

# Potential and Performance of Ukraine

Analytical report by the International Centre for Policy Studies

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Canadian International  
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# SEPPAC

DEVELOPING SOCIO-ECONOMIC PERFORMANCE  
AND POTENTIAL ANALYSIS CAPACITY IN UKRAINE

This report was prepared as part of the "Socio-Economic Performance and Potential Analysis Capacity" project implemented by the International Centre for Policy Studies in partnership with The Conference Board of Canada with funding from the Canadian International Development Agency (CIDA).

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# Preface

This report, entitled *Potential and Performance of Ukraine*, was prepared under the auspices of the "Socio-Economic Performance and Potential Analysis Capacity" (SEPPAC) project currently being undertaken in Ukraine. The purpose of the project is to increase the capacity of the Ukrainian government and non-government sectors to analyze and develop effective state policy through an assessment of Ukraine's socio-economic performance and economic potential. This report was prepared by a group of economists at the International Center of Policy Studies (ICPS), including Maxim Boroda, Ildar Gazizulin, Oleksandr Zholud and Dr. Olga Romanyuk, under the general direction of a team of senior advisors from The Conference Board of Canada (CBoC) consisting of Pedro Antunes, Paul Darby, Brenda Lafleur, Dan Lemaire, Sheila Rao and Matthew Stewart. This report presents the research findings from the first two years of the project.

The authors would like to express their sincere gratitude to the representatives of the Ministry of Finance, the Ministry of Economy, the National Bank of Ukraine and the State Statistics Committee of Ukraine for their assistance in obtaining the necessary data and for the invaluable help that they provided during the course of the research.

The SEPPAC project is funded by the Canadian International Development Agency (CIDA). CIDA is a federal agency of the Canadian government responsible for planning and implementing the majority of Canadian programs aimed at cooperation, alleviating poverty and contributing to a more secure, equitable, and prosperous world. The overall goal of CIDA in Ukraine is to build civil society and local government.

The authors had three major goals in writing this report:

## **1. To evaluate the quality of life of Ukraine compared with other countries using benchmarking tools.**

Benchmarking is an important instrument for identifying a country's strengths and weaknesses by comparing its performance on a number of key socio-economic indicators with that of other countries and thus helping to establish priorities for effective policy action. The practice of benchmarking is very popular with business. Recently, it has also gained popularity

in the public sector and among international organizations, such as the United Nations and the World Economic Forum.

Ukraine needs a system for developing and evaluating state policy that is based on an analysis of factual data. Benchmarking is an important tool that will help the Ukrainian government identify well-reasoned policy priorities and solutions to key problems using best practices from other countries.

ICPS has established a system of socio-economic indicators that covers a broad range of policy issues. Ukraine was compared with a group of countries that include those with a similar economic structure, competitor countries, and countries that are top performers in key areas. The benchmarking results provide an objective basis for identifying government policy priorities that can be easily understood by all participants in the policy-making process. The results of this research have revealed not only the socio-economic domains that need improvement but also the distance that Ukraine must cover to achieve its desired development goals.

## **2. To identify the current and future potential output of Ukraine.**

Estimating the country's level of potential output is a very important indicator both for the short-term policies of government institutions, especially the central bank, and for long-term forecasts of growth factors and obstacles to future economic growth. The gap between potential and actual output is one of the main factors that influences monetary policy in developed economies. In addition, a long-term forecast of potential output also makes it possible to reveal problem areas in a country's long-term development and to help design policies to prevent their emergence.

In order to forecast potential economic growth, the factors that lead to changes in fixed capital (incentives to invest, foreign capital flows and tax policy), in labour supply (especially demographic factors) and in total factor productivity (education, healthcare, R&D, tax policy, and so on) have been analysed. In short, through the analysis of Ukraine's future potential output the research has also developed a clear-cut foundation for analyzing the factors that are important for Ukraine's further development.

### 3. To identify the most burning issues for Ukraine and the resultant policy priorities.

After identifying the relevant set of socio-economic development indicators for Ukraine, the research determined the areas where Ukraine is performing relatively well and those areas that need improvement. In turn, recognizing the areas most in need of improvement offered an objective basis for identifying the burning issues for Ukraine that create the priorities for public policy. This report focuses on the following three important policy challenges that emerged from the research: Ukraine's demographic prospects, energy efficiency and the efficiency of social protection funding in Ukraine.

## Benchmarking Ukraine's Quality of Life

State policy priorities must be set out clearly if reforms are to be implemented effectively. Evidence-based analysis, such as benchmarking, helps define these priorities in a transparent manner. Benchmarking Ukraine's performance in each of the quality of life domains makes it possible to pinpoint those socio-economic factors in need of immediate attention and gauge how far Ukraine has to go to reach its desired goals.

The results of the benchmarking research undertaken at ICPS indicate that Ukraine's overall quality of life ranking is 3.24 out of a possible 5 points. Of the 63 countries included in our benchmarking analysis, Ukraine shares the 57th spot with Moldova, putting it ahead of only India, Kazakhstan, Macedonia, South Africa, and Paraguay.

Ukraine's worst results are in the HealthCare domain, where it ranks 62nd out of 63 countries. Ukraine's score in the Welfare domain puts it in 52nd place. Ukraine is in the 44th spot in the Society domain, tying with Estonia, Macedonia, Pakistan, and Uruguay. In the Environment domain, Ukraine shares 49th place with Azerbaijan, Belarus, Czech Republic, Greece, Hungary, Iceland, Russia, and the United States. The highest rating is achieved in the Education domain—Ukraine takes 34th place, tying with Chile, Lithuania, and Russia. Ukraine's rankings in all domains are quite low, which worsens its overall position relative to other countries, many of which compensate for their failure in one domain by successes in others

Ukraine suffers from a problem typical of most transition economies. It does not yet have the advantages of developed countries, such as permanent welfare programs, effective educational and health-care systems and well-developed infrastructure. At the same time,

it has lost some of the advantages of developing countries, such as favorable demographics and social capital. Ukraine's abundant supply of natural resources (arable land and valuable minerals) and Ukraine's favorable geographic position along international transport corridors are relatively permanent and will provide Ukraine with advantages with respect to future development. However, Ukraine's challenging demographic situation is only going to get worse and the physical capital and infrastructure inherited from the Soviet Union are old and desperately need to be upgraded.

In our opinion, promoting economic and social efficiency is a key policy imperative for the government that can be used to unite its efforts regarding economic and social reform. The efficient use of natural and human resources will enhance the welfare of the Ukrainian people and raise their quality of life. The development of the appropriate social institutions, such as those that provide health insurance, is also critical.

## Improving Energy Efficiency

Ukraine is one of the world's biggest consumers of energy per unit of Gross Domestic Product (GDP). Based on this indicator Ukraine received the second worst score in the benchmarking results — 62nd place and only ahead of Kyrgyzstan. Ukraine consumes almost twice as much energy for the production of one dollar of GDP compared with the Central European countries of Poland and the Czech Republic, and almost three times more than the developed countries such as Italy.

In Ukraine it is possible to apply both price and non-price incentives to increase energy efficiency. Eliminating price signal distortions by decreasing state interference in energy markets would be the most effective way to increase Ukrainian energy efficiency. Moreover, other non-price methods of stimulating energy efficiency will work better if energy prices reflect market realities. At the same time, the introduction of appropriate energy efficiency standards is necessary for those sectors where rising energy prices do not provide sufficient incentives for energy saving. Housing and the communal and public sectors do have the knowledge about energy saving activities or the incentives to adopt such measures, either because these sectors are not for profit or because energy is not an important component of their expenses.

## Estimating Potential GDP

Estimating and forecasting potential output achieves three main goals: it allows for the development of a long-term forecast for economic activity; it helps to

pinpoint those specific resources Ukraine is actually lacking to raise the level of long-term economic growth; and to evaluate the gap between potential and actual output which indicates the magnitude and the direction of inflationary pressure.

The growth of potential (and actual) output depends mainly on total factor productivity (TFP), rather than on the 'classical' factors of production – labor and capital. TFP has accounted for one-third to one-half of GDP growth in a significant number of developed economies over the past 40 years. Furthermore, it represents the main quantitative descriptor of the significant economic gap between rich and poor countries.

The main source of TFP growth in Ukraine is improved efficiency in the use of the factors of production. TFP growth is assumed to remain robust over the long-term, under the condition that economic and social reform continues. However, even with the strong TFP performance embodied in the forecast of potential output, output of goods and services per employee in Ukraine in 2050 will be more than 50 per cent lower than its current level in the United States. A decline in the labor force will cause Ukraine to lose 0.8 percentage points of GDP growth every year compared to the case where labor would remain unchanged. Over the latter period of the forecast (2031 – 2050), capital will account for practically 50 per cent of GDP growth as the growth in TFP begins to converge to that in more developed economies. However, even at the very end of this period, total factor productivity will continue to be the main factor driving Ukrainian economic performance.

## Demography

Since 1993, Ukraine's population fell by over 10 per cent, while the elderly share of the population has been steadily growing. One of the most important factors behind this falling population is the fact that Ukraine has one of the lowest fertility rates in the world. The fertility rate would need to almost double to hold the future level of the population constant.

In addition, mortality rates are very high in Ukraine. Average life expectancy at birth is 66 years in Ukraine; this is 11 years less than the average in Western European countries. Ukraine's infant mortality rate stands at twice the European average. Forty-seven per cent of men and 36 per cent of women in Ukraine die before they reach retirement age. For example, four times as many men as women die at the age of 30. Furthermore, the mortality rate among men aged 30 to 40 is still increasing. Prospects for an improvement in mortality rates are bleak, as Ukraine is currently suffering from epidemics of tuberculosis and HIV/AIDS. Every

day, 35 people are infected with HIV in Ukraine. In addition, in Ukraine, the annual level of alcohol consumption is 12 liters per capita. Based on data from the WHO, alcohol consumption of more than 8 liters per capita per year is likely to cause a gradual degradation in a society's socio-economic performance.

By 2050, even with a small improvement in fertility rates, falling death rates and a neutral net immigration position, Ukraine's population is forecast to decline by over one-third, going from 46 million to 29 million. In the year 2025, around a quarter of the Ukrainian population will be over 60, whereas in 2050 nearly one-third of all Ukrainians will be aged 60 or older. This bleak demographic outlook undermines the future growth in potential output and puts steady long-term pressure on public funding of health care and pensions.

## Efficiency of Social Protection Funding

A calculation of social protection and social procurement expenditures based on OECD methodology demonstrates that in 2006 the total amount of such expenditures from state and local budgets and state targeted non-budget funds in Ukraine constituted 151 billion UAH, or 28 per cent of GDP. This is almost four times the 41 billion UAH indicated in the consolidated budget of Ukraine under the budget function heading: «social protection and social procurement». Based upon the indicator of social protection expenditures as a share of GDP, Ukraine's level of social protection is equal to that of the most developed countries, such as Switzerland or France; however, the efficiency of the use of these funds is much lower.

The majority of Ukraine's transfers to the population take the form of cash transfers, which make up the largest and most rapidly growing portion of overall transfers. The growing portion of social transfers provided in cash is a sign of a developed European country. With respect to non-cash transfers, the largest share are social benefits, which are not well targeted to the poorest layers of the population. Most of the social benefits in Ukraine are simply "declared benefits", which are either not funded or are underfunded.

Problems with the efficiency and effectiveness of the funding of the system of social protection and social procurement in Ukraine arise from the fiscal dependency of local governments upon the state government. The Ukrainian system of intergovernmental transfers envisions that most social services are provided at the local level based upon delegated expenditures from the state budget. These expenditures to support social

services are funded by local revenues and equalization grants, as well as a set of social subsidies, which leads to the fiscal dependency of local governments upon the central state authority. According to the intergovernmental fiscal transfers' formula the delegated expenditures on social services are calculated based on the set of norms and standards established by the state government and on the number of recipients.

This dependency creates an incentive structure that undermines the efficiency of the provision of social services. The analysis shows that spending on residential institution services dominates expenditures on social services in comparison with community-based services. At the same time, the funding of community-based services, such as services provided in social service centres for youth and families, early rehabilitation centres for disabled children, territorial centres of domiciliary assistance, as well as the services provided

by NGOs and individuals, are both more effective and more efficient than those provided in the residential institutions, such as children's homes and homes for the disabled. However, based on the current legislation, the local authorities have no incentive to transfer budget funds from residential institutions to community-based agencies. This is because residential institutions are more expensive to operate than community-based institutions, and thus by emphasizing residential institutions the local authorities can get a larger portion of the equalization grants from the state budget.

In order to improve the system of social procurement and social protection in Ukraine and to increase the efficiency of social expenditures it is necessary to encourage the funding of community-based services and services provided by NGO's, which in turn should be accompanied by the reform of intergovernmental budget relations.

# Chapter 1

## Benchmarking Ukraine's Quality of Life

### What does quality of life mean and why should it be measured?

The ultimate goal of any modern democratic state should be to ensure a high quality of life for its citizens. The electoral support for politicians depends on their capacity to provide an overall vision for the country and to put in place policies and programs that help to achieve this vision. Ukraine's citizens want a high quality of life—and they want their government to adopt policies and programs that ensure that this is accomplished.

**Quality of life means economic wealth, high-grade public services, and a safe and comfortable environment.**

"Quality of life" is a concept that encompasses economic wealth, high-grade public services, and a safe and comfortable environment. It reflects the fact that the average person is interested in down-to-earth and perceptible things—an adequate income, the opportunity to find a job or open a business, a chance to live in a community that is clean and safe, access to relevant education programs and lifelong learning opportunities, and high-quality and affordable health care.

This chapter assesses Ukraine's record on achieving this goal by benchmarking its performance against other countries on a range of quality of life indicators. By doing so, we can see what we are doing well, what we are doing poorly, and what we can learn from other countries. It allows us to assess where public policy is achieving its objectives and where new strategies are needed.

### Evaluating the components of quality of life

We single out five domains that reflect the state's success in ensuring a high quality of life for its citizens: Wealth, Society, Health Care, Education, and Environment.

Each domain comprises six to nine indicators that reflect a significant aspect of that domain (see Appendix). The Wealth indicators examine economic well-being, efficiency, and innovativeness. The

#### Quality of life domains:

- **Wealth**
- **Society**
- **Healthcare**
- **Education**
- **Environment**

Society indicators measure equality, crime, and corruption. Indicators in the Health Care and Education domains assess the health and education status of citizens and the public health and education services available to them. The Environment indicators reflect pressures on the environment and policy responses to those pressures.

### Why Isn't GDP Enough?

For many years, gross domestic product (GDP) was the primary measure used by economists to evaluate a country's performance. Even though GDP is an important factor in our quality of life, it is not the only one. We include it as one of the indicators because we recognize that a country that is not generating enough income is hampered in what it can do on the social and environmental front. But we also recognize that high income per capita is no guarantee of a high quality of life.

### Selecting countries for comparison with Ukraine

While Ukraine's performance is most often compared to that of Poland or Russia, in some respects it has more in common with quite unexpected countries than with its closest neighbors. For example, Ukraine must contend with a neighboring superpower (Russia) just as Canada and Mexico must manage their relationships with the United States. Ukraine's industrial structure is closer to that of the Philippines or Colombia while challenges that relate to the key role of Ukraine's commodity sectors resemble those of Nigeria and Ecuador.

CIS and Central European countries are natural benchmarks for Ukraine as they also faced the problem of transitioning to market economies and democratic governments. Ukraine can learn from both their successful and their unsuccessful reforms. Comparison with other developing countries—particularly emerging markets—is also worthwhile

## Benchmarking Methodology

By drawing our data from freely available international databases, we attempt to avoid the comparability problems that arise from methodological differences among the statistical agencies of individual countries. We choose indicators that are universally recognized and easy to interpret.

The year 2005 is the base year chosen for our comparative analysis, since these data are available for most indicators and countries.

Data on all the indicators have been converted into school-style grades. For each indicator, a country's performance is ranked as "excellent," "very good," "satisfactory," or "poor" based on the following method:

- We calculate the difference between the top and bottom performer and divide this figure by 4.
- A country receives a rating of "excellent" on a given indicator if its score is in the top quartile; a "very good" if its score is in the second quartile; a "satisfactory" if its score is in the third quartile; and a "poor" if its score is in the bottom quartile.

The overall domain ranking for each country is calculated by applying a point system to each indicator performance. Five points are given to an "excellent" ranking, four points to a "very good" ranking, three points to a "satisfactory" ranking, and two points to a "poor" performance. The indicator points are then added up for each domain and the average (mean) score is calculated.

The overall quality of life ranking for each country is calculated as the mean (average) of the domain scores. It reflects a country's relative success in ensuring a high quality of life for its citizens.

since Ukraine competes with them for investment and new product markets. An in-depth study of their experiences can provide concrete examples of innovative policy approaches.

Benchmarking against industrialized developed nations is essential since they offer Ukraine an opportunity to analyze and assess the best practices in each domain. The "golden billion" countries vary in their geographical, cultural, and political features. All of them—with the exception of the United Arab Emirates and Israel—belong to the Organisation for Economic Co-operation and Development (OECD) and/or the European Union.

Benchmarking against only the top-performing countries (as is often done, for example, in Canada and Australia) is not helpful analytically given the large performance gap between Ukraine and the developed countries. However, Ukraine is not so far down the development ladder that a comparison with the least

developed nations would be useful.<sup>1</sup> Our perception of a high quality of life is closer to that found in EU countries than in those African or Asian countries facing shortages of basic food, clean drinking water and medical supplies. Ukraine's goal is to reach the level of developed states; however, it must also study the experience of developing countries in order to learn from their achievements and mistakes.

We used multiple criteria in order to be as open as possible when choosing countries and to avoid bias when drawing conclusions about identifying Ukraine as belonging to a definitive group of countries. We also believe that limiting the number of countries inevitably leads to the loss of some knowledge of international experience and successful development models that we want to use as the basis for policy recommendations. A core set of countries emerges from using such criteria as: Ukraine's the key trading partners and competitors, similar economies in terms of human development, and membership in international groups and organizations. These countries—Kazakhstan, Germany, Poland, Russia and Turkey—are included in our benchmarking.

### Sixty-three comparator countries were chosen.

Some countries were dropped from our study because of a lack of reliable and accessible data. In the end, 63 countries were chosen (see Appendix: Table 2). Our data requirements were kept flexible enough so as not to exclude important countries such as India and China.

## Benchmarking results

### Ukraine is ranked 57<sup>th</sup> out of 63 countries in quality of life.

Ukraine's quality of life ranking is 3.24 out of possible 5 points. Of the 63 countries included in our benchmarking analysis,

Ukraine shares the 57th spot with Moldova, putting it ahead of India, Kazakhstan, Macedonia, South Africa, and Paraguay. Ukraine's results in all domains are quite poor and, unlike many of the comparator countries, Ukraine's failures in certain domains are not

compensated for by successes in others.

Quality of life	3.24
Welfare	3.14
Society	3.43
Health Care	2.78
Education	3.67
Environment	3.17

Ukraine's worst results are in the Health Care domain, where it ranks 62nd out of the 63 countries. Ukraine's score in the Welfare

<sup>1</sup> Designated by the United Nations Development Agency as "low human development" countries.

domain puts it in 52<sup>nd</sup> place. Ukraine is in the 44<sup>th</sup> spot in the Society domain, tying with Estonia, Macedonia, Pakistan, and Uruguay. In the Environment domain, Ukraine shares 49<sup>th</sup> place with Azerbaijan, Belarus, Czech Republic, Greece, Hungary, Iceland, Russia, and the United States. The highest rating is achieved in the Education domain—Ukraine takes 34<sup>th</sup> place, tying with Chile, Lithuania, and Russia.

### Quality of Life Worldwide

Our benchmarking rankings contain no surprises. Countries ranked in the top tier are the same developed and successful countries ranked high in other ranking systems, such as the UN Human Development Index. As in those other ranking systems, socially oriented and environmentally responsible countries such as Canada and Sweden rank higher than countries such as the U.K and the U.S. whose success is weighted more in the economic domain.

The second tier is the most diverse one. It includes such dissimilar pairs as Italy and Belarus, Uruguay and Tunisia. While these countries lag the top tier countries, some offer successful models of advancement.

While the bottom third of countries have the lowest quality of life rankings, Ukraine can still learn from their experiences. Some of them have achieved rapid rates of economic development, others can be proud of their educated workforce or protected environment. Yet, none of them was capable of parlaying these achievements into an overall high quality of life. This tier of countries comprises most of the developing countries and transition economies, including Ukraine.

### Quality of life in Ukraine is one of the lowest among European countries.

Ukraine's quality of life performance ranks among the lowest of the European and Former Soviet Union (FSU) countries included in our benchmarking. This outcome is in line with the results of similar surveys carried out by various international organizations: Ukraine ranks 78<sup>th</sup> out of 177 countries on the UN Human Development Index, 98<sup>th</sup> out of 111 in *The Economist's* Quality of Life Index, and 174<sup>th</sup> out of 178 on the New Economic Foundation's Happiness Index.

To understand the reasons for such a poor ranking, it is necessary to analyze the individual indicators that make up each domain.

### Wealth

We benchmark the wealth of economies using economic, innovation and efficiency indicators. One of Ukraine's main weaknesses in this domain is low energy efficiency. While we score relatively well on some macroeconomic and innovation indicators, we are not living up to our potential and lag behind less

Wealth Domain Score	3.14
Income per capita	3
Unemployment	4
Business climate (time required to start a business)	3
Energy efficiency	2
ICT diffusion	2
R&D expenditures	4
Number of researchers	4

economically developed countries in the overall domain rankings.

Ukraine has one of lowest rankings on energy efficiency. Energy efficiency is captured by an indicator that measures the consumption of energy per US\$1 million GDP at purchasing power parity. The more efficient an economy is, the less energy it needs to produce a given set of goods and services.

Ukraine's low ranking can be partially attributed to the economic structure, where energy-consuming metallurgical and chemical industries prevail. However, housing and communal services also consume coal, gas, and electricity inefficiently. The economic structure remains dependent on energy because there is little incentive to be efficient: energy prices in Ukraine are lower than the world price. This, in turn, leaves Ukraine vulnerable to external price shocks.

Ukraine is also not living up to its immense innovation potential. Ukraine has a large number of researchers and scientists and ranks well on business funding of R&D, but has not yet been able to distinguish itself in technology- and science-intensive sectors of the economy by becoming an exporter of high-value-added goods.

Ukraine, thus far, has not made a mark on a global scale when it comes to innovation. Only a small number of Ukrainian scientists have published in foreign scientific periodicals and very few patents are registered by Ukraine in world-recognized patent organizations. One factor hindering the country's ability to apply its innovative potential is insufficient protection of intellectual property rights.

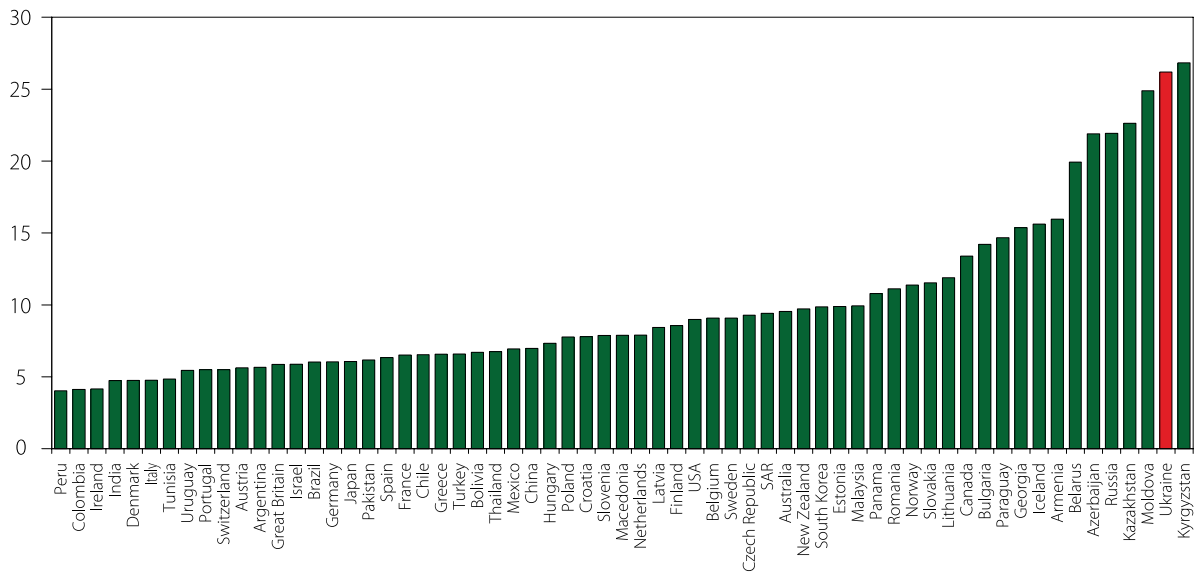
Ukraine performs relatively well on macroeconomic indicators. We have high GDP growth rates and low unemployment rates. However, at the micro-level, measures must be taken to improve Ukraine's business climate in order to promote further economic development and growth. For example, the time required to start a business is relatively high, illustrating the challenges facing Ukrainian entrepreneurs.

### Society

The Society domain is benchmarked using indicators that measure corruption, crime, income security, and income inequality. Corruption is the most critical

### Chart 1. Energy Efficiency of the Economy

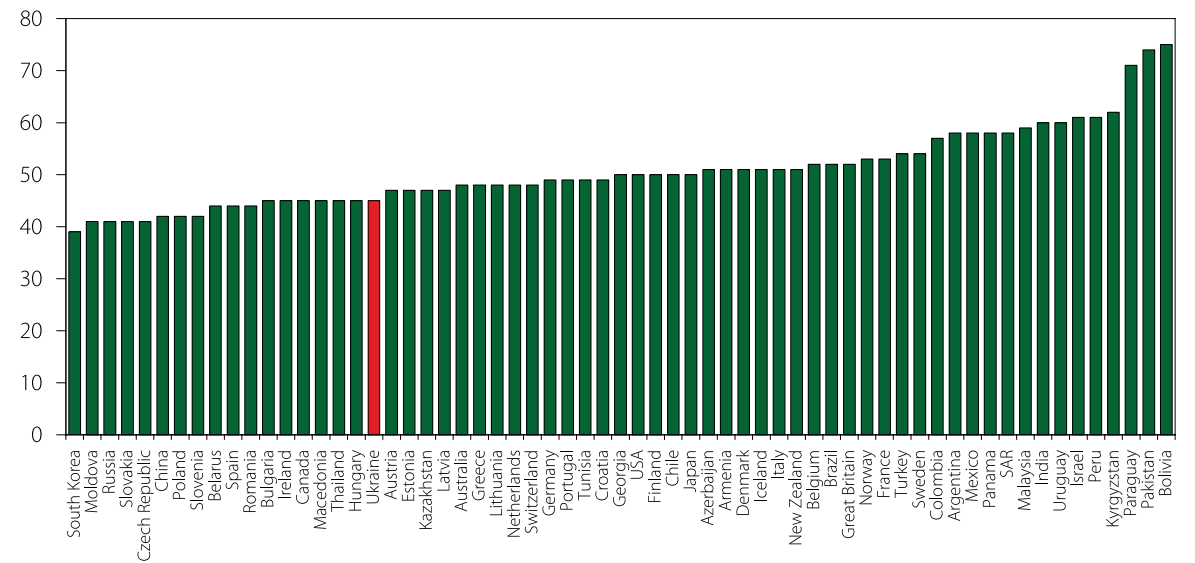
Consumption of energy per US\$1 million of GDP at purchasing power parity(terajoules)



Source: Environmental Sustainability Index.

### Chart 2. Dependency ratio

per 100



Source: World Health Organization.

problem in Ukraine. Not only does it threaten social stability but it also affects Ukraine's performance in other domains by contributing to a poor business climate and lowering the overall quality of education. Corruption also results in a high level of distrust in major government institutions, including law-enforcement agencies and the judicial system.

Ukraine scores relatively poorly on crime indicators. However, it is important to keep in mind that some

of the data regarding the number of crimes recorded are questionable due to the fact that countries have different definitions of crime and varying degrees of stringency when it comes to law enforcement.

Another concern is the number of unemployed young people (youth who neither work nor attend school). These unemployed youth are at risk of lower income, higher poverty, and social exclusion throughout their lives. Moreover, the disengagement

Society Domain Score	3.43
Income inequality	4
Gender income gap	4
Homicides	3
Robberies	3
Dependency ratio	5
Youth unemployment rate	3
Corruption	2

of young people from mainstream society lowers the country's competitiveness, undermines its economic potential, and decreases social cohesion.

From the point of view of social equality, Ukraine fares surprisingly well. However, such a situation is typical for the majority of former Soviet Union

countries. Ukraine did not, however, perform well on gender equality. Aside from the large income gap between men and women (Ukrainian women earned just 53 per cent of what Ukrainian men earned), there are numerous incidences of gender violence and unbalanced representation in legislative and executive bodies. Ukraine does much more than other CIS countries in terms of legally ensuring equal rights and opportunities for men and women: the framework law was adopted and a specialized authority, Ministry for Family, Youth and Sport, established. However, the mechanisms to ensure gender parity in Ukrainian society do not appear to be performing well.

The demographic structure of Ukrainian society is favorable today (at least in comparison with most of our benchmarking countries). The relatively low dependency ratio contributes to fiscal stability and eases the implementation of social reforms (including

pension reform). However, this situation will not last for long—Ukraine's population is not only aging, but also declining. If nothing is done to take advantage of the current window of opportunity, the task of reforming the social security system will get much more complicated.

### Health care

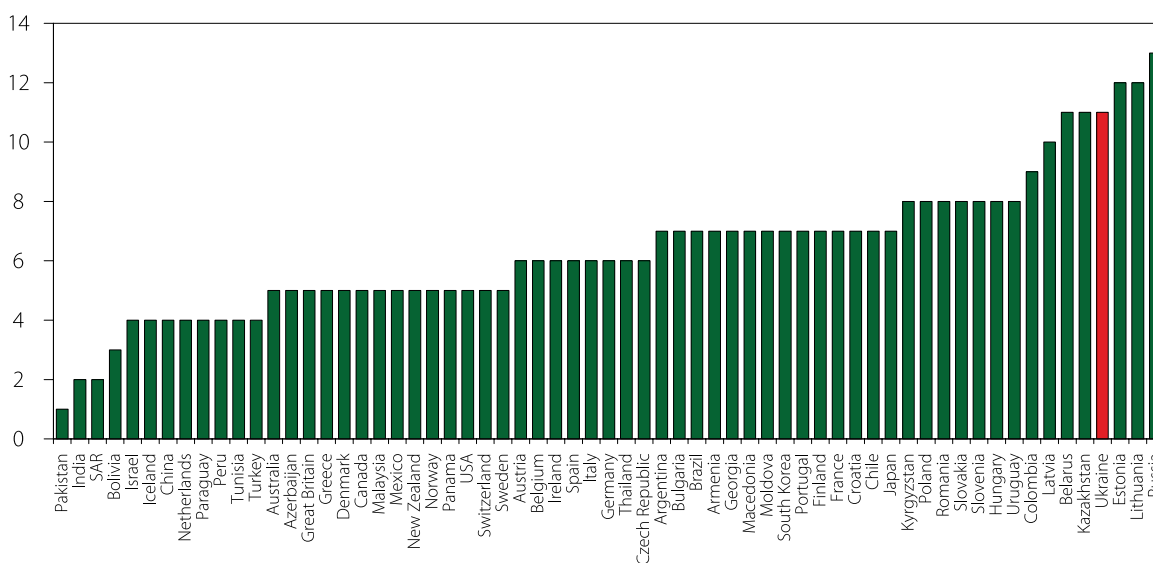
Health care Domain Score	2.78
Life expectancy	3
Gender gap	2
Infant mortality	3
HIV	2
Tuberculosis	2
Health expenditures	3
Physicians	5
Alcohol consumption	2
Smoking	3

Health care is the domain in which Ukraine records its worst performance. In looking at this domain, we focus on the following components of healthcare: health status, health resources, and lifestyle. Of great concern in Ukraine is the high incidence of two of the world's most dangerous diseases: HIV/AIDS and tuberculosis. While

HIV/AIDS is a challenge worldwide, tuberculosis, a completely curable disease, is an epidemic only in Ukraine, and is not a threat in other European countries. Ukrainians' lifestyle behaviors—high tobacco and very high alcohol consumption—add to the dismal outlook in this domain.

The poor lifestyle behaviors and high morbidity rates have had a negative impact upon Ukraine's overall

**Chart 3. Gender Life Expectancy Gap**  
years



Source: World Health Organization.

health status. Its life expectancy is low and its infant mortality rates are high. The gap in male and female life expectancy is another source of concern, with male life expectancy being significantly lower than female life expectancy. The difference in male and female life expectancy in Ukraine is 11 years—one of the largest gaps worldwide.

Ukraine's health-care system is in poor shape. Even under conditions of insufficient funding, the system should operate much more effectively than it does. Ukraine does score high on the indicator measuring the number of physicians per capita. International experience suggests that more attention should be given to disease prevention rather than to outpatient treatment (which is where most health-care resources in Ukraine are presently concentrated).

### Education

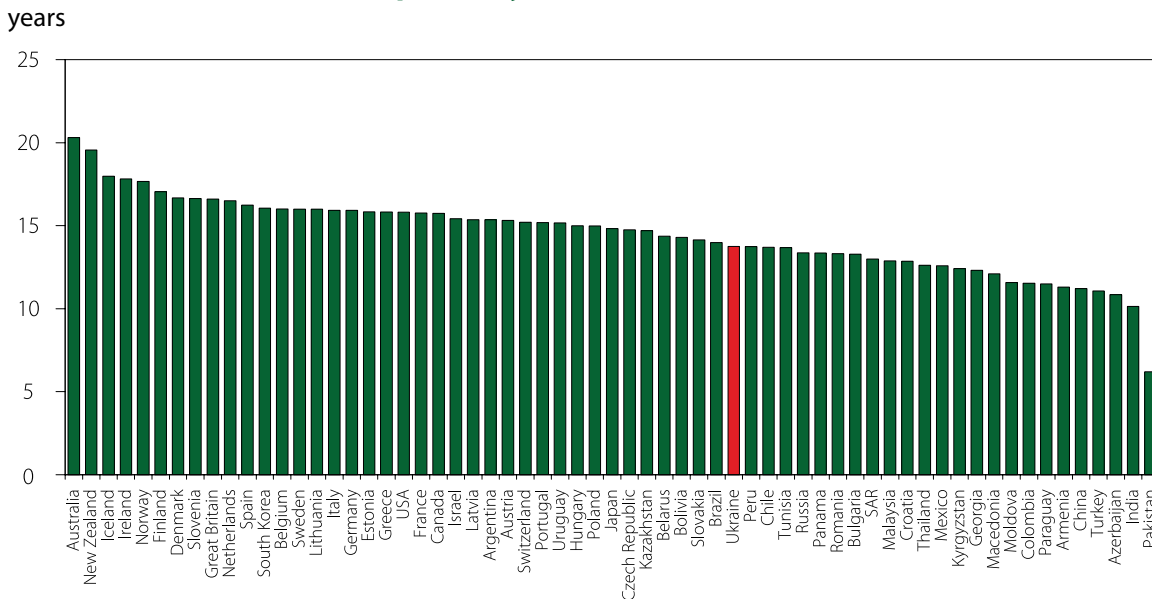
We analyze the education domain in terms of both quality and resources and find that Ukraine performs relatively well overall. The main problem is corruption in the education system. It is no secret that money can buy admission to, and degrees from, practically any university in Ukraine. Consequently, a nominal increase in the number of graduates does not necessarily mean an increase in the quality and capabilities of the workforce.

Ukraine scores well when it comes to education resources. It gets "good" grades on the primary school student–teacher ratio and on the education expenditures indicator. Unfortunately, this is not

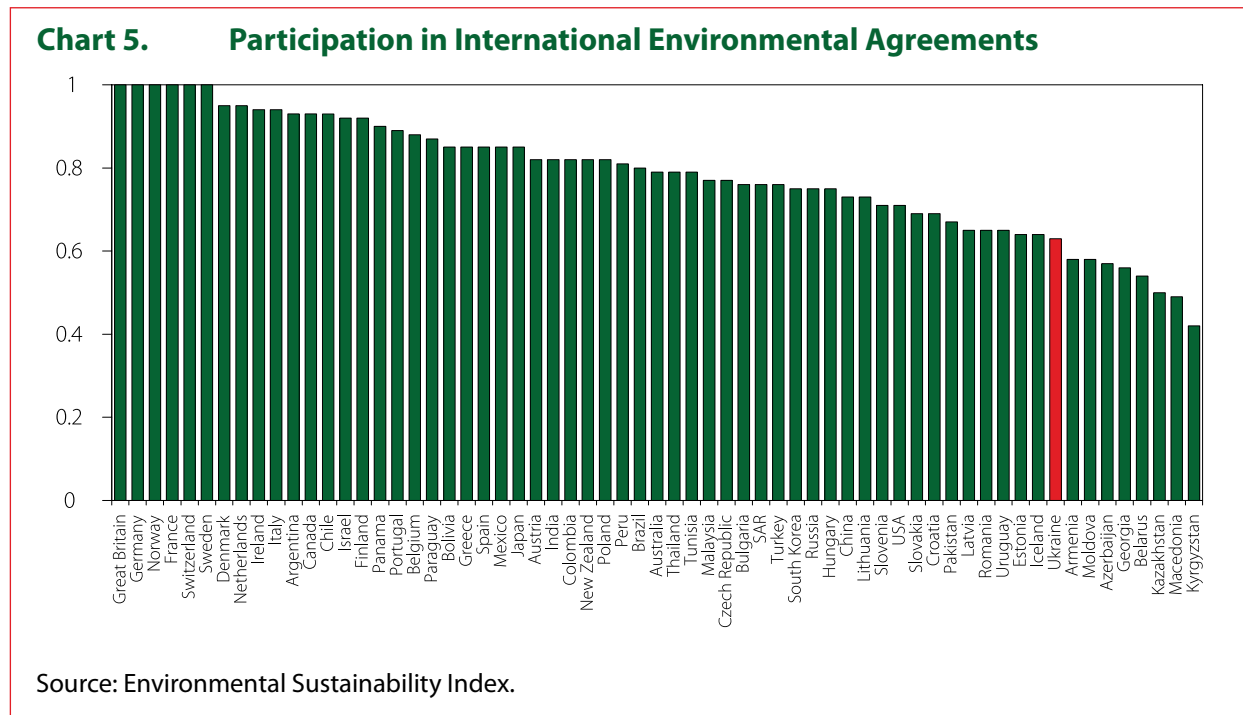
<b>Education Domain Score</b>	<b>3.67</b>	being fully reflected in Ukraine's education outcomes. The number of years spent in school (primary to tertiary education) is less than the average for the countries benchmarked. Lower school life expectancy depreciates the value of diplomas obtained in Ukraine to some extent and also calls into question the high score we attain on the indicator measuring the share of the labor force with tertiary education.
Foreign students	4	
School life expectancy	3	
Corruption	2	
Education expenditures	4	
Student–teacher ratio in primary school	4	
Labor force with tertiary education	5	

An indicator that measures the strength and competitiveness of a country's education system is the number of foreign students in the country. Ukraine scores a grade of "good" on this indicator. The high number of foreign students, however, is largely due to long existing connections established during the Soviet era and not to specific policies aimed at attracting foreign students. In reality, the global integration of the Ukrainian educational system is insufficient: teaching in English is not widespread among Ukrainian colleges, and Ukrainian diplomas in some specialties are not recognized internationally. Consequently, Ukraine not only loses out on opportunities to export its educational services, but its educational system is also incapable of ensuring the global competitiveness of the workforce.

**Chart 4. School Life Expectancy**



Source: UNESCO.



**Environment**

<b>Environment Domain Score</b>	<b>3.17</b>
CO <sub>2</sub> per capita	3
CO <sub>2</sub> per GDP	2
NO <sub>x</sub>	5
SO <sub>2</sub>	3
Protected land	3
Participation in international environmental agreements	3

The Environment domain is made up of indicators that measure pressures on the environment and policy responses to those pressures. The environmental situation has traditionally been weak in Ukraine with the intense burden on the environment not being mitigated by effective protective policy.

The Ukrainian government adopted the concept of sustainable development, yet it still does not adhere to it. Policy measures directed toward improving the environmental situation, such as the ratification of international agreements and broadening of protected land areas, are not sufficient. Also, as a result of the absence of a national system to account for greenhouse gas emissions, Ukraine is unable to participate in the global market for trade in quotas, which costs it considerable revenues.

Ukraine performs poorly in both the environment and health care domains. Although the impact of poor environmental conditions on the population's health and life expectancy has not been fully studied, one can argue that there is a link between poor air quality and the health of the population.

**What do these results indicate?**

**Ukraine has neither the advantages of developed countries nor those of developing states.**

Overall, Ukraine ranks low in quality of life performance but has the appearance of a more prosperous country. This discrepancy could, to some extent, be explained by the fact that while it is similar to Western European countries in terms of lifestyle and consumption preferences, Ukraine remains far behind developed economies when it comes to the quality of public services and policy effectiveness.

Ukraine suffers from a problem typical of most transition economies. It does not yet have the advantages of developed countries (such as permanent welfare programs and effective educational and health-care systems). At the same time, it has lost some of the advantages of developing countries (such as favorable demographics and social capital). We have a low GDP per capita, low life expectancy, our population is declining, and our environmental conditions are poor.

Our abundant supply of natural resources (land and minerals) and Ukraine's favorable geographic position along international transport corridors are relatively permanent. However, Ukraine's intellectual resources and demographic situation are only going to get worse. In addition, physical capital and infrastructure inherited from the Soviet Union are old and desperately need to be upgraded.

The country is developing, but not quickly enough. The rest of the world will not wait until we catch up—other developing countries are doing so at much faster rates.

Ukraine should look to examples of countries that trailed behind for a long time but eventually made great strides—such as Japan, South Korea, and growth powerhouse China. The development process takes decades, but the very first steps are the most important and have the most impact.

In our opinion, efficiency will be key to the success of the government's economic and social reform efforts. Efficient use of natural and human resources can

enhance Ukrainians' welfare and raise their quality of life. The development of institutions, such as those that provide health insurance, is critical.

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**Benchmarking helps define state policy priorities.**

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State policy priorities must be set out clearly if reforms are to be implemented effectively. Evidence-based analysis, such as benchmarking, helps define these priorities in a transparent manner. Benchmarking Ukraine's performance in each of the quality of life domains makes it possible to pinpoint those socio-economic areas in need of immediate attention, and gauge how far Ukraine has to go to reach its desired goals.

## Chapter 2

# Ukraine's Demographic Prospects

Since the first half of the 1990s, the demographic situation in Ukraine has worsened dramatically. Despite certain positive changes in recent years, Ukraine is facing a severe demographic crisis over the coming decades. Even if effective policy measures to improve the underlying characteristics of the Ukrainian demographic outlook were taken immediately, it would still not be possible for Ukraine to avoid serious economic and social problems caused by a shrinking and aging population. However, postponement of such policy actions would make the future demographic situation even worse.

## The Current Demographic Situation

### Population

#### Ukraine's population is decreasing rapidly.

Since 1993, Ukraine's population has been falling rapidly. Natural depopulation of 0.6–0.8 per cent per annum and significant emigration in the second half of 1990s<sup>1</sup> led to a decline in the population, from 52.2 million on January 1, 1993, to 46.6 million as of January 1, 2007 — a drop of over 10 per cent (see Chart 1).

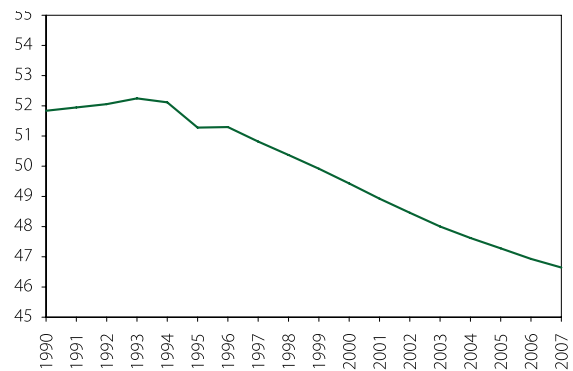
The birth rate has grown slightly in recent years to reach 9.5 births per 1,000 people in 2006, compared with 7.7 births per 1,000 in 2001. (Nevertheless, the birth rate is still lower than in the early 1990s when it stood at 12 births per 1,000.) Furthermore, net immigration recently turned positive, which has helped to stabilize the impact of migration upon population projections.<sup>2</sup>

However, an already-high and still-increasing mortality rate, which now stands at over 16 deaths per 1,000 people, neutralizes these slight positive shifts of recent years and contributes to a continued steep decline in the Ukrainian population.

Ukrainian demographic trends exhibit considerable regional differences. Natural depopulation is lowest in Kyiv, the Western oblasts and the Crimea. The

**Chart 1.**  
Ukraine's Population

millions as of January 1

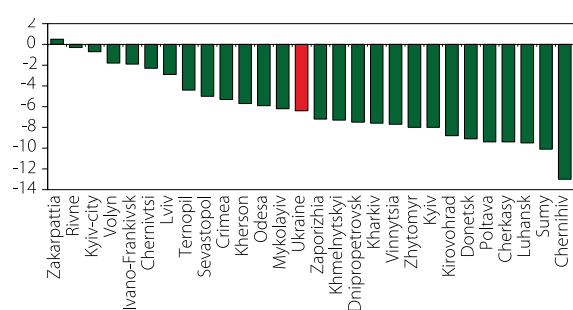


Source: Derzhkomstat.

only Ukrainian region with a positive natural population growth rate as of 2006 is Zakarpattia. The natural population declines in the Donbas region and in the Central and Northern oblasts are much worse than the Ukrainian average (see Chart 2).

**Chart 2.**  
Natural Population Growth as of 2006  
by Oblast

births per 1,000 minus deaths per 1,000



Source: Derzhkomstat.

<sup>1</sup> Emigration of Ukrainian citizens in 1994–2001 totaled nearly 150,000 annually.

<sup>2</sup> The net inflow of people into Ukraine due to international migration was 14,200 in 2006, whereas there was a net outflow of 152,200 people in 2001.

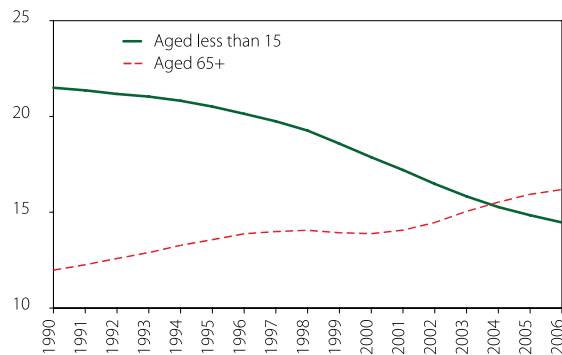
## Age and sex structure

### The elderly share of the population grows

From 1990 through 2006, the population share of children 15 years and younger fell from 21.5 per cent to less than 14.5 per cent. Over the same period, the share of the elderly (those aged over 65 years) increased from 12 per cent to 16 per cent. (see Chart 3.) Until recently, the increase in the share of the elderly in Ukraine's population was accompanied by decreasing life expectancy.

**Chart 3.**  
**Age Structure of the Population**

as per cent of total population



Source: Derzhkomstat. Calculations: ICPS.

The Ukrainian population is appropriately gender-balanced. The slight numerical predominance of women<sup>3</sup> can be attributed to their higher life expectancy. However, it is important to note that the life expectancy gender gap in Ukraine, which stands at 11 years in favour of women, is one of the highest in the world.

## Migration flows

### Integration of immigrants is a challenge for Ukraine.

In recent years, net international migration has become neutral in terms of its impact upon the size of Ukraine's population. Immigrants are now mostly from Transcaucasia and Central Asia. The share of immigrants from these countries as measured against the total number of immigrants is continually growing. Ukraine's interest in attracting migrants is currently low, since there is as yet no labor force deficit. However, policies to promote immigration will become increasingly important as Ukraine's population both ages and shrinks.

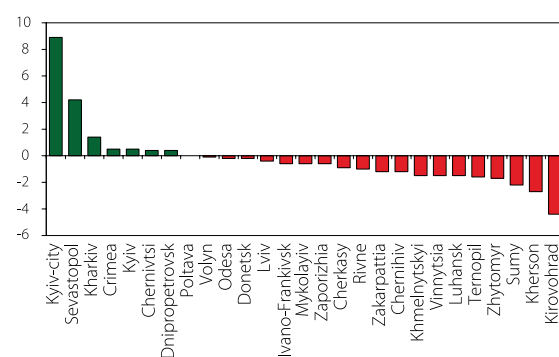
A common Soviet heritage, the lack of a language barrier, and a relatively high level of educational at-

tainment make it relatively easier for newcomers from Transcaucasia and Central Asia to integrate into Ukrainian society. However, their Muslim religion and the poverty of most migrants from these regions create the risk of social tension in places where the settlement density of these immigrants is high. This problem is particularly acute when it comes to the return of displaced populations to their original homelands—for example, the return of Crimean Tatars to the Crimea.

Regional migration inside Ukraine is dominated by a significant inflow of people to Kyiv (see Chart 4). The capital attracts over 80 per cent of all domestic Ukrainian migrants. Based upon data on officially registered newcomers from other regions, the number of Kyiv residents grows by 1 per cent annually. However, under-reporting of changes to official residency means that the true growth rate of Kyiv is much higher. A slight net inflow of people has been reported in the Crimea and some big Ukrainian cities, such as Kharkiv and Dnipropetrovsk.

**Chart 4.**  
**Population Growth Due to In-migration as of 2006 by Oblast**

people per 1,000



Source: Derzhkomstat.

## Causes of the unfavorable demographic outlook

### Low life expectancy

Average life expectancy at birth is 66 years in Ukraine. This is 11 years less than the average in Western European countries and 15 years less than in Japan. Forty-seven per cent of men and 36 per cent of women in Ukraine die before they reach retirement age. Moreover, average life expectancy stopped decreasing only very recently.

<sup>3</sup> As of 2007, women constituted 53.9 per cent of total population.

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**Four times as many men as women die at the age of 30.**

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There are several reasons for the difference in mortality rates between men and women. The female mortality rate depends largely on health factors (cardiovascular diseases, cancers) whereas men of working age are much more exposed to factors not related to health issues (accidents, murders, suicides). For example, four times as many men as women die at the age of 30.<sup>4</sup> Furthermore, the mortality rate among men aged 30 to 40 is still increasing.

The unsatisfactory state of the Ukrainian environment also has a negative impact upon life expectancy in Ukraine, as it raises the incidence of disease.

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**The infant mortality rate in Ukraine is twice the European average.**

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In the early 1990s, infant mortality rose due to the deterioration of the health-care system. Access to medical treatment was complicated by low financial support for state medical institutions, a lack of medical supplies and low incomes. As a result of renewed economic growth post-2000, the situation has improved, although Ukraine's infant mortality rate still remains twice the European average.

### *Low fertility rate*

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**Ukraine has one of the lowest fertility rates in the world.**

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Ukraine has one of the lowest fertility rates in the world. The low fertility is mainly the result of the economic crisis of the 1990s that generated a sharp decline in living standards and created a sense of insecurity regarding future living conditions. In addition, disintegration of the preschool education system, and the unsatisfactory state of reproductive health (especially for women) also had a strong negative impact upon the birth rate. Finally, the increasing use of abortion as a method of birth control has resulted in a rising rate of female sterility.

In recent years, the birth rate has begun to slowly recover, especially in the cities. As a result, the fertility rate has increased from 1.1 in 1999 to 1.2 in 2005. However, given Ukraine's rate of infant and child mortality, a fertility rate of 2.3 is needed to hold the population constant over the long-term. Moreover, the number of infants with birth defects is constantly increasing.

### *Epidemics of tuberculosis and HIV*

An epidemic of tuberculosis was officially announced in Ukraine in 1995. In 2005, the tuberculosis morbidity rate constituted 84 persons per 100,000 while the death rate for tuberculosis was 25 per 100,000. In 2006, 700,000 people with tuberculosis infections were registered in tuberculosis dispensaries; 120,000 of them had an active, contagious form of the disease.

Despite a slight improvement in TB morbidity and death rates in 2006, among European countries Ukraine remains second after Russia in terms of the number of TB cases. Ukraine's epidemic indicators for tuberculosis are 10–12 times higher than those in the developed countries.

Around two-thirds of Ukraine's TB cases are able-bodied people of reproductive age; however, the tuberculosis morbidity rate is also high among children. The number of TB patients resistant to antibiotics is rapidly increasing. Even though the threat of tuberculosis is very serious in Ukraine, only 30–40 per cent of the estimated funding required to effectively fight the epidemic is currently provided by the state.

At the same time, there is a real threat of an HIV/AIDS epidemic in Ukraine. Ukraine is second in Europe in terms of the growth in HIV/AIDS morbidity. Over the most recent five-year period, the incidence of HIV infection in Ukraine rose 20-fold. Today, there are approximately 400,000 HIV-infected people in the country.

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**Every day, 35 people are infected by HIV in Ukraine.**

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Most of the people infected with HIV are able-bodied people—adults aged 20–40. Based on data up to 2006, 2–3 persons die from AIDS in Ukraine each day on average, and 35 people get infected. Almost one-half of HIV infections in Ukraine come from drug injection; one-third are the result of sexual contact; and 15 per cent of new infections come from mother-to-child transmission.

### *Lack of a healthy lifestyle culture*

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**Lifestyle accounts for 50 per cent of factors affecting population health.**

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The health level of a population is roughly 10 per cent the result of medical assistance, 20 per cent the result of environmental conditions, and another

<sup>4</sup> The mortality rate for men exceeds that of women in all age groups, but the difference is especially acute for men and women of working age.

20 per cent is related to genetic factors. However, lifestyle accounts for about one-half of the factors affecting population health.

A healthy lifestyle is not promoted in Ukraine. This failure to promote healthy living has resulted in rising rates of alcoholism and smoking. According to official statistics, the number of people suffering from chronic alcoholism is currently about 900,000. Every year, some 50,000 to 55,000 Ukrainians become alcohol-dependent. In Ukraine, the annual level of alcohol consumption is 12 liters per capita. Based on data from the World Health Organization, alcohol consumption of more than 8 liters per capita per year is likely to cause a gradual degradation in a society's socio-economic performance.

The number of drug addicts is also increasing. Nearly 100,000 addicts were registered for the non-medical use of drugs as of 2001. By 2006, this figure had grown to 160,000.

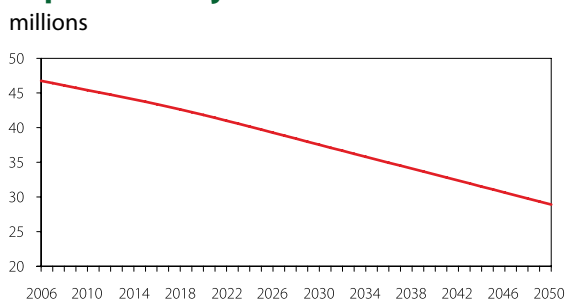
## The Demographic Outlook

### Depopulation

**Depopulation cannot be slowed without much stronger immigration.**

Some positive developments in the demographic situation have occurred recently. The birth rate has increased and the balance of external migration has turned positive. We expect these demographic factors to continue to gradually improve over the forecast period to 2050. However, any reasonable assumptions about these demographic determinants over the forecast horizon clearly show that it is not possible to reverse the downward trend in the overall size of Ukraine's population. Continued rapid depopulation in Ukraine thus appears to be inevitable.

**Chart 5.**  
**Population Projection**



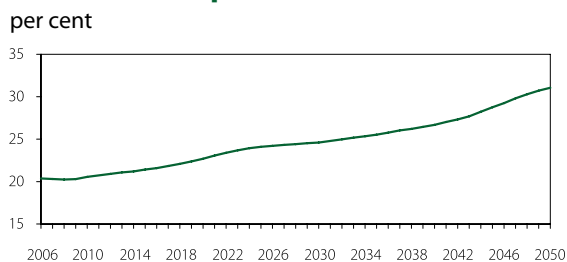
Source: Derzhkomstat. Forecast: ICPS.

By 2050 Ukraine's population is forecast to decline by over one-third, going from 46 million to 29 million (see Chart 5). In order for Ukraine to eventually halt this decline through a natural increase in the population, it would be necessary to almost double the fertility rate. The experience of many other countries with a similar depopulation problem indicates that policy measures, including material incentives, have a very limited and short-term impact on fertility rates. Over the past two decades, countries have only managed to solve the problem of a shrinking population by increasing net immigration.

### Aging of population

The low fertility rate, prevalent since 1990, not only reduces future population growth, but over time it will also increase the elderly's share of the total population.

**Chart 6.**  
**Over-60 Age Group as a Share of Ukraine's Population**



Source: Derzhkomstat. Forecast: ICPS.

**Aging of the population will increase over time.**

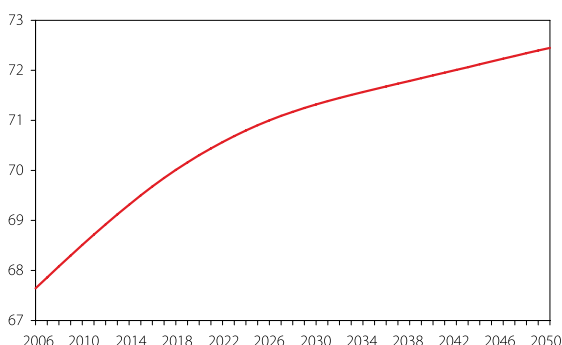
This aging problem usually arises when the population starts to decline, and it is typical for the majority of developed countries. In the case of Ukraine, the population will continue to age throughout the forecast period. Thus, in the year 2025, around a quarter of the Ukrainian population will be over 60, whereas in 2050 nearly one-third of all Ukrainians will be aged 60 or older (see Chart 6).

### Urbanization

Ukraine is not an exception to the worldwide trend toward urbanization. The share of city residents in the total population is forecast to continually increase over the entire forecast period (see Chart 7).

A positive aspect of urbanization is the higher quality of life that can be attained through increased access to "the benefits of civilization"—primarily, better access to medical services and to the education and cultural institutions that are usually concentrated in cit-

**Chart 7.**  
**City Residents as Share of Population**  
per cent



Source: Derzhkomstat. Forecast: ICPS.

ies. In addition, urbanization can be associated with enhanced economic growth as the workforce shifts from less productive agricultural activities to more efficient employment in manufacturing and services.

**Urbanization is increasing wealth and lowering fertility.**

However, one of the potential consequences of urbanization in Ukraine is downward pressure on the overall fertility rate, since rural residents have considerably higher birth rates than city dwellers. In addition, over time the "traditional values" typical of the Ukrainian village may change as more village residents become familiar with lifestyles more typical of an urban culture. Thus, alongside growing incomes and educational attainment among the rural population is the possible development of the lower fertility rates typical of city residents.

**Positive balance of external migration**

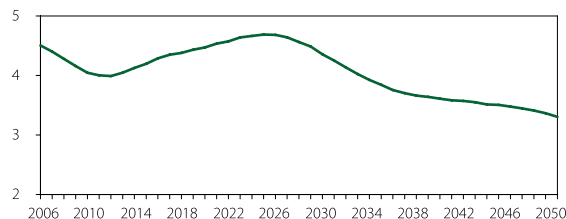
**No significant shifts in the volume of net migration are forecast.**

In recent years, Ukraine has registered a slightly positive balance in terms of international migration. Therefore, net emigration is no longer causing population decline. However, thus far there are no grounds for predicting a considerable increase in immigration in the future (see Chart 8). It is further increases in immigration that are saving the United States, Canada, and most EU states from demographic crises. Therefore, in the future, Ukraine may well be forced to attract many more external migrants than it does now.

The impact of net international migration on the size of the population is assumed to be very slightly positive over the forecast period. However, the characteristics of these international migration flows will most

likely have consequences that are not beneficial for Ukraine. Women of childbearing age are the most likely to emigrate, which will worsen the situation regarding the fertility rate. In addition, the "brain drain" will remain a pressing problem, becoming even more acute as the visa regime between Ukraine and European Union is liberalized.

**Chart 8.**  
**Net International Migration**  
thousands

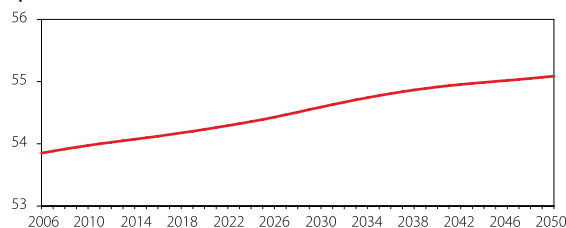


Source: Derzhkomstat. Forecast: ICPS.

**Growing share of women**

We do not expect much change in Ukraine's trend toward women making up a higher share of the overall population. By 2050, this share is forecast to grow by almost 2 percentage points (see Chart 9).

**Chart 9.**  
**Share of Women in Ukraine's Population**  
per cent



Source: Derzhkomstat. Forecast: ICPS.

The increase is the result of the significant difference in life expectancy between men and women which is assumed to continue throughout the forecast period.

**Consequences of the demographic crisis**

**Loss of economic competitiveness**

A shortage of labor limits the ability of business to increase output. Although to some extent this limitation can be overcome through replacing labor with fixed capital, labor shortages will continue to represent a

bottleneck as Ukraine strives to increase overall output. In addition, understaffing at factories designed for a certain number of workers will result in an underutilization of existing equipment and prevent achievement of economies of scale.<sup>5</sup>

Labor shortages will also lead to an increase in the cost of labor, reflected in rising real wages. In the short run, this may have a positive effect on people's incomes, although in the medium term this will only lead to higher inflation unless the higher wages are offset by increased productivity. A more expensive workforce could result not only in a drop in business profitability, but also in the loss of an important international competitiveness advantage.

**A labor shortage will lower Ukraine's ability to attract investment.**

Ability of Ukrainian economy to attract investment is based on the high rates of profit. Wage growth and the limits to production capacity caused by labor shortages will lower the ability of Ukraine to continue to attract investment.

### Stagnation of the domestic market

Growth of the domestic market, and especially growth in consumer spending, has in recent years been the main source of overall economic growth. Retail and wholesale trade and construction were the two fastest growing components of overall economic activity in late 2006 and early 2007. Rapid growth in the domestic market has generated considerable investment in the retail segment of the banking industry. This strength in the domestic market is happening in spite of depopulation, so the demographic problem may seem to be relatively unimportant.

However, the almost 40 per cent decrease in the number of children 14 years or younger is thus far the most prominent feature of the ongoing depopulation of Ukraine. Since this cohort does not work and spend income directly, the fall in the Ukrainian population has yet to undermine the domestic market. The population of working-age population has only declined roughly 5 per cent since 1990 (see Chart 10).

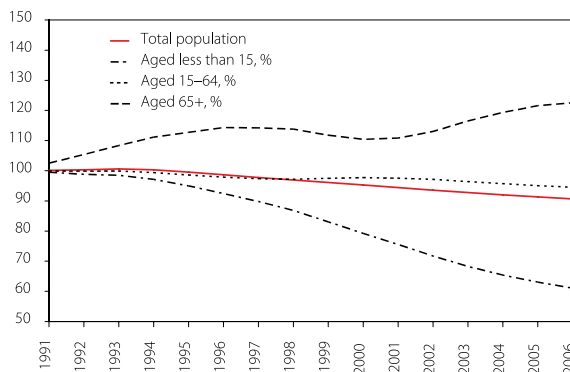
**Change of population age structure may lead to stagnation of consumption.**

However, over time the drop in the birth rate in the 1990s will create a situation in which the population of working age begins to decline

and the current workforce will increasingly age into retirement. Such trends will hurt income growth and lead to the stagnation of consumption and overall domestic market. These trends will cause a slowdown in investment in the retail-oriented sectors, which are presently the main drivers of economic growth.

**Chart 10.**  
**Ukraine's Population by Age Groups**

1990 = 100



Source: Derzhkomstat. Calculations: ICPS.

**A rapid decline in Ukraine's working-age population will begin in three years.**

Only those domestic markets that satisfy the needs of pensioners—such as pharmaceuticals and medical services—will show strong growth.

### Overloading of the state pension system

According to the ICPS demographic forecast, Ukraine's working-age population<sup>6</sup> will start declining rapidly in 2010. This will be a result of the large drop in birth rates in the early 1990s. Over the 2010–25 period, the number of people of working age will fall by 5 million. Over the same period, the number of pensioners will decrease at a much slower pace (see Chart 11).

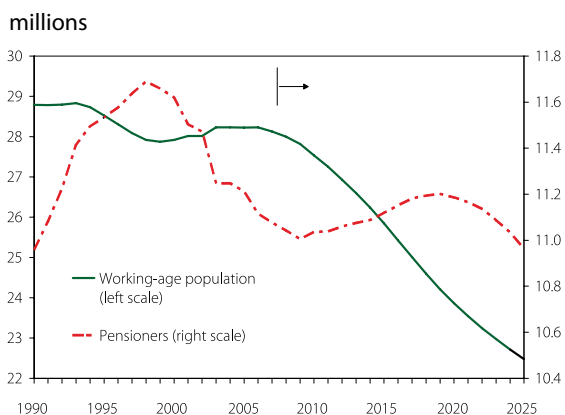
As Chart 11 indicates, the ratio of pensioners to the working-age population will soon increase. This ratio will grow most strongly over the 2014–19 period as the substantial numbers of Ukrainians born in the second half of the 1950s, analogous to the North American baby boom, retire (see Chart 12).

The increase in the population share of the elderly will add to the burden on the funding component of the Ukrainian pension system. The Ukrainian pension

<sup>5</sup> Economies of scale refer to a fall in costs per unit of output as the size of production increases.

<sup>6</sup> 16–54 years for women and 16–59 years for men.

**Chart 11.**  
**Working-Age Population and Pensioners<sup>7</sup>**

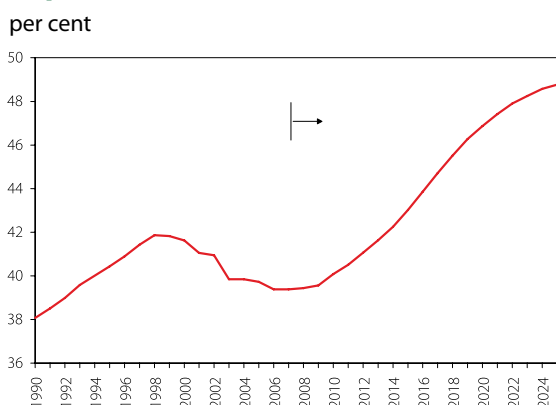


Source: Derzhkomstat. Forecast: ICPS.

fund will lose revenues as a result of the increasing ratio of pensioners to workers as well as the diversion of part of the pension contributions to the new accumulative fund starting in 2009.<sup>8</sup>

Mass disbursements from the accumulative fund will not begin until 2024 for women and 2029 for men.<sup>9</sup> Until then, it will be “draining” money from the existing pension fund. Based on our calculations, by 2009,

**Chart 12.**  
**Ratio of Pensioners to the Able-Bodied Population**



Source: Derzhkomstat. Forecast: ICPS.

5.8 per cent of the existing pension fund revenues obtained from salaries<sup>10</sup> will be directed to the new accumulative fund. By 2014, this share will reach 20.2 per cent as a result of the higher accrual rates required to meet the needs of the large and growing number of future retirees, putting enormous fiscal pressure on the existing pension system.

## Counteracting the impact of the poor demographic outlook

### *Economic growth and restructuring*

Stable economic growth, which raises citizens' welfare, is the main factor now increasing Ukrainian life expectancy and fertility. In addition, a more stable economic and political situation has led to a drop in emigration, especially for those of working age.

### **The labor-intensive structure of the economy will hinder future economic growth.**

The labor-intensive structure of the Ukrainian economy, if maintained into the future, will become a serious barrier to further economic growth.

The current system of state aid is aimed at preserving the current economic structure, as opposed to stimulating the development of new industries in response to emerging market forces. Moreover, the highest priority sectors for state aid are labor-intensive industries such as resource extraction and agriculture. The nature of this support does not stimulate the managers and owners of enterprises in labor-intensive sectors to invest in capital in order to reduce the labor intensity of their production.

It is crucial to understand that Ukraine will be unable to maintain economic growth by means of traditional, labor-intensive industries. However, because of Ukraine's large scientific and educational shortfall in comparison with developed countries, Ukraine will not be able to quickly develop new technologies and products which would be competitive on the world market and lead to the immediate restructuring of the economy. Therefore, Ukraine should exploit its existing comparative advantages. These advantages include the country's transit location along the Europe – Asia international transportation corridor, the

<sup>7</sup> Pensioners in Ukraine are defined as women aged 55 and older and men aged 60 and older. In fact, the number of pensioners exceeds the number of people who have reached their retirement age because of earlier (preferential) retirement of some categories of employees. As of the beginning of 2006, the number of preferential pensioners totalled 2.5 million, whereas the total number of pensioners was 13.4 million.

<sup>8</sup> According to the draft law # 2854 of December 29, 2006, which was adopted after first reading on April 24, 2007, the accumulative system is to be launched in 2009. The accumulative fund will be financed through deductions from the labor compensation fund. The deduction rate will increase by 1 percentage point per year—from 2 per cent in 2009 to 7 per cent in 2014.

<sup>9</sup> Small-scale payouts from this fund may begin earlier, depending upon how actively those aged over 40 will deposit in the accumulation system on a voluntary basis.

<sup>10</sup> Payroll deductions constitute 96–97 per cent of the existing pension fund's revenues.

availability of an educated workforce, Ukraine's close proximity to the European Union, and a considerable agricultural potential.

### Health care reform

The present health-care system in Ukraine is a strange mixture of a Soviet system, which ensures government-paid medical aid, and a set of private medical clinics that provide a wide range of medical services for a fee. In addition, patients must pay for some services provided in state-owned clinics. Medical insurance is not sufficiently available.

The major disadvantages of the existing state medical system are inconvenience, low quality, and corruption. However, the services provided by paid clinics are affordable only for the wealthy, and are still not always of high quality. In addition, paid clinics often prescribe unnecessary treatment in order to increase revenues.

#### **Building up a system of early disease diagnostics is a priority.**

Reform of medical care should take into consideration Ukraine's demographic characteristics.

The creation of a system of early disease diagnostics, similar to the Soviet system of preventive medical examination of the population, is thus a priority. However, a significant improvement in Ukraine's mortality rates is not possible without the introduction of a healthier lifestyle among the general population.

### Pension reform

#### **Retirement age is low in Ukraine in comparison with international standards.**

The retirement age is low in Ukraine compared with other countries. On average, a man's life expectancy after he reaches the retirement age of 60 is

14 years. A woman, after reaching the retirement age of 55, lives, on average, a further 22.5 years. Moreover, future increases in life expectancy will further increase the number of years for which pensioners are paid money from the state budget.

A gradual increase in the retirement age would raise the share of the working-age population and thus decrease the pressure on the state-financed pension fund. This will be difficult politically, as Ukrainians are accustomed to retiring at a relatively young age. Nevertheless, raising the age of retirement is the best way to increase the proportion of taxpayers to pensioners.

Introduction of the new accumulative retirement accounts will stimulate the large-scale reporting of

salaries which currently are outside the formal economy, since only reported incomes will allow for the accumulation of state pension savings. The offering of legal employment will thus become a competitive advantage for employers seeking to hire from an increasingly scarce labor pool. The faster the process of the "de-shadowing" of incomes, the quicker will be the broadening of the tax base—which, in turn, will reduce the deficit pressure on the pension fund. However, it would be unrealistic to expect a complete reporting of incomes in the first few years after the new accumulative pension system is introduced.

### Migration policy

#### **Enhancing immigration**

In 2006, immigration quotas were introduced for highly experienced workers in high demand. Nevertheless, these quotas were not implemented. Only after an in-depth study of market needs will it be possible to make immigration quotas an effective tool for improving workforce supply. It will also be important to introduce immigrant integration programs, especially language training, and make it easier to issue work permits for foreigners.

#### **Promotion of legal emigration**

There is concern in Ukraine that the possible elimination of the visa requirement for Ukrainians by the EU or the liberalization of the EU labor market for Ukrainian citizens will provoke a sizable outflow of Ukrainian workers. Indeed, the size of emigration may rise; however, its characteristics will also change. The experience of neighbouring Poland is relevant here. After some EU countries' labor markets became fully open for Polish nationals in 2004, the number of Polish emigrants to these states increased greatly. Nevertheless, the emigration turned out to be temporary. Furthermore, the main incentive for this emigration is not the openness of the market but the strong demand for workers.

The opportunity to legally emigrate and then return home again induces Poles to undertake stays abroad of short duration in order to earn money and gain experience. This then allows these workers to return home to Poland afterward and invest their earnings in education, business ventures, or housing.

#### **For illegal emigrants, it is much more difficult to come back.**

Because much of it is illegal, current Ukrainian emigration has a different character. For Ukrainians who have immigrated to EU countries illegally, it is much more complicated to return home since they are likely to face difficul-

ties if they later want to return to jobs in the country where they were illegally employed. Thus, contacts with the homeland are lost. Moreover, knowing that it will be difficult to return home, Ukrainians tend to take their children with them to the countries where they work—again reducing the probability that they will return to Ukraine at some future date.

Promotion of legal emigration also enables the state to take care of its citizens' rights abroad. (Ukrainian consulates can offer no support to illegal migrants.)

The following are some recommendations that would make the process of Ukrainian emigration less harmful for the country's labor market:

- Press for greater liberalization of workers' movements, including the introduction of visa-free travel throughout the EU.
- Ensure the availability of information on legal emigration and return.
- Develop re-integration programs for Ukrainian labor migrants eager to return home, including information about the domestic labor market and credit opportunities for housing and business development.
- Promote cooperation between Ukrainian consulates and non-government organizations in Ukraine and abroad that take care of illegal migrants.

## Chapter 3

# Potential Output

In this section, we present a long-term forecast of the potential output that can be achieved in Ukraine, describe its main determining factors, and provide recommendations for strengthening the future economic potential of the country. The framework presented here for developing and forecasting potential output will become the basis for other long-term predictions and will also make it possible to evaluate various development strategies. The forecast of potential output builds upon the results of the demographic forecast presented in Chapter 2.

### What is potential output?

According to the most widely used definition, potential output is the level of production that results from the full utilization of resources (capital and labor). Note, however, that the full utilization of resources does not mean 100 per cent usage, as even at “full employment” some labor will be unemployed as it moves between jobs and some capital will be undergoing routine maintenance.

#### Short-term growth can be above potential.

In the short term, it is possible for actual output, as measured by real gross domestic product (GDP), to be above the level of potential output. Under such circumstances, excessive use of resources (most frequently, labor) results in growing costs for these resources. It is impossible for output to remain above the level of potential output on an ongoing basis.

#### Our model uses two resources: labor and capital.

In our approach to determining potential output, we assume that there are two resources that generate goods and services: labor and capital. The manner in which they are combined to produce output is described by a production function. Capital (machinery, equipment, buildings) is assumed to be always used to the best advantage with the available quantity of labor. Labor is a much more variable factor of production and thus is frequently employed above or below its optimum level.

### Why is it important to determine potential output?

The determination of potential output allows for the achievement of three main goals

#### A long run forecast of potential output enables policy-makers to...

First, it helps to develop a long-term economic forecast better than other forecasting methods. This allows policy-makers to see the future challenges that their country will face and gives them time to prepare an adequate response. In addition, the ability to change the assumptions concerning the determinants of potential output makes it possible to develop alternative scenarios for the country's future development and to evaluate their costs and benefits.

#### ...find bottlenecks...

Second, a comparison of the quantity and quality of the inputs into the production process in Ukraine to similar inputs in other countries can give an idea of what specific resources Ukraine is lacking as Ukraine strives to raise its economic performance.

#### ...and estimate the gap between potential and actual output.

Third, estimating potential output allows for the determination of the gap between potential and actual output, which will in turn indicate the direction of price pressures and guide the implementation of monetary and fiscal policy.

### What factors determine potential output?

#### Output is determined by three factors:

- labor
- capital
- total factor productivity

According to our approach, the level of output—both potential and actual—is influenced by three main factors: labor, capital, and total factor productivity.

In the short run, the labor input (measured as the average annual number of employees or the number of hours worked during the year) depends on the demand for the goods and services that are produced by the economy. In the long run, the supply of labor depends on the demographic forecast for the size of the population that is old enough to be legally employed (the source population), the expected levels of involvement of members of the source population in the labor market (the labor force participation rate) and the various institutional factors that govern employment, such as the number of hours in a working week, and the duration of vacations.

The size of the capital input depends on the initial level of the stock of capital, its depreciation and discard rates, and the level of new investment. Over the long-term, institutional and economic factors that affect the willingness of entrepreneurs to invest are the most important determinants of the capital stock.

Total factor productivity (TFP) represents how efficiently labor and capital are combined to generate output. It is measured in history as the gap between actual output and that part of actual output that can be explained simply by the level of capital and labour. To a large extent, TFP reflects the level of a country's overall economic development. The level of TFP thus explains a significant part of the difference in per capita income between rich and poor countries.

## What are the methods for calculating potential output?

It is possible to identify two main methods for calculating potential output:

1. **"Pure" statistical approach.** This approach is based on separating the underlying long-term trends in real GDP or its components from "white noise" and from the purely cyclical movements in real GDP. The underlying trend level in real GDP can then be used to calculate potential output. The identification of trend GDP can be achieved through such pure statistical techniques as a simple linear regression of real GDP versus time or the use of various statistic filters that can separate trends from cyclical variations and noise. The advantage of using purely statistical methods to calculate potential output is their lack of dependence on assumptions concerning the underlying production function. However, purely statistical methods can only be used to generate short-term forecasts of potential output.

2. **Structural approach.** This approach is based on building a model of the manner in which the various inputs into the production process are combined to generate output, in other words, specifying an aggregate production function. Like all modelling endeavors, this approach suffers from dependence on a variety of assumptions. However, if the quality of the assumptions is good, the structural approach allows for preparation of medium and long-term forecasts of potential output.

## Why have we selected the structural approach to determining potential output?

The requirements of this project involve:

- providing a medium- and long-term forecast of potential output growth;
- identifying the factors that are crucial to determining this forecast of potential output growth; and
- developing public policy recommendations that will help lift growth in potential output over the medium- and long-term forecast horizons.

**Only the structural model approach meets all the requirements for evaluating long-term potential output.** Pure statistical methods provide good information on the current state of the economy and the gap between actual and potential output. They cannot directly serve to generate a medium- or long-term forecast of potential GDP, nor can they identify the main structural factors that will influence future growth. Only the structural model approach meets all the requirements outlined above and thus is the approach selected to evaluate the future of potential output in Ukraine.

The Cobb – Douglas production function was chosen to represent the manner in which labour, capital and TFP are combined in Ukraine to produce output.<sup>1</sup> It has the following general form:

$$Y=L^{\alpha}K^{(1-\alpha)}TFP,$$

where real GDP (Y) depends on labor (L), capital (K), and total factor productivity (TFP). The coefficient  $\alpha$  establishes labor's contribution to output growth, and in the case of the above production function this can be calculated as the average share of wages, salaries, and other payments to labor in total national income.

<sup>1</sup> Cobb C W and Douglas P H (1928) "A Theory of Production", *American Economic Review*, 18 (Supplement), 139 – 165.

The value of  $\alpha$  (or the output elasticity of labor) used in the production function for Ukraine is 0.66, which is in line with the contribution of labor to GDP in most countries.<sup>2</sup> The contribution of capital to output growth can then be calculated as simply 1 minus labor's share in national income—or 0.34. TFP has the most direct and powerful influence on output—a one per cent increase in the growth of TFP leads to a one per cent increase in the growth in output.

Other possible specifications of the production function either do not reflect the current situation in Ukraine or are too complex and data intensive to be used to generate forecasts of potential output. Not surprisingly, the Cobb-Douglas production function is the one most commonly used in empirical work.

Potential GDP is calculated using the above production function by setting the values of capital and labor at their maximum sustainable or “potential” values given existing technology. Sustainable, in this context, refers to the values of these inputs that would generate no upward or downward pressure on inflation. Potential output cannot be directly observed. Instead, it must be calculated on the basis of the above equation, where the potential values of capital and labor and trend TFP are used instead of their actual values. Note that potential output is not some far-off theoretical limit to output—in any one year the economy should be able to obtain the level of potential output, and it is possible for output to exceed its potential (thus putting upward pressure on inflation), if only for a brief period of time.

## Statistics on capital: 1990–2005

There are no reliable statistics in Ukraine to reflect the true amount of capital stock available in the country. Estimates of the capital stock<sup>3</sup> are calculated based on companies' balance sheet data. In other words, the value of a machine or building is usually calculated as its initial price minus wear and tear from the time of purchase. This approach often does not take into account equipment obsolescence. Thus, a computer that was first purchased in 1989 as new equipment, can today appear on the balance sheet to be more expensive than the most modern computer given declines in the cost of computing equipment. Moreover, no modern software will function on this old computer. Thus from a quality perspective, the value of the capital stock can be overstated, especially in times of rapid improve-

ments in technology. It is also very difficult to calculate the appropriate deflators for Ukrainian capital assets because of the hyperinflation of the early 1990s.

Due to the lack of appropriate data on capital in constant prices for the 1990–99 period it was decided to generate estimates of the capital stock in constant prices by working backward from the year 2000 using the annual investment data and holding depreciation rates constant at 2005 levels. The deflator for the capital stock was assumed to be equal to the GDP deflator over the 1990–1999 period.

## What has been other countries' experience regarding potential output growth?

Classical economic theory introduced the idea that the level of output over the long-term is constrained by the amount of available resources: capital, land and labor. Although the impact of technological progress was recognized, it was not considered to be the decisive factor.

**TFP is the crucial determinant of overall output.**

Economists began to pay more attention to technological progress (TFP) only in the second half of the 20th century.

This was related to the development of the Solow model of economic growth.<sup>4</sup> In this model, TFP was singled out as one of the important components of the production function.

**If Canada's capital per employee level was at the Ukrainian level, Canada would still have a GDP per employee level twice as high as Ukraine's because of higher TFP.**

Econometric specifications of the production function show that TFP has accounted for one-third to one-half of real GDP growth in a significant number of developed economies over the past 30 years. That is, TFP has had more influence on output growth than the “classical” factors: labor and capital. Furthermore, TFP is the main quantitative representation of the reasons that explain the significant gap between rich and poor nations.

In 2005, GDP per employee in Ukraine and Canada constituted UAH 21,347 and UAH 368,099 (accord-

In 2005, GDP per employee in Ukraine and Canada constituted UAH 21,347 and UAH 368,099 (accord-

<sup>2</sup> In the case of Ukraine, the data is not sufficiently disaggregated to calculate labor's share in national income, so “ $\alpha$ ” was estimated using the OECD average.

<sup>3</sup> The term “fixed-capital assets” (capital stock) means material assets retained by an economy in order to further utilize them in the process of production, goods and services delivery, or to perform administrative and social and cultural functions. Their expected term of exploitation or operational cycle is more than a year.

<sup>4</sup> Solow, R., (1957) “Technical Change and the Aggregate Production Function.” *Review of Economics and Statistics*, 39:312–320.

ing to the official exchange rate). That is, Canadian GDP per employee was 17 times higher than Ukrainian GDP per employee. However, if we compare the data on capital per employee, this indicator was UAH 61,700 in Ukraine and UAH 520,000 in Canada—that is, the Canadian capital per employee was only eight times higher. Assuming that TFP does not depend on capital, this suggests that roughly half the difference between Canadian and Ukrainian GDP per employee is the result of higher Canadian TFP.

## Special features of Ukraine's potential GDP: 1990–2006

### Real GDP in Ukraine in 2006 was still below its 1990 level.

Real GDP in Ukraine in 2006 was still lower than its 1990 level.<sup>5</sup> The levels of capital and labor did not change significantly over the entire 1990-06 period; however, real GDP shrank by more than 50 per cent from 1990 to 1999. After 1999, there was a strong revival in real GDP growth. Because of the lack of significant fluctuations in the levels of the factors of production (capital and labour), almost all of the historical fluctuations in output can be explained by fluctuations in TFP.

### Only post-1997 estimates of TFP are used.

Because of the lack of quality statistics and given the significant structural changes that took place in the 1990s, it was decided to use estimates of TFP starting from 1998 in our forecast of potential output. TFP registered its lowest historical level in that year. Over the 1999 to 2006 period, TFP grew on average by 7.4 per cent per year. However, over the 1999 to 2004 period, TFP grew at an average annual rate of 8.4 per cent. In the opinion of International Centre for Policy Studies (ICPS) economists, the significant slowdown in TFP growth in 2005<sup>6</sup> testifies to the end of the period of recovery from the loss in output associated with the economic restructuring of the early 1990s.

Because of atypically high volatility in TFP from 1998 to 2006, trend values for TFP were calculated for use in the determination of potential output. Data for 2005 and 2006 were ignored when calculating trend TFP, as real GDP over these years significantly deviated from its long-term trend because of external shocks (fluctuations of global prices for ferrous metals and

rising prices for gas) and internal shocks (a significant increase in private consumption because of easier access to personal loans).

According to ICPS estimates, potential GDP was UAH 571.5 billion in 2006, or 6.3 per cent above the actual value of real GDP. The gap between the actual and potential output was primarily the result of the sluggish growth registered in 2005.

## Forecast of the Capital Stock

We believe that the capital stock will grow rapidly throughout the entire forecast period. In creating the forecast of the capital stock, depreciation rates were held constant at 2005 levels and investment was assumed to remain at 21 per cent of GDP. Although this assumed investment rate is slightly lower than its actual value over the last three years,<sup>7</sup> it is much higher than the investment rates in most developed countries.

The current low size of the capital stock and the strong investment forecast suggest strong growth in the capital stock over the forecast period. When combined with the decline in the labor force caused by depopulation, the capital-labor ratio will grow even faster than the growth in capital.

In 2005, capital per worker comprised UAH 56,000. This ratio is forecast to double by 2019, which corresponds to average annual growth in the capital-labour ratio of 5 per cent. The capital-labour ratio is forecast to double again by 2030 and reach UAH 699,000 by 2050, which represents a 10-fold increase from today's value. Such an increase in the capital-labour ratio is not unreasonable: in the United States, the real capital-labour ratio grew 9.7-fold from 1913 to 1998, whereas in Japan it grew 36-fold from 1950 to 1998.

## Forecast for potential GDP growth

### Trend TFP is used in the calculation of potential output.

According to ICPS economists, the recovery process that largely caused the rapid growth in real GDP over the past seven years has been mainly exhausted. This is why we expect a slowdown in TFP growth to 7 per cent over the 2007–09 period, with a subsequent gradual decline in TFP growth to only 1.7 per cent by 2050.

<sup>5</sup> According to the official statistics. Due to the qualitative changes that occurred during the period, the actual differences are hard to measure.

<sup>6</sup> Real GDP grew a mere 2.7 per cent in 2005 as opposed to average growth of 9 per cent over the previous four years. This slowdown was largely the result of deteriorating conditions for foreign trade and also statistical "artifacts," primarily a decline in wholesale trade because of the shrinking numbers of intermediaries involved in such trade.

<sup>7</sup> 2004 – 22.6 per cent GDP, 2005 – 22 per cent GDP, 2006 – 24 per cent GDP.

This growth pattern assumes that as the Ukrainian economy matures and develops, TFP growth will converge to that exhibited by the developed economies (approximately 1 per cent per annum).

In countries with developed economic and social institutions, TFP growth is limited mainly by the speed of technological progress. However, in Ukraine the main source of TFP growth over the coming 30 years will be increased efficiency in utilizing capital and labour. Thus the TFP forecast embedded in the forecast of potential output depends critically on further economic and social reform in Ukraine. Moreover, even with TFP growing as fast as we have assumed, output of goods and services per employee in Ukraine in 2050 will still be more than 50 per cent lower than the current U.S. level.

**Over 2007–09 real GDP growth could reach 9 per cent per year.**

Significant investment, a stable labor force and rapid growth in TFP over 2007–09 will make it possible for Ukraine to

post average annual real potential output growth of 9 per cent from 2007 to 2009. However, starting in 2010, there will be a gradual slowdown in potential output growth—to 7.6 per cent per year over 2010–15 and to 6 per cent per year over 2016–20. Again, such potential output growth will be possible only if there is sufficient support for the institutional development required to sustain rapid growth in TFP.

**Shrinking labor supply and slowing TFP growth will lead to deceleration in potential output growth.**

From 2021 to 2030, there will be an accelerating decline in the size of the labor force. This will be the reason why Ukraine will annually lose approximately 0.8 percent-

age points of potential GDP growth per year over the 2007 to 2050 time period compared with a scenario in which the labor supply remains unchanged. Despite a significant increase in the level of capital per employee (more than fourfold from 2007 to 2030), rapid growth of TFP over this period will result in a reduction of the ratio between capital and potential GDP. The ratio will fall to its lowest point in 2030 when the level of capital will be only 1.9 times higher than potential GDP.

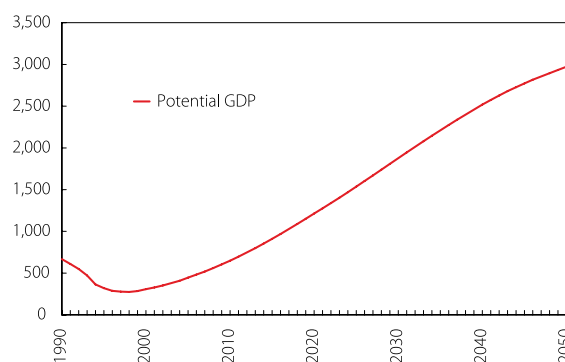
**Over 2031–50, capital will become the main source of economic growth.**

After 2030, this capital to potential output ratio will grow as capital will have a bigger and bigger weight in growth. In contrast to the 2007-30

period when three-quarters of the growth in economic potential was the result of growing productivity, from

2031 to 2050 increases in the level of the capital stock will account for almost 50 per cent of the growth in potential GDP. However, even at the very end of the forecast period in 2050, TFP will continue to be the main factor driving potential output growth.

**Chart 1.**  
**Potential GDP 2005 UAH billions**



Data: Derzhkomstat. Forecast: ICPS.

Potential GDP at 2005 prices in 2050 is forecast to be 6.4 times its level in 2007 (see Chart 1), while potential GDP per employee in 2050 is predicted to be 10.6 times its 2007 level. The labor input will shrink by 40 per cent over the 2007-50 period, whereas capital per employee is forecast to be 11 times higher in 2050 than in 2007.

## The determinants of TFP

**TFP is more important for growth than labor or capital.**

As differences in TFP explain the gap in the level of output per capita between rich and poor countries better than

the availability of labor and capital, economists have proposed many theories and undertaken a substantial amount of empirical research to try to understand the determinants of TFP. The theoretical approaches to better understand what determines TFP can be divided into two main groups.

The first group of theories is based on the assumption that either capital or labor are incorrectly measured, or that there are additional factors that must be included in the production function. For example, in the majority of African and Latin American countries, where a significant part of capital is evaluated using the balance sheet method, firms very frequently have a lot of outdated equipment. Although the market value of this outdated equipment could easily be zero, this capital is still counted on the books and thus is included in the estimate of the capital stock. There is

an ongoing debate in Ukraine concerning the amount of outdated and useless capital still on the books of Ukrainian companies which could be distorting the measurement of the capital stock.

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#### **Differences in human capital may explain differences in TFP levels.**

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No less problematic is the assumption that labor is homogeneous. It is clear that an individual that has specific skills relevant to his or her work will be more productive than someone who lacks such knowledge. As it is impossible to take account of all the skills of each employee, analysts either divide the labor input into several groups (for example, based on their education: primary, secondary, or higher) or introduce the idea of human capital. Human capital is defined as the acquired knowledge and skills that are embodied in the labor force. Given the difficulty in measuring human capital, it is theorized that much of the differences in TFP between countries in fact reflect differences in human capital.

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#### **The socio-economic environment matters.**

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The second group of theories regarding the reasons for the significant differences in TFP performance between countries can be termed theories of the socio-economic and institutional environment. Their main theme is that the quality of the socio-economic and institutional environment is the most important determinant of TFP. This environment is characterized by such diverse indicators as the level of corruption, the ease of starting a new business, the prevalence of the rule of law, the robustness of the democratic system, and the degree of political stability. Such factors influence ability of economic actors to behave efficiently and hence are important determinants of TFP. To name just one example, where there is little public protection for property rights, a significant part of a firm's resources is spent on the private protection of these rights (including everything from armed guards to bribes to government officials that oversee property rights). The costs of such activities reduce the amount of funds that could be channeled into more productive directions.

In the opinion of ICPS economists, the weakness of Ukrainian institutions is a very important cause of the significant gap between living standards in Ukraine and in developed economies. Here, the direction of the cause-and-effect relationship is important: poor quality institutions lead to low living standards, not

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#### **Weakness of Ukrainian institutions results in a gap between living standards in Ukraine and in developed economies.**

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vice versa. A comparison of the Federal Republic of Germany to the German Democratic Republic between 1945 and 1989, or of South and North Korea since 1950 proves that countries with very close starting positions in terms of the level of capital, the quality of labor, and social and cultural conditions can have radically different levels of development depending upon the evolving quality of their socio-economic institutions.

## **Investment instead of institutional development?**

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#### **The investment/GDP ratio in Ukraine is high.**

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As previously mentioned, Ukraine's level of capital per employee is several times lower than found in the majority of developed economies. At the same time, investment as a share of GDP in Ukraine has been very high—above 20 per cent—over the past four years.

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#### **Capital per worker in Ukraine can be doubled in just 13 years.**

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With the current rate of depreciation and investment, and given the decline in the labor force, Ukraine can expect to double its capital stock of equipment and buildings per employee within just 13 years. Certainly, this will result in an increase in productivity. However, this productivity increase can hide a dangerous trap. Instead of continuing the development of institutions, the government, satisfied with the rapid development of the country thanks to strong investment growth, may simply stimulate further new investment. Eventually this approach will fail, as an ever-increasing share of investment will be required simply to maintain the existing capital.

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#### **Capital growth is not enough.**

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Thus, despite the significant positive effect on output and productivity resulting from growth in the capital stock, it alone will not be able to support sustainable growth. Further institutional reforms will also be required. Postponing such reforms will only increase the gap between the standard of living in Ukraine and in developed economies.<sup>8</sup>

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<sup>8</sup> Andrew Tiffin (2006) "Ukraine: The Cost of Weak Institutions," IMF Working Papers 06/167, International Monetary Fund.

## Is stronger extensive growth possible?

As was previously mentioned, long-term output growth depends upon the growth of capital, labor and TFP. Thus far, we have emphasized the importance of TFP growth. However, it may be possible for Ukraine to generate higher economic growth not only from an improvement in the quality or usage of existing resources which results in high TFP growth (so-called intensive growth), but from increased volumes of the factor inputs (extensive growth).

Increasing the rate of long-term growth above the baseline ICPS forecast through such extensive growth is indeed possible. However, the scope for such an improvement in growth through a simple increase in input volumes is very limited.

### Extensive growth is limited.

Our demographic forecast (see Chapter 2) points to depopulation and a rise in the share of the elderly in the total population. As a result, the baseline forecast is for a declining labor force, especially after 2020. Immigration may help to solve this problem to some extent, but no reasonable outlook for future immigration to Ukraine can begin to reverse the expected fall in the labor input. Thus far, Ukraine has had difficulty competing with Russia and the EU for immigrants since their higher income levels make these countries more appealing for most migrants.

The labor force could also be increased by increasing participation rates. In Western European countries between 1960 and 1990, the "reserve" of workers largely consisted of housewives. In the USSR, the

**Table 1. Investment/GDP, in OECD Countries and Ukraine, per cent**

	2000	2001	2002	2003	2004	2005
Australia	22.0	22.9	24.8	25.4	25.8	26.5
Austria	22.8	22.1	20.4	21.3	20.9	20.5
Belgium	20.8	20.4	19.2	18.8	18.8	19.9
Great Britain	23.2	22.8	22.8	24.3	24.4	23.4
Greece	20.2	19.8	19.6	19.5	19.8	20.7
Denmark	24.3	23.2	22.3	23.0	24.6	27.0
Ireland	22.5	21.3	17.7	19.8	23.3	28.4
Iceland	25.8	26.0	26.3	27.2	28.1	29.3
Spain	20.3	20.3	20.9	20.4	20.6	20.6
Italy	19.2	19.6	19.5	19.6	20.2	20.7
Canada	31.1	29.5	29.1	29.9	29.5	29.3
Korea	20.8	22.6	22.3	21.5	20.6	19.7
Luxemburg	21.4	20.0	19.3	18.9	19.6	19.3
Mexico	21.9	21.1	20.0	19.5	19.1	19.3
Netherlands	21.5	20.0	18.3	17.8	17.4	17.3
Germany	20.4	20.8	21.3	22.8	23.5	23.9
New Zealand	18.6	18.3	18.1	17.5	18.0	18.7
Norway	23.7	20.7	18.8	18.3	18.0	18.1
Poland	27.1	26.5	25.0	22.5	22.2	21.4
Portugal	16.9	18.9	17.9	18.4	18.3	18.2
Russia	25.7	28.5	27.3	25.0	24.1	26.8
Slovakia	16.9	16.6	16.5	16.1	16.5	16.8
USA	19.9	19.2	17.9	17.9	18.4	19.1
Turkey	22.4	18.2	16.6	15.5	17.8	19.6
Hungary	22.9	22.9	22.9	21.9	22.4	22.7
<b>Ukraine</b>	<b>19.7</b>	<b>19.7</b>	<b>19.2</b>	<b>20.6</b>	<b>22.6</b>	<b>22.0</b>
Finland	19.4	19.5	17.9	18.1	18.3	18.8
France	19.5	19.5	18.8	18.8	19.2	19.7
Czech Republic	28.0	28.0	27.5	26.7	26.2	24.9
Switzerland	22.8	22.2	21.6	20.7	21.0	21.4
Sweden	17.5	17.3	16.5	16.0	16.3	17.2

Sources: OECD Factbook 2007: Economic, Environmental and Social Statistics; Derzhkomstat.

labor force grew considerably owing to the increased participation rate of women. However, in Ukraine the participation rates for women are already very high, and it is unrealistic to assume that future labor force growth could be triggered by increasing the involvement of women in the workforce. A more productive approach to increasing participation rates would be to raise the retirement age, although this would be politically difficult. Thus, it is extremely hard to generate greater output growth by increasing the supply of labor. Instead, emphasis must be placed upon increasing the quality of labor through advanced education and skills training.

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**It is extremely hard to increase labor supply.**

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The other source of increased extensive long-term growth would be stronger growth in the capital stock. Capital stock growth is achieved through investment. In this context, it is important to note that investment as a share of GDP in Ukraine is already very high compared with developed countries (see Table 1).

The fact that there are few countries worldwide, where the investment to GDP ratio ever reaches 30 per cent indicates that this is virtually a limit for any economy. In Ukraine, this indicator averaged 22.9 per cent over the 2004 to 2006 period. Since the baseline forecast already assumes that the share of investment to real GDP will remain at the very high level of 21 per cent over the entire forecast period, it is difficult to imagine how it would be possible to generate output growth significantly higher than that in the baseline forecast through stronger investment growth.

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**Ukraine can replace existing capital in 10 years.**

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This discussion suggests that it will be very difficult for Ukraine to increase its expected long-term growth by simply increasing the volume of the inputs of capital and labor above their growth rates in the baseline forecast. Thus, attention should be focused on increasing TFP and the quality of the labor and capital inputs into the production function.

## Can Ukraine improve the quality of its human capital?

As mentioned above, Ukraine cannot expect long-term growth in the labor force. The inability to in-

crease the sheer numbers of workers raises the question of the possibility of increasing its quality through the development of human capital.

Human capital refers to the stock of productive skills and technical knowledge embodied in labor. Human capital actually increases as it is used, unlike physical capital which is reduced through wear and tear as it is employed. According to Gary Becker, one of the leading experts on human capital, human capital should be additionally subdivided into "general" and "specific" human capital.<sup>9</sup> Specific human capital comprises the knowledge and skills that can be applied only to specific tasks in a given enterprise or industry. General human capital refers to skills such as literacy and numeracy that are useful in all aspects of life.

Ukraine's official estimates suggest that the level of human capital is quite satisfactory. The liberalization of education over the past 16 years caused a rise in the number of institutions of higher education (accredited to teach levels III and IV), namely institutes, universities and academies, from 149 to 350. This sharp increase was mainly the result of technical schools obtaining the status of a university: the number of institutes accredited to teach at a lower attainment level dropped from 742 to 570. The number of graduates from institutions accredited to teach grades I and II fell by 38 per cent, whereas the number of graduates from institutions accredited to teach levels III and IV rose by more than two-and-a-half times.

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**More graduates does not necessarily mean a better labor force.**

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However, an increase in the number of graduates is not necessarily accompanied by growth in human capital, as much depends upon the quality of the education received. There is evidence that liberalization of the educational market resulted in greater corruption involving the waiving of entrance requirements or the sale of diplomas. The number of illiterates actually rose during the 1990s for the first time in the post-war period, a rise which is directly connected with the increase in the number of the homeless. Strong emigration of those having secondary and higher education from Ukraine also lowered the quality of the workforce. Thus, despite the official statistics on graduations, we believe that investment in human capital would be highly productive in terms of lifting long-term potential output growth. It will also be important to find an adequate method for measuring human capital and including human capital in the aggregate production function.

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<sup>9</sup> Gary S. Becker (1964), *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. Chicago, University of Chicago Press.

## Could the available capital stock be used in a more intensive manner?

Surveys of firms indicate that capacity utilization (the rate of employment of the existing capital stock) is significantly less than 100 per cent. Is there not thus a reserve which could be used to boost potential output growth over the medium term?

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### **Capital is never fully used.**

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The answer appears to be no. In general, capital is never used to its full capacity. Even if the economy is overheated with actual output above potential, capacity utilization rates never rise above 90 per cent.

The situation in Ukraine is complicated by the quality of the existing capital stock. Currently, Ukraine is experiencing an excess of outdated capital, much of which is still on the books. The result is a low reported rate of capacity utilization. However, improvement in the quality of the capital stock is rapidly occurring as a result of the rapid pace of new investment. As this takes place, reported capacity utilization rates will rise as outdated capital is discarded; however, this process does not boost potential GDP growth above the pace consistent with the new investment. In general, investment is essentially affected by the "rules of the game" existing within Ukraine. The high investment rates that form part of the baseline forecast will only be possible if Ukraine continues to reform the institutional and political environment in which investment decisions are made.

## Chapter 4

# Energy Efficiency: A Prerequisite for a Higher Quality of Life

**High energy efficiency is an important prerequisite for increasing the quality of life. Ukraine is one of the most energy intensive economies in the world. Neither businesses nor residential consumers use energy efficiently. Hence, increasing energy efficiency would result in a higher standard of living for households and improved business competitiveness. To solve the problem, the government must institute policies that change energy use incentives for both households and businesses**

### The high energy intensity of Ukraine's economy

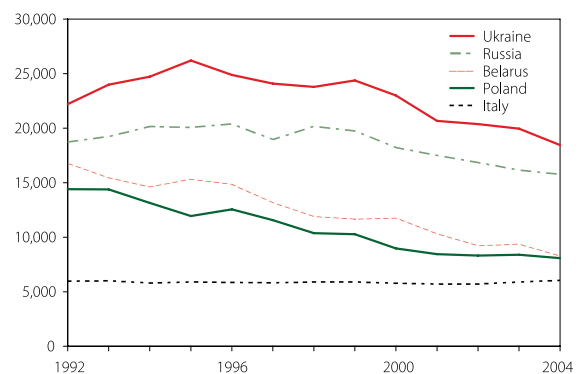
Ukraine is one of the biggest consumers of energy resources per unit of gross domestic product (GDP) in the world. Ukraine ranked 62nd in our benchmarking of GDP energy intensity,<sup>1</sup> measured as the total consumption of primary energy (Btu) per unit of GDP. This placed Ukraine just ahead of Kyrgyzstan, the country that ranked last in the benchmarking of GDP energy intensity. In Ukraine, almost twice as much energy is used to produce a unit of GDP as in Central European countries, such as Poland and the Czech Republic, and three times as much as in developed economies, such as Italy (see Chart 1).

In an environment with rising natural gas prices, high energy intensity will be a barrier to Ukraine's economic development.<sup>2</sup> Over the 2005–07 period, the price of imported gas, which is the most important primary energy resource used in the country, increased by more than by 100 per cent to US\$130 per 1,000 m<sup>3</sup>. If Russia keeps its current gas pricing policy for the CIS countries unchanged, prices for Ukraine would double, approaching a Central European level (average US\$230 per 1,000 m<sup>3</sup>) by 2011.

The consequence of this anticipated rise in gas prices would be a deterioration in the competitive-

**Chart 1.**  
**GDP Energy Intensity\***

Btu per US\$2,000 GDP



\* Energy intensity equals the total consumption of primary energy (Btu) per unit of GDP (US\$ by PPP).

Source: International Energy Agency.

ness of Ukrainian companies and a reduction in the welfare of households.<sup>3</sup> In addition, the energy supply situation for Ukraine is risky given that the sources of energy are not diversified and must pass through one country—Russia. This implies that Ukraine has a strong political and economic dependency on Russia.

In order to reduce the impacts of the expected increases in natural gas prices, Ukraine will have to decrease its energy intensity more rapidly than in recent years. During the five-year period from 1999 to 2004, GDP energy intensity decreased by 32 per cent. According to the estimates contained in the Energy Strategy of Ukraine, Ukraine could reduce its energy intensity by an additional 23 per cent by 2010 and 42 per cent by 2030. However, given the prospects for gas prices, this will not be enough to protect energy consumers, such as businesses and households, from a considerable price shock.

<sup>1</sup> The ranking was based on the energy intensity of GDP data (TJ/mn US\$ by PPP) provided by the Environmental Sustainability Index report (2005), Yale Institute.

<sup>2</sup> See, for example, the estimates of the impact of higher gas prices on Ukraine in the IMF Country Report No. 07/47, February 2007.

<sup>3</sup> Another consequence of increasing prices for gas, electricity, and residential services would be increased public spending on providing a safety net for the poor.

## Energy efficiency and intensity

Ukraine's low rating in GDP energy intensity can be traced to two sources. First, it is the result of Soviet industrial planning, which located a large number of low energy-efficient and high energy-intensive industries in the country.<sup>4</sup> Two of Ukraine's most important sectors in terms of GDP and industrial output, the steel and chemical industries, are also its most energy intensive.

Second, Ukraine's high energy intensity is the result of the availability of cheap energy resources over a long period of its history. Throughout the world, low energy prices have typically been linked to high GDP energy intensity (see Chart 2). This is clearly the case in Ukraine. The historically low price of energy resources in Ukraine has minimized the incentive for businesses to invest and modernize.

The consequence is that many Ukrainian companies are now using outdated, energy-inefficient technologies. As a result, Ukrainian companies spend comparatively more energy resources to produce one unit of output, for example a tonne of steel, than their competitors in the rest of the world.

In addition to gas prices, the prices of other energy resources, in particular coal and electricity, in Ukraine are also below the European average. These low energy price levels are primarily explained by government intervention in the form of:

- government subsidies to the coal sector;
- imposed restrictions on Ukrainian coal and gas exports; and
- an environmental policy that is lenient on polluters.<sup>5</sup>

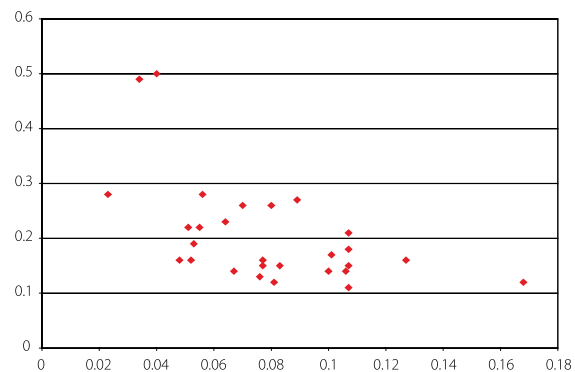
The result of this intervention is that the government not only slows down the introduction of energy-saving technologies, but also gives false price signals to producers and consumers that distort the technology and energy resource choices they make.

In addition to energy prices, two other important factors have affected Ukraine's energy intensity over the 1990–2004 period.<sup>6</sup>

First, the increase in energy intensity per unit of GDP between 1990 and 1995 can partly be explained by a fall in output and a corresponding decline in capacity

### Chart 2. Energy Prices and Energy Intensity in Selected Countries

Left axis—energy intensity (tonnes of oil equivalent)/GDP, horizontal axis— electricity price (US\$/kWh)



Source: International Energy Agency. Calculations: ICPS.

utilization. In many industries, energy consumption for a given factory is independent of that factory's level of production. As a result, output may fall during a recession, but not nearly as much as energy consumption. By the 2004–06 period, the effect of this factor had practically disappeared as a result of restructuring and an increase in capacity utilization rates to the 70–90 per cent range.

### Energy Efficiency vs. Energy Intensity

Energy efficiency and energy intensity are different concepts. Energy efficiency is using less energy to provide the same level of output. For example, one air conditioner is said to be more energy efficient than another if it uses less energy to achieve the same cooling output. Energy efficiency can generally be improved by using a more efficient technology or process. Energy intensity is a measure of an economy's average use of energy to produce a unit of GDP. Energy intensity is affected by many factors including climate, standards of living, and the energy efficiency of consumer goods, buildings, and industrial processes. A country can have high energy intensity but at the same time be very energy efficient in the way it uses resources. However, Ukraine is both an energy-intensive and an energy-inefficient economy.

Second, the estimate of Ukraine's energy intensity could be influenced by the size of its shadow economy. The government's estimate of shadow GDP, which the State Statistics Committee (SSC) imputes

<sup>4</sup> The development of the energy intensive sectors in Ukraine was also predetermined by the availability of ample deposits of natural resources, in particular, coal, iron ore, and non-mineral ores.

<sup>5</sup> A lenient environmental policy means that the costs to society from environmental pollution generated by the production and consumption of energy resources are not internalized in the prices for those resources. A stricter environmental policy would raise the cost of production of energy resources and, consequently, raise the price of energy resources.

<sup>6</sup> For a more complete discussion of these factors, see UCEPA (2006).

when calculating GDP, is only about half that of independent estimates. As a result, total GDP (from both the official and shadow economies) is thought to be underestimated and this implies that GDP energy intensity might be overestimated. Nevertheless, micro data at the individual company level suggests that low energy efficiency remains a key factor in Ukraine's poor ranking in GDP energy intensity.

## Potential for decreasing Ukraine's GDP energy intensity

In the short term, the greatest progress toward reducing Ukraine's energy intensity will come from increasing energy efficiency. According to estimates presented in the Energy Strategy of Ukraine, technological energy saving (that is, improvements in energy efficiency) will account for approximately 90 per cent of the country's energy savings by 2010. The other 10 per cent of the country's energy savings will be achieved by a restructuring of the economy toward the less energy-intensive service sector. Although the share of the energy-intensive manufacturing sector relative to total GDP is still higher in Ukraine than in most OECD countries, this share has been rapidly falling as the size of the much less energy-intensive service sector has been rising.

### Consumers with the greatest energy saving potential

Table 1 shows the share of each sector's energy consumption relative to economy-wide energy consumption for Ukraine, the comparator countries of Poland and Russia, and the comparator regions of Organisation for Economic Co-operation and Development (OECD) countries and the world. The table reveals that the share of industrial and residential energy consumption is significantly higher in Ukraine than in other countries, particularly the OECD countries. According to estimates made in the Energy Strategy of Ukraine, these two sectors have the greatest potential for energy saving. The table also reveals that the share of transportation sector energy consumption is only 15 per cent in Ukraine, substantially lower than the average share for the world as a whole. As the industrial and residential sectors become more energy efficient and Ukraine becomes wealthier, the transportation share can be expected to increase.

Most of the energy intensive sectors in Ukraine—steel, non-mineral production, chemicals, extraction, and utilities—have an untapped potential to apply

energy-saving technologies. The low energy prices that have prevailed until recently allowed industrial sector companies to remain competitive despite using outdated, energy inefficient technologies.

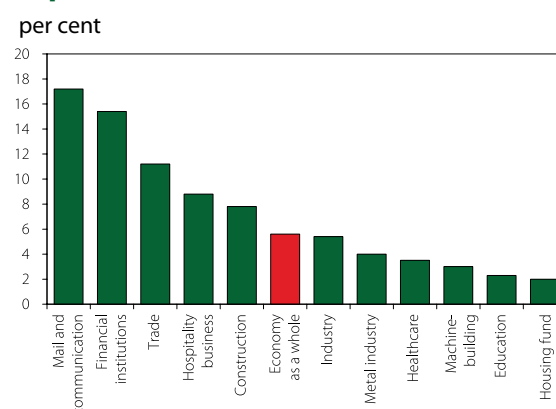
**Table 1. Energy Balance in 2004**

Each sector's energy consumption relative to economy-wide energy consumption					
	Ukraine	Poland	Russia	OECD	World
Final energy consumption. total	100.0	100.0	100.0	100.0	100.0
Industry	39.6	27.3	29.9	23.0	26.9
Transport	15.0	19.3	22.3	33.6	25.8
Others	35.9	46.4	41.5	33.3	38.4
Residential	28.7	29.0	31.7	18.9	26.4
Private and public sectors	3.3	10.0	4.8	11.7	7.8
Agriculture	3.5	7.4	2.3	1.9	2.3
Other	0.4	0.0	2.7	0.8	1.8
Non-energy needs	9.4	7.0	6.3	10.2	8.9

Source: International Energy Agency.

The energy efficiency of production facilities in the sectors that are focused on the consumer market is much higher. This has occurred for three reasons. First, these sectors tend to replace their capital stock much more frequently than other sectors, which allows them to take greater advantage of advances in technology<sup>7</sup> (see Chart 3). Second, these sectors generally have low energy intensity and, as a re-

**Chart 3. Frequency of Capital Stock Replacement in 2004**



Source: Derzhkomstat.

<sup>7</sup> The steel sector is the largest, in terms of total energy consumption, in Ukraine. In other countries, the bulk of final energy consumption occurs in the non-ferrous metallurgy, steel, pulp and paper, chemical, and oil refining industries. See data on the final energy consumption structure for Ukraine and other countries in IEA (2005) and IEA (2007).

sult, their choices of technology were not distorted by artificially low energy prices. Finally, strong competition with imports and a greater openness to foreign direct investment have led industries focused on the consumer market to use more efficient technologies.

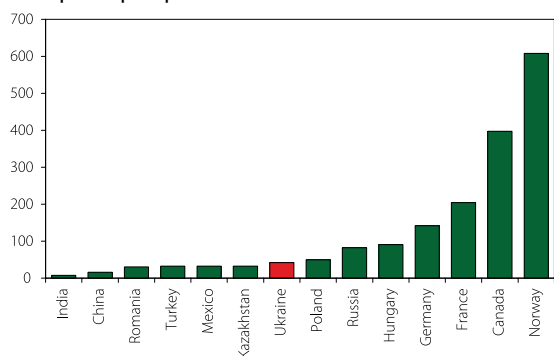
Two other areas that have significant potential for energy savings are local utilities (rendering district heating and water supply services) and public sector enterprises. For over a decade, prices for residential services have not been sufficient to cover capital expenditures. This has led to a deterioration of the housing stock and the infrastructure of the local utilities. An example of the impact of this deterioration on energy savings has been losses, as large as 30 per cent, of water and heat in the pipes that service residential establishments.

### A higher quality of life can lead to higher energy intensity

Energy intensity is affected by many factors including climate, standards of living, and the energy efficiency of consumer goods, buildings, and industrial processes. A higher quality of life (or standard of living) can lead to higher energy intensity, especially in per capita (rather than per GDP) terms. This is a result of a wider use of white goods (electrical appliances), residential services, and transportation by households. Currently, Ukrainian households have low levels of energy consumption when compared to other countries (see Chart 4). However, looking forward, as consumers become richer and their demand for white goods, residential services, and transportation rise, energy consumption is expected to increase. This will put upward pressure on GDP energy intensity in Ukraine.

**Chart 4. Electricity Consumption by Residential Consumers in 2004**

kWh per capita per month

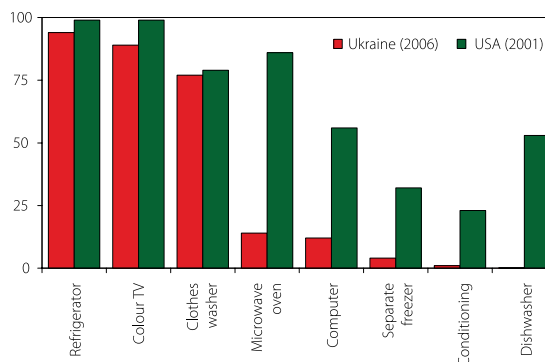


Sources: IEA; UN. Calculations: ICPS.

The ownership of electrical appliances is much lower in Ukraine than in more developed countries (see Chart 5). Currently, about 50 per cent of the major appliances used in Ukraine were made in Ukraine, and many of these appliances were most likely produced when the country was part of the former Soviet Union. First-time purchases and purchases made to replace old appliances will likely lead both to an increase in energy consumption and to a higher quality of life. This is because new appliances usually consume more energy than the old Soviet models but also provide a higher level of service.

**Chart 5. Percentage of Households in Ukraine and U.S. with Selected Appliances**

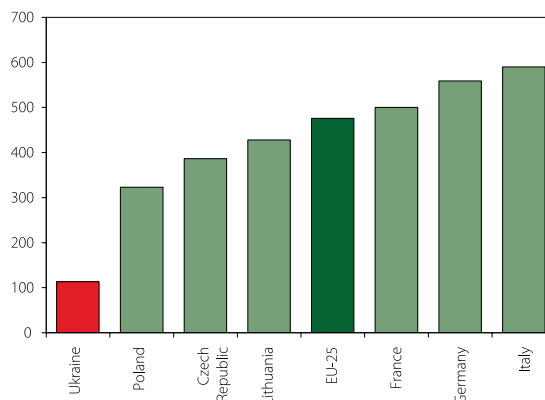
per cent



Sources: SSC; U.S. Energy Information Administration.

Despite substantial increases in car sales over the past several years, the number of privately owned cars in Ukraine remains quite low when compared to other countries (see Chart 6). As car ownership continues to expand, the increase in fuel consumption would

**Chart 6. Number of Cars per 1,000 Inhabitants in 2005**



Sources: SSC; Eurostat.

be almost proportional to the growth in Ukraine's car fleet, which would put substantial upward pressure on Ukraine's future demand for gasoline.

Although the level of accessibility of the major residential services (water and district heating) to the public is quite high, the quality of these services is very low. In many towns, hot water is delivered on a schedule, rather than 24 hours a day, and the water temperature does not meet prescribed standards. Despite the current trend toward increasing energy efficiency in the provision and consumption of residential services, the consumption of energy in this sector could actually increase in the short term as consumers demand higher water temperatures for home heating.<sup>8</sup>

## How to stimulate energy saving

In Ukraine, both price and non-price incentive measures for increasing energy efficiency can be applied effectively. Eliminating price signal distortions by removing government intervention in the marketplace and allowing energy prices to rise would be the most effective measure. This would be particularly important in the commercial sector.<sup>9</sup> In addition, non-price incentive measures would be most effective in an environment with true market prices. For example, in the past, efforts to stimulate energy efficiency in Ukraine proved to be ineffective despite available institutional infrastructure.<sup>10</sup>

Although the development of incentive measures that address the industrial use of energy is important, policy measures must also be developed to reduce energy usage by those sectors for which an increase in energy prices is not a sufficient incentive to participate in energy-saving activities. These sectors include the household sector, the residential services sector and the public sector. These entities do not have the incentives or the skills to participate in energy-saving activities, either because they are not for-profit companies or because energy is not an important share of their expenditures. Government initiatives could be designed to address the following barriers that such consumers face on the path to increased energy efficiency:

- **Lack of information and skills:** Residential consumers often do not have information on the costs and benefits of various options for energy saving.
- **Obsolete or absent regulations and norms:** This is especially important in the construction sector and for real estate owners. Heating is the most energy-intensive and energy-inefficient residential service. Building regulations and codes designed to improve energy savings can potentially have lasting consequences because energy efficiency improvements in buildings have long payback periods, often more than 20 years.
- **Limited access to capital:** This is a relevant issue for public sector enterprises, which often have a very tight budget, and also for residential consum-

## The 1970s Oil Crisis and the Policy of the “Three-Es”

The response of OECD countries to the oil crisis in the 1970s provides some important lessons for Ukraine. Following the shortage of oil supplies from the Middle East as a result of OPEC's embargo, OECD countries developed the policy of the “Three -Es”:

- 1) Energy security;
- 2) Economic development;
- 3) Environmental protection.

These three goals would be met by: 1) increasing the reliability of the existing energy infrastructure, 2) saving consumers money through lower energy bills, and 3) reducing the impact that production and consumption of energy has on the environment. Energy efficiency was seen as the major instrument that could be used to achieve these goals.

In the 30 years since the oil shock, the GDP energy intensity of OECD countries has decreased threefold. Overall efficiency has

improved and, at the same time, the structure of energy consumption and industrial output has changed considerably. This restructuring has taken two forms. First, energy consumption has shifted from more expensive primary energy sources, such as oil and coal, to electricity. Second, output has shifted from energy intensive sectors—such as steel, chemicals, and pulp and paper—to sectors with a higher value added and lower energy intensity.

In OECD countries, the household sector is now one of the largest and most energy-inefficient sectors. As a result, one of the key energy saving policy challenges facing these countries is the development and introduction of incentives designed to reduce household consumption of energy.

*Source: Drawn from the ICPS paper “Future of the Ukrainian Economy,” p. 48.*

<sup>8</sup> The modernization of the old infrastructure and assets of the centralized system of residential services will be a gradual process. Meanwhile, households that become impatient will choose individual heating systems that will increase the consumption of electricity.

<sup>9</sup> According to data provided by the Ukrainian Steel Association, when the gas prices for industry increased in 2006, the association members decreased their energy consumption by 15–20 per cent.

<sup>10</sup> See a description of the institutional framework and energy-saving policies used in Ukraine in UCEPA (2006).

ers. The limited access to capital has often prevented these sectors from fully implementing and utilizing energy-efficient technologies.

Governments in many countries inform the general public about the benefits of energy savings and make it easy to finance such activities. These steps can eventually change the consumption patterns of households and other energy consumers. For example, in the EU there is a common practice for governments and producers to reach agreements on producing goods with specific qualities. These efforts have led to substantial energy savings.<sup>11</sup> Perhaps one of the most famous examples of a (voluntary) energy efficiency program is the Energy Star labeling program that was instituted in the United States. This program was designed to identify and promote energy-efficient products. A recent EU initiative has been to ban ordinary light bulbs and replace them with energy-saving bulbs. This measure could save about EUR10 billion per year.

The government should also ensure that energy efficiency is considered during the modernization, de-

sign, and maintenance of buildings and infrastructure. A good example of a holistic approach is that of the EU. The EU Directive<sup>12</sup> recommends that member countries reconsider their construction and building design norms and institute mandatory certification of buildings and regular inspections. Building-energy audits would be a much-needed first step for Ukraine to start improving energy efficiency.

Improving the general public's access to capital is needed in Ukraine in order to promote the introduction of energy-saving technologies. Government and businesses can also work together to create financial incentives for energy saving. For example, in the early 1990s, several Dutch utilities initiated a program to encourage the replacement of old and energy inefficient refrigerators. Consumers who bought a new, efficient appliance received a payment for each year it remained in service beyond 10 years.<sup>13</sup> Such investments are usually economically viable and have very short payback periods.<sup>14</sup>

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<sup>11</sup> From 1990 to 2006, the consumption of electricity by refrigerators in Germany fell by 58 per cent, from 1.05 kWh to 0.57 kWh per 100 liters per 24 hours. Similar results were achieved with regard to other appliances.

<sup>12</sup> Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.

<sup>13</sup> An average service life of refrigerators in households that participated in the program was about 22 years; therefore, an average payment equaled to 15 per cent of the new appliance price. The example is taken from IEA materials.

<sup>14</sup> A number of estimates show that in the developed economies, an energy savings of 1 kWh a year as a result of replacing equipment and light bulbs can be achieved with an investment of as little as four cents U.S.

## Chapter 5

# Social Protection Funding in Ukraine

One of the indicators that can be used to evaluate the quality of life in any country is the access of its citizens to social services and the quality of those services. Although it is important for governments to provide the necessary inputs into the social protection system through spending on social programs, it is equally important to ensure that the spending is done wisely and efficiently so that government spending on social protection can deliver the greatest possible benefits.

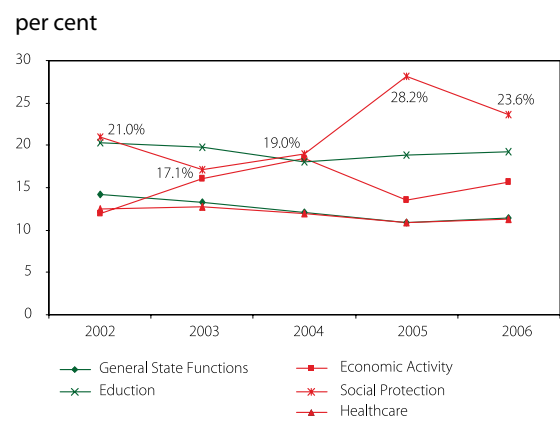
The right of the citizens of Ukraine to state-provided social protection is defined in Ukraine's constitution. However, the current state of development of social institutions and the budgetary realities faced by Ukraine have not allowed Ukrainian citizens to enjoy the full measure of social guarantees envisioned in the constitution. Therefore, the main focus of this chapter is on the efficiency of the funding of social protection and social procurement in Ukraine.

"Social protection and social procurement" is the largest line item in the budget, even larger than the health, education, and expenditures on economic activity line items. Between 2002 and 2006—the years covered by this analysis—annual expenditures on social protection and social procurement accounted for, on average, 22 per cent of the total expenditures in Ukraine's consolidated budget.

At times, social protection and social procurement has accounted for even larger shares of the budget. In 2005, the social development of the country was made a policy priority. As a result, the share of social protection and social procurement rose to 28 per cent of total budget expenditures (see Chart 1). This represented 9 per cent of gross domestic product (GDP). In 2006, a new government policy on economic development funnelled government spending into the economic development sphere. As a result, the share of social protection and social procurement expenditures fell to 24 per cent of total budget expenditures, or 8 per cent of GDP.

However, these figures understate the true size of government spending on social protection and social

**Chart 1.**  
Major Consolidated Budget Expenditures (per cent of total)



procurement. This is because, under the Ukrainian budgetary accounting system, some key elements of spending on social services are included in other budget line items such as housing and communal sector, education, spiritual and physical development, health care, civil order, and security.

In order to accurately compare Ukraine's social expenditures with those of other developed countries, such as the Organisation for Economic Co-operation and Development (OECD) countries, it is necessary to calculate total spending on social protection and social procurement, including state and local budgets. This calculation of total social protection spending must include items in the social protection and social procurement budget function, other budget functions, and state non-budget target funds. The expenditures belonging to other budget functions include health care expenditures and housing allowances provided by the state and local governments. The expenditures belonging to state non-budget target funds include the social insurance fund for the temporary loss of working capacity, the social insurance state compulsory unemployment fund, and the social insurance fund for work-related accidents. The identification of what spending can be classified as spending on social

<sup>1</sup> Constitution of Ukraine, June 28, 1996 (para. 1).

<sup>2</sup> The consolidated budget includes the budgets of state and local levels of government.

## Actual Amount of Social Protection and Social Procurement Expenditure in 2006 Consolidated Budget of Ukraine

Expenditures on social protection and social procurement can be found in each of the budget functions. For example, "State Budget Subvention to Local Budgets for the Equipment of the Institutions That Render Social Services to Children and Youth" is a social expenditure that is officially recorded in the "Nation-wide" budget function.

Another example is "Compensation for the Pension Fund Losses Caused by the Introduction of the Special Rate for Payers of Fixed Agricultural Tax." This logically belongs to social care spending but is included in the "Economic Activity" budget function. As another example, "Financial Support of Sanatorium and Recreation Agencies", which provides recreation programs for various categories of public servants, belongs to the "Health" budget function, yet many of the programs covered by this budgetary item can more properly be thought of as social expenditures.

Thus, the actual spending on social protection and social procurement is much higher than reported in the "social protection and social procurement" budget function in the consolidated budget of Ukraine. In order to see the full magnitude of social spending, it is necessary to identify those expenditures on social protection and social procurement that belong to other budget functions.

In the 2006 consolidated budget, the actual spending on social programs related to social protection and social procurement in all budget functions amounts to UAH 57 billion, and represents approximately 11.2 per cent of GDP. In comparison, spending on programs in the "social protection and social procurement" budget function amounts to UAH 41 billion, which represents approximately 8 per cent of GDP.

protection can be done using the classification system for the OECD's Social Expenditure Database.

Based upon this classification system, a full accounting of Ukraine's expenditures on social programs and procurement reveals that in 2006 the approximate total amount of actual state and local government expenditures on social programs, as well as the state non-budget target funds, was UAH 150 billion, representing 28 per cent of GDP (see Table 1). In comparison, expenditures specifically included in the "social protection and social procurement" budget function amounted to only UAH 41 billion, representing 8 per cent of GDP.

Based upon these figures, Ukraine's total social expenditure level is high relative to that of other countries. In terms of social expenditure as a share of GDP, Ukraine is behind only Sweden and France (see Chart 2).

However, in spite of this high level of government spending on social services the quality of these services still remains quite low relative to that of other developed countries. (See sections in the benchmarking chapter on health care reform on page 13 and in the demographic prospects chapter on pension reform on page 22.)

**The social assistance needs of the most vulnerable segments of the population are not being met.** The high level of poverty in Ukraine, especially among families with children and families with disabled or unemployed persons of working age, testifies to the lack of effectiveness of the existing state system in supporting the vulnerable segments of the population. The provision of social assistance is not well targeted. This has created inefficiencies and inequities in the social protection system. Certain types of social assistance have, up until now, been provided

## Classification of Social Expenditure Based on OECD Methodology

The OECD Social Expenditure Database groups social benefits in nine policy areas:

- Old-age — pensions, early retirement pensions, home-help and residential services for the elderly;
- Survivors – pensions and funeral payments;
- Incapacity-related benefits – care services, disability benefits, benefits accruing from occupational injury and accident legislation, employee sickness payments;
- Health – spending on in- and out-patient care, medical goods, prevention;
- Family – child allowances and credits, childcare support, income support during leave, sole parent payments;
- Active labour market policies – Employment services, training youth measures subsidised employment, employment measures for the disabled;
- Unemployment – unemployment compensation, severance pay, early retirement for labour market reasons;
- Housing – housing allowances and rent subsidies; and,
- Other social policy areas – non-categorical cash benefits to low-income households, other social services (i.e., support programmes, such as food subsidies, that are prevalent in some non-OECD countries).<sup>3</sup>

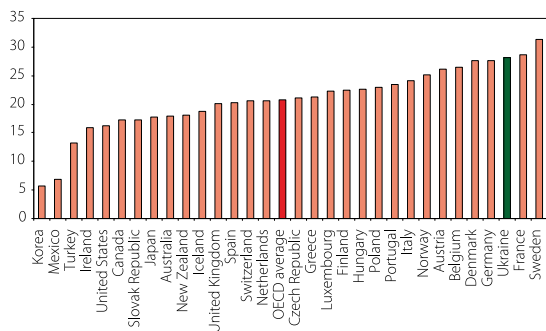
<sup>3</sup> *The Social Expenditure Database: An Interpretive Guide SOCX 1980–2003*, OECD, 2007.

**Table 1. Total Amount of Public Social Expenditure Spent in Ukraine in 2006, Calculations Based on OECD Methodology**

Public Social Expenditures	2006 Amount (Bln. UAH)	2006 % of GDP
Social protection and social procurement	41	8
Pension fund	74	14
Social insurance fund on temporary loss of working capacity	6	1
Social insurance state compulsory unemployment fund	3	1
Social insurance fund on work accidents	2	0
Health care	20	4
Housing allowance	4	1
Total	150	28

without an income test. As a result, many households that do not necessarily need social assistance, receive assistance. At the same time, the amount of social assistance provided to households where it is needed is insufficient to meet their actual needs.

**Chart 2. Public Social Expenditure as a Share of GDP ( per cent)**



Data Source: OECD Factbook 2007: Economic, Environmental and Social Statistics (OECD, 2007). Ukraine data calculated based on OECD methodology for 2006.

In addition, the efficiency of Ukraine's system of social protection has been hindered by a lack of two key tools. First, it is difficult to identify effective social assistance programs because there is no system to evaluate the impact of social assistance on poverty. Sec-

ond, without a database of potential recipients of such assistance it is difficult to identify those families that are most in need of social assistance. As a result, the poor account for only one-third of families reached by the state social assistance programs.<sup>4</sup> Households that are not poor receive a substantial portion of social transfers. This is because current transfer programs are not efficient poverty-reduction tools. It also means that poverty-reducing social transfers could be much lower if they were better targeted to the poor.<sup>5</sup> Therefore, it is necessary to analyze actual social protection and social procurement funding mechanisms in order to introduce mechanisms that allow social assistance funds to be better targeted to those segments of the population that really need them.

A comparison of the Ukrainian system of social protection with the systems of other developed countries would help to identify the main features of the systems of developed countries and the challenges facing Ukraine's social protection.

In an efficient public system of social protection, the government would make an accurate assessment of the social services needs of its citizens and allocate the available budget funds in order to meet these needs in an efficient way.

## Status of Fiscal Decentralization in Social Protection Funding

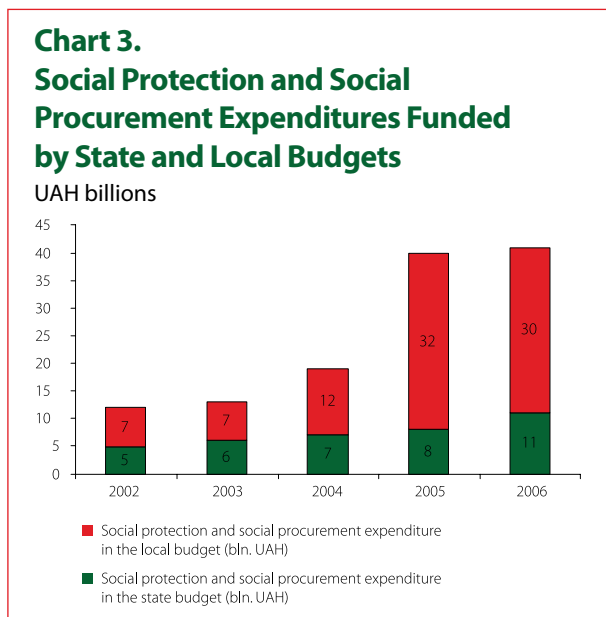
The experience of developed countries proves that local government is the level of government that is most effective in assessing the needs of its citizens. Therefore, decentralized provision of social services is more efficient than centralized provision. The European Charter on Local Self-Government, which was ratified by Ukraine, has recognized this and affirmed that many of the state responsibilities for social support should be transferred to local authorities. By doing this, the needs of the local citizens can be best satisfied. Therefore, social support activities should be partially performed by the national government and partially by local governments.

**However, most social protection expenditures are funded from the state budget.** In 2006, the share of expenditures on social protection and social procurement funded from local budgets was 27 per cent. This represents a significant reduction from 2002 when the share was 42 per cent. This fact suggests that the funding of social protection expenditure has, in fact, become more

<sup>4</sup> President Decree № 359/2006, "On the Main Areas of Improvement of the System of Social Payments to the Population," [http://www.mlsp.gov.ua/control/uk/publish/article.jsessionid=2E48BCEB6177B7064EF525DCC3FDF833?art\\_id=46397&cat\\_id=34950](http://www.mlsp.gov.ua/control/uk/publish/article.jsessionid=2E48BCEB6177B7064EF525DCC3FDF833?art_id=46397&cat_id=34950).

<sup>5</sup> See World Bank Report No. 39887 – UA, Ukraine: Poverty Update, June 20, 2007.

centralized, contrary to the stated aims of the European Charter on Local Self-Government (see Chart 3).



**Local budgets in Ukraine are very much dependent upon transfers from the state.** In Ukraine, about 85 per cent of local budget<sup>6</sup> expenditures are social sphere expenditures delegated from the state to the local level. To offset their cost, these expenditure mandates are accompanied by transfers from the state budget to local budgets.

Fiscal equalization must be based upon mechanisms that encourage local authorities to increase their local revenue collections and, at the same time, provide better and more visible improvements in services. However, this equalization process doesn't work well in Ukraine.<sup>7</sup>

**Social protection, education, and health expenditures have been delegated from the state government to local governments.** Expenditures on social protection, education, and health programs that have been delegated by the state to local governments are funded by local budget revenues that have been supplemented by equalization payments from the state government. The equalization payments are designed to ensure that the local governments can undertake the social expenditures that have been mandated by the state. In cases where local government revenues are less than the expenditures mandated by the state government, the state government makes equalization grants to the local "recipient" government. In

cases where local "donor" government revenues exceed the expenditures mandated by the state government, the state government transfers the excess back to the state budget.

**The current equalization system doesn't offer many incentives for local governments to efficiently manage their budgets.** The current equalization system suffers from at least two flaws. First, local governments have very little incentive to spend their delegated expenditures efficiently. Local governments have a vested interest in demonstrating their growing expenditure needs to the state government in order to secure larger equalization grants. Second, local governments have very little incentive to generate increased revenues because any revenues in excess of delegated expenditures would be clawed back by the state government. These flaws distort the actual picture of the need for expenditures on social services and the local resources available to provide those services. The system creates the perverse outcome where some local governments, which have become "donors" because they have managed to expand local tax bases, may end up worse off than other local governments, which have become "recipients" because of their inability to increase their local tax base. Ukraine's equalization system is ineffective and hinders the ability of social programs to meet the needs of Ukraine's citizens.

**Subventions for social protection are not managed by local governments.** In contrast to equalization grants (which are distributed to local budgets based on a formula), social subsidies (which constitute a large portion of transfers) are managed by central executive authorities such as the Ministry of Labour and Social Protection, the Ministry of Regional Development and Construction,<sup>8</sup> or corresponding oblast administrations. This violates the rules established in the Budget Code and hampers the ability of local governments to efficiently plan and manage their budget resources and to satisfy the needs of their citizens.

Local governments are not able to fund their own social protection initiatives. Local governments do not have enough of their own revenue sources with which to fund their own social protection initiatives independently from the state government. Worse, most of what local revenues they do have are spent by the local governments to cover expenditures delegated by the state.

The high level of dependency of local budgets on transfers from the state budget makes it difficult for local governments to plan their social protection

<sup>6</sup> Expenditures in the social sphere include social protection and social procurement, education, health, housing, and communal expenditures.

<sup>7</sup> Nikolaus Schall and Olga Romanyuk, Status of Decentralization in Ukraine Report, (February 2006).

<sup>8</sup> In the state budget for 2008, the Ministry of Labour and Social Protection is the main provider of social subsidies, while the Ministry of Regional Development and Construction is the key provider of subsidies for housing construction.

and social procurement expenditures efficiently and to form their social budgets independently from the state.

## Forms of Social Protection in Ukraine

**Social Protection in Ukraine is delivered to citizens in a variety of ways.** Social protection is delivered as services provided in residential institutions, cash benefits, social benefits, and community-based services.

*Services provided in residential institutions* are related to the complete maintenance of socially unprotected and vulnerable citizens who need external assistance and are unable to take care of themselves. This category also includes funding of public organizations.

*Cash benefits* represent different forms of material procurement, bonuses, extra charges, and other such benefits paid in cash.

*Social benefits* include partial compensation by the government to offset the prices of particular goods and services, and the opportunity for individuals to buy goods and services at discounted prices.

*Community-based services* are services aimed at the restoration and maintenance of normal living conditions for Ukraine's most unprotected and vulnerable citizens who are sensitive to certain social risks or have been negatively affected by state policy.

An analysis of Ukraine's social legislation leads to the conclusion that the dominant types of social protection in Ukraine are cash benefits and social benefits. "Services provided by residential institutions" is a much smaller category of social expenditure and covers only the most unprotected citizens. Community-based services are a developing type of social protection and represent only a very low level of expenditures in the local budgets. These expenditures include social service centres for youth and families, early rehabilitation centres for disabled children, territorial centres of domiciliary assistance, as well as the services provided by NGOs and individuals.

These four types of social protection can be delivered in two ways: in a cash form, or as an in-kind form (see Table 2).

*Cash forms* represent different types of cash benefits given directly to individuals.

*In-kind forms* represent those services that are provided in non-cash forms.

**Table 2.**  
**Division of Social Protection and Social Procurement Expenditures by Form of Funding**

Cash Form	In-Kind Form
<p><b>Cash benefits</b> include:</p> <ul style="list-style-type: none"> <li>- different types of cash allowances</li> <li>- material support</li> <li>- compensation payments</li> </ul>	<p><b>Serviced provided in residential institutions</b> include those provided by:</p> <ul style="list-style-type: none"> <li>- orphanages</li> <li>- hostels</li> <li>- retirement homes</li> </ul> <p><b>Community-based services</b> include those provided by:</p> <ul style="list-style-type: none"> <li>- shelters for minors</li> <li>- territorial centres</li> <li>- departments of social services provided at home</li> <li>- centres of social services for youth</li> <li>- services provided by NGOs and individuals</li> </ul> <p><b>Social benefits</b> for eligible individuals include:</p> <ul style="list-style-type: none"> <li>- partial compensation related to the prices of particular goods</li> <li>- the opportunity to buy certain goods and services at discounted prices</li> </ul>

The majority of Ukraine's transfers take the form of cash transfers. An analysis of transfers to the population shows that cash transfers make up the largest and most rapidly growing portion of transfers in Ukraine (see Table 3). Cash transfers have grown significantly—from UAH 7.5 billion in 2002 to UAH 33 billion by 2006. This is a positive signal, as the prevalence of cash transfers over in-kind transfers is typical of the well-developed European countries.

## Efficiency of Benefits in Ukraine

**A weak point in Ukraine's system of social protection is the huge number of declared benefits.** According to various estimates, the cost of providing all the benefits granted in the country's legislation is between UAH 19 billion and UAH 29 billion. In fact, only a fraction of these benefits are actually being financed from the budget (see Table 3).

Currently there are 46 legislative acts that regulate the system of benefits. Under these acts, about 15 million citizens have the right to benefits. However, there is no single regulatory document that describes a framework for allocating these benefits to citizens.

**Table 3.**  
**Cash and In-Kind Transfers**  
**in the Consolidated Budget of Ukraine**

	2002	2003	2004	2005	2006	2007
Cash transfers (UAH billions)	7.5	7.5	13.1	33.2	33.0	32.5
Pensions and social aid <sup>9</sup>	7.0	6.9	12.2	32.6	32.4	31.9
Scholarships <sup>10</sup>	0.5	0.6	0.9	0.5	0.6	0.6
In-kind transfers (billion UAH)	3.7	3.9	4.2	5.9	6.4	10.6
Other operating transfers (including social benefits) <sup>11</sup>	3.7	3.8	4.2	5.8	6.3	10.5
Capital transfers <sup>12</sup>	0.0	0.1	0.1	0.1	0.1	0.0

Benefits are mostly used to provide aid to people other than the poor. Despite the example provided by developed countries, in Ukraine, benefits are not exclusively used for providing assistance to low-income households. Rather, most benefits are extended to those who provide special service to the country, to encourage employment in socially important professions, and to attract employees to rural areas.

**Illegal use of benefits.** Due to the large number of declared benefits and the broad base of benefit recipients, it is not a simple task to oversee the allocation of benefits. The complexity of the system has made it relatively easy and risk-free for citizens to illegally obtain benefits. Citizens have been able to illegally obtain documents that provide them with benefits to which they do not have any right. These violations of the system often go unpunished.

**Ukraine uses a set of unfunded benefits rather than conditional cash transfers as have been used successfully in other countries.** In many post-socialist states, cash transfers are provided to many households in order to defray the cost of utilities. The rationale behind these utility offset payments is that low-income households, especially pensioners, cannot afford to pay the cost of even a basic (often termed "lifeline") level of heating, electricity, and water services. This is especially true for countries where pensions remain fixed and utility tariffs are adjusted to eliminate subsidies. This problem is compounded by the fact that many households live in (newly privatized) apartments where they have no way to regulate their own energy use. In these instances, the government gives the household a cash transfer, conditional

### Cash Transfers Versus In-Kind Transfers<sup>13</sup>

From an economic efficiency perspective, cash transfers are generally deemed to be superior to in-kind transfers because they do not directly influence market prices. Economic efficiency is enhanced to the extent that the marginal benefit of goods and services sold in an economy is equivalent to their marginal social cost. When policymakers intervene to set prices that are different from the marginal social benefit or marginal social cost, as occurs in the case of in-kind transfer schemes, resources will be used inefficiently.

In other words, transfer programs that lower the price of target goods for the poor will cause individuals to produce more of these goods than they would in the absence of the program. Resources that could be used more efficiently in producing other goods and services are allocated to the production of these target goods for the poor. In the process, a certain amount of economic efficiency is sacrificed.

By contrast, in-kind payments are often used as a means of controlling, modifying, or otherwise influencing the behaviour of recipients. In-kind transfer programs provide basic food, health-care services, or schooling to those who otherwise could not afford them or are unlikely to purchase adequate services even if they did have adequate resources.

International experience suggests that as a country becomes more economically developed the opportunity to use cash transfers in its social safety net increases. With economic development, a larger segment of the labour force is employed in the formal sector, financial infrastructure becomes accessible to more people, and the bureaucracy is better able to apply income and means tests. As the institutional capacity to target households and process payments improves, a range of administrative, economic, and public finance considerations favours the choice of cash over in-kind transfers.

<sup>9</sup> Note: This category includes all compensations outlined in the Law of Ukraine On Status and Social Protection of Citizens, who Suffered from Chernobyl Catastrophe, disability payments, and compensation by budget organizations for pension benefits in the case of early retirement.

<sup>10</sup> Note: This category includes scholarships (excluding those assigned by the President and Cabinet of Ministries of Ukraine), excess fees, and material assistance for students and post-graduate and doctoral students.

<sup>11</sup> Note: This category includes some cash payments which are impossible to extract from the budget due to the lack of detail in the accounting system. In particular, this number includes rents on apartments given without payment and compensation for communal services; additional benefits for citizens, such as compensation for expenditures on solid and liquid heating household fuels and liquefied gas; compensation for housing and communal services; one-time cash assistance for citizens suffering from natural calamities; compensations for health damages; and other cash payments.

<sup>12</sup> Note: This category includes some one-time capital transfers to citizens as compensation for damages to fixed assets.

<sup>13</sup> Taken from Steven R. Tabor's *Assisting the Poor with Cash: Design and Implementation of Social Transfers Programs* (Washington: World Bank, September 2002).

on the household's inability to afford a "lifeline" level of basic utilities.<sup>14</sup>

In Ukraine, targeted cash transfers are not used to compensate households for the high prices of certain goods and services. Rather, subsidies are made to communal enterprises. Usually these subsidies are insufficient to cover the actual cost of providing the benefits. Effectively, the state has transferred unfunded mandates to the communal enterprises.

As a result, communal enterprises are often faced with a difficult choice—provide citizens with fewer or lower quality services than they are obliged to, or find other ways to cover the cost of providing these services. Many of the communal enterprises that choose to fully provide these services cover their costs by using funds that have been earmarked for capital expenditures. The consequence of this has been a deterioration of the stock of fixed capital and the consequential increase in the cost of providing services.

**The current benefit system creates inefficiencies in consumption.** The absence or overstatement of consumption norms has contributed to inefficiencies in consumption behaviour.<sup>15</sup> For example, there has been no norm established for benefits related to the costs of personal travel. The absence of a norm has fostered excessive consumption of transport services by benefit recipients. Another example can be found in the housing market. The volume of housing and utility services which can be consumed under the benefit is fixed. However, it surpasses the norms sufficient for meeting the minimum human needs. As a consequence, households have an incentive to overuse these services.

**Benefits are not well-directed toward low-income households.** The problem here is two-fold. First, not all individuals who are eligible for benefits actually use them. For example, pensioners living in rural areas may have transportation service benefits but do not use those benefits because they do not travel. Second, the complexity of the benefit system often leads to its misuse. The huge list of citizens eligible for free fares on municipal public transport, for example, has created many opportunities to exploit the system. Individuals use falsified, expired, or other people's documentation to illegally obtain these transportation services.

This section has shown that Ukraine's system of benefits has two fundamental problems. First, the system

is inefficient in providing services to the citizens who need and are eligible for them. Second, the system has created significant burdens on those enterprises that provide them.

## Funding of Residential Institutions Versus the Provision of Community-Based Services

Two other in-kind forms of social protection available are the services provided in residential institutions and community-based services. These two types of services are provided by the local governments.

**The majority of budget funds dedicated to the provision of social services are spent on residential institution services.** These institutions include homes for orphaned children and children without parental care, homes for children with physical and mental disabilities, and other types of residential institutions.

**A smaller portion of budget funds are dedicated to funding community-based service agencies.** These agencies work closely with the people in the communities and render community-based social services. They include social service centres for youth and families, territorial centres, divisions of housing assistance, and early rehabilitation centres for disabled children.

An analysis of budget expenditures on services provided by residential institutions and community-based agencies in the Khmel'nitskaya oblast allow us to make two observations about social services provision in Ukraine (see Table 4).

- Spending on residential institution services dominated expenditures on social services between 2002 and 2005.
- Unit costs are significantly lower for the provision of community-based services than for the provision of residential institution services.<sup>16</sup>

Local governments are not able to shift funds from residential institutions to community-based agencies. This is because local budgets are constrained by requirements related to the quantity and quality of residential institution services provided.

The state government has developed standards for the provision of social services which mandate minimum

<sup>14</sup> Steven R. Tabor's *Assisting the Poor with Cash: Design and Implementation of Social Transfers Programs* (Washington: World Bank, September 2002).

<sup>15</sup> *Reforming of System of Benefits in Ukraine, Discussion Paper*, International Centre for Policy Studies, July 2004.

<sup>16</sup> J.S. Birks and C.A. Sinclair, *Preliminary Assessment of Public Expenditures Management for the Reform of Social Services, First Draft for Project and Stakeholder Discussion*, DFID, USIF, September 2005.

**Table 4. Residential Institutions Expenditures Versus Community-Based Agencies Expenditures in the Khmelnytskaya Oblast, UAH**

Residential Institutions	2002	2003	2004	2005
Orphaned children/Children without parental care	1,508,800	2,035,000	3,684,300	5,635,400
<i>unit costs</i>	6,035	8,374	12,119	
Children's homes	761.4	1,077,500	1,631,700	2,478,200
<i>unit costs</i>	7,147	8,844	10,527	
Children with physical and mental disabilities	8,581,900	11,719,800	12,539,700	17,456,000
<i>unit costs</i>	4,659	6,338	6,982	
Homes for infants	1,324,500	1,638,800	1,758,200	2,472,000
<i>unit costs</i>	(n/a)	(n/a)	(n/a)	
Disabled minors	661	867.2	949.2	1,042,000
<i>unit costs</i>	(n/a)	(n/a)	(n/a)	
Shelters for minors	217.8	279.8	404.8	584.6
<i>unit costs</i>	7,778	9,326	13,958	
Elderly and disabled	10,307,600	12,396,000	14,381,000	19,192,400
<i>unit costs</i>	(n/a)	(n/a)	(n/a)	
Mental health	8,516,600	9,771,100	11,386,600	17,840,000
<i>unit costs</i>	6,018	6,743	8,047	
<b>Total Expenditures on Residential Institutions</b>	<b>31,879,600</b>	<b>39,785,200</b>	<b>46,735,500</b>	<b>50,990,200</b>
Social service centres for youth and families	384.6	668.2	833.9	1,463,000
<i>unit costs</i>	(n/a)	(n/a)	(n/a)	(n/a)
Territorial centres and divisions of domiciliary assistance	3,881,800	5,508,300	7,594,000	11,242,000
<i>unit costs</i>	240	173	187	
Early rehabilitation centres for disabled children	56.3	604.7	792.2	1,003,000
<i>unit costs</i>	605	1,579	1,204	
<b>Total expenditures on community-based agencies<sup>17</sup></b>	<b>4,322,700</b>	<b>6,196,500</b>	<b>9,220,100</b>	<b>13,708,000</b>

levels of services to be provided.<sup>18</sup> These standards have been developed for all spheres of social services, including services provided to the aged, disabled, orphaned, homeless, and to other service constituents. Budgets reflect the requirements mandated by the standards.<sup>19</sup>

Community-based social services include services provided by budget-funded, community-based agencies and community-based NGOs, and by individuals (which are not funded by government). **Even if the services provided by budget-funded, community-based agencies are more effective and cost efficient than the same services provided by residential institutions, local government has very little ability to direct additional funding to community-based agencies and move individuals from residential institution-based care to care provided by community-based**

agencies. This is because the share of the equalization grant local governments receive from the state that is tied to the number of individuals being serviced by residential institutions is much higher than the share of the grant received by local government for services provided by budget-funded, community-based agencies. Thus, local governments have no incentive to provide services to individuals through budget-funded, community-based agencies rather than through residential institutions since the result would be a reduction in the equalization grants from the state.

**The pricing of services provided by NGOs or individuals is determined using different formulas than the pricing of services provided by residential institutions or budget-funded, community-based agencies.** The cost of services provided by NGOs or individuals is calculated using principles defined by the Regulation of

<sup>17</sup> By "community-based agencies" the authors mean only those agencies that are funded from local and state budgets through intergovernmental transfers. Services provided by NGOs and individuals are not included.

<sup>18</sup> Chorniy Lyubomyr and Olga Romanyuk, *Main Challenges of Social Protection in Ukraine: Place and Role of the Non-Governmental Organizations*, (Kyiv: Center of Public Expertise, 2007).

<sup>19</sup> Order of the Ministry of Labour and Social Policy of Ukraine "State Classifier of Social Standards and Norms," no. 293, June 17, 2002.

Cabinet of Ministries "On Approval of the Procedure of Regulation of Tariffs on Paid Social Services."<sup>20</sup> The tariff for the paid social service is calculated based on the cost of the service, administrative expenses, and the value added tax. The cost of the paid social service includes direct material costs, overhead expenses, direct salaries expenses, and other expenses. The list of items included in the calculation of paid social services is defined by the state, communal enterprises, and other providers of paid social services.

However, local governments are unable to purchase services from NGOs and individuals because they don't have funding from the state budget. The current budget system, with its equalization transfers formula, is not designed to encourage the provision of social services outside of residential institutions or budget-funded, community-based agencies. Providing social services through NGOs or individuals rather than through residential institutions or budget-funded, community-based agencies would result in the complete elimination of the equalization grant that provides for social services.

There is no opportunity for local governments to use their social budgets more efficiently or to encourage the development of non-government social services providers. Local governments cannot seek more efficient ways to use their social service budget funds. This is because, under the current budget mechanisms, most social services are expected to be provided by residential institutions. These institutions, however, are unable to contract these services to NGOs or individuals that might be able to provide them more efficiently. For instance, a child might be better off with a foster family than in a children's home. In the foster home, the child could be treated better, feel psychologically more comfortable, and be able to enjoy more normal familial relationships. However, the current system does not have the budgetary flexibility that would allow the local government to pay for the child's care in a foster home environment. In addition, even if a budget-funded, community-based agency or NGO is able to provide a service at a lower cost than a residential institution, the local government would be unable to provide the service through that agency or NGO.

## Conclusions and Recommendations

Although the Ukrainian government's spending on social protection is high relative to that of more developed countries, its social protection system is far less efficient. There are several reasons for this:

- Local governments, which have been delegated the responsibility for delivering most social services and which have a better sense of the needs of the individuals in their communities, are unable to efficiently allocate expenditures because of their high fiscal dependency on the state government.
- The major forms of social protection are cash transfers and social benefits. These cash transfers are not well-targeted toward helping the poorest and most vulnerable segments of society. Instead, they are often given to those who provide special services to the country, or they are used to encourage employment in socially important professions or to attract employees to rural areas.
- Many of the benefits are unfunded or under-funded.
- The complexities in the social protection system, such as the large number of declared benefits and benefits recipients, has made it easy to obtain benefits illegally.
- Benefits are not well directed toward low-income households.
- The absence or overstatement of consumption norms for many benefits has contributed to inefficiencies in consumption behaviour.
- The majority of budget funding dedicated to the provision of social services is spent on funding residential institutions. This is not the most cost-effective method of providing social services since residential institutions have higher unit costs than community-based agencies.
- The provision of social services is tied to equalization grants.
- This encourages the provision of social services through residential institutions or budget-funded, community-based agencies. This limits the types of services to which individuals have access since residential institutions only provide the bare necessities, such as food, minimum medical treatment, and shelter.
- It is not possible to shift the provision of social services from residential institutions to budget-funded, community-based agencies even though the community-based agencies are more cost-efficient. This is because the equalization grant allocated from the state budget for residential institutions funding

<sup>20</sup> Regulation of the Cabinet of Ministries, "On Approval of the Procedure of Regulation of Tariffs on Paid Social Services," no. 268, April 9, 2005.

is much higher than the grant for budget-funded, community-based agencies. Thus a decrease in the number of recipients of services from residential institutions versus the number receiving services from budget-funded, community-based agencies would reduce the equalization grant received by the local governments.

- It is not possible to provide social services using community-based agencies, such as NGOs or individuals, even if they are able to provide better quality and more cost-efficient services. This is because the equalization grants made to local governments by the state governments are tied to the provision of services through residential institutions or budget-funded, community-based agencies.

In order to improve Ukraine's system of funding social protection systems and to more efficiently provide social protection services, the following changes should be considered:

**Reform the funding system.** Since most of the social services are provided at the local level, the equalization system that distributes resources between the state and local budgets should be reformed. In addition, the ability of the local governments to collect revenues should be enhanced, perhaps by increasing local tax bases.

**Reform the benefits system.** There are several reforms to the benefits system that should be undertaken. First, Ukraine should move away from using in-kind transfers and follow the example of other developing countries that use cash transfers. Second, professional benefits and benefits for special merit to the country should be eliminated. Third, the elimination of these benefits should be accompanied by an increase in wages in the affected professions. Fourth, social benefits, such as compensation for services provided by communal enterprises, should be transformed into conditional cash transfers. These can either be directed cash payments to individuals or vouchers for buying certain communal services. Fifth, an audit of all existing benefits as well as the list of benefits recipients should be undertaken. This would allow the government to better understand the scope of funding needs for the benefits system. Sixth, benefits should be tied directly to the income of households.

**Reform social services.** In order to efficiently provide social services to citizens, it is necessary to audit the list of social services recipients. In addition, it is necessary to develop a national classification of social services. This would allow the government to clearly define the activities to be provided by each of the social services

and to calculate the cost of these services. Ideally, the budget for social protection and social procurement should be based upon the cost of services that are provided to individuals.

In order to estimate the required state and local budgetary funds that are necessary to provide social services it will first be necessary to categorize social services recipients by their needs. For each of these groups of services recipients, it will be possible to define a basic list of social services they require. To accomplish this it will be necessary to identify the government institutions that will make the diagnosis of the health status of the social services consumers and then determine the services they need. For example, a single, elderly individual who receives help at home might require food provision, periodic house cleaning, occasional nursing care, etc.<sup>21</sup>

Thus the total amount of expenditures on social services budgeted for in the state and local budgets can be calculated using estimates of the number of recipients in each category and the average cost of providing social services to an individual in that category.

It will be also necessary to determine how each social service will be delivered to individuals. Some social services will be delivered by providing recipients with cash transfers equivalent to the cost of obtaining the service, while other social services will be provided directly.

Social services providers could be identified by the spending unit, such as the local government, or by the services recipients themselves. The spending unit could identify social services providers in cases where the recipient is provided the services directly and does not receive a cash transfer payment or voucher to purchase those services themselves. This approach is most likely to be effective when the social service recipients themselves are unable to make a choice of social service providers, such as in the case of those suffering from alcoholism or mental disability, or for infants or the elderly.

In cases where the social services provider is identified by the recipient, the state would provide the recipient with a cash transfer payment or a voucher for the social services. Under a voucher system, a voucher would be issued by a representative of the state agency to the service recipient. Upon receiving the services the recipient would sign the voucher over to the service provider who could then redeem the voucher for payment by the state.<sup>22</sup>

The introduction of this type of mechanism will make it possible to achieve one more goal—the establishment

<sup>21</sup> Chorniy Lyubomyr and Olga Romanyuk, *Main Challenges of Social Protection in Ukraine: Place and Role of the Non-Governmental Organizations*, (Kyiv: Center of Public Expertise, 2007).

<sup>22</sup> Ibid.

of competition among providers (both governmental and non-governmental) of social services. Since the fee for services would be fixed, the providers would compete for clients by trying to provide the highest quality of service.

Direct government provision of some social services will still be necessary. Direct government provision will be most appropriate in cases where the costs of providing a social service to an individual cannot be estimated

or where a diagnosis of the needs of an individual is difficult to make.

The development of the new social service system will need to be accompanied by the development of a new market for social service provision. In order to ensure the establishment of an effective market the government should develop a system for licensing social service providers and a transparent procedure for monitoring and regulating these providers.

# Appendix

**Table 1. Ukraine's Report Card**

Domains	Parameters	Indicators	Grades
Welfare	Economy	GDP per capita on a PPP basis <sup>1</sup> , US \$	3
		Unemployment rate, %	4
	Efficiency	Time required to start a business, days	3
		Energy effectiveness, volumes of energy consumption per US \$1mn of GDP on a PPP basis	2
	Innovativeness	Index of ICT diffusion	2
		Business financed GERD, % of GDP	4
		Number of researchers, per 100,000	4
<b>Average grade</b>			<b>3.14</b>
Society	Inequality	Income inequality, Gini coefficient	4
		Gender income ratio	4
	Security	Total recorded intentional homicide, completed, per 100,000	3
		Total recorded robberies, per 100,000	3
	Threats	Dependency ratio, per 100	5
		Youth unemployment, aged 15-24, %	3
		Corruption perceptions index	2
<b>Average grade</b>			<b>3.43</b>
Healthcare	Health	Life expectancy, years	3
		Life expectancy gender gap, years	2
	Morbidity	Infant deaths, per 1,000 live births	3
		Estimated number of people living with HIV, aged 15-49, %	2
		Tuberculosis incidence, per 100,000	2
	Resources	Total health expenditure, % of GDP	3
		Number of physicians, per 100,000	5
	Lifestyle	Total alcohol consumption, liters per capita	2
Regular daily smokers, aged over 15, %		3	
<b>Average grade</b>			<b>2.78</b>
Education	Quality	Number of foreign students in the country	4
		School life expectancy (primary to tertiary), years	3
		Corruption in education system, index	2
	Resources	Total expenditure on educational institutions and administration, % of GDP	4
		Pupil-teacher ratio in primary school	4
		Labor force with tertiary education, %	5
<b>Average grade</b>			<b>3.67</b>
Environment	Pressure	Carbon emissions, tn per capita	3
		Carbon emissions, tn per US \$1mn of GDP	2
		Anthropogenic NO <sub>x</sub> emissions, tn per unit populated area	5
		Anthropogenic SO <sub>2</sub> emissions, tn per unit populated area	3
	Policy	Total land area under protected status, %	3
		Participation in international environmental agreements	3
<b>Average grade</b>			<b>3.17</b>

Calculations: ICPS.

<sup>1</sup> PPP – purchasing power parity.

**Table 2. Quality of Life Rating**

Nº	Country	Welfare	Society	Healthcare	Education	Environment	Quality of life
1	Sweden	4.71	4.14	4.56	4.60	4.17	<b>4.44</b>
2	Denmark	4.86	4.43	4.11	4.67	3.83	<b>4.38</b>
3	Norway	4.29	4.43	4.44	4.50	3.83	<b>4.30</b>
4	Switzerland	4.57	4.14	4.33	4.20	4.17	<b>4.28</b>
5	Australia	4.86	4.14	4.63	4.75	3.00	<b>4.28</b>
6	New Zealand	4.57	4.14	4.22	4.60	3.83	<b>4.27</b>
7	Canada	4.71	4.29	4.44	4.33	3.50	<b>4.26</b>
8	Iceland	4.57	4.50	4.44	4.50	3.17	<b>4.24</b>
9	Finland	4.57	4.14	4.22	4.33	3.83	<b>4.22</b>
10	Germany	4.57	4.14	4.00	4.50	3.83	<b>4.21</b>
11	Netherlands	4.57	4.29	4.22	4.20	3.67	<b>4.19</b>
12	Austria	4.57	4.14	3.89	4.17	4.17	<b>4.19</b>
13	France	4.57	4.14	3.89	4.50	3.83	<b>4.19</b>
14	Belgium	4.43	4.14	4.22	4.60	3.50	<b>4.18</b>
15	Israel	4.43	3.67	4.56	4.40	3.67	<b>4.14</b>
16	Japan	4.71	4.43	3.89	4.00	3.67	<b>4.14</b>
17	USA	4.86	3.86	4.22	4.50	3.17	<b>4.12</b>
18	Ireland	4.71	4.14	4.00	4.33	3.33	<b>4.10</b>
19	Great Britain	4.71	4.14	4.00	4.33	3.33	<b>4.10</b>
20	Italy	4.43	3.57	4.11	4.17	3.50	<b>3.96</b>
21	Slovenia	4.14	4.14	4.11	3.80	3.33	<b>3.91</b>
22	Portugal	4.14	3.71	3.89	4.17	3.33	<b>3.85</b>
23	Spain	4.00	3.86	3.67	4.17	3.50	<b>3.84</b>
24	Hungary	3.86	4.14	3.56	4.40	3.17	<b>3.82</b>
25	Czech Republic	4.29	3.86	3.89	3.83	3.17	<b>3.81</b>
26	Greece	4.00	3.71	4.11	4.00	3.17	<b>3.80</b>
27	South Korea	4.43	4.00	3.63	3.50	3.00	<b>3.71</b>
28	Latvia	3.71	3.57	3.22	4.20	3.83	<b>3.71</b>
29	Poland	3.43	3.57	3.78	4.17	3.50	<b>3.69</b>
30	Croatia	3.71	3.71	3.67	3.50	3.83	<b>3.69</b>
31	Lithuania	3.71	3.57	3.56	3.67	3.67	<b>3.63</b>
32	Slovakia	3.29	3.86	3.67	3.60	3.50	<b>3.58</b>
33	Uruguay	3.57	3.43	3.67	3.17	4.00	<b>3.57</b>
34	Tunisia	3.43	3.67	3.78	3.40	3.50	<b>3.55</b>
35	Chile	3.71	3.29	3.56	3.67	3.50	<b>3.54</b>
36	Malaysia	3.57	3.14	3.33	3.83	3.83	<b>3.54</b>
37	Bolivia	2.86	3.00	3.25	3.83	4.67	<b>3.52</b>
38	Bulgaria	3.29	3.86	3.78	3.33	3.33	<b>3.52</b>
39	Belarus	3.17	3.83	3.25	4.00	3.17	<b>3.48</b>
40	Estonia	3.86	3.43	3.11	4.00	3.00	<b>3.48</b>
41	Romania	3.57	4.00	3.44	3.50	2.83	<b>3.47</b>
42	Argentina	3.29	2.57	3.50	3.83	4.00	<b>3.44</b>
43	Brazil	3.43	3.20	3.11	3.00	4.33	<b>3.41</b>
44	Mexico	3.43	3.14	3.67	3.33	3.50	<b>3.41</b>
45	Peru	3.17	3.00	3.00	3.20	4.67	<b>3.41</b>
46	Panama	2.71	3.00	3.38	3.20	4.67	<b>3.39</b>
47	Turkey	3.57	3.50	3.67	2.80	3.33	<b>3.37</b>

Nº	Country	Welfare	Society	Healthcare	Education	Environment	Quality of life
48	Thailand	3.17	4.00	2.67	3.33	3.67	<b>3.37</b>
49	China	3.57	4.17	3.33	2.25	3.50	<b>3.36</b>
50	Colombia	3.00	2.71	3.25	3.20	4.50	<b>3.33</b>
51	Armenia	3.00	3.83	3.44	2.80	3.50	<b>3.32</b>
52	Pakistan	3.40	3.43	3.44	2.00	4.17	<b>3.29</b>
53	Azerbaijan	2.67	4.17	3.38	3.00	3.17	<b>3.28</b>
54	Kyrgyzstan	2.50	3.29	3.44	3.40	3.67	<b>3.26</b>
55	Georgia	3.17	3.29	3.33	3.00	3.50	<b>3.26</b>
56	Russia	3.57	3.29	2.56	3.67	3.17	<b>3.25</b>
57	Moldova	2.86	3.71	3.44	3.17	3.00	<b>3.24</b>
<b>58</b>	<b>Ukraine</b>	<b>3.14</b>	<b>3.43</b>	<b>2.78</b>	<b>3.67</b>	<b>3.17</b>	<b>3.24</b>
59	Kazakhstan	3.29	3.40	2.89	3.60	2.83	<b>3.20</b>
60	Macedonia	2.83	3.43	3.44	2.83	3.33	<b>3.17</b>
61	India	3.00	3.57	2.89	2.50	3.83	<b>3.16</b>
62	Paraguay	2.33	3.00	3.22	3.17	4.00	<b>3.14</b>
63	SAR	2.86	2.57	3.00	3.00	3.33	<b>2.95</b>

Calculations: ICPS.



