	60.4	61.4	61.5	61.7	61.9	61.8	61.8	61.8	61.6
UKR	69.1	63.4	63.8	65.9	67.6	67.1	66.5	65.6	64.9	64.4	64.7
UZB	59.6	59.8	60.7	62.0	63.1	63.2	63.4	63.3	63.4	63.1	62.8
South-Eastern Europe											
ALB	64.5	63.7	63.2	63.0	63.1	64.1	64.6	64.6	64.2	63.0	62.4
BIH	47.0	48.8	51.8	52.2	52.9	53.2	53.3	52.9	52.0	51.0	50.8
HRV	61.7	61.1	61.3	62.2	63.8	63.7	63.3	62.6	62.1	62.0	62.4
MKD	57.1	57.2	61.2	62.7	64.3	64.5	64.3	64.0	63.4	62.9	62.6
MNE	57.1	60.0	60.1	61.3	62.7	63.1	63.3	63.1	62.7	62.3	62.1
SRB	57.0	59.7	60.3	61.8	63.5	63.6	63.3	62.9	62.5	62.2	62.1
TUR	57.3	49.5	50.2	50.3	50.6	50.3	50.0	49.8	49.6	49.4	49.4

Source: ILO statistics and UNECE estimates.

The example of the EU Lisbon strategy indicates that policies can help increase labour supply and employment successfully. The strategy targeted *inter alia* employment rates of the population aged 15-64 years and of older workers (aged 54-64 years). The EU employment rate increased from 62 per cent in 2000 to 66 per cent in 2008 before it has been reduced by the global financial crisis to 64 per cent by 2010. Nevertheless, the EU employment rate is projected to increase gradually to 68.7 per cent by 2050 (EC, 2011). The employment rate of older workers increased continuously from 37 per cent in 2000 to 46 per cent by 2010 and is expected to keep increasing in subsequent decades. Other examples of age-friendly employment policies are mentioned in Box 5.1.

In the countries investigated employment rates increase in line with the increasing participation rates projected by the ILO up to 2020. These projections are based on recent trends and policies (ILO, 2011 b). As mentioned above, six EECCA countries (Armenia, Belarus, Georgia, Republic of Moldova, Russian Federation and Ukraine) and six SEE countries (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia and The former Yugoslav Republic of Macedonia) are likely to experience rapid population ageing over the next few decades. In order to reduce growth of economic dependency ratios, governments of these countries should adopt ambitious policies with a view to increasing the comparatively

Box 5.1

Age-friendly employment policies

One of the commitments of the UNECE strategy on ageing is to enable labour markets to respond to the economic and social consequences of population ageing. In most countries of the region the average retirement age is lower than the statutory retirement age. In some countries (e.g. Bulgaria, Iceland and Turkey) the average exit age of men exceeds noticeably the statutory age while the opposite is true for women. European politicians are generally aware of the unsustainability of current retirement patterns but their policy choices tend to be restricted by the fact that both younger and older Europeans resent government initiatives aiming to increase the employment of the elderly and effective retirement age. Ageing societies however cannot afford the luxury of losing the productive potential of older workers. According to the Madrid International Plan of Action on Ageing, encouraging labour market participation of the elderly is a key precondition for coping successfully with the impact of demographic transition in ageing societies. This could be achieved by making the labour market equally accessible to adults of all ages by providing an age-friendly institutional environment, changing public perceptions of labour market participation of older people and establishing an anti-discriminatory legal framework. Good practice in the region include a national programme for the re-employment of disadvantaged workers in Italy, government policies to promote the employment of older persons in Georgia, a national 'Assistance for Retirement' programme in Bulgaria, a national programme for older workers in Finland, and a strategy for gender equality in the labour market in Sweden.

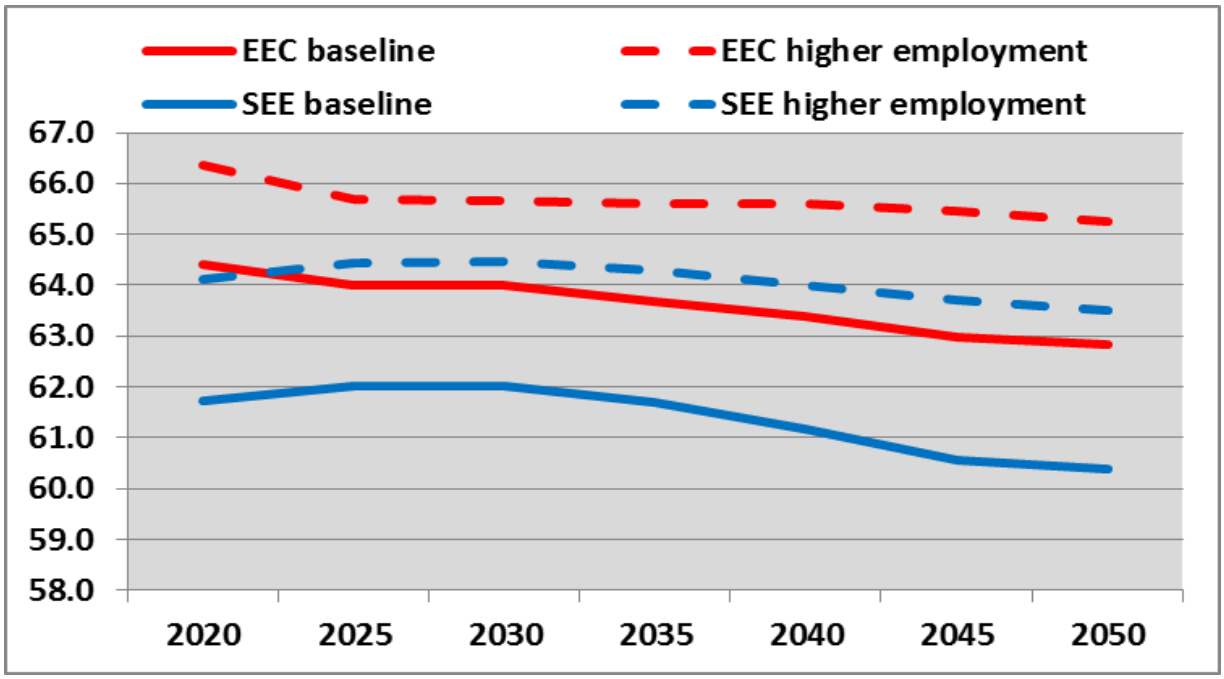
Source: UNECE (2011b).

low participation and employment rates of older population cohorts. Participation rates of female cohorts over 55 years are particularly low but could be raised by adjusting the statutory retirement age of women to parity with males and reducing incentives for early retirement. Simulations based on the assumption of an increase of participation rates of older female to those of male workers indicate that the average increase in aggregate employment rates over the baseline levels would rise from some 2 per cent in 2020 to almost 2½ per cent in Eastern Europe and the Caucasus (without Azerbaijan) and from 2½ per cent to over 3 per cent in South-Eastern Europe (without Turkey).

Figure 5.9 compares the employment rates consistent with the baseline and higher employment scenarios in Eastern Europe and the Caucasus (EEC) and South-Eastern Europe. The relatively strong impact of higher female participation rates in SEE economies on aggregate employment rates reflects the comparatively low level of participation rates of older female workers in countries of the region. In spite of the higher employment rates associated with the mobilization of older workers, employment *levels* would start declining from the 2020s (albeit more slowly than in the baseline scenario) due to the impact of rapid population ageing.

The direction and magnitude of fiscal effects of the increasing female labour supply are by no means obvious. Given the important role played by women in childcare and care for the aged, higher labour market participation would not be feasible without a transfer of such services from private households to alternative institutions that would have to be financed to some extent by the public sector.

Figure 5.9
Alternative employment-population ratios (15-64 years), per cent



Source: UNECE projections.
Note: EEC = Armenia, Belarus, Georgia, Republic of Moldova, Russian Federation, Ukraine. SEE = Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, The former Yugoslav Republic of Macedonia. Sub-regional averages are unweighted.

The required investment in child and elderly care could be substantial in many countries of the region. After the transition crisis during which a large share of facilities were closed down many countries invested in pre-school services. As a result, preschool enrolment rates surpassed their pre-transition levels in Central Europe and Western EECCA but remained low and with no sign of substantial recovery in Central Asia and the Caucasus (UNICEF, 2009). On the other hand, the provision of institutional elderly care, i.e. nursing homes, hospices, and long-term residential care, is quite low even in Western countries (involving not more than 12-13 per cent of the elderly in Northern European countries, OECD 2011c) and is very limited in EECCA and SEE countries.

Other policy scenarios, based on alternative assumptions about labour market participation rates or demographic patterns, could be developed with the aid of model simulations. Given the sensitivity of such simulations to changes in behavioural and demographic parameters, it would be prudent to increase effective retirement ages by eliminating early retirement options or making them less attractive. The sustainability of social security systems could be further improved by facilitating immigration with a view to increasing labour supply. Simulations suggest that moderate increases in net immigration could increase employment and restore fiscal balance of social security systems. Immigration is already important for the labour market in Russia and other resource-rich EECCA economies while the source countries – mainly resource-poor economies of the sub-region – benefit from inflows of worker remittances. However, immigration would be also beneficial to countries like Ukraine. Simulations based on our pension model suggest that moderate net

inflows of young immigrant workers (50,000 per year) could eliminate the Ukrainian PAYG deficit by 2030 and keep it close to zero until 2050.

A more detailed discussion of immigration and other issues that should be addressed by international cooperation is beyond the scope of this chapter. However, Box 5.2 highlights some areas for international cooperation and mentions a few examples of good practice in the ECE region.

Box 5.2
Cooperation on Ageing Policies in the ECE region

National ageing policies should be strengthened by effective regional and sub-regional cooperation in diverse areas, including labour markets, pensions, health and long-term care. The regional cooperation in the ECE area aims to reduce the risk of poverty of the ageing population and empower older persons by providing them with a secured income. It is recommended that member States should pursue their objectives in line with the agreed Regional Implementation Strategy of the Madrid International Plan of Action on Ageing, which ensures that all relevant stakeholders (governments, NGOs and research communities) are involved. Examples of good practice include the UNECE intergovernmental Working Group on Ageing and the South-Eastern Europe Health Network.

Source: UNECE (2011a).

Concluding remarks

This chapter argues that population ageing presents significant challenges for EECCA and SEE countries. Although the ageing process is less advanced than in Western Europe, the rapid pace of demographic change in Emerging Europe and Central Asia is projected to double or even treble the national old-age dependency ratios over the period 2010-50. The adverse impact of ageing on effective labour supply is expected to be particularly strong in countries of the Caucasus (except Azerbaijan), Eastern Europe, and South-Eastern-Europe (except Turkey).

The overall sustainability of pension systems in countries with a relatively advanced demographic transition will depend on their capacity to fully utilize diminishing labour resources. The increase of effective retirement age of both men and women is a key precondition for increasing participation and employment rates, providing that governments reduce incentives to retire early and improve incentives to work in the formal sector. In some countries even high employment rates may not be sufficient to balance the revenues and expenditures of PAYG systems so that downward adjustments in replacement rates would be needed to make social security sustainable. Policy makers should ensure however that retirement benefit levels do not decline below the minimum specified in the 1952 ILO social security convention. The investment performance of the second pillar defined benefit systems has been disappointing to date in the EECCA and SEE countries that introduced them in late

1990s or early 2000s. Although the performance of these systems may well improve in the longer run, it is unlikely that they will play more than a supplementary role in the provision of public pension benefits in the foreseeable future.

In some countries of the region the contribution-based public pension systems may become unsustainable due to the diminishing number of contributors and rising number of retirees with social security entitlements. In such countries authorities should probably consider the establishment of a social protection floor for the elderly in the form of noncontributory social pensions. The financing of universal social pension from the general revenue would reduce labour costs in the formal sector and could stimulate job creation.

Ageing will have important consequences for healthcare systems as well. However, at least in the near future, the priorities for EECCA and SEE countries' health spending will be set predominantly by the necessity of improving health outcomes and the rising citizens' expectations about the quality and accessibility of health services. These countries' ability to invest in public health will vary a lot depending on their development process and the fiscal space they will have. While for oil exporting countries it will be easier to increase public investment, all of them should concentrate their efforts on making substantial improvements in efficiency in order to reduce the health gap with advanced economies and contain cost pressures. Preventive strategies aiming at improving the population health status and attaining a "healthy ageing" process could have positive effects on the employment rates especially of pre-retirement workers, contributing in this way to the efforts to increase labour market participation and ease the pressure on pension systems.

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Statistical Annex

Introduction

The statistical annex was prepared by the UNECE Statistical Division on the basis of the information available as of 31 July 2012. Please note that the MDG indicators for the ECE region are continuously updated. The latest available version of the data can be downloaded from the UNECE website at http://w3.unece.org/pxweb/Dialog/

Table 1A

Population below national poverty line, percentage [a]

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Europe, Caucasus and Central Asia																	
Armenia	..	..	..	..	..	..	50.9	49.7	42.9	34.6	29.8	26.5	25.0	27.6	34.1	..	..
Azerbaijan	68.1	..	..	..	..	..	49.6	46.7	44.7	40.2	29.3	20.8	15.8	13.2	10.9	9.1	..
Belarus	38.4	38.6	32.1	33.0	46.7	41.9	28.9	30.5	27.1	17.8	12.7	11.1	7.7	6.1	5.4	..	..
Georgia	..	..	46.2	50.2	51.8	51.8	51.1	52.1	54.5	27 [b]	..	..	31.0	..		..	..
Kazakhstan	..	34.6	38.3	39.0	34.5	31.8	28.4	24.2	19.8	16.1	31.6 [c]	18.2	12.7	12.1	8.2	6.5	5.3
Kyrgyzstan	..	43.5	43.0	54.9	55.3	62.6	56.4	54.8	49.9	45.9	43.1	39.9	35.0	31.7	31.7	..	..
Republic of Moldova	..	..	..	..	..	67.8	54.6	40.4	29.0	26.5	29.1	30.2	25.8	26.4	26.3	..	..
Russian Federation	24.8	22.1	20.8	23.4	28.4	29.0	27.5	24.6	20.3	17.6	17.7	15.2	13.3	13.4	13.2	13.1	..
Tajikistan	..	..	..	..	36.0	..	..	..	18.0	..	..	..	..	..	17.1	..	..
Ukraine	..	..	..	..	..	80.2	82.7	83.3	76.2	65.6	55.3	49.7	27.2	16.1	15.5	21.8	..
Uzbekistan	..	..	..	..	..	..	27.5	26.5	27.2	26.1	25.8	..	..	..	..	..	..
South-Eastern Europe																	
Albania	..	..	..	..	..	..	..	25.4	..	..	18.5	..	..	12.4	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	19.5	..	..	18.3	..	..	18.2	..	..	..	..
Croatia	..	..	..	..	..	..	17.2	18.2	16.9	16.7	17.5	18.0	17.3	17.9	20.5	..	..
Serbia	..	..	..	..	..	..	..	14.0		..		8.8	7.9	6.1	6.9	9.2	..
The former Yugoslav Republic of Macedonia	..	..	19.0	20.7	21.0	22.3	22.7	30.2	30.2	29.6	30.0	29.8	29.4	28.7	..	..	..
Turkey	..	..	..	..	..	..	..	27.0	28.1	25.6	20.5	17.8	17.8	17.1	18.1	..	..

Notes: The national poverty rate is the percentage of the total population living below the national poverty line.
National poverty lines are set by individual countries, reflecting their population's basic needs for subsistence. The following are definitions applied in the reported countries.

Armenia: Consumption below the adult equivalent poverty line. Data from 2008 are based on revised poverty line. Source: Integrated Living Conditions Survey 2004, 2009 Republic of Armenia National Statistical Service.
Azerbaijan: Absolute poverty line, Source: UNSD MDG database for years 1995-2001, State Statistical Committee (MDG indicators) for years 2002-2010.
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Russian Federation: Population with money incomes below minimum subsistence level, Source:National Statistical Office of the Russian Federation.
Tajikistan: Population living on less than US$1.08 (PPP) per day. Source: MDG needs assessment 2010 for 1999-2003, MDG Progress Report 2010 for 2009.
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Croatia: At risk of poverty, 60% of median equivalised income, Source: National Statistical Office - Household Budget Surveys for years 2001-2005, Eurostat for years 2006-2010.
Serbia: Percentage of poor persons, under absolute poverty line. Source: Poverty in the Republic of Serbia, 2008 - 2010 (LP20), Statistical Office of the Republic of Serbia
The former Yugoslav Republic of Macedonia: Relative poverty (70% of median equivalised expenditure), Source: MDG report 2009, State Statistical Office.
Turkey: Income below subsistence minimum, complete poverty line (food and non-food), Source: MDG report 2005 for years 2002-2003, Poverty study 2009 for years 2004-2009.

a Data on population at risk of poverty in the EU countries, Iceland and Norway are presented in Table 1B.
b Break in series due to change in methodology.
c Break in series due to change in composition of food and non-food items in the minimum subsistence basket.
d Provisional data.
.. - data not available

Table1B

Poverty in the EU countries and other European high income countries, percentage

Country	Total						Women						Men					
	1995	2005	2007	2008	2009	2010	1995	2005	2007	2008	2009	2010	1995	2005	2007	2008	2009	2010
European Union																		
Austria	13.0	12.3	12.0	12.4	12.0	12.1	15.0	13.1	13.3	13.5	13.2	13.5	12.0	11.5	10.6	11.2	10.7	10.7
Belgium	16.0	14.8	15.2	14.7	14.6	14.6	17.0	15.5	15.9	15.9	15.7	15.2	15.0	14.1	14.4	13.6	13.4	13.9
Bulgaria	..	14.0	22.0	21.4	21.8	20.7	..	15.0	23.0	22.9	23.7	22.3	..	13.0	20.9	19.8	19.8	19.0
Cyprus	..	16.1	15.5	15.7	15.3	15.8	..	17.6	17.4	17.8	17.1	17.2	..	14.5	13.5	13.5	13.4	14.3
Czech Republic	..	10.4	9.6	9.0	8.6	9.0	..	11.0	10.5	10.1	9.5	10.0	..	9.7	8.7	8.0	7.5	8.0
Denmark	10.0	11.8	11.7	11.8	13.1	13.3	..	12.1	12.0	12.0	13.4	13.4	..	11.6	11.3	11.7	12.8	13.1
Estonia	..	18.3	19.4	19.5	19.7	15.8	..	19.1	21.7	22.0	21.6	16.2	..	17.4	16.7	16.5	17.5	15.4
Finland	..	11.7	13.0	13.6	13.8	13.1	..	12.8	13.8	14.5	14.7	13.8	..	10.6	12.1	12.7	12.9	12.4
France	15.0	13.0	13.1	12.7	12.9	13.5	16.0	13.7	13.4	13.4	13.7	14.1	15.0	12.3	12.8	11.9	12.0	12.8
Germany	15.0	12.2	15.2	15.2	15.5	15.6	16.0	12.9	16.3	16.2	16.3	16.4	13.0	11.4	14.1	14.2	14.7	14.9
Greece	22.0	19.6	20.3	20.1	19.7	20.1	22.0	20.9	20.9	20.7	20.2	20.9	21.0	18.3	19.6	19.6	19.1	19.3
Hungary	..	13.5	12.3	12.4	12.4	12.3	..	13.2	12.3	12.4	12.1	12.0	..	13.9	12.3	12.4	12.8	12.6
Ireland	19.0	19.7	17.2	15.5	15.0	16.1	20.0	20.6	18.5	16.4	15.1	16.2	17.0	18.9	16.0	14.5	14.9	15.9
Italy	20.0	18.9	19.9	18.7	18.4	18.2	21.0	20.6	21.3	20.1	19.8	19.5	19.0	17.0	18.4	17.1	17.0	16.8
Latvia	..	19.2	21.2	25.6	25.7	19.3 [a]	..	20.0	22.7	27.7	27.0	18.7 [a]	..	18.3	19.3	23.1	24.2	20 [a]
Lithuania	..	20.5	19.1	20.0	20.6	20.2	..	21.3	21.2	22.0	21.9	19.8	..	19.7	16.7	17.6	19.1	20.7
Luxembourg	12.0	13.7	13.5	13.4	14.9	14.5	13.0	14.2	14.1	14.3	16.0	14.4	11.0	13.2	12.9	12.5	13.8	14.6
Malta	..	13.9	14.8	15.0	15.3	15.5	..	14.4	15.3	16.4	15.9	16.0	..	13.4	14.4	13.6	14.7	15.0
Netherlands	11.0	10.7	10.2	10.5	11.1	10.3	12.0	10.8	10.7	10.4	11.3	10.8	11.0	10.6	9.6	10.5	10.8	9.7
Poland	..	20.5	17.3	16.9	17.1	17.6	..	19.9	17.1	16.7	17.4	17.7	..	21.3	17.6	17.0	16.9	17.4
Portugal	23.0	19.4	18.1	18.5	17.9	17.9	24.0	20.1	19.0	19.1	18.4	18.4	21.0	18.7	17.2	17.9	17.3	17.3
Romania	..	-	24.8	23.4	22.4	21.1	..	..	25.3	24.3	23.4	21.4	..	..	24.3	22.4	21.4	20.7
Slovakia	..	13.3	10.6	10.9	11.0	12.0	..	13.5	11.0	11.5	11.8	12.2	..	13.2	10.2	10.1	10.1	11.7
Slovenia	..	12.2	11.5	12.3	11.3	12.7	..	13.7	12.9	13.6	12.8	14.1	..	10.6	10.0	11.0	9.8	11.3
Spain	19.0	19.7	19.7	19.6	19.5	20.7	19.0	20.8	20.9	21.0	20.6	21.3	19.0	18.5	18.5	18.3	18.3	20.1
Sweden	..	9.5	10.5	12.2	13.3	12.9	..	10.0	10.6	13.0	14.5	14.3	..	9.0	10.5	11.3	12.0	11.4
United Kingdom	20.0	19.0	18.6	18.7	17.3	17.1	22.0	19.4	19.6	20.0	17.8	17.8	19.0	18.6	17.6	17.4	16.7	16.4
Other high income countries																		
Iceland	..	9.7	10.1	10.1	10.2	9.8	..	9.8	9.1	9.5	9.3	9.8	..	9.6	11.0	10.7	11.1	9.8
Norway	..	11.4	11.9	11.4	11.7	11.2	..	10.2	10.3	9.9	10.1	10.1	..	12.5	13.4	12.9	13.2	12.2
Switzerland	..	..	..	16.2	15.1	15.0	..	..	..	14.5	13.5	13.8	..	..	..	18.0	16.7	16.1

Source: Eurostat (Statistical Office of the European Union)
Note: Population at risk of poverty, share of persons aged 0+ with an equivalised disposable income below 60% of the national equivalised median income.
.. - data not available
a: data refers to 2011

Table 2

Unemployment rate by sex, percentage

	Total						Women						Men					
Country	**2000**	**2005**	**2008**	**2009**	**2010**	**2011**	**2000**	**2005**	**2008**	**2009**	**2010**	**2011**	**2000**	**2005**	**2008**	**2009**	**2010**	**2011**
Eastern Europe, Caucasus and Central Asia																		
Armenia	..	31.2	19.7	18.7	19.0	18.4	..	37.6	22.0	21.2	21.2	..	..	26.1	17.6	17.8	17.0	..
Azerbaijan [a]	11.8	7.3 [a]	5.9	5.7	5.6	5.4	12.7	7.3	5.5	6.6	6.9	..	10.9	7.2	6.1	4.9	4.4	..
Belarus [b]	2.1	1.5	0.8	0.9	0.7	..	2.4	2.0	0.9	0.9	0.7	..	1.7	1.0	0.7	0.8	0.7	..
Georgia	10.3	13.8	16.5	16.9	16.3	15.1	9.7	12.6	16.1	15.4	14.5	13.1	11.0	14.8	16.8	18.1	17.9	16.7
Kazakhstan	12.8	8.1	6.6	6.6	5.8	5.4	..	9.6	7.9	7.5	6.6	6.2	..	6.7	5.3	5.6	4.9	4.6
Kyrgyzstan	..	8.1	8.2	8.4	8.6	..	..	9.1	9.4	9.8	9.9	..	..	7.4	7.3	7.4	7.7	..
Republic of Moldova [c]	8.5	7.3	4.0	6.4	7.4	6.7	7.2	6.0	3.4	4.9	5.7	5.6	9.7	8.7	4.6	7.8	9.1	7.7
Russian Federation [d]	10.6	7.2	6.3	8.4	7.5	6.1	10.4	7.0	6.1	7.8	6.9	6.0	10.8	7.3	6.6	9.0	8.0	6.4
Tajikistan [b]	9.3	..	..	..	..	..	9.6	..	..	..	..	..	9.0	..	..	..	..	..
Ukraine	11.6	7.2	6.4	8.8	8.1	7.9	11.6	6.8	6.1	7.3	6.8	6.8	11.6	7.5	6.6	10.3	9.3	8.8
Turkmenistan	2.4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Uzbekistan	0.4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South-Eastern Europe																		
Albania [b]	16.8	14.1	13.0	13.8	13.6	13.3	19.3	17.2	13.5	15.9	16.7	14.3	14.9	12.1	12.5	12.2	11.5	12.4
Bosnia and Herzegovina	..	..	23.4	24.1	23.1	25.6	..	..	26.8	25.6	29.9	29.9	..	..	21.4	23.1	25.6	26.1
Croatia	16.1	12.7	8.4	9.1	11.8	13.5	17.3	13.9	10.1	10.3	12.3	13.2	15.0	11.6	7.0	8.0	11.4	13.8
Montenegro	..	30.3	16.8	19.1	19.7	19.7	..	26.2	17.9	20.4	20.7	20.0	..	35.5	15.9	18.0	18.9	19.5
Serbia [e]	..	20.8	13.6	16.1	19.2	23.7	..	26.2	15.8	17.8	20.2	..	..	16.8	11.9	14.8	18.4	..
Republic of Macedonia	32.2	37.3	33.8	32.2	32.0	..	34.9	38.4	34.2	32.8	32.3	..	30.5	36.5	33.5	31.8	31.9	..
Turkey	6.5	10.6	9.8	12.6	10.7	8.8	6.3	11.2	10.0	12.7	11.4	10.1	6.6	10.5	9.7	12.6	10.4	8.3
EU 27																		
Austria	4.7	5.2	3.8	4.8	4.4	4.2	4.6	5.5	4.1	4.6	4.2	4.3	4.8	4.9	3.6	5	4.6	4
Belgium	6.6	8.5	7	7.9	8.3	7.2	8.3	9.5	7.6	8.1	8.5	7.2	5.3	7.6	6.5	7.8	8.1	7.1
Bulgaria	16.2	10.1	5.6	6.8	10.2	11.2	15.8	9.8	5.8	6.6	9.5	10	16.6	10.3	5.5	7	10.9	12.3
Cyprus [f]	5	5.3	3.7	5.3	6.2	7.8	7.3	6.5	4.3	5.5	6.4	7.7	3.2	4.4	3.2	5.2	6	7.9
Czech Republic	8.8	7.9	4.4	6.7	7.3	6.7	10.5	9.8	5.6	7.7	8.5	7.9	7.3	6.5	3.5	5.9	6.4	5.8
Denmark	4.5	4.8	3.4	6	7.5	7.6	5	5.3	3.7	5.3	6.5	7.5	4	4.4	3.2	6.6	8.4	7.7
Estonia	13.1	7.9	5.5	13.8	16.9	12.5	11.5	7.1	5.3	10.6	14.3	11.8	14.6	8.8	5.8	16.9	19.5	13.1
Finland	11.1	8.4	6.4	8.2	8.4	7.8	12	8.6	6.7	7.6	7.6	7.1	10.3	8.2	6.1	8.9	9.1	8.4
France [g]	10.2	8.9	7.4	9.1	9.4	9.3	12.2	9.8	7.9	9.4	9.7	9.8	8.5	8	6.9	8.9	9	8.8
Germany	7.9	11.1	7.5	7.7	7.1	..	8.3	10.7	7.5	7.2	6.6	..	7.7	11.4	7.4	8.1	7.5	..
Greece	11.3	9.9	7.7	9.5	12.6	17.7	17	15.3	11.4	13.2	16.2	21.4	7.4	6.1	5.1	6.9	9.9	15
Hungary	6.6	7.2	7.8	10	11.2	10.9	5.8	7.4	8.1	9.7	10.7	10.9	7.2	7	7.6	10.3	11.6	11
Ireland	4.3	4.4	6	11.9	13.7	14.4	4.3	4.0	4.6	8.0	9.7	10.6	4.4	4.6	7.1	14.8	16.9	17.5
Italy	10.9	7.7	6.8	7.8	8.4	8.4	14.9	10.1	8.5	9.3	9.7	9.6	8.3	6.2	5.5	6.8	7.6	7.6
Latvia	14.2	8.9	7.5	17.1	18.7	15.4	13.4	8.7	6.9	13.9	15.7	13.1	15	9.1	8	20.3	21.7	17.6
Lithuania	16	8.3	5.8	13.7	17.8	15.4	13.7	8.3	5.6	10.4	14.5	13	18.3	8.2	6.1	17.1	21.2	17.8
Luxembourg	2.3	4.5	5.1	5.1	4.4	4.9	3.1	5.8	6	6.1	5.1	6.3	1.8	3.5	4.3	4.4	3.8	3.8
Malta	6.3	7.3	6	6.9	6.9	6.5	6.5	8.9	6.9	7.6	7.1	7.1	6.2	6.6	5.6	6.6	6.8	6.1
Netherlands	2.7	4.7	2.8	3.4	4.5	4.4	3.5	5.1	3	3.5	4.5	4.4	2.2	4.5	2.5	3.4	4.4	4.5
Poland	16.4	17.8	7.1	8.2	9.6	9.7	18.4	19.2	8	8.7	10	10.5	14.6	16.6	6.4	7.8	9.3	9
Portugal	3.9	7.7	7.7	9.6	11	12.9	4.8	8.8	9	10.3	12.1	13.2	3.1	6.8	6.6	9	10	12.7
Romania	7.1	7.2	5.8	6.9	7.3	7.4	6.6	6.4	4.7	5.8	6.5	6.8	7.7	7.8	6.7	7.7	7.9	7.9
Slovakia	19.1	16.3	9.5	12	14.4	13.5	18.6	17.2	10.9	12.8	14.6	13.6	19.4	15.5	8.4	11.4	14.2	13.5
Slovenia	6.9	6.5	4.4	5.9	7.3	8.2	7.1	7.1	4.8	5.8	7.1	8.2	6.8	6.1	4	5.9	7.5	8.2
Spain	13.8	9.2	11.3	18	20.1	21.7	20.3	12.2	13	18.4	20.5	22.2	9.5	7.1	10.1	17.7	19.7	21.2
Sweden	5.5	7.8	6.2	8.4	8.4	7.5	5.0	7.7	6.6	8.0	8.3	7.5	5.9	7.9	5.9	8.7	8.5	7.6
United Kingdom	5.6	4.8	5.6	7.6	7.8	8	4.9	4.3	5.1	6.4	6.8	7.3	6.2	5.2	6.1	8.6	8.6	8.7
Other high income countries																		
Canada	6.8	6.8	6.1	8.3	8.0	7.5	6.7	6.5	5.7	7.0	7.2	7.0	6.9	7.0	6.6	9.4	8.7	7.8
Iceland	1.9	2.6	3.0	7.2	7.6	..	2.6	2.6	2.6	5.7	6.7	..	1.3	2.6	3.3	8.6	8.3	..
Israel	8.8	9.0	6.1	..	6.6	5.6	9.2	9.5	6.5	..	6.5	5.6	8.4	8.5	5.7	..	6.8	5.6
Norway	3.5	4.4	2.5	3.1	3.5	3.2	3.3	4.2	2.4	2.6	2.9	3.0	3.6	4.5	2.7	3.6	4.0	3.4
Switzerland	2.7	4.5	3.4	4.1	4.6	4.1	3.1	5.1	4.0	4.5	5.0	4.5	2.3	3.9	2.8	3.8	4.2	3.7
United States	4.0	5.1	5.8	9.3	9.6	8.9	4.1	5.1	5.4	8.1	8.6	8.5	3.9	5.0	6.1	10.3	10.5	9.4

Source: UNECE Statistical Database, compiled from national and international (Eurostat and ILO) official sources.

Note: The unemployment rate is the share (in per cent) of the unemployed in the labour force.
The unemployed are all the persons above a specific age who, during the reference period, were: (a) without work, i.e. were not in paid employment or self-employment, (b) currently available for work, i.e. were available for paid employment or self-employment during the reference period, and (c) seeking work, i.e. had taken specific steps in a specified reference period to seek paid employment or self-employment.

.. - data not available

General note: Data come from the Labour Force Survey (LFS) unless otherwise specified in country footnotes.

a Data refer to official estimates.
b Data refer to registered unemployment
c Data do not cover Transdniestra
d 2005 data do not cover the Chechen Republic. Data from 2006 cover the Chechen Republic.
e Data do not cover Kosovo and Metohia.
f Data cover only the area controlled by the Republic of Cyprus.
g Data do not cover the overseas departments (DOM).

Table 3

Net enrolment Rate in primary education by sex

Country	Total			Girls			Boys		
	2000/2001	2005/2006	2010/2011 [a]	2000/2001	2005/2006	2010/2011 [a]	2000/2001	2005/2006	2010/2011 [a]
Eastern Europe, Caucasus and Central Asia									
Armenia	90.6	83.0	..	91.0	84.7	..	90.2	81.4	..
Azerbaijan	85.4	83.1	84.4	84.7	80.3	83.8	86.0	85.9	85.0
Belarus	93.4	89.8	91.7	..	..	..	..	..	..
Georgia	..	93.4	..	..	94.1	..	..	92.7	..
Kazakhstan	89.2	89.8	88.2	89.2	90.1	89.2	89.1	89.5	88.7
Kyrgyzstan	86.3	88.5	87.5	85.3	87.9	86.8	87.2	89.0	88.1
Republic of Moldova	92.5	87.8	87.6	91.2	87.7	87.4	93.7	87.8	87.8
Russian Federation	..	91.4	..	..	91.3	..	..	91.5	..
Tajikistan	95.1	97.3	97.3	91.5	95.1	95.5	98.7	99.4	99.0
Ukraine	..	90.2	90.7	..	90.0	91.1	..	90.3	90.4
Uzbekistan	..	..	89.8	..	..	88.4	..	..	91.2
South-Eastern Europe									
Albania	99.4	..	79.9	..	..	80.1	..	..	79.7
Bosnia and Herzegovina	..	..	87.0	..	..	87.8	..	..	86.2
Croatia	86.8	90.1	86.8	86.1	89.8	86.6	87.5	90.5	87.1
Montenegro	..	98.5	83.2	..	..	..	..	..	..
Serbia	..	97.9	92.7	..	97.9	92.5	..	97.9	93.0
The former Yugoslav Republic of Macedonia	92.4	88.1	88.0	92.4	88.3	88.6	92.3	87.9	87.3
Turkey	96.6	97.7	..	..	96.0	..	..	99.4	..
Belgium	99.1	98.8	..	99.2	98.9	..	99.1	98.7	..
Bulgaria	96.7	92.0	98.0	95.8	91.6	98.0	97.6	92.3	97.9
Cyprus	95.0	99.2	98.7	95.3	99.2	98.5	94.7	99.2	98.9
Denmark	100.0	95.9	..	100.0	96.5	..	99.9	95.2	..
Estonia	96.8	94.3	..	96.1	94.0	..	97.5	94.7	..
Finland	99.6	96.8	97.7	99.6	97.0	97.7	99.6	96.6	97.6
France	99.0	98.5	98.5	99.1	98.6	98.6	98.9	98.4	98.4
Germany	99.2	98.3	97.7	99.1	98.3	97.5	99.3	98.3	97.8
Greece	93.6	98.5	..	93.8	98.6	..	93.5	98.4	..
Hungary	89.4	90.4	..	88.9	89.6	..	89.9	91.2	..
Ireland	93.9	95.2	95.1	93.5	94.8	95.0	94.3	95.6	95.2
Italy	98.7	98.7	97.4	98.6	98.3	96.7	98.9	99.0	98.1
Latvia	..	..	95.1	..	..	95.8	..	..	94.4
Lithuania	95.7	89.7	92.8	95.2	89.3	92.4	96.2	90.0	93.3
Luxembourg	96.1	96.6	..	96.4	97.0	..	95.9	96.2	..
Malta	93.1	..	93.8	93.1	..	94.3	93.1	..	93.3
Netherlands	99.3	98.4	99.8	98.7	97.7	99.8	99.9	99.0	99.8
Poland	97.5	95.4	..	97.4	95.3	..	97.6	95.5	..
Portugal	..	97.8	..	..	97.2	..	..	98.3	..
Romania	93.4	92.3	87.6	93.1	92.3	87.3	93.7	92.2	87.9
Slovakia	..	..	83.7	..	..	84.6	..	..	82.9
Slovenia	93.9	94.6	..	93.5	94.4	..	94.2	94.8	..
Spain	99.9	99.7	99.7	99.9	99.5	99.8	99.9	99.9	99.6
Sweden	99.7	95.4	99.4	..	95.2	99.0	..	95.5	99.7
United Kingdom	100.0	98.5	..	..	98.8	..	..	98.3	..
EU 27									
Iceland	99.4	97.8	..	98.9	97.3	..	99.9	98.4	..
Israel	98.3	97.0	..	98.3	97.5	..	98.2	96.5	..
Liechtenstein	..	95.1	93.5	..	95.4	91.9	..	94.7	95.2
Norway	99.8	98.6	99.1	99.8	99.0	99.2	99.7	98.3	99.1
Switzerland	95.3	93.1	93.8	95.5	93.0	93.6	95.1	93.2	93.9

Source: UNESCO Institute for Statistics database

Note: The net enrolment ratio is the number of students of the official school..age group (defined by each country) enrolled in primary level education per 100 persons of the same age group.

.. - data not available
a: Data for school year 2010/2011 or latest data available

Table 4

Enrolment ratio at secondary education by sex

Country	Total				Girls				Boys			
	1995/1996 [a]	2000/2001	2005/2006	2008/2009 [b]	1995/1996 [a]	2000/2001	2005/2006	2008/2009 [b]	1995/1996 [a]	2000/2001	2005/2006	2008/2009 [b]
Eastern Europe, Caucasus and Central Asia												
Armenia	..	86.0	85.9	86.3	..	88.5	87.4	87.7	..	83.6	84.4	85.0
Azerbaijan	..	74.4	79.3	..	..	72.1	77.9	..	..	76.8	80.7	..
Belarus	..	81.8	87.9	86.5	..	..	..	..	..	..	..	..
Georgia	76.4	..	77.0	..	75.1	..	77.4	..	77.6	..	76.7	..
Kazakhstan	..	87.8	87.8	89.6	..	87.4	87.7	89.2	..	88.3	87.9	89.9
Kyrgyzstan	..	..	81.2	78.9	..	..	81.4	78.5	..	..	81.1	79.3
Republic of Moldova	..	78.0	81.3	78.6	..	79.3	83.1	79.3	..	76.8	79.7	78.0
Russian Federation	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	73.5	81.0	85.0	..	67.2	74.1	79.9	..	79.7	87.7	89.8
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	..	91.0	83.8	86.0	..	91.9	84.3	86.3	..	90.1	83.4	85.7
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
South-Eastern Europe												
Albania	..	69.4	..	..	..	68.0	..	..	..	70.8	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Croatia	..	83.2	..	91.0	..	84.0	..	93.7	..	82.5	..	88.4
Montenegro	..	..	..	..	..	..	..	..	..	..	..	..
Serbia	..	..	..	90.2	..	..	..	91.1	..	..	..	89.3
The former Yugoslav Republic of Macedonia	..	..	..	..	..	..	..	..	..	..	..	..
Turkey	..	71.1	76.5	..	..	63.7	71.3	..	..	78.4	81.6	..
EU 27												
Austria	..	..	..	..	..	..	..	..	..	..	..	..
Belgium	95.9	..	..	..	96.2	..	..	..	95.6	..	..	..
Bulgaria	84.8	87.6	85.2	82.7	..	86.8	84.1	81.5	..	88.3	86.3	83.8
Cyprus	89.6	88.3	94.1	96.0	90.9	89.4	95.1	96.4	88.4	87.3	93.0	95.5
Czech Republic	86.2	..	..	..	87.3	..	..	..	85.1	..	..	..
Denmark	87.1	89.3	89.3	..	88.3	90.5	90.7	..	86.0	88.1	87.9	..
Estonia	..	84.6	91.1	..	..	86.4	92.3	..	..	83.0	90.0	..
Finland	92.6	94.4	96.4	93.9	93.7	95.2	96.5	94.2	91.5	93.6	96.3	93.5
France	94.9	92.0	97.9	98.4	95.6	93.0	98.7	99.3	94.2	91.1	97.1	97.6
Germany	88.6	..	..	..	88.7	..	..	..	88.6	..	..	..
Greece	82.8	82.6	91.9	..	85.3	85.4	92.4	..	80.5	80.0	91.4	..
Hungary	..	86.5	90.5	..	..	86.7	90.5	..	..	86.4	90.6	..
Ireland	85.2	88.8	95.3	99.0	87.4	91.8	98.1	99.9	83.2	86.0	92.6	98.2
Italy	..	88.4	92.5	94.0	..	89.6	93.2	94.1	..	87.2	91.8	93.9
Latvia	80.2	..	..	83.7	82.1	..	..	84.3	78.4	..	..	83.1
Lithuania	85.3	93.0	93.2	91.1	84.8	93.3	93.7	91.4	81.6	92.6	92.7	90.8
Luxembourg	69.8	80.5	83.4	..	72.6	83.8	85.6	..	67.1	77.3	81.3	..
Malta	76.3	..	..	81.1	78.8	..	..	79.9	73.8	..	..	82.3
Netherlands	91.1	..	88.8	87.4	91.6	..	89.5	88.2	90.7	..	88.1	86.8
Poland	..	91.4	93.1	..	..	92.8	93.7	..	..	90.0	92.5	..
Portugal	74.5	79.3	81.6	..	78.0	82.4	85.6	..	71.2	76.4	77.8	..
Romania	71.7	80.0	80.0	..	72.6	81.0	81.1	..	70.9	79.1	78.9	..
Slovakia	..	..	..	..	..	..	..	..	..	..	..	..
Slovenia	..	91.4	90.1	..	..	92.7	90.7	..	..	90.1	89.5	..
Spain	..	91.3	94.2	95.1	..	92.9	95.9	96.3	..	89.8	92.5	94.1
Sweden	97.5	94.9	99.4	94.1	98.0	95.7	99.6	94.1	97.1	94.1	99.2	94.1
United Kingdom	93.3	94.7	92.6	..	93.6	95.4	94.4	..	93.0	94.1	90.9	..
Other high income countries												
Canada	..	..	..	..	..	..	..	..	..	..	..	..
Iceland	..	82.5	89.3	..	..	84.1	90.3	..	..	80.9	88.3	..
Israel	..	98.9	99.7	..	..	99.4	100.0	..	..	98.5	99.5	..
Liechtenstein	..	..	..	64.1	..	..	..	64.3	..	..	..	63.9
Norway	..	94.4	97.2	93.9	..	94.9	97.7	94.0	..	94.0	96.8	93.9
Switzerland	..	83.9	85.0	83.1	..	82.1	82.7	81.8	..	85.7	87.2	84.3
United States of America	87.5	86.8	91.1	89.5	88.0	88.0	92.0	90.2	87.0	85.6	90.3	88.8

Source: UNESCO Institute for Statistics database

Note: The net enrolment ratio is the number of students of the official school..age group (defined by each country) enrolled in secondary..level education per 100 persons of the same age group.

.. - data not available
a: Data may be from 1994/1995 if 1995/1996 is not available
b: Data from 2009/2010 or latest year available

Table 5

Gross Enrolment Ratio in tertiary education by sex

	Total				Women				Men			
Country	**1989/1990**	**1999/2000**	**2004/2005**	**2009/2010 [a]**	**1989/1990**	**1999/2000**	**2004/2005**	**2009/2010 [a]**	**1989/1990**	**1999/2000**	**2004/2005**	**2009/2010 [a]**
Eastern Europe, Caucasus and Central Asia												
Armenia	23.2	23.6	28.3	51.5	..	24.5	31.2	57.9	..	22.6	25.5	45.2
Azerbaijan	23.3	15.7	14.5	19.1	..	12.9	13.4	18.9	..	18.3	15.5	19.3
Belarus	48.8	53.7	63.9	83.0	..	61.2	73.9	97.9	..	46.5	54.4	68.7
Georgia	..	37.8	46.6	28.2	..	36.9	47.3	31.4	..	38.8	45.8	25.1
Kazakhstan	39.4	28.1	52.7	40.8	..	30.3	62.1	48.3	..	25.8	43.5	33.5
Kyrgyzstan	26.9	34.8	42.5	..	..	35.0	47.1	..	..	34.6	38.0	..
Republic of Moldova	35.4	32.5	36.1	38.1	..	37.1	42.9	43.7	..	28.1	29.5	32.7
Russian Federation	54.7	55.4	72.2	..	..	..	83.5	..	..	..	61.2	..
Tajikistan	22.1	14.0	17.8	19.7	..	7.1	9.2	11.5	..	20.9	26.3	27.9
Turkmenistan	12.2	..	..	..	..	..	..	..	..	..	..	..
Ukraine	48.3	49.3	68.6	79.5	..	52.6	75.8	88.5	..	46.0	61.7	70.8
Uzbekistan	17.2	13.0	9.8	8.9	..	11.8	8.1	6.9	..	14.1	11.5	10.7
South-Eastern Europe												
Albania	8.2	16.7	..	..	8.7	19.2	..	..	7.7	13.9	..	..
Bosnia and Herzegovina	..	..	..	37.2	..	..	..	42.2	..	..	..	32.3
Croatia	22.8	30.8	43.8	54.1	..	33.1	48.1	62.1	..	28.6	39.6	46.5
Montenegro	..	..	22.1	47.6	..	..	26.9	52.9	..	..	17.4	42.6
Serbia	..	..	..	49.1	..	..	..	55.6	..	..	..	42.8
Republic of Macedonia	18.5	22.6	29.7	38.6	18.5	25.5	34.7	41.8	18.6	19.9	25.0	35.6
Turkey	13.0	24.5	31.9	..	8.7	19.6	27.1	..	17.3	29.3	36.7	..
EU 27												
Austria	32.5	56.2	47.6	..	30.5	58.1	52.0	..	34.5	54.3	43.3	..
Belgium	37.3	57.0	61.8	..	36.6	60.6	68.3	..	38.0	53.5	55.6	..
Bulgaria	26.2	44.3	44.1	56.9	28.2	52.1	47.3	64.6	24.4	36.9	41.2	49.4
Cyprus	..	19.6	33.2	54.6	..	22.2	35.3	50.5	..	16.9	31.2	58.7
Czech Republic	16.2	28.6	47.6	..	14.2	29.1	51.3	..	18.0	28.2	44.1	..
Denmark	34.1	57.1	80.2	..	36.1	66.0	93.4	..	32.3	48.5	67.4	..
Estonia	..	55.6	66.7	..	..	65.9	83.7	..	..	45.6	50.4	..
Finland	44.5	82.4	91.9	93.7	46.8	90.4	100.7	103.3	42.3	74.7	83.4	84.5
France	37.1	53.8	55.2	..	39.5	59.2	61.8	..	34.7	48.6	48.8	..
Germany	..	..	..	..	..	..	..	..	..	..	..	..
Greece	24.9	51.1	88.6	..	25.3	53.5	94.8	..	24.5	49.0	82.9	..
Hungary	14.6	37.1	64.1	..	15.2	40.9	76.3	..	14.0	33.4	52.3	..
Ireland	28.2	50.0	56.4	..	26.2	55.0	62.6	..	30.2	45.3	50.3	..
Italy	29.5	48.8	64.0	..	28.9	55.0	74.0	..	30.1	42.8	54.4	..
Latvia	24.9	56.5	75.2	60.1	29.3	72.4	97.2	76.8	20.7	40.9	54.3	44.0
Lithuania	33.2	50.6	76.4	74.0	27.4	61.3	93.6	89.5	38.6	40.2	59.9	59.0
Luxembourg	..	9.8	..	..	..	..	..	..	..	..	..	..
Malta	10.5	20.6	30.7	35.3	9.2	22.6	35.5	40.9	11.8	18.7	26.2	30.0
Netherlands	35.4	52.6	58.7	..	31.8	53.3	60.8	..	38.8	51.8	56.6	..
Poland	20.4	50.6	63.9	..	24.3	59.4	74.8	..	16.6	42.2	53.4	..
Portugal	20.0	47.3	55.4	..	..	54.3	62.8	..	..	40.6	48.2	..
Romania	8.3	23.6	45.8	58.8	8.2	25.0	51.1	67.7	8.4	22.3	40.7	50.3
Slovakia	..	28.6	40.1	54.8	..	29.4	45.2	66.9	..	27.9	35.1	43.3
Slovenia	24.4	55.4	79.6	..	27.3	64.4	94.5	..	21.5	47.1	65.4	..
Spain	35.7	58.7	66.6	..	37.0	63.6	73.3	..	34.4	54.1	60.2	..
Sweden	30.7	67.1	82.0	73.8	33.4	79.9	99.8	89.9	28.1	54.8	64.8	58.4
United Kingdom	26.6	58.3	58.7	..	25.7	63.3	68.5	..	27.5	53.3	49.3	..
Other high income countries												
Canada	90.3	59.3	..	..	99.8	68.1	..	..	81.2	50.9	..	..
Iceland	25.4	45.5	70.4	..	29.0	56.9	92.9	..	22.0	34.3	48.6	..
Israel	33.6	49.5	58.1	..	33.2	58.5	66.4	..	34.0	41.0	50.1	..
Liechtenstein	..	..	..	36.0	..	..	..	27.4	..	..	..	44.3
Norway	38.4	69.3	78.6	74.4	42.2	82.4	95.2	92.6	34.7	56.7	62.5	56.9
Switzerland	25.5	37.7	45.7	54.8	17.6	32.3	42.4	54.6	33.3	43.1	48.9	55.0
United States of America	71.5	68.7	82.2	94.8	79.1	78.6	97.0	111.3	64.1	59.3	68.2	79.2

Source: UNESCO Institute for Statistics database

Note: Enrolment in tertiary education expressed as percentage of population that is in the five-year age group following the age of leaving the secondary school. The age for each level of educating is specific to each country. Tertiary level is defined as level 5 and 6 of ISCED 1997 for the academic year concerned.

.. - data not available
a 2009-2010 or latest data available.

Table 6A

Gender pay gap in gross monthly earnings, percentage

Country	1995	2000	2005	2006	2007	2008	2009	2010	2011
Eastern Europe, Caucasus and Central Asia									
Armenia [a]	..	48.1	42.5	40.8	40.8	41.8	39.2	35.9	..
Azerbaijan	..	..	..	..	..	43.2	41.4	45.2	..
Belarus	20.9	19	20.9	20.1	21.6	26.1	..	..	..
Georgia	..	45.7	51	50.9	49.5	45.8	42.3	42.6	..
Kazakhstan [b]	..	10.8	15.3	12.9	10.4	10.1	8.9	8.5	..
Kyrgyzstan	..	32.4	37.5	34.2	32.7	32.7	..	..	..
Republic of Moldova [c]	..	..	27.4	31.9	27.4	26.7	23.6	23.9	25.6
Russian Federation	..	..	36.3	..	34.1	..	32.1	..	..
Tajikistan	..	56.8	48	44.6	43.3	40.3	..	..	..
Ukraine	33	29.1	29.1	27.2	27.1	24.8	..	22.2	..
South-Eastern Europe									
Albania	..	31.1	..	..	..	..	..	..	..
Croatia [c]	..	..	10.6	11	10.8	11.1	10.6	10.2	..
Serbia	..	..	7.3	6.7	3.7	..	..	..	..
EU 27									
Austria	..	..	34.5	34.2	36.7	34.9	36.7	33.8	..
Belgium	..	26.5	24.7	23.6	23.5	22.9	21.9	..	..
Bulgaria [d]	..	24.2	17.7	16.8	16.6	..	..	..	..
Cyprus [e]	..	..	..	25.7	22.7	..	..	..	..
Czech Republic	..	29.9	24.9	24.6	24.8	26	25.2	24.9	..
Estonia	..	..	31.2	32.7	31	30.9	27.9	..	..
Finland [f]	21.4	21.2	19.1	19.8	19.8	19.2	18.9	18.5	..
France [g]	19.4	18.6	18.5	..	..	..	..	..	..
Germany [h]	24.7	..	..	..	..	..	..	..	..
Ireland	25.2	20.9	19.1	..	..	..	..	..	..
Italy	..	..	..	26.3	27.1	24.8	25	..	..
Latvia [i]	21.7	21.4	18.1	17.6	16.1	15.2	16	18.5	16.5
Lithuania [j]	29.7	18.3	17.6	17.8	20.7	19.2	12.7	14.3	..
Luxembourg [k]	..	19.1	19.2	18.7	17.7	17.3	..	..	..
Malta	..	..	..	..	..	..	..	..	..
Netherlands [b]	45	42.9	41.4	44.5	43.9	43.1	42.8	42.6	..
Poland [l]	..	..	..	17.8	..	18.7	..	15	..
Portugal	..	..	..	..	..	..	..	..	..
Romania	..	..	14.1	13.1	10.6	6.3	6.9	11	..
Slovakia	..	25	28.4	26.9	25.8	24	25.3	24.7	..
Slovenia [f]	15	12.2	6.9	6.9	7.8	7.6	2.9	3.5	..
Spain [c]	..	30	27.5	26.3	25.6	21.9	22	..	..
Sweden	15	17.6	16.3	15.9	16.1	16	14.6	14.4	..
United Kingdom	..	26.9	23.3	23.7	23.6	..	..	..	..
Other high income countries									
Canada	..	30.6	27.4	27.2	26.9	27	25.7	25.5	24.4
Iceland	..	35.4	30.6	30.7	30.8	28.1	..	..	..
Israel [m]	39.6	38.5	36.8	36.6	35.8	36.9	34.1	34.3	..
Norway [n]	..	16.5	15.3	15.4	15.7	16.1	15.3	15	..
Switzerland [o]	..	21.3	..	18.9	..	19.3	..	18.4	..
United States	45.1	44.3	41.4	39.1	37.9	..	..	..	..

Source: UNECE Statistical Database, compiled from national and international official sources.

Note: Gender pay gap is the difference between men's and women's average earnings from employment, shown as a percentage of men's average earnings. Gender pay gap in monthly earnings is measured on the average total gross monthly earnings from work.

.. - data not available

a Data cover paid employees and self-employed in the formal sector of the economy, and refer to net earnings.

b Data does not include family or housing allowances

c Data refer to net earnings.

d Data refer only to employees under labour contract.

e Data exclude payments in kind and irregular bonuses

f Data cover only full-time employees. Earnings data do not include irregular bonuses, housing and family allowances.

g Data cover only Metropolitan France

h The data do not cover employees in the industrial sectors "Agriculture and Forestry", "Fishing" and "Public Administration, Defense, Compulsory Social Security" (NACE Rev. 1.1. Only NACE sections C-O, excluding L).

I Data refer to full-time equivalent

j Excludes individual enterprises

k Data cover only full-time employees and the NACE REV.1 sections C-K.

l Data from 2000 covers only full-time employees. Family allowances are excluded.

m Data from 2006 cover paid employees and self-employed

n Remuneration for time not worked is not included. Data cover full-time employees.

o Data cover full-time employees only. Overtime pay and family allowances are not included.

Table 6B

Gender pay gap in gross hourly earnings, percentage

Country	1995	2000	2005	2006	2007	2008	2009	2010	2011
Eastern Europe, Caucasus and Central Asia									
Azerbaijan [a]	..	..	55.0	53.1	49.2	45.8	..	..	..
Kyrgyzstan [b]	..	32.4	37.5	34.2	32.7	32.7	..	..	..
EU 27									
Austria	22.0	20.0	18.0	25.5	25.5	25.5	25.4	25.5	..
Belgium	12.0	13.0	7.0	9.5	9.1	9.0	8.8	8.6	..
Bulgaria [c]	..	..	15.0	12.4	12.4	13.6	15.3	15.7	..
Cyprus [d]	29.0	26.0	25.0	21.8	23.1	21.6	21.0	21.0	..
Czech Republic	..	22.0	19.0	23.4	23.6	26.2	25.9	25.5	..
Denmark	15.0	15.0	18.0	17.6	17.7	17.1	16.8	16.0	..
Estonia [e]	27.0	25.0	25.0	29.8	30.9	27.6	..	..	..
Finland [f]	..	17.0	20.0	21.3	20.0	20.0	20.1	19.4	..
France [g]	13.0	13.0	12.0	15.4	16.9	17.1	15.5	16.0	..
Germany [h]	21.0	21.0	22.0	22.7	23.0	23.2	23.2	23.1	..
Greece	17.0	15.0	9.0	20.7	21.5	22.0	..	..	..
Hungary	22.0	21.0	11.0	14.4	16.3	17.5	17.1	17.6	..
Ireland	20.0	19.0	9.0	17.2	17.1	12.6	12.6	12.6	..
Italy	8.0	6.0	9.0	4.4	5.1	4.9	5.5	5.5	..
Latvia	..	20.0	16.0	15.1	15.4	13.4	14.9	17.6	..
Lithuania [i]	27.0	16.0	15.0	17.1	20.0	21.6	15.3	14.6	..
Luxembourg	19.0	15.0	14.0	10.7	12.5	12.4	12.5	12.0	..
Malta	..	11.0	4.0	5.2	7.6	8.6	6.9	6.1	..
Netherlands [k]	23.0	21.0	18.0	23.6	23.6	19.6	19.2	18.5	..
Poland	..	..	..	12.1	..	..	..	..	..
Portugal	5.0	8.0	9.0	8.4	8.3	9.2	10.0	12.8	..
Romania	21.0	17.0	13.0	7.8	12.7	9.0	8.1	12.5	..
Slovakia	..	22.0	24.0	25.8	23.6	20.9	21.9	20.7	..
Slovenia	14.0	12.0	8.0	8.0	8.3	8.5	3.2	4.4	..
Spain [k]	13.0	15.0	13.0	17.9	17.1	16.1	16.7	16.7	..
Sweden	15.0	18.0	16.0	16.5	17.9	17.1	16.0	15.8	..
United Kingdom	26.0	21.0	16.0	24.3	21.1	21.4	20.6	19.5	..
Other high income countries									
Canada	..	19.4	16.2	16.3	16.1	16.3	15.2	14.8	13.7
Iceland	..	35.1	28.4	27.5	28.2	24.5	..	..	..
Israel [l]	19.3	17.3	16.7	..	16.0	17.3	..	..	..
Norway [m]	..	17.0	16.0	16.0	15.7	17.2	16.7	16.1	..
Switzerland	..	21.0	..	18.6	18.7	18.4	18.4	19.1	..
United States	..	16.7	12.9	13.2	12.6	12.7	12.3	10.9	10.6

Source: UNECE Statistical Database, compiled from national and international official sources.

Note: *Gender pay gap* is the difference between men's and women's average earnings from employment, shown as a percentage of men's average earnings. Pay gaps in hourly earnings refers to gender pay gap in hourly wage rates.

.. - data not available

a Data cover both paid employees and self-employed.

b Figures are obtained by dividing the monthly earnings figures by the total number of monthly working hours.

c Data cover employees under labour contract.

d Data exclude payments in kind and irregular bonuses.

e Data cover employees who have a direct employment contract and receive remuneration in October. Employees with contract of agreement have not been covered.

f Earnings data do not include irregular bonuses, housing and family allowances. The method of defining part/full-timers has been changed in 2001.

g Data cover only Metropolitan France.

h The data do not cover employees in the industrial sectors "Agriculture and Forestry", "Fishing" and "Public Administration, Defense, Compulsory Social Security" (NACE Rev. 1.1. Only NACE sections C-O, excluding L).

I Individual enterprises (about 8% of total employees) are not included for 1995-2008.

j Bonuses, gratuities, housing and family allowances are not included.

k Data refer to net earnings.

l From 2006 data cover both paid employees and self-employed

m Remuneration for time not worked is not included. Data cover full-time employees.

Table 7

Women in managerial positions, as percentage of total number of persons in managerial positions

Country	1995	2000	2005	2009	2010	2011
Eastern Europe, Caucasus and Central Asia						
Armenia	..	..	..	..	..	..
Azerbaijan [a]	..	..	48.2	19.2	25.5	..
Belarus [b]	..	45.5 [c]	..	46.3	..	..
Georgia [d]	..	19.0	26.3	..	..	..
Kazakhstan	..	..	35.5	..	..	..
Kyrgyzstan	..	..	30.1	30.7	32.3	..
Republic of Moldova [e]	..	33.2	38.9	38.7	36.4	..
Russian Federation	37.5 [f]	35.6	39.0	37.4	38.7	..
Tajikistan	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..
Ukraine	..	36.7	38.2	..	..	..
Uzbekistan	..	..	..	..	..	..
South-Eastern Europe						
Albania	..	..	..	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..
Croatia	22.6	24.7	24.1	27.7	26.8	24.8
Montenegro	..	..	19.7	..	..	..
Serbia [g]	..	..	24.8	35.0	33.3	33.0
The former Yugoslav Republic of Macedonia	..	..	28.5	26.8	27.9	..
Turkey	..	..	..	10.2	10.0	..
EU 27						
Austria	23.9	28.4	27.2	27.2	28.8	27.2
Belgium	..	31.4	31.8	34.0	34.1	..
Bulgaria	28.5	29.8	34.0	32.1	34.1	36.9
Cyprus [h]	..	14.4	15.1	11.8	13.1	13.6
Czech Republic	26.8	24.9	29.6	29.0	27.7	25.8
Denmark	19.2	24.2	24.2	24.8	22.6	27.8
Estonia	36.6	39.9	36.9	35.8	36.9	36.2
Finland	..	26.7	29.8	29.7	30.4	32.0
France [i]	36.4	35.0	37.6	38.1	38.7	39.4
Germany	26.0	27.1	28.2	29.7	29.9	30.3
Greece	22.1	25.1	26.5	29.7	29.7	23.0
Hungary	33.8	33.5	34.8	36.3	36.4	40.4
Ireland	27.6	26.3	30.3	39.6	39.0	33.3
Italy	15.7	14.3	32.4	33.6	32.8	25.0
Latvia	37.5 j	37.2	42.7	43.4	41.2	45.0
Lithuania	35.8 [k]	41.9	42.9	38.9	40.6	38.5
Luxembourg	24.6	27.2	23.5	18.8	24.3	24.2
Malta	..	18.2	18.5	21.2	22.5	23.4
Netherlands	20.3	26.6	25.5	28.5	28.6	29.6
Poland	34.7	32.5	32.8	35.5	36.2	38.4
Portugal	30.4	31.1	33.9	31.4	31.8	32.7
Romania	28.2	26.8	29.2	31.2	32.4	31.2
Slovakia	27.4 [l]	31.2	30.8	32.2	34.6	31.0
Slovenia	27.2	29.6	34.2	35.6	34.8	38.5
Spain	31.3	31.5	32.0	33.1	34.3	29.8
Sweden	..	30.7	29.9	32.5	31.2	34.6
United Kingdom	33.6	34.5	34.3	35.5	35.7	34.3
Other high income countries						
Canada	35.1	35.4	35.9	37.1	..	..
Iceland [m]	27.7	29.3	27.4	33.3	34.5	40.0
Israel	..	27.2	27.6	..	..	..
Norway	..	25.0	30.4	34.0	34.4	31.5
Switzerland	23.9	23.3	28.3	31.5	33.0	33.0
United States [n]	..	40.5	42.5	..	..	..

Source: UNECE Statistical Database, compiled from national and international (Eurostat and ILO) official sources.

Note: Percentage of women in managerial positions is the percentage of female employed in the ISCO-88 category, legislators, senior officials and managers, over the total number of male and female employed of the same ISCO-88 category.

.. - data not available

a Data are based on administrative registers.

b Data refer to the national classification of occupations.

c Data refer to 1999 and come from Population Census.

d Data do not cover Abkhazia and South Ossetia (Tshinvali).

e Data do not cover Transdniestra.

f Data refer to 1997

g Data do not cover Kosovo and Metohia.

h Data cover only the area controlled by the Republic of Cyprus.

i Data do not cover overseas departments (DOM).

j Data refer to 1996.

k Data refer to 1997.

l The persons working in the armed forces are counted in the other groups.

m Data do not cover the three northern territories (Yukon, Northwest and Nunavuk).

n Data do not cover the armed forces.

Table 8

Female employers, as percentage of total number of employers

Country	1995	2000	2005	2006	2007	2008	2009	2010	2011
Eastern Europe, Caucasus and Central Asia									
Armenia	..	..	..	..	9.5	13.1	7.9	11.7	..
Azerbaijan	..	..	..	..	..	..	..	..	..
Belarus	..	19.9 [a]	..	..	..	..	31.3	..	..
Georgia	..	12	18.8	..	..	..	..	..	..
Kazakhstan	..	..	23.2	31	33.6	35	37.9	38.1	39.8
Kyrgyzstan	..	17.7	22.3	24.2	..	..	..	..	..
Republic of Moldova [b]	..	20.9	23	26.6	38.9	30.8	32.7	26	32.9
Russian Federation	..	28.7	39.8	36.6	39	36.9	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..
Ukraine	..	26.2	35.5	30.5	33	33.3	33.4	34.8	..
Uzbekistan	..	..	..	..	..	..	..	..	..
South-Eastern Europe									
Albania	..	..	..	..	10.4	15.9	..	..	..
Bosnia and Herzegovina	..	..	..	25.6	27.1	27.4	..	..	..
Croatia	28.5 [c]	24.1	25.4	28.5	24.4	25.9	24	27.1	29.8
Montenegro	..	..	28.2	..	..	..	..	..	..
Serbia [d]	..	..	23.8	21.9	29.3	28.7	..	..	..
The former Yugoslav Republic of Macedonia	..	16.4	80.4	20.4	23.5	23.9	22.5	24.7	24.7
Turkey	3.6	3.9	4.5	5.7	6.3	6.2	6.4	6.9	7
EU 27									
Austria	24.5	29.1	23.3	26	25.5	26.4	25.5	25.9	25
Belgium	13.8	21.1	21.7	22.7	22.3	22.2	23	24.3	20.7
Bulgaria	25	25.5	27.7	26.2	27.1	29	27.8	29.8	30.3
Cyprus [e]	..	10.6	12.1	11.8	13.1	10.8	13.8	12.7	15.2
Czech Republic	24.1	23.1	23.2	23.5	21.4	22.6	22.6	21	21.8
Denmark	18.9	16.4	16.4	20.9	20.2	20.4	20.7	21.5	22.1
Estonia [f]	26.1	27.5	24.1	21.4	23.7	23	23.9	20.2	20.8
Finland	32.4	24	24.7	25.8	26.2	24.5	23.2	24.6	26.1
France	21.5	21.4	22.4	22.1	24.5	26.1	23.1	22.5	24.3
Germany	21.3	22.5	24.1	24.2	23.7	23.9	24.1	24.5	24.2
Greece	12.9	18.2	19.2	19.8	19.9	20	20.1	20.6	22.3
Hungary	23.5	26.8	27.9	27.4	27.6	26.6	27.5	29.3	27.8
Ireland	15.9	18.5	17.6	17.2	17.9	18.1	20.3	21.3	21.8
Italy	22.5	24	21.4	22.1	22	22.3	21.9	21.9	22.4
Latvia	27.4 [g]	28.4	33.8	37.1	30.1	26.5	24.7	35.2	33.6
Lithuania	37.9 [h]	38.8	28.6	30.1	26	23.2	27.8	26.5	28.7
Luxembourg	21.4	24.8	24.1	23.1	26.7	24.5	21.3	23.9	25
Malta	..	..	11.9	10.4	10.8	11.4	11.4	9.7	16.7
Netherlands	30.4 [i]	31.2 [h]	22.6	23	22.6	21.7	23.3	22.7	24.2
Poland	31.3	31.5	31.2	30.7	30.7	30.2	29.4	29.1	30.7
Portugal	25	25	25.6	27	28.5	27.7	26.1	26.7	27.2
Romania	27.4	22.8	24.4	24.7	21.4	22.9	24.3	24.3	26
Slovakia	24.5	28.5	25.2	26.4	27.6	23.4	24.2	25.5	26.8
Slovenia	65.9	23.1	27.1	27.6	21.5	24.4	25.2	25.6	26.5
Spain [j]	16.9	21.9	24.2	24.8	24.6	25.6	28.1	28	28.5
Sweden	21.2	18.7	20	19.5	18.6	19.7	20.3	21.2	21.5
United Kingdom	22.4	23.6	24.3	24.1	24.7	22.5	24.1	25.9	24.9
Other high income countries									
Canada	..	..	..	..	..	..	..	..	..
Iceland	24.5	26.1	25	22.1	25.9	23.5	17.6	26.5	26.1
Israel [k]	9.7	14.2	16.1	16.5	18.5	..	..	..	..
Norway	26.7 [l]	29.1 [l]	28.8	26.2	28.2	27.9	25.2	24.2	25.6
Switzerland	22.5	23.4	23	22.6	24.9	24.3	25.2	24.9	24.3

Source: UNECE Statistical Database, compiled from national and international (Eurostat and ILO) official sources.

Note: Employers are workers who hold self-employment jobs and have engaged on a continous basis, one or more persons to work for them in their business as employees.

.. - data not available

a Data refer to 1999 and come from Population Census.
b Data do not cover Transdniestra.
c Data refer to 1996.
d Data do not cover Kosovo and Metohia.
e Data cover only the area controlled by the Republic of Cyprus.
f Data on employers cover members of producers cooperatives.
g Data refer to 1996.
h Data refer to 1997.
i 1980-2001: Data on employers include own-account workers and members of producers cooperatives.
j As of 2005: methodology revised, data not strictly comparable.
k 1998, 2001: methodology revised, data not strictly comparable.
l 1980-2001 : Data on employers include own-account workers and members of producers cooperatives.

Table 9

Women in national parliaments, percentage

Country	1990	1995	2000	2005	2009	2010	2011
Eastern Europe, Caucasus and Central Asia							
Armenia	..	6.3	3.1	5.3	8.4	9.2	9.2
Azerbaijan	..	12.0	12.0	10.5	11.4	11.4	16.0
Belarus	..	..	4.5	29.4	31.8	31.8	31.8
Georgia	6.4	6.0	7.2	9.4	5.1	6.5	6.5
Kazakhstan	..	13.4	10.4	10.4	15.9	17.8	17.8
Kyrgyzstan	..	1.4	10.0	3.2	25.6	25.6	23.3
Republic of Moldova [a]	3.8	4.8	8.9	20.8	23.8	23.8	18.8
Russian Federation	..	10.2	7.7	9.8	14.0	14.0	14.0
Tajikistan	..	2.8	15.0	17.5	17.5	19.0	19.0
Turkmenistan	..	18.0	26.0	16.0	16.8	16.8	16.8
Ukraine	..	3.8	7.8	5.3	8.2	8.0	8.0
Uzbekistan	..	6.0	7.2	17.5	17.5	22.0	22.0
South-Eastern Europe							
Albania	32.4	7.1	..	6.4	..	16.4	16.4
Bosnia and Herzegovina	..	..	28.6	16.7	11.9	19.0	16.7
Croatia	4.5	7.1	21.9	21.7	20.9	23.5	23.5
Montenegro	..	..	..	..	6.2	11.1	11.1
Serbia	..	..	..	..	21.6	21.6	21.6
The former Yugoslav Republic of Macedonia	4.2	3.3 [b]	7.5 [c]	19.2	28.3	32.5	30.9
Turkey	1.3	2.9	4.2	4.4	9.1	9.1	14.2
EU 27							
Austria	19.7	21.9	26.8	33.9	27.9	27.9	27.9
Belgium	..	12.7	23.3	34.7	35.3	39.3	39.3
Bulgaria	..	10.8 [d]	10.8	20.8	21.7	20.8	20.8
Cyprus [e]	1.8	5.4 [d]	7.1	16.1	14.3	12.5	10.7
Czech Republic	14.1	10.3	15.9	17.0	15.5	22.0	22.0
Denmark	..	33.0	37.4	36.9	38.0	38.0	38.0
Estonia	11.9 [f]	11.9	17.8	18.8	20.8	22.8	19.8
Finland	31.5	33.5	36.5	37.5	41.5	40.0	42.5
France	5.6	5.9	10.9	12.2	18.2	18.9	18.9
Germany	26.3	30.8 [g]	30.9	32.8	32.2	32.8	32.8
Greece	..	6.3 [b]	8.7	14.0	14.7	17.3	17.3
Hungary	7.3	11.1	8.3	9.1	11.1	9.1	9.1
Ireland	7.8	13.3	12.0	13.3	13.3	13.9	14.5
Italy	..	11.1 [b]	11.1	11.5	21.3	21.3	21.3
Latvia	..	9.0	17.0	21.0	20.0	22.0	20.0
Lithuania	7.1 [f]	18.0 [b]	17.5	22.0	17.7	19.1	19.1
Luxembourg	16.7	16.7	16.7	23.3	25.0	20.0	20.0
Malta	..	5.8	9.2	9.2	8.7	8.7	8.7
Netherlands	22.7	32.7	36.0	36.7	41.3	40.7	39.3
Poland	13.5	13.0 [d]	13.0	20.2	20.2	20.0	20.0
Portugal	..	13.0	17.4	21.3	28.3	27.4	26.5
Romania	..	7.3 [b]	7.3	11.2	11.4	11.4	11.4
Slovakia	14.7 [f]	14.7	14.0	16.7	19.3	15.3	16.0
Slovenia	15.0 [f]	13.3 [f]	10.0	12.2	13.3	14.4	14.4
Spain	13.9	24.7 [b]	28.3	36.0	36.3	36.6	36.6
Sweden	..	40.4	42.7	45.3	47.0	46.4	45.0
United Kingdom	6.3	9.2	18.4	19.7	19.5	22.0	22.0
Other high income countries							
Canada	..	20.6 [d]	19.9	21.1	22.1	22.1	24.7
Iceland	21.4	25.4	34.9	30.2	42.9	42.9	42.9
Israel	..	7.5 [b]	12.5	15.0	17.5	18.3	19.2
Norway	35.8 [h]	39.4	36.4	38.2	36.1	39.6	39.6
Switzerland	17.5 [i]	21.5	23.0 [j]	25.0	28.5	29.0	29.0
United States	..	11.7 [j]	12.9	15.2	16.8	16.8	16.7

Source: UNECE Statistical Database, compiled from national and international official sources (Inter-Parliamentary Union).
Note: *Members of parliament* are the persons elected to the lower or single house by the persons entitled to vote in the country. The *parliament* is the legislative or deliberative assembly; one or more chambers or assemblies that form (or form part of) the legislature of a country. Data refer to the lower or single house.

Data correspond to the situation of the parliament on 30th June of the reference year.

.. - data not available

a Data do not cover Transdniestria.
b Data refer to 1996.
c Data refer to 1998.
d Data refer to 1997.
e Data cover government controlled areas only.
f Data refer to 1992.
g Data refer to 1994
h Data refer to 1989.
I Data refer to 1991.
j Data refer to 1999.

Table 10

Life expectancy at birth by sex

Country	Total					Women					Men				
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia															
Armenia	72.1	71.2	72.9	73.5	..	75.4	74.9	75.8	76.5	..	68.6	67.3	70.1	70.3	..
Azerbaijan	71.1	69.1	71.8	72.4	73.6	74.8	72.9	75.1	75.1	76.0	67.0	65.2	68.6	69.6	71.2
Belarus	..	..	69.0	68.8	..	75.6	74.3	74.7	75.1	..	66.3	62.9	63.4	62.9	..
Georgia	..	..	71.3	74.0	..	76.1	77.2	75.0	77.6	..	68.7	68.9	67.5	70.0	..
Kazakhstan	68.8	64.6	65.8	65.9	..	73.4	70.4	71.6	71.7	..	63.9	59.3	60.2	60.4	..
Kyrgyzstan	68.8	65.5	67.8	67.7	..	73.0	69.9	72.0	71.8	..	64.4	61.3	63.8	63.8	..
Moldova, Republic of	68.6	65.9	67.8	67.8	69.1	72.0	69.7	71.4	71.7	73.5	65.0	62.0	64.0	63.8	64.9
Russian Federation	69.3	64.7	65.4	65.4	..	74.4	71.7	72.4	72.4	..	63.8	58.3	59.2	59.0	..
Tajikistan	69.9	66.1	68.2	70.6	..	72.6	68.9	70.3	73.2	..	67.1	63.5	66.1	68.1	..
Turkmenistan	..	..	..	..	..	69.7	67.5	71.8	72.7	..	62.9	61.9	64.9	65.8	..
Ukraine	70.5	66.9	67.9	67.3	70.3	75.0	72.6	73.6	73.4	75.3	65.7	61.3	62.3	61.5	65.2
Uzbekistan	69.1	70.8	71.3	72.5	..	71.7	73.2	73.6	74.9	..	66.4	68.4	68.9	70.2	..
South-Eastern Europe															
Albania	72.6	74.9	74.9	..	..	75.9	78.3	78.0	78.6	..	69.6	71.5	72.0	72.1	..
Bosnia and Herzegovina	..	..	..	..	..	75.2	75.1 [a]	76.7	77.5	..	69.7	69.5 [a]	71.3	72.1	..
Croatia	72.6	73.3	73.0	75.4	76.9	76.4	77.2	76.7	78.9	80.0	68.7	69.3	69.1	71.9	73.6
Montenegro	..	..	..	74.2	75.9	78.2	76.7	76.3	77.0	78.4	72.8	71.4	71.0	71.4	73.5
Serbia [b]	71.6	72.1	72.3	72.7	74.0	74.4	74.6	75.1	75.4	76.6	68.8	69.8	69.5	70.0	71.4
The former Yugoslav Republic of Macedonia	..	71.8	73.0	73.7	75.0	74.5	74.0	75.2	75.9	77.2	70.3	69.8	70.8	71.6	72.9
Turkey	68.3	70.2	70.4	71.3	..	66.0	67.8	72.8	73.8	..	63.8	65.6	68.1	68.9	..
EU 27															
Austria	75.8	76.9	78.3	79.5	80.8	79.0	80.1	81.2	82.2	83.5	72.3	73.4	75.2	76.6	77.9
Belgium	76.2	77.0	77.9	79.1	80.3	79.5	80.4	81.0	81.9	83.0	72.7	73.5	74.6	76.2	77.6
Bulgaria	71.2	71.0	71.6	72.5	73.8	74.7	74.9	75.0	76.2	77.4	68.0	67.4	68.4	69.0	70.3
Cyprus [c]	..	..	..	78.9	..	78.6	79.8	80.4	80.9	..	74.1	75.3	75.3	76.8	..
Czech Republic	71.5	73.3	75.1	76.1	77.7	75.5	76.8	78.5	79.2	80.9	67.6	69.7	71.7	72.9	74.5
Denmark	74.9	75.3	76.9	78.3	79.3	77.8	77.9	79.2	80.5	81.4	72.0	72.7	74.5	76.0	77.2
Estonia	69.9	67.7	70.8	72.8	76.0	74.9	74.3	76.2	78.1	80.8	64.7	61.4	65.2	67.3	70.6
Finland	75.1	76.8	77.9	79.4	80.3	79.1	80.4	81.3	82.8	83.7	71.0	72.9	74.3	75.8	77.0
France	..	..	79.2	80.3	81.9	81.2	82.2	83.0	83.8	85.3	72.8	73.9	75.3	76.7	78.3
Germany	77.4	76.7	78.3	79.4	80.5	80.4	79.9	81.2	82.0	83.0	74.0	73.3	75.1	76.7	78.0
Greece	77.1	77.5	78.0	79.2	80.6	79.5	80.0	80.6	81.6	82.8	74.7	75.0	75.5	76.8	78.4
Hungary	69.4	70.0	71.9	73.0	74.7	73.8	74.8	76.2	77.2	78.6	65.2	65.4	67.5	68.7	70.7
Ireland	74.8	75.5	76.6	79.4	81.0	77.7	78.3	79.2	81.6	83.2	72.1	72.8	74.0	77.2	78.7
Italy	77.1	78.3	79.9	80.9	..	80.3	81.5	82.8	83.6	..	73.8	75.0	76.9	78.0	..
Latvia	69.5	66.3	70.6	71.1	73.7	74.6	72.9	76.1	76.6	78.4	64.2	60.0	64.9	65.4	68.6
Lithuania	71.6	69.2	72.2	71.3	..	76.4	75.1	77.5	77.4	..	66.5	63.3	66.8	65.4	..
Luxembourg	75.7	76.8	78.0	79.6	80.8	78.7	80.6	81.3	82.3	83.5	72.4	73.0	74.6	76.7	77.9
Malta [d]	..	77.2	78.4	79.4	81.4	..	79.6	80.3	81.4	83.6	..	74.8	76.2	77.2	79.2
Netherlands	77.2	77.7	78.3	79.7	81.0	80.4	80.6	80.8	81.8	83.0	73.9	74.7	75.6	77.4	78.9
Poland	71.0	72.0	73.9	75.1	76.4	75.6	76.4	78.1	79.4	80.7	66.6	67.7	69.6	70.8	72.1
Portugal	74.1	75.4	76.7	78.1	79.8	77.5	79.0	80.2	81.3	82.8	70.6	71.7	73.2	74.9	76.7
Romania	69.8	69.4	71.2	72.2	73.8	73.1	73.5	74.8	75.8	77.6	66.6	65.5	67.8	68.8	70.2
Slovakia	71.1	72.4	73.3	74.1	75.6	75.7	76.5	77.5	78.1	79.3	66.7	68.4	69.2	70.2	71.7
Slovenia	73.9	74.7	76.2	77.5	79.8	77.8	78.5	79.9	80.9	83.1	69.8	70.8	72.2	73.9	76.4
Spain	77.0	78.1	79.3	80.3	82.3	80.6	81.8	82.9	83.7	85.3	73.4	74.4	75.8	77.0	79.1
Sweden	77.7	79.0	79.8	80.7	81.6	80.6	81.7	82.0	82.9	83.6	74.8	76.2	77.4	78.5	79.6
United Kingdom	75.9	76.8	78.1	79.3	..	78.7	79.4	80.4	81.4	..	73.0	74.1	75.6	77.1	..
Other high income countries															
Canada [e]	..	78.0	79.0	80.2	..	..	81.0	81.7	82.5	..	..	75.0	76.3	77.7	..
Iceland	78.1	78.0	79.7	81.5	81.9	80.7	80.1	81.6	83.5	84.1	75.5	76.0	77.8	79.6	79.8
Israel	76.8	77.5	79.0	80.2	..	78.5	79.4	81.1	82.1	..	75.1	75.5	76.7	78.2	..
Norway	76.6	77.8	78.8	80.3	81.2	79.9	80.9	81.5	82.7	83.3	73.4	74.8	76.0	77.8	79.0
Switzerland	77.5	78.7	80.0	81.5	82.7	80.9	81.9	82.8	84.0	84.9	74.0	75.4	77.0	78.7	80.3
United States	75.4	75.8	76.8	77.4	78.7	78.8	78.9	79.3	79.9	81.1	71.8	72.5	74.1	74.9	76.2

Source: UNECE Statistical Database, compiled from national and international (WHO European Health for All database, Eurostat and UNICEF TransMONEE) official sources.

Note: Life expectancy at birth is the average number of years a newborn is expected to live, if the prevailing patterns of mortality at the time of her/his birth were to stay the same throughout her/his life.

.. - data not available

a Data refer to the period 1990-1995.

b Data do not cover Kosovo and Metohia.

c Data cover only government controlled area.

d From 2001, data cover foreign residents

e Data are calculated with a method that uses three years of data (e.g. 2007 data refers to 2005-2007).

Table 11

Children under five mortality rate, per 1,000 live births

Country	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia					
Armenia	55	43	33	26	20
Azerbaijan	93	82	67	56	46
Belarus	17	17	14	9	6
Georgia	47	41	33	27	22
Kazakhstan	57	50	44	38	33
Kyrgyzstan	72	61	52	44	38
Republic of Moldova	37	31	26	22	19
Russian Federation	27	26	23	17	12
Tajikistan	116	111	93	76	63
Turkmenistan	98	85	74	64	56
Ukraine	21	20	18	15	13
Uzbekistan	77	70	63	57	52
South-Eastern Europe					
Albania	41	35	29	23	18
Bosnia and Herzegovina	19	13	10	9	8
Croatia	13	10	8	7	6
Montenegro	18	15	13	10	8
Serbia	29	19	13	9	7
The former Yugoslav Republic of Macedonia	39	24	16	13	12
EU 27					
Austria	9	7	6	5	4
Belgium	10	8	6	5	4
Bulgaria	22	23	21	16	13
Cyprus	11	9	7	5	4
Czech Republic	14	10	7	5	4
Denmark	9	7	6	5	4
Estonia	21	18	13	9	5
Finland	7	5	4	4	3
France	9	7	5	5	4
Germany	9	7	5	5	4
Greece	13	10	8	6	4
Hungary	19	14	11	8	6
Ireland	9	7	7	5	4
Italy	10	8	6	4	4
Latvia	21	23	17	13	10
Lithuania	17	16	12	9	7
Luxembourg	8	6	5	4	3
Malta	11	9	8	7	6
Netherlands	8	7	6	5	4
Poland	17	14	10	8	6
Portugal	15	10	7	5	4
Romania	37	32	27	21	14
Slovakia	18	14	12	10	8
Slovenia	10	7	5	4	3
Spain	11	8	7	6	5
Sweden	7	5	4	4	3
United Kingdom	9	7	7	6	5
Other high income countries					
Canada	8	7	6	6	6
Iceland	6	5	4	3	2
Israel	12	9	7	6	5
Liechtenstein	10	8	6	4	2
Norway	9	6	5	4	3
Switzerland	8	6	6	5	5
United States	11	10	9	8	8

Source: MDG Database of the UN Statsitics Division

Note: the under-five mortality rate (U5MR) is the probability (expressed as a rate per 1,000 live births) of a child born in a specified survey year dying before reaching the age of five if subject to current age-specific mortality rates.

Table 12

Infant mortality rate, per 1,000 live births by sex

Country	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia					
Armenia	46	37	29	23	18
Azerbaijan	74	66	56	47	39
Belarus	14	14	11	7	4
Georgia	40	35	29	24	20
Kazakhstan	48	43	38	33	29
Kyrgyzstan	59	51	44	38	33
Republic of Moldova	30	26	22	19	16
Russian Federation	22	21	18	13	9
Tajikistan	91	87	75	62	52
Turkmenistan	78	69	61	53	47
Ukraine	18	17	15	13	11
Uzbekistan	63	58	53	48	44
South-Eastern Europe					
Albania	36	31	25	20	16
Bosnia and Herzegovina	17	12	8	8	8
Croatia	11	9	7	6	5
Montenegro	16	13	11	9	7
Serbia	25	17	11	8	6
The former Yugoslav Republic of Macedonia	34	22	14	12	10
EU 27					
Austria	8	6	5	4	4
Belgium	9	6	5	4	4
Bulgaria	18	18	17	13	11
Cyprus	10	8	5	4	3
Czech Republic	12	8	5	4	3
Denmark	7	5	5	4	3
Estonia	17	15	10	7	4
Finland	6	4	4	3	2
France	7	5	4	4	3
Germany	7	5	4	4	3
Greece	11	9	7	5	3
Hungary	17	12	9	7	5
Ireland	8	6	6	4	3
Italy	8	6	5	4	3
Latvia	16	18	14	10	8
Lithuania	14	13	9	7	5
Luxembourg	7	5	4	3	2
Malta	10	8	7	6	5
Netherlands	7	6	5	4	4
Poland	15	12	8	7	5
Portugal	11	8	6	4	3
Romania	29	26	22	17	11
Slovakia	15	12	10	8	7
Slovenia	9	6	5	3	2
Spain	9	7	5	5	4
Sweden	6	4	3	3	2
United Kingdom	8	6	6	5	5
Other high income countries					
Canada	7	6	5	5	5
Iceland	5	4	3	2	2
Israel	10	7	6	4	4
Liechtenstein	9	7	5	3	2
Norway	7	5	4	3	3
Switzerland	7	5	5	4	4
United States	9	8	7	7	7

Source: UNECE Statistical Database, compiled from national and international (WHO European health for all database, Eurostat and UNICEF TransMONEE) official sources.

Note: The *infant mortality rate* is the number of deaths of infants under one year of age per 1000 live births in a given year.

Table 13

Maternal death rate, per 100,000 live births

Country	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia					
Armenia	46	47	38	34	30
Azerbaijan	56	81	65	52	43
Belarus	37	28	31	20	4
Georgia	63	75	58	61	67
Kazakhstan	92	90	70	50	51
Kyrgyzstan	73	98	82	77	71
Republic of Moldova	62	60	39	25	41
Russian Federation	74	72	57	37	34
Tajikistan	94	160	120	79	65
Turkmenistan	82	94	91	76	67
Ukraine	49	45	35	25	32
Uzbekistan	59	36	33	32	28
South-Eastern Europe					
Albania	48	43	39	31	27
Bosnia and Herzegovina	18	14	10	9	8
Croatia	8	14	11	14	17
Montenegro	8	10	11	9	8
Serbia	23	25	12	10	12
The former Yugoslav Republic of Macedonia	16	14	15	10	10
EU 27					
Austria	10	7	5	5	4
Belgium	10	10	9	8	8
Bulgaria	24	23	28	13	11
Cyprus	17	17	15	12	10
Czech Republic	15	9	7	7	5
Denmark	13	19	8	7	12
Estonia	48	46	28	23	2
Finland	7	5	5	6	5
France	13	13	10	8	8
Germany	13	9	7	7	7
Greece	6	2	5	3	3
Hungary	23	23	10	10	21
Ireland	6	4	6	2	6
Italy	10	6	4	5	4
Latvia	57	58	43	21	34
Lithuania	34	21	21	11	8
Luxembourg	6	11	11	17	20
Malta	14	13	12	10	8
Netherlands	10	12	13	8	6
Poland	17	14	8	5	5
Portugal	15	10	8	8	8
Romania	170	72	52	30	27
Slovakia	15	10	13	6	6
Slovenia	11	13	12	14	12
Spain	7	4	5	6	6
Sweden	6	5	5	4	4
United Kingdom	10	10	12	13	12
Other high income countries					
Canada	6	7	7	11	12
Iceland	8	7	7	6	5
Israel	12	10	9	7	7
Norway	9	4	8	9	7
Switzerland	7	6	6	6	8
United States	12	12	14	18	21

Source: MDG databased of the UN Statistics Division (Trends in Maternal Mortality: 1990-2010. WHO/UNICEF/UNFPA/WB)

Note: A maternal death is death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Table 14

Abortions, per 1,000 live births

Country	1990	1995	2000	2005	2006	2007	2008	2009	2010
Eastern Europe, Caucasus and Central Asia									
Armenia	326.7	627.6	343.4	291.3	295.8	286.8	302.8	310.7	274.3
Azerbaijan [a]	134.4	200.3	149.8	138	140.1	122.2	133.6	130.8	121.2
Belarus	1834.7	1910.9	1301	714.4	605	446.7	391.2	329.2	307.8
Georgia [b]	658.6	701.8	306.4	423.1	443.6	362.7	337.7	..	348.6
Kazakhstan	701.7	807.2	616.9	450.4	432.8	413.4	365.5	..	..
Kyrgyzstan [c]	416.4	231	164.6	115.7	97.5	108.1	103.7	..	..
Republic of Moldova [d]	1062.9	1013.6	704.8	441.5	418.8	417.2	407.5	..	..
Russian Federation	..	1751.4	1411.1	907	837.4	700.9	618.9	559.3	493.2
Tajikistan [e]	196	169.1	131.9	107.4	93.8	53.8	50.5	..	..
Turkmenistan	284.8	259.6	169	133.9	126.6	..	..	..	..
Ukraine	1550.6	1501.8	1127.5	618.7	498.8	445.3	..	..	355.2
Uzbekistan	278.3	175.1	117.3	88.8	81	66.9	61.9	..	..
South-Eastern Europe									
Albania	318	442.2	409.9	237.4	279.1	265.2	229.9	..	..
Bosnia and Herzegovina	..	..	347.9	482.2	..	..	..	..	..
Croatia	697.4	284.6	172.2	107.4	114.2	109.1	102.8	99.8	87
Montenegro	..	428.7	302.3	204.3	173.8	167.3	141.2	111.7	114.6
Serbia [f]	..	..	573.7	369.1	361.5	356.4	349.7	323.4	323.4
The former Yugoslav Republic of Macedonia	618.5	491.5	389.2	294.5	272.9	268.4	257.1	236.5	209
Turkey	..	..	..	..	..	..	..	..	..
EU 27									
Austria [g]	38.7	28.1	30.4	22.8	..	..	..	..	..
Belgium	..	97.1	118.2	139.6	144	145.3	145.2	148.2	..
Bulgaria	1375.2	1349.1	833	588	503.8	498.9	470.9	416.7	417.8
Cyprus	..	..	..	..	..	..	..	..	..
Czech Republic	852.2	515.4	380.8	258.8	239.6	221.7	215.4	208.2	204.8
Denmark	324.6	254	233.5	234.9	231.6	..	..	..	..
Estonia	1318.6	1308.1	975.2	669.7	630.4	563.1	524.6	478.5	446.6
Finland	186.6	156.7	192.6	189.3	180.9	179.3	175.1	172.5	168
France [h]	..	251.9	..	254.3	..	..	..	..	..
Germany	199.8	128	175.5	180.8	177.9	170.6	167.7	166.4	162.9
Greece	99.2	133.3	174.5	153.4	153.4	145.3	..	..	..
Hungary	719.3	686.8	607.1	499.4	463.8	449.4	444.7	447.7	447.8
Ireland	..	..	..	..	..	..	..	..	..
Italy	283.5	256.5	248.1	233.3	224.6	221.9	..	..	..
Latvia	1029.6	1200.9	851.4	594.7	531.1	507.6	435.3	409.7	387.3
Lithuania	857.2	759.3	476.1	326.5	305	296.7	257.6	218.7	196.2
Luxembourg	..	..	..	..	..	..	..	..	..
Malta	..	..	..	..	..	..	..	..	..
Netherlands [i]	92.9	109.9	131.7	152.9	153.8	156.2	154.2	153.1	..
Poland	..	1.3	0.4	0.6	0.9	0.8	1.2	..	1.6
Portugal [j]	..	..	4.8	7.3	11.5	42.2	129.5	196.7	177
Romania	3152.6	2124.9	1099.5	739.1	684.5	639.1	576.4	521.9	480.3
Slovakia	702.3	584.1	334.9	265.1	264.2	246.7	233.5	216.3	208.3
Slovenia	658.6	568.5	463.6	322.2	297.5	261.1	226.7	212.9	..
Spain	92.7	135.8	160.3	196.5	210.4	227.7	222.8	225.2	..
Sweden	302.5	304	342.5	345.1	340.3	346.3	348.1	335.6	326
United Kingdom [k]	246.9	238.9	290.7	286.5	286.3	284	271.9 [l]	264.2	258.8
Other high income countries									
Canada	229.6	286.4	321.5	282.9 [m]	..	..	..	..	..
Iceland	149.7	188.6	228.7	202.8	204.8	198.5	198.3	195.2	198.9
Israel [n]	150.1	150.8	137	132.6	131.3	128.4	..	..	..
Norway	255.2	228.3	247.1	246.5	241.4	259.4	265.4	255.2	256.1
Switzerland [o]	154.7	144.3	156.9	148.4	144.4	142.9	142.4	136.4	138.1
United States	386.9	348.5	323.5	291.4	..	..	..	..	..

Source: UNECE Statistical Database, compiled from national and international (Eurostat, UN Statistics Division Demographic Yearbook, WHO European health for all database and UNICEF TransMONEE) official sources.

Note: *Legal abortions* refer to legally induced early foetal deaths and do not cover spontaneous abortions (i.e. miscarriages). The abortion rate is defined as the number of abortions per 1000 live births during a given year.

.. - data not available

a Data include illegal abortions.

b From 1995 : data do not cover Abkhazia and South Ossetia (Tshinvali).

c Data include spontaneous abortions (i.e. miscarriages).

d Data do not cover the left bank of Nistru river and Bender municipality.

e Data include menstrual cycle regulation procedures (also known as mini-abortions) carried out within the first 5 to 6 weeks of a possible pregnancy.

f Data do not cover Kosovo and Metohia.

g Data refer to abortions carried out in hospitals.

h Data do not cover overseas territories.

I Data refer to abortions performed on women living in the Netherlands.

j Data refer to abortions carried out in public and private hospitals.

k Data include residents and non-residents. Data do not cover Northern Ireland.

l Provisional data.

m Data do not cover abortions performed on non-Canadian residents.

n Data include East Jerusalem and Israeli residents in certain other territories under occupation by Israeli military forces since June 1967. Data refer to applications for abortions and not to actual abortions performed.

o For 1990-2003, data partially estimated.

Table 15

Adolescent fertility rate, live births per 1,000 to women aged 15-19

Country	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia					
Armenia [a, b]	70	56	27	27	..
Belarus [a, b]	44	39	27	21	..
Georgia [b, c]	58	64	40	38	49
Kazakhstan [a, b]	53	50	31	27	..
Kyrgyzstan	47 [b]	32 [b]	34 [b]	26	..
Republic of Moldova [a, b, d]	58	62	36	29	27
Turkmenistan [a, b]	24	25	26	..	..
Ukraine [a, b]	61	54	32 [e]	28	..
Uzbekistan [a, b]	..	..	21	13	..
South-Eastern Europe					
Albania [a]	15	23	15	19	..
Bosnia and Herzegovina	40	..	20	15	..
Croatia	27	..	..	14	12
Montenegro	..	..	..	16	17
Serbia [f]	42	33	26	23	20
The former Yugoslav Republic of Macedonia	..	44	31	22	20
Turkey	50	50	..	39	32
EU 27					
Austria	21	17	14	13	10
Belgium	12	10	11	11	..
Bulgaria	71	52	46	38	41
Cyprus [g]	34	17	10	6	..
Czech Republic	45	25	13	11	11
Denmark	9	9	8	6	5
Estonia [a]	50	38	26	21	17
Finland [h]	12	10	10	10	8
France [i]	..	..	12	12	11
Germany	11 [j]	9	13	11	9
Greece	20	13	9	10	11
Hungary	40	31	23	20	18
Ireland	16	15	20	17 [k]	15
Italy	9	7	7	7	7
Latvia [a]	50	30	26	21	17
Lithuania	41	41	25	19	14
Luxembourg	14	11	12	12	7
Malta [a]	..	10	17	16	19
Netherlands [a]	8	6	7	6	..
Poland	32	22	17	13	15
Portugal [l]	24	20	22	19	15
Romania	51	42	39	34	..
Slovakia	45	32	24	20	23
Slovenia	25	13	8	6	5
Spain	12	8	9	11	11
Sweden	14	9	7	6	6
United Kingdom	33	28	29	26	..
Other high income countries					
Canada	25	24	17	13	..
Iceland	38	23	23	14	13
Israel [m]	20	18	17	15	..
Norway	17	14	12	8	8
Switzerland	7	6	6	5	4
United States	60	57	48 [n]	40	..

Source: UNECE Statistical Database, compiled from national and international (Eurostat, UN Statistics Division Demographic Yearbook, WHO European health for all database and UNICEF TransMONEE) official sources.

Note: The adolescent fertility rate is the number of live births to women aged 15-19 per 1000 women aged 15-19.
.. - data not available
a Data refer to age group 0-19.
b Data do not cover infants born alive with less than 28 weeks gestation, less than 1000 grams in weight and 35 centimeters in length, who die within seven days of birth.
c Data do not cover Abkhazia and South Ossetia (Tshinvali). 1990-2003: data refer to age group 15-20.
d Data do not cover the left bank of Nistru river and Bender municipality.
e Data refer to 1998.
f Data do not cover Kosovo and Metohia.
g Data cover only the area controlled by the Republic of Cyprus.
h Data include nationals temporarily outside the country.
I Data do not cover overseas departments (DOM).
j Data cover only West Germany (Federal Republic of Germany).
k Provisional data.
l Data refer to resident mothers.
m Data cover East Jerusalem and Israeli residents in certain other territories under occupation by Israeli military forces since June 1967.
n Data refer to 1999.

Table 16

Tuberculosis incidence rate, per 100,000 population

Country	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia					
Armenia	33	47	71	72	73
Azerbaijan	110	110	110	110	110
Belarus	80	81	74	72	70
Georgia	107	107	107	107	107
Kazakhstan	139	139	196	215	151
Kyrgyzstan	143	143	151	158	159
Republic of Moldova	114	114	136	164	182
Russian Federation	107	107	122	107	106
Tajikistan	93	91	125	187	206
Turkmenistan	64	52	92	70	66
Ukraine	41	52	84	101	101
Uzbekistan	128	128	128	128	128
South-Eastern Europe					
Albania	24	24	23	19	14
Bosnia and Herzegovina	94	84	63	52	50
Croatia	64	53	41	28	21
Montenegro	..	..	..	27	19
Serbia	..	..	..	34	18
The former Yugoslav Republic of Macedonia	81	58	41	30	21
Turkey	58	58	46	33	30
European Union					
Austria	22	20	16	13	5
Belgium	18	16	14	12	9
Bulgaria	46	46	46	46	40
Cyprus	5	5	4	4	4
Czech Republic	22	21	16	11	7
Denmark	8	10	12	8	6
Estonia	30	51	64	41	25
Finland	18	15	12	7	7
France	20	19	13	10	9
Germany	21	17	13	8	5
Greece	10	10	8	6	5
Hungary	40	48	35	21	15
Ireland	21	15	12	11	8
Italy	9	10	9	7	5
Latvia	92	93	92	69	39
Lithuania	92	92	86	74	69
Luxembourg	11	11	10	10	9
Malta	6	6	5	7	12
Netherlands	10	13	10	8	7
Poland	49	48	33	25	23
Portugal	72	63	47	36	29
Romania	143	143	167	164	116
Slovakia	32	34	22	15	8
Slovenia	43	31	21	15	11
Spain	22	26	23	19	16
Sweden	7	7	6	6	7
United Kingdom	12	12	12	15	13
Other high income countries					
Canada	8	8	6	5	5
Iceland	7	6	4	4	5
Israel	9	10	9	7	5
Norway	8	6	6	7	6
Switzerland	22	14	9	8	8
United States	12	10	7	6	4

Source: MDG Database of the UN Statistics Division

Note: Number of newly diagnosed tuberculosis cases, all forms during the given calendar year per 100,000 population.

.. - data not available

Table 17

Tuberculosis treatment success rate under DOTS, percentage

Country	1995	2000	2005	2009
Eastern Europe, Caucasus and Central Asia				
Armenia	55	87	72	73
Azerbaijan	65	90	59	62
Belarus	..	..	..	64
Georgia	58	63	73	75
Kazakhstan	..	79	71	62
Kyrgyzstan	..	82	85	82
Republic of Moldova	..	63	62	54
Russian Federation	65	68	58	55
Tajikistan	88	77	82	81
Turkmenistan	73	81	85	84
Ukraine	83	..	..	60
Uzbekistan	78	80	81	81
South-Eastern Europe				
Albania	..	..	79	89
Bosnia and Herzegovina	97	94	97	99
Croatia	..	..	46	63
Montenegro	..	..	30	86
Serbia	..	..	85	86
The former Yugoslav Republic of Macedonia	70	86	84	90
Turkey	65	59	83	77
European Union				
Austria	82	73	75	66
Belgium	..	66	66	76
Bulgaria	..	..	86	85
Cyprus	100	..	63	29
Czech Republic	60	70	72	67
Denmark	..	86	83	53
Estonia	..	70	72	59
Finland	..	..	..	68
France	..	..	..	..
Germany	..	77	71	77
Greece	..	..	..	..
Hungary	..	64	45	57
Ireland	..	84	64	67
Italy	80	74	..	..
Latvia	61	72	74	75
Lithuania	..	73	70	73
Luxembourg	100	..	..	..
Malta	100	100	100	80
Netherlands	72	76	84	80
Poland	..	72	77	67
Portugal	69	79	89	84
Romania	51	70	82	85
Slovakia	64	82	92	82
Slovenia	90	84	84	87
Spain	..	..	..	..
Sweden	..	79	74	85
United Kingdom	..	..	68	82
Other high income countries				
Canada	..	35	68	75
Iceland	100	100	100	75
Israel	..	83	84	86
Norway	77	70	91	82
Switzerland	..	..	..	..
United States	76	83	84	60

Source: MDG Database of the UN Statistics Division

Note: Treatment rate is the proportion of registererd patients who were cured or who completed treatment to all registered cases. DOTS (Direct Observed Therapy Short Course) is the method of the therapy that is considered the most cost effective strategy to reduce tuberculosis cases and deaths.

.. - data not available

Table 18A

Energy use (kg oil equivalent) per $1,000 GDP (constant 2005 PPP $)

Country	1990	1995	2000	2005	2010[a]
Eastern Europe, Caucasus and Central Asia					
Armenia	739	297	284	199	175
Azerbaijan	771	896	571	368	156
Belarus	695	578	425	322	243
Georgia	422	448	260	180	167
Kazakhstan	628	730	442	385	396
Kyrgyzstan	676	424	326	299	271
Republic of Moldova	582	646	472	416	264
Russian Federation	470	547	491	384	335
Tajikistan	338	373	359	243	180
Turkmenistan	1428	1621	1388	819	572
Ukraine	602	816	736	543	435
Uzbekistan	1129	1278	1261	897	673
South-Eastern Europe					
Albania	207	117	120	119	72
Bosnia and Herzegovina		281	235	214	217
Croatia	138	149	139	128	118
Montenegro				167	140
Serbia	220	311	272	253	208
The former Yugoslav Republic of Macedonia	156	199	184	185	153
Turkey	120	120	122	108	110
European Union					
Austria	126	122	112	123	111
Belgium	193	199	188	174	159
Bulgaria	435	402	321	262	202
Cyprus	127	130	132	117	119
Czech Republic	293	257	236	215	178
Denmark	133	132	110	105	110
Estonia	622	448	313	232	247
Finland	246	258	228	212	211
France	158	157	147	145	137
Germany	171	148	135	132	121
Greece	122	121	122	112	99
Hungary	211	214	179	161	150
Ireland	156	132	108	89	93
Italy	109	111	109	111	104
Latvia	366	375	230	185	182
Lithuania	377	353	232	192	180
Luxembourg	209	159	123	137	121
Malta	143	112	84	102	87
Netherlands	167	161	136	138	136
Poland	331	286	197	176	154
Portugal	104	115	114	117	102
Romania	342	283	236	189	148
Slovakia	317	306	259	216	158
Slovenia	174	191	163	155	138
Spain	117	122	121	119	103
Sweden	224	231	184	175	160
United Kingdom	160	155	130	113	101
Other high income countries					
Canada	279	283	252	240	212
Iceland	320	340	369	336	514
Israel	138	136	125	125	110
Norway	153	142	131	122	135
Switzerland	108	107	100	97	89
United States	240	229	204	184	171

Source: MDG Database of the UN Statistics Division

Note: Energy use per GDP (Constant 2005 PPP $) is the kilogram of oil equivalent of energy use per gross domestic product converted to 2005 constant international dollars using purchasing power parity rates. Gross Domestic Product (GDP) is the sum of gross value added by all resident producers in the economy plus any product taxes (less subsidies) not included in the valuation of output. Value added is the net output of an industry after adding up all outputs and subtracting intermediate inputs. The purchasing power parity (PPP) conversion factor is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as the United States (U.S.) dollar would buy in the United States. An international dollar has the same purchasing power over GDP as a U.S. dollar has in the United States.

a 2010 or latest year available.

Table 18B

Carbon dioxide emissions, kg per $1 GDP (PPP)

Country	1995	2000	2005	2008	2009
Eastern Europe, Caucasus and Central Asia					
Armenia	0.41	0.42	0.28	0.27	..
Azerbaijan	1.98	1.19	0.70	0.58	..
Belarus	1.24	0.78	0.61	0.50	0.39
Georgia	0.40	0.30	0.32	0.28	0.39
Kazakhstan	1.78	1.47	1.19	1.23	0.16
Kyrgyzstan	0.84	0.44	0.50	0.55	0.05
Republic of Moldova	1.62	0.53	0.51	0.44	0.79
Russian Federation	1.35	1.17	0.90	0.77	0.79
Tajikistan	0.52	0.32	0.24	0.20	0.39
Turkmenistan	3.56	2.86	1.66	1.28	..
Ukraine	2.07	1.47	1.05	0.93	0.50
Uzbekistan	2.76	2.64	1.88	1.46	0.12
South-Eastern Europe					
Albania	0.15	0.19	0.19	0.12	0.46
Bosnia and Herzegovina	0.47	0.97	1.00	1.00	0.21
Croatia	0.34	0.33	0.29	0.27	..
Montenegro	..	..	0.68	0.44	0.32
Serbia	..	..	0.74	0.61	0.11
The former Yugoslav Republic of Macedon	0.82	0.77	0.59	0.55	0.08
Turkey	0.35	0.35	0.30	0.32	..
European Union					
Austria	0.29	0.26	0.29	0.25	0.23
Belgium	0.46	0.40	0.37	0.33	0.31
Bulgaria	1.08	0.82	0.69	0.59	0.53
Cyprus	0.40	0.38	0.37	0.36	0.85
Czech Republic	0.82	0.73	0.60	0.50	0.49
Denmark	0.42	0.32	0.29	0.28	0.28
Estonia	1.59	1.00	0.73	0.69	0.65
Finland	0.52	0.40	0.35	0.33	0.34
France	0.26	0.24	0.23	0.20	0.20
Germany	0.41	0.36	0.34	0.31	0.30
Greece	0.46	0.47	0.42	0.38	0.37
Hungary	0.51	0.42	0.35	0.31	0.30
Ireland	0.44	0.35	0.29	0.27	0.26
Italy	0.31	0.29	0.30	0.27	0.26
Latvia	0.59	0.35	0.26	0.23	0.24
Lithuania	0.57	0.36	0.29	0.25	0.26
Luxembourg	0.46	0.33	0.38	0.31	0.32
Malta	0.31	0.29	0.27	0.25	..
Netherlands	0.39	0.32	0.31	0.28	0.28
Poland	1.06	0.71	0.60	0.52	0.49
Portugal	0.30	0.29	0.30	0.25	0.25
Romania	0.80	0.63	0.52	0.41	0.37
Slovakia	0.77	0.60	0.48	0.35	0.33
Slovenia	0.47	0.39	0.35	0.33	0.32
Spain	0.31	0.30	0.31	0.26	0.24
Sweden	0.27	0.21	0.18	0.16	0.16
United Kingdom	0.40	0.32	0.28	0.26	0.24
Other high income countries					
Canada	0.60	0.57	0.51	0.48	0.47
Iceland	0.35	0.33	0.28	0.31	0.33
Israel	0.41	0.41	0.35	0.32	0.29
Norway	0.23	0.21	0.20	0.19	0.19
Switzerland	0.19	0.18	0.17	0.16	0.15
United States	0.60	0.53	0.49	0.45	0.43

Source: MDG database of the UN Statistics Division

Note: Carbon emissions are measured as the total amount of carbon dioxide emitted by the country as a consequence of all relevant human (production and consumption) activities. Total CO2 emissions is divided by the total value of the gross domestic product (GDP) expressed in purchasing power parity (PPPs).

.. - data not available

Table 19

Proportion of land area covered by forest

Country	1990	2000	2005	2010
Eastern Europe, Caucasus and Central Asia				
Armenia	..	10.8	10.0	9.3
Azerbaijan	11.3	11.3	11.3	11.3
Belarus	37.5	39.9	40.7	41.6
Georgia	40.0	39.8	39.6	39.5
Kazakhstan	1.3	1.2	1.2	1.2
Kyrgyzstan	4.4	4.5	4.5	5.0
Republic of Moldova	9.7	9.9	11.0	11.7
Russian Federation	49.4	49.4	49.4	49.4
Tajikistan	2.9	2.9	2.9	2.9
Turkmenistan	8.8	8.8	8.8	8.8
Ukraine	16.0	16.4	16.5	16.8
Uzbekistan	7.2	7.6	7.7	7.7
South-Eastern Europe				
Albania	28.8	28.1	28.5	28.3
Bosnia and Herzegovina	43.2	42.7	42.7	42.7
Croatia	33.1	33.7	34.0	34.3
Montenegro	40.4	40.4	40.4	40.4
Serbia	26.4	28.1	28.3	31.0
The former Yugoslav Republic of Macedonia	35.9	37.7	38.3	39.2
Turkey	12.6	13.2	14.0	14.7
European Union				
Austria	45.8	46.5	46.8	47.1
Belgium	22.4	22.0	22.2	22.4
Bulgaria	30.1	30.5	33.6	36.1
Cyprus	17.4	18.6	18.7	18.7
Czech Republic	34.0	34.1	34.3	34.4
Denmark	10.5	11.5	12.6	12.8
Estonia	49.3	52.9	53.1	52.3
Finland [a]	72.0	73.9	72.9	72.9
France	26.4	27.9	28.6	29.0
Germany	30.8	31.8	31.8	31.8
Greece	25.6	27.9	29.1	30.3
Hungary	20.0	21.3	22.1	22.6
Ireland	6.7	9.2	10.1	10.7
Italy	25.8	28.5	29.8	31.1
Latvia	51.1	52.2	52.9	53.8
Lithuania	31.0	32.2	33.8	34.5
Luxembourg	33.2	33.6	33.6	33.6
Malta	0.0	0.0	0.0	0.0
Netherlands	10.2	10.6	10.8	10.8
Poland	29.2	29.8	30.0	30.5
Portugal	36.3	37.6	37.9	38.1
Romania	27.7	27.7	27.8	28.6
Slovakia	40.0	39.9	40.2	40.2
Slovenia	59.0	61.2	61.7	62.2
Spain	27.7	34.0	34.6	36.4
Sweden	66.5	66.7	68.7	68.7
United Kingdom	10.8	11.5	11.7	11.9
Other high income countries				
Canada	34.1	34.1	34.1	34.1
Iceland	0.1	0.2	0.2	0.3
Israel	6.1	7.1	7.2	7.1
Norway	30.0	30.6	31.8	33.1
Switzerland	28.8	29.9	30.4	31.0
United States	32.3	32.8	33.0	33.2

Source: MDG database of the UN Statistics Division

Note: Proportion of forest area to total land area expressed as a percentage.

a: The official land area by the National Land Survey of Finland on 1.1. 2004 is the one used. This is because the land area of Finland has been changing size due to the postglacial crustal uplift and to the construction of artificial lakes.

.. - data not available

Table 20

Proportion of population using an improved drinking water source

	Total					Urban					Rural				
Country	**1990**	**1995**	**2000**	**2005**	**2010**	**1990**	**1995**	**2000**	**2005**	**2010**	**1990**	**1995**	**2000**	**2005**	**2010**
Eastern Europe, Caucasus and Central Asia															
Armenia	..	90	92	95	98	98	98	98	99	99	..	75	81	89	97
Azerbaijan	70	71	74	77	80	88	88	88	88	88	70	52	59	66	71
Belarus	100	100	100	100	100	100	100	100	100	100	100	99	99	99	99
Georgia	81	82	89	96	98	94	94	97	99	100	81	69	80	92	96
Kazakhstan	96	96	96	96	95	99	99	99	99	99	96	92	91	91	90
Kyrgyzstan	..	78	82	87	90	98	98	98	99	99	..	66	73	80	85
Republic of Moldova	..	93	93	94	96	98	98	99	99	99	..	88	89	91	93
Russian Federation	93	94	95	96	97	98	98	98	98	99	93	83	86	89	92
Tajikistan	..	62	61	63	64	..	93	93	92	92	..	49	50	52	54
Turkmenistan	..	83	83	84	..	97	97	97	97	97	..	72	72	72	..
Ukraine	..	97	97	98	98	100	100	99	99	98	..	91	92	95	98
Uzbekistan	90	90	89	88	87	97	97	98	98	98	90	85	83	82	81
South-Eastern Europe															
Albania	97	98	98	96	95	100	100	100	98	96	97	96	96	95	94
Bosnia and Herzegovina	97	97	97	98	99	99	99	99	100	100	97	96	96	97	98
Croatia	99	99	99	99	99	100	100	100	100	100	99	97	97	97	97
Montenegro	97	98	98	98	98	99	99	99	99	99	97	96	96	96	96
Serbia	99	99	99	99	99	99	99	99	99	99	99	98	98	98	98
The former Yugoslav Republic of Macedo	100	100	100	100	100	100	100	100	100	100	100	99	99	99	99
Turkey	85	89	93	97	99	94	95	97	99	100	73	79	85	92	96
European Union															
Austria	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Belgium	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bulgaria	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cyprus	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Czech Republic	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Denmark	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Estonia	98	98	98	98	98	99	99	99	99	99	98	97	97	97	97
Finland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
France	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Germany	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Greece	96	98	99	100	100	99	100	100	100	100	96	95	98	99	99
Hungary	96	97	99	100	100	98	99	100	100	100	96	94	98	100	100
Ireland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Italy	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Latvia	99	99	99	99	99	100	100	100	100	100	99	96	96	96	96
Lithuania	..	..	92	92	..	98	98	98	98	98	..	..	81	81	..
Luxembourg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Malta	100	100	100	100	100	100	100	100	100	100	100	99	100	100	100
Netherlands	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Poland	..	..	..	..	..	100	100	100	100	100	..	..	..	..	..
Portugal	96	97	99	99	99	98	98	99	99	99	96	96	98	100	100
Romania	75	80	84	89	..	93	95	97	99	99	75	62	70	76	..
Slovakia	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Slovenia	100	100	100	100	99	100	100	100	100	100	100	99	99	99	99
Spain	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sweden	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
United Kingdom	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Other high income countries															
Canada	100	100	100	100	100	100	100	100	100	100	100	99	99	99	99
Iceland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Israel	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Norway	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Switzerland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
United States	99	99	99	99	99	100	100	100	100	100	99	94	94	94	94

Source: MDG database of the UN Statistics Division

Note: Percentage of persons who use improved drinking water sources to the total population. Improved drinking water sources include household connection, public standpipe, borehole, protected dug well, protected spring, and rainwater collection.

.. - data not available

Table 21

Proportion of population using an improved sanitation facility, percentage

Country	Total					Urban					Rural				
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010
Eastern Europe, Caucasus and Central Asia															
Armenia	..	88	89	89	90	95	95	95	95	95	..	75	77	79	80
Azerbaijan	..	57	62	74	82	..	70	73	81	86	..	43	50	67	78
Belarus	93	93	93	93	93	91	91	91	91	91	96	96	96	97	97
Georgia	96	96	95	95	95	97	97	96	96	96	95	95	94	94	93
Kazakhstan	96	96	97	97	97	96	96	97	97	97	97	97	97	98	98
Kyrgyzstan	..	93	93	93	93	94	94	94	94	94	..	93	93	93	93
Republic of Moldova	..	76	79	82	85	..	86	87	88	89	..	67	72	77	82
Russian Federation	74	73	72	71	70	80	78	77	76	74	58	58	59	59	59
Tajikistan	..	89	90	93	94	93	93	93	95	95	..	87	89	92	94
Turkmenistan	98	98	98	98	98	99	99	99	99	99	97	97	97	97	97
Ukraine	..	95	95	95	94	97	97	97	97	96	..	91	91	90	89
Uzbekistan	84	85	91	97	100	95	96	97	99	100	76	78	87	96	100
South-Eastern Europe															
Albania	76	78	84	90	94	94	94	95	95	95	66	68	76	85	93
Bosnia and Herzegovina	..	95	95	95	95	98	98	98	99	99	..	93	93	92	92
Croatia	99	99	99	99	99	99	99	99	99	99	98	98	98	98	98
Montenegro	..	..	90	90	90	..	..	92	92	92	..	..	87	87	87
Serbia	..	..	92	92	92	96	96	96	96	96	..	..	88	88	88
The former Yugoslav Republic of Macedonia	..	..	88	88	88	92	92	92	92	92	..	..	82	82	82
Turkey	84	85	87	89	90	96	96	96	97	97	66	68	71	73	75
European Union															
Austria	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Belgium	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bulgaria	99	100	100	100	100	100	100	100	100	100	98	99	100	100	100
Cyprus	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Czech Republic	100	99	98	98	98	100	100	99	99	99	98	98	97	97	97
Denmark	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Estonia	95	95	95	95	95	96	96	96	96	96	94	94	94	94	94
Finland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
France	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Germany	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Greece	97	97	98	98	98	100	99	99	99	99	93	94	96	97	97
Hungary	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ireland	99	99	99	99	99	100	100	100	100	100	98	98	98	98	98
Latvia	..	..	78	78	..	..	..	82	82	..	..	..	71	71	..
Lithuania	..	..	86	86	..	95	95	95	95	95	..	..	69	69	..
Luxembourg	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Malta	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Netherlands	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Poland	..	..	90	90	..	96	96	96	96	96	..	..	80	80	..
Portugal	92	95	98	100	100	97	98	99	100	100	87	92	97	100	100
Romania	71	72	72	73	..	88	88	88	88	..	52	53	54	54	..
Slovakia	100	100	100	100	100	100	100	100	100	100	100	100	100	99	99
Slovenia	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Spain	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sweden	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
United Kingdom	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Other high income countries															
Canada	100	100	100	100	100	100	100	100	100	100	99	99	99	99	99
Iceland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Israel	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Norway	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Switzerland	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
United States	100	100	100	100	100	100	100	100	100	100	99	99	99	99	99

Source: MDG database of the UN Statistics Division

Note: Percentage of persons who use improved sanitation facilities to the total population.
Improved sanitation facilities include connection to a public sewer, connection to a septic

.. - data not available

Table 22

Net official development assistance and official aid received (constant 2010 US$, and per capita)

Country	1995		2000		2005		2010	
	US$ per cap	US$ Mln	US$ per cap	US$ Mln	US$ per cap	US$ Mln	US$ per cap	US$ Mln
Eastern Europe, Caucasus and Central Asia								
Armenia	87.8	283.1	97.5	300.0	63.0	193.1	110.9	342.8
Azerbaijan	20.7	159.3	24.3	196.0	29.7	252.7	17.6	159.1
Belarus	..	..	..	..	6.9	67.4	14.4	140.4
Georgia	57.0	270.1	53.9	238.0	76.7	334.3	210.3	625.2
Kazakhstan	5.3	84.2	16.1	239.3	17.9	270.5	14.0	223.9
Kyrgyzstan	75.2	342.9	61.2	299.3	61.5	314.8	71.3	380.4
Republic of Moldova	..	..	49.0	178.4	54.2	194.7	132.1	470.4
Tajikistan	14.7	85.7	29.4	181.7	42.2	288.9	57.7	436.7
Turkmenistan	9.9	41.3	11.5	51.6	7.7	36.8	8.9	44.7
Ukraine	..	..	..	..	10.1	473.3	13.7	626.4
Uzbekistan	4.1	93.6	9.5	235.6	7.6	197.1	8.4	230.9
South-Eastern Europe								
Albania	73.5	230.7	162.6	499.4	118.0	370.7	106.3	340.7
Bosnia and Herzegovina	..	1 211.8	283.5	1 199.0	148.3	636.9	118.7	510.4
Croatia	14.6	68.2	23.3	103.3	32.3	143.7	34.0	150.7
Montenegro	..	..	..	..	7.0	4.4	127.2	80.3
Serbia	..	119.4	248.2	1 901.8	165.0	1 228.0	90.3	659.9
The former Yugoslav Republic of Macedonia	49.6	97.1	194.1	393.2	129.2	263.1	91.0	187.2
Turkey	6.4	383.6	7.7	495.8	6.7	456.1	14.3	1 047.2

Source: UNECE Statistical Database and World Development Indicators (World Bank)

.. - data not available

Table 23

Gross external debt in relation to GDP, %

Country	1995	2000	2005	2008	2009	2010
Eastern Europe, Caucasus and Central Asia						
Armenia	28.8	47.9	37.3	27.4	54.3	66.2
Azerbaijan	17.3	25.2	15.4	8.8	11.0	..
Belarus	19.9	20.4	17.2	24.9	44.8	52.1
Georgia	..	110.8	56.0	60.4	80.4	82.9
Kazakhstan	28.6	69.3	76.0	80.9	98.2	81.2
Kyrgyzstan	51.2	127.4	96.2	68.1	85.3	86.6
Republic of Moldova	59.3	133.6	69.6	67.6	80.2	82.3
Russian Federation	38.7	62.1	33.7	28.9	38.2	33.0
Tajikistan	143.4	120.1	45.9	44.8	50.5	..
Turkmenistan	6.9	50.1	6.2	3.0	3.1	..
Ukraine	22.8	39.0	46.0	56.5	88.2	85.1
Uzbekistan	17.9	33.7	30.0	13.9	12.3	..
South-Eastern Europe						
Albania	13.3	29.2	25.2	39.0	39.6	..
Bosnia and Herzegovina	..	34.4	24.1	16.0	22.9	..
Croatia	17.2	50.5	67.8	79.7	101.7	101.3
Montenegro	..	..	43.8	68.8	102.5	..
Serbia	..	172.0	61.4	59.4	81.9	..
The former Yugoslav Republic of Macedonia	34.2	43.1	50.0	47.5	58.0	59.0
Turkey	32.4	44.3	35.3	38.2	43.8	39.6
EU 27						
Austria	..	..	168.6	200.0	217.4	207.9
Belgium	..	..	261.4	314.4	303.8	..
Bulgaria	77.7	86.5	61.6	99.1	113.7	104.6
Cyprus	26.6	30.1	87.7	104.1	505.7	447.4
Czech Republic	31.1	38.0	37.3	38.2	46.6	49.6
Denmark	..	..	138.9	170.4	195.2	192.3
Estonia	..	52.9	80.9	113.3	129.5	115.1
Finland	71.3	93.1	111.7	127.2	168.2	182.7
France	..	..	142.8	171.0	197.5	200.4
Germany	..	..	128.3	140.4	153.3	157.2
Greece	..	..	108.5	144.8	179.3	179.7
Hungary	68.9	63.8	77.1	142.5	183.6	158.7
Ireland	..	..	661.7	889.8	1 071.0	1 049.1
Italy	..	..	94.2	103.9	120.4	118.5
Latvia	31.0	61.9	93.8	124.7	161.7	165.1
Lithuania	23.8	42.5	48.4	68.3	89.8	85.9
Luxembourg	..	..	3 328.9	3 723.2	4 146.3	3 594.0
Malta	..	209.9	346.8	493.9	526.3	520.8
Netherlands	..	..	261.3	276.0	302.6	310.1
Poland	37.7	40.5	43.7	46.0	64.9	66.5
Portugal	..	..	158.0	191.6	233.6	231.4
Romania	19.1	29.5	39.1	48.8	72.4	76.0
Slovakia	23.0	37.5	44.1	53.3	74.9	76.0
Slovenia	40.4	51.5	67.7	99.6	117.9	114.6
Spain	..	..	119.4	145.4	172.4	165.4
Sweden	..	119.0	156.7	193.5	222.5	205.5
United Kingdom	177.1	222.6	323.7	341.1	427.6	..
Other high income countries						
Canada	..	..	56.0	54.6	72.2	69.7
Iceland	62.5	97.6	282.6	452.4	1 002.9	940.0
Israel	..	55.7	58.2	43.0	47.1	48.8
Norway	41.6	79.5	91.2	126.6	146.7	144.0
Switzerland	110.1	248.0	238.0	243.6	253.2	246.0
United States	..	..	75.0	95.7	97.5	98.6

Source: Compiled from UNECE Statistical Database

Note: Data refer to external debt as a percentage of GPD.

.. - data not available

Table 24

Individuals regularly using the internet, percentage

Country	1995	2000	2005	2010	2011
Eastern Europe, Caucasus and Central Asia					
Armenia	0.1	1.3	5.3	44.0	..
Azerbaijan	0.0	0.2	8.0	46.0	50.0
Belarus	0.0	1.9	..	31.7	39.6
Georgia	0.0	0.5	6.1	27.0	36.6
Kazakhstan	0.0	0.7	3.0	34.0	45.0
Kyrgyzstan	..	1.0	10.5	20.0	20.0
Republic of Moldova	0.0	1.3	14.6	40.0	38.0
Russian Federation	0.2	2.0	15.2	43.0	49.0
Tajikistan	..	0.1	0.3	11.6	13.0
Turkmenistan	..	0.1	1.0	2.2	5.0
Ukraine	0.0	0.7	3.8	23.0	30.6
Uzbekistan	0.0	0.5	3.3	20.0	30.2
South-Eastern Europe					
Albania	0.0	0.1	6.0	45.0	49.0
Bosnia and Herzegovina	..	1.1	21.3	52.0	60.0
Croatia	0.5	6.6	33.1	60.3	70.7
Montenegro	..	..	28.8	52.0	40.0
Serbia	..	..	26.3	40.9	42.2
The former Yugoslav Republic of Macedonia	0.0	2.5	26.5	51.9	56.7
Turkey	0.1	3.8	15.5	39.8	42.1
European Union					
Austria	1.9	33.7	58.0	72.7	79.8
Belgium	1.0	29.4	59.8	79.3	78.0
Bulgaria	0.1	5.4	20.0	46.2	51.0
Cyprus	0.4	15.3	32.8	53.0	57.7
Czech Republic	1.5	9.8	35.3	68.8	73.0
Denmark	3.8	39.2	82.7	88.7	90.0
Estonia	2.8	28.6	61.5	74.1	76.5
Finland	13.9	37.3	74.5	86.9	89.4
France	1.6	14.3	42.9	80.1	79.6
Germany	1.8	30.2	68.7	81.9	83.0
Greece	0.8	9.1	24.0	44.4	53.0
Hungary	0.7	7.0	39.0	65.3	59.0
Ireland	1.1	17.9	41.6	69.9	76.8
Italy	0.5	23.1	35.0	53.7	56.8
Latvia	..	6.3	46.0	68.4	71.7
Lithuania	..	6.4	36.2	62.1	65.1
Luxembourg	1.6	22.9	70.0	90.6	90.9
Malta	0.2	13.1	41.2	63.0	69.2
Netherlands	6.5	44.0	81.0	90.7	92.3
Poland	0.7	7.3	38.8	62.3	64.9
Portugal	1.5	16.4	35.0	51.1	55.3
Romania	0.1	3.6	21.5	39.9	44.0
Slovakia	0.5	9.4	55.2	79.4	74.4
Slovenia	2.9	15.1	46.8	70.0	72.0
Spain	0.4	13.6	47.9	66.5	67.6
Sweden	5.1	45.7	84.8	90.0	91.0
United Kingdom	1.9	26.8	70.0	85.0	82.0
Other high income countries					
Canada	4.2	51.3	71.7	81.6	83.0
Iceland	11.2	44.5	87.0	95.0	95.0
Israel	0.9	20.9	25.2	67.2	70.0
Norway	6.4	26.8	82.0	93.4	94.0
Switzerland	3.6	47.1	70.1	83.9	85.2
United States	9.2	43.1	68.0	79.0	77.9

Source: International Telecommunication Union (ITU)

Note: Data correspond to the percentage of users of internet, usually in an age group of population, depending on the country definition of age group (e.g., 15-74 years old) and reference period (e.g., last three months preceeding the survey). Use of internet includes all locations and methods of access.

.. - data not available

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