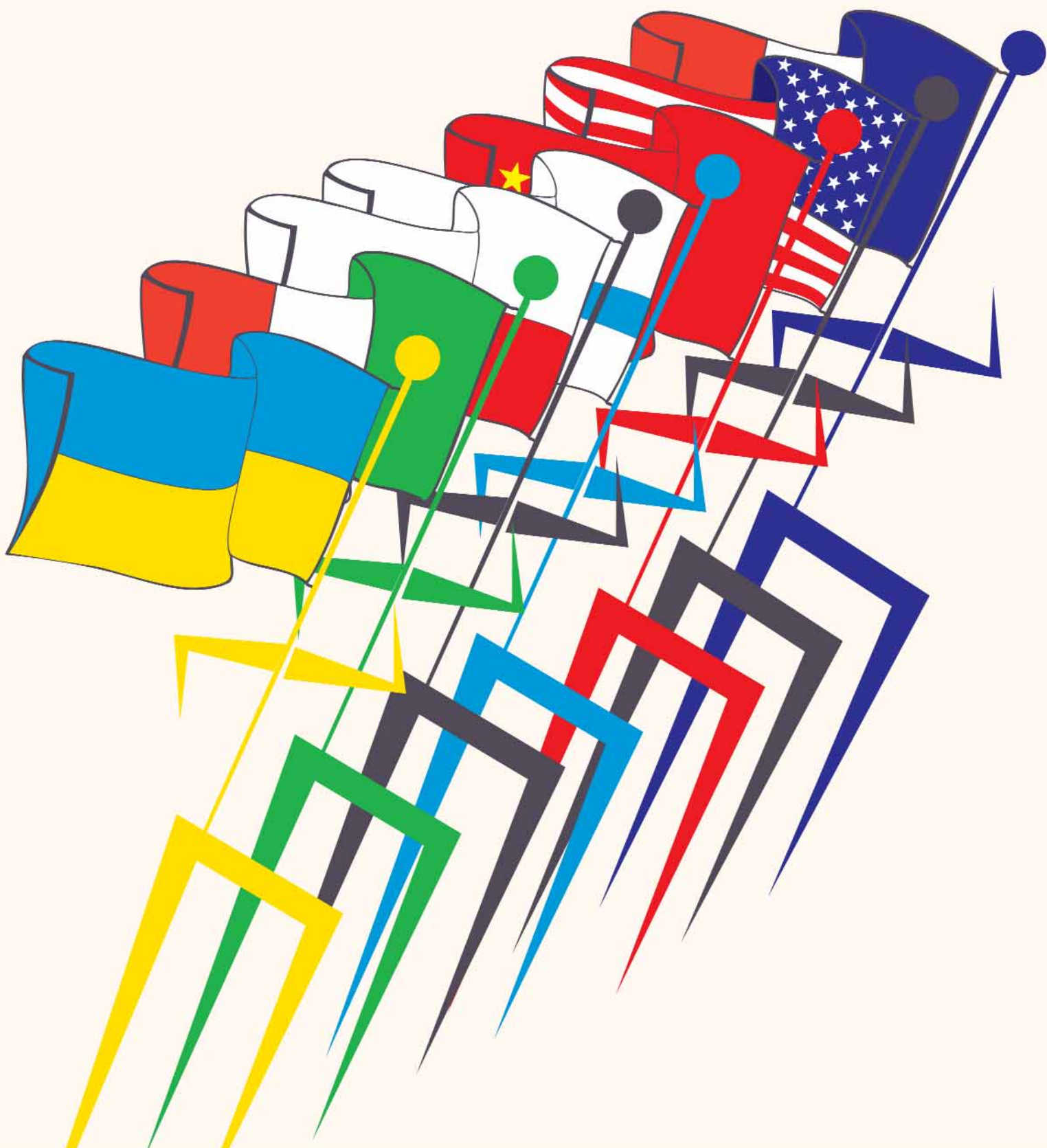


# MONITOR

C O M P E T I T I V E N E S S

№1 2006



TECHNOLOGY FOR ECONOMIC BREAKTHROUGH®

Public Organization

# THE COUNCIL ON COMPETITIVENESS OF UKRAINE



**Our mission** – consolidation of Ukrainian society by accepting  
**THE COMPETITIVENESS OF UKRAINE AS A NATIONAL IDEA.**

- ◆ We study the advanced international experience in developing and implementation of national competitiveness strategies.
- ◆ We develop the technology and the tool for economic breakthrough.
- ◆ We convoke a forum of public, scientists, politicians and businessmen to discuss the ways of strategic development of Ukraine.

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**MIM-KYIV**

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**Yuri Poluneev**  
Chairman, the Council on Competitiveness of Ukraine

## Dear readers!

Today, Ukraine has a choice – either to make a breakthrough on the basis of a new model and technologies for development or to be left behind at the edge of Europe. We, Ukrainians, have been frustrated by the lack of a strategic direction, petty political squabbles, overriding populism and slow progress. New ideas and clear vision for the future are required. Globally dynamic world is moving fast down the information and technology revolution path – away from predominant utilization of natural resources and cheap labor. Instead, countries gain leading positions through innovation and knowledge-based economy, with the core asset being human capital.

Breakthrough to a higher level of economic, political and social development should not be a reckless scheme but a result of a consolidation of the Ukrainian nation around a clear and well thought over strategy of growth. Therefore, it is critical for Ukraine to develop a creative and pragmatic «national» idea, which could consolidate society.

The Council on Competitiveness of Ukraine has come up with such an idea – «globally competitive country that builds knowledge-based economy». Here, we provide politicians, academic community and general public with the Technology for Economic Breakthrough as well as with the tool, which will help take the first steps to implement this idea.

We bring your attention to the analytic quarterly journal «Competitiveness Monitor», which is a rather unique product in Ukraine as well as global research and media market. The Quarterly's focus is to analyze social, political, and economic environment in Ukraine within a range of competitiveness indicators as used by the IMD Lausanne in preparing World Competitiveness Yearbook. Furthermore, those indicators are used to compare Ukraine with thirteen so called «reference» countries, which, one way or the other, are relevant to Ukrainians, but demonstrate generally better competitiveness characteristics.

This analytical approach, together with use of statistical data and expert opinions in the course of CM preparation, allow to define Ukraine's so called critical gaps in mentioned indicators vis-a-vis reference countries. In addition, the Quarterly provides experts' recommendations regarding possible ways to narrow the gaps. And this could be used to better shape economic policy focusing on strengthening national competitiveness.

The first issue is synergetic – it reviews most important indicators of competitiveness and determines Ukraine's rating without dividing indicators into four TEB matrix groups. Every subsequent issue will be dedicated to one of the four matrixes of the Technology for Economic Breakthrough. Thus, annually, the CM four issues will provide a detailed comparative analysis of Ukraine's competitiveness standing.

We think «Competitiveness Monitor» quarterly will become an indispensable tool for assessing competitiveness of Ukraine, analyzing trends, risks and prospects in this area, initiating a broad public debate and, last but not least, promoting competitiveness of Ukraine as a national idea. The latter, we believe, could be a solid basis for much needed economic breakthrough.

**Yuri Poluneev,  
Chairman, Council on Competitiveness of Ukraine**

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# TECHNOLOGY FOR ECONOMIC BREAKTHROUGH<sup>®</sup>

Without economic breakthrough, present level of economic growth is likely to conserve Ukraine's status as a third rate country as well as to perpetuate the country's evident lagging behind by most competitiveness indicators – not only vis-a-vis developed market economies but also its closest neighbours.

Ukraine's competitiveness rating, according to the latest WEF 2006 report, dropped by 10 positions. All developed countries as well as most developing nations have surged ahead. Ukraine left behind only small and energy-dependent CIS countries and the world's poorest nations.

The concept of country competitiveness has its own specificity since countries, unlike companies, cannot disappear as a result of competition.

**The country competitiveness can be defined as its capability to ensure sustainable economic growth.**

## National competitiveness:

1

- a stable and positive macroeconomic performance, which ensures growth of incomes;

2

- a success of national companies in international markets;

3

- a responsible competitiveness or sustainability of competitive advantages (innovation, compatibility of economic growth with social and environmental stability).

## Raising national competitiveness means:

1

Creating such an institutional and regulatory environment that:

- mobilises investment;
- stimulates private sector development;
- leads to productivity growth (efficiency of a country's utilisation of its deficit natural, human, financial, technological resources for production of best quality goods and services that sustain global competition).

2

Concentrating investment into factors of sustainable growth:

- from private sector – to modernise technology, train work force, develop innovations;
- from public sector – to invest into basic education, science, R&D, development of skills and qualifications, basic infrastructure.

**The institutional and regulator framework resulting from principal government decisions makes a decisive impact on ability of national business to compete.**

**Ukraine is not competitive. Growth based on existing trends, competitive factors and advantages will not shape, in a medium-term perspective (10-15 years), a qualitatively new economy as well as the country.**

### Ukraine needs economic breakthrough.

At likely 4-5% rate of GDP growth till 2010, the main competitiveness indicator, GDP per capita, could increase at best to USD 3,500-4,000. For comparison, on average, this indicator for Euro zone was on average USD 32,700 per capita in 2005.

#### Is it possible to sustain 7-10% growth rates in Ukraine?

Theoretically, yes.  
The technology for economic breakthrough – FROM a factor or resource-based competitiveness TO innovation-driven knowledge-based economy – has been developed exactly for this purpose.

### At the core of the TEB:

**1.** A four-matrix system for enhancing a government's policy impact on the country's competitiveness. In its basis – internationally measured statistical data or experts opinions (IMD-Lausanne WCY competitiveness rating methodology complemented by selected indicators as provided by the World Bank, UN, UNIDO, OECD, Dow Jones, AccountAbility, etc.);

**2.** A system for comparing Ukraine's performance by selected most important indicators vis-a-vis a group of so called «orientation» countries (OCs), which could become certain benchmarks for competition and emulation. The TEB objectives are also carried out through a project «Competitiveness Monitor», where these comparisons with selected OCs are made within a group of indicators, which could be linked to necessary or desirable government action. These so called «action-driven» indicators (ADIs) are those competitiveness indicators that could be directly improved, within a reasonable timeframe, through implementation of focused and coordinated government policy measures.



# The TEB Matrixes

## 1. Critical Gap Fix (CGF) Matrix

It is a set of policy measures, which make positive impact on macroeconomic fundamentals, quality of public institutions, efficiency of state regulation over main markets (capital, labour, land, IP etc.) and supporting institutions as well as openness of economy and efficiency of competitiveness.



## 2. The KBE Foundations Matrix

This is the TEB's central direction. The society's efforts and resources should be focused on investment, which form foundations for the knowledge-based economy and facilitate accumulation of intellectual capital (IC).



### Foreign experience

#### 10 lessons from Finland in building knowledge-based economy

- 1) capacity of government and public institutions to react in adequate manner to challenges and external shocks;
- 2) strategic vision by political elite of the country's future;
- 3) effective political consensus-building mechanisms as to the country's competitiveness policy priorities;
- 4) education system, particularly higher education, which adjusts to changes and challenges;
- 5) diversification of export structure towards research-intensive goods;
- 6) deep structural and social reforms (in Ukraine, high on the agenda – reforms of municipal utilities, state-regulated monopolies, energy sector, capital markets, non-banking financial institutions, pension system);
- 7) substantial increase of budget allocations for science and R&D;
- 8) formation of horizontal linkages and technology flows among sectors and industries;
- 9) effective system for converting ideas into goods (commercialization of innovations) with a particular emphasis on stimulating patent activity;
- 10) venture finance industry.



### 3. Sustainability Matrix

Creating conditions for sustainable economic growth and responsible competitiveness

**Socially and environmentally responsible business is:**

1. more profitable business;
2. business that enhances competitiveness of a country.

**Under the imperative of sustainable development, business should be valued**

- NOT ONLY by sales and profits
- BUT ALSO by its positive impact on society, social and ecological environment.

**Responsible competitiveness envisages social responsibility of business in such areas as:**

- human rights;
- employment work standards;
- protection of environment;
- fight against spread of corruption.





## 4. Social Cohesion Matrix

**Social cohesion (SC) is achieved through interplay of two important features of a democratic society:**

- 1) level of social «inclusivity»;
- 2) development of social capital.

**Socially inclusive society** undertakes a focused effort to weaken or eliminate various social and cultural discriminations and divides, to narrow dangerously wide income gaps, to integrate into social fabric all categories of people.

Social capital (by OECD definition) is a complex of social networks supported by informal values, norms and attitudes, which are shared by members of social groups and communities and which creates among them a critical mass of trust and social support as well as effect of cooperation and interaction.

History proves that economic breakthroughs (so called miracles), in other words, the country's ability to respond to critical challenges and emerge more competitive, are possible mainly if there is a high level of a nation's social cohesion. Central role in creating and enhancing social capital is played by a national idea. In Ukraine's case, it should be looked for in the future.

Idea of a competitive country can be a national idea for Ukraine since it is apolitical, pragmatic, contest-based, methodologically developed, internationally comparative as well as socially verified.



**Ukraine possesses economic potential and certain key resources for economic (competitiveness) breakthrough. However, success would also depend on:**

1. emergence of truly uniting and pragmatic national idea – something like «Competitive Country That Builds Knowledge-Based Economy»;
2. achievement of high level of social cohesion;

3. improved quality of state governance and separation of power and big business;
4. integration of national culture into economic policy menu;
5. constructive interaction in «Competitive Country» project of all stakeholders:

- employers (business);
- workers (trade unions);
- government;
- education and research spheres;
- civil society.



# Gross Domestic Product: Growth & Forecasts

Fig. 1 GDP (Purchasing Power Parity) per capita (2005), USD '000

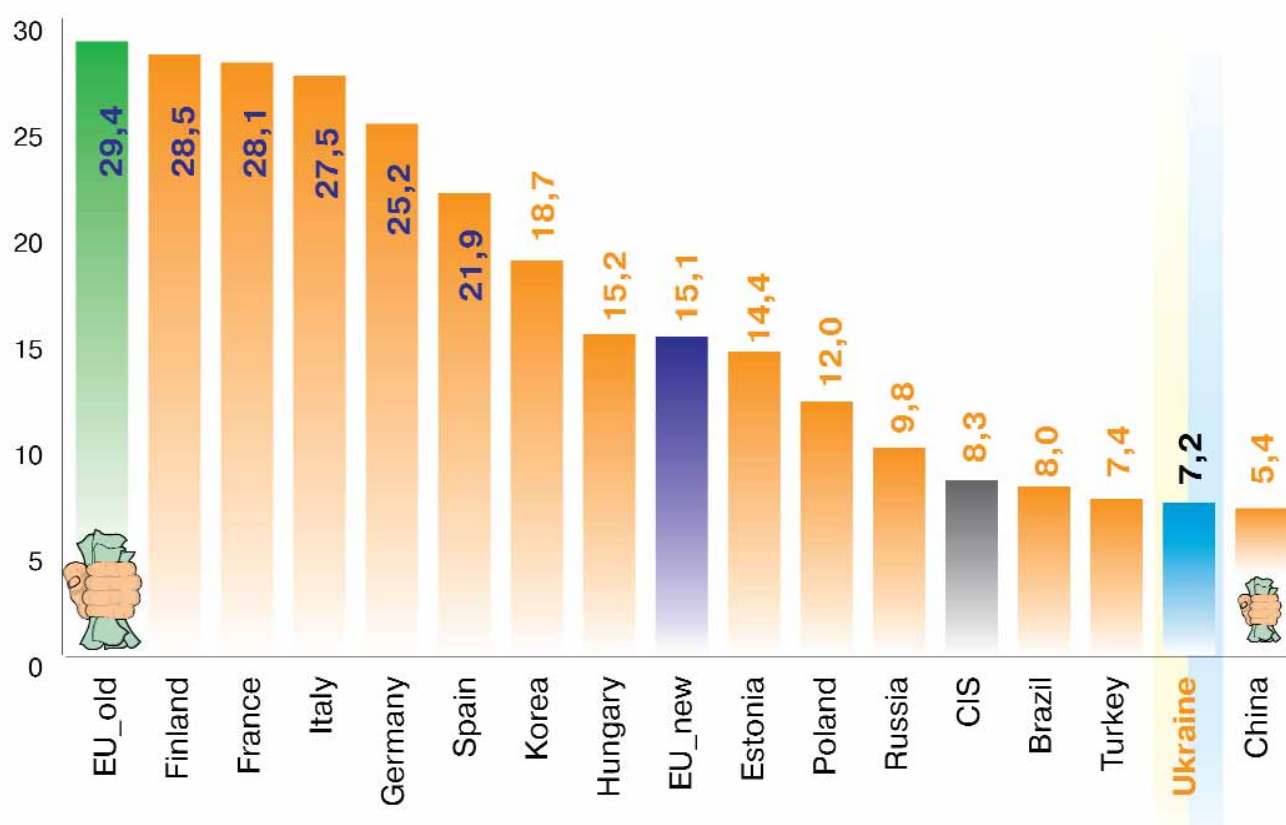
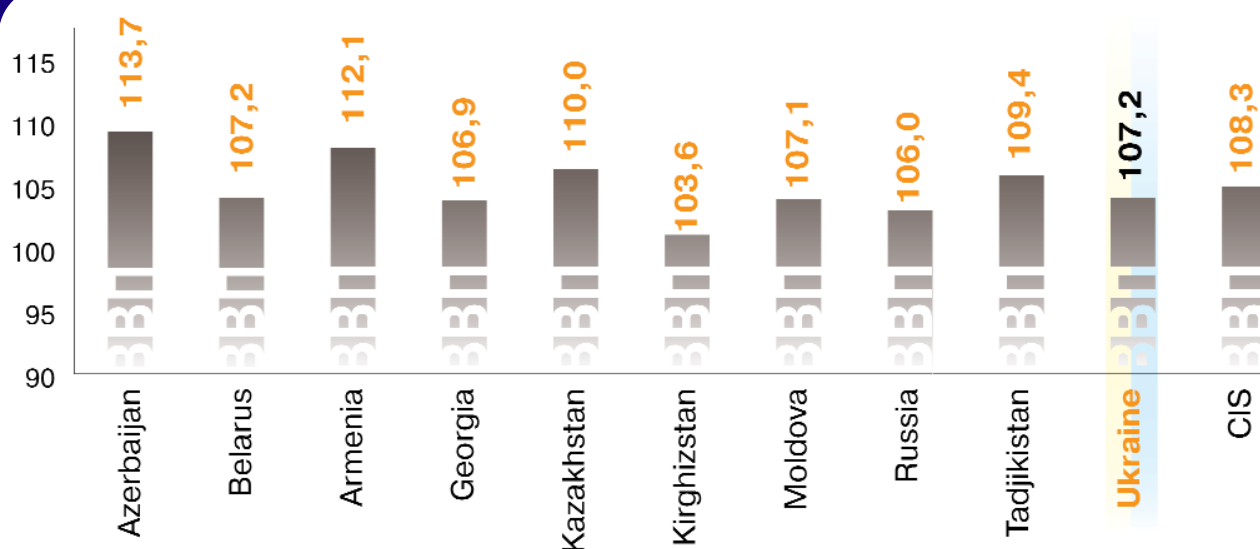


Fig. 2 Average annual growth of real GDP for 2001 – 2005, %



## Reasons for Ukraine lagging behind regarding GDP:

## Foreign experience

1

Deep and continuous **CRISIS** made GDP (PPP) per capita drop to USD3.7 thousand in 1998, while 6-year recovery resulted in nearly doubled index. However, this has not been sufficient for the country to reach even an average level across CIS.

2

The main objective reasons for the Ukrainian deep transformation crisis were: **INCONSISTENCY** in economic and structural reforms, **A RISE IN PRICES** of energy resources, **DISCONTINUED** defense production, **BROKEN CONNECTIONS** with the former USSR partners, etc.

3

Unlike more successful transformation economies, Ukraine **NEVER DEVELOPED** any efficient strategic and tactical political **MEASURES**, which could ensure rapid development of institutional and market environment; the economic decisions made resulted in converse effect deteriorating financial destabilization, tax pressure, distortion of revenue allocation among the institutional sectors of economy and elimination of savings in these sectors (i.e. made resource development base shrink).

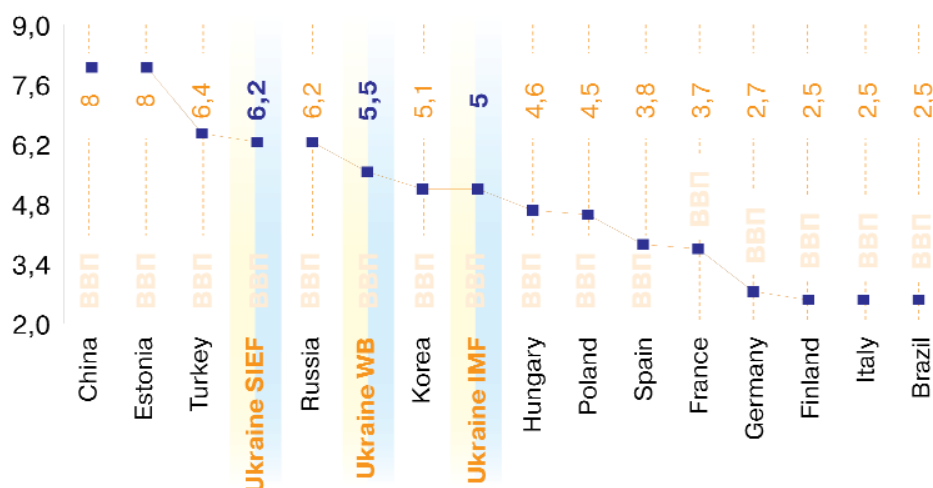
4

The economic recovery was performed using the reserve capacities and the redundant workforce possessing outdated qualifications within the old economic structure. The post-crisis economic recovery years (2001-2005) saw an average growth in real Ukrainian GDP of 7.2%<sup>1</sup>, which is a little lower than the similar average index for the CIS countries (8.3%), but higher than the similar average index for the Russian Federation (Fig. 2).

The past decade saw the following highest average annual GDP growth rates: **China** (over 9%), **Ireland** (7.7%), and **India** (6.3%). These countries have long been top-ten leaders with regard to FDI Confidence Index. Last year, China, for instance, ranked 1st, whereas India «passed» the USA and ranked 2nd. Poland, Russia, and Brazil ranked 5th, 6th, and 7th, respectively. Ukraine, unfortunately, was left far behind the leaders. Among the benchmark countries only China has been behind Ukraine so far regarding GDP (PPP) per capita (Fig. 1). Nevertheless, it is China that has remained the most dynamic among the rest of the world and has all the potential for the future economic breakthrough.

According to different forecasts, in 2006, Ukraine is going to speed up its dynamics and leave behind most «old» European countries (Fig. 3)<sup>2</sup>. For 9 months 2006, the growth reached 5.7% with the potential to preserve this trend up to the year-end. If the growth rate exceeds 5%, Ukraine will reach its pre-crisis levels of GDP (PPP) per capita, i.e. recovery period will be over.

Fig.3 Forecast of real GDP growth in 2006, % of the previous year



In order to overcome the existing economic gap between Ukraine and Russia, Ukraine needs to be ahead of Russia by 3.5 percent in terms of average annual GDP growth within the next decade. To simultaneously reduce the gap between Ukraine and EU-15 twofold, the difference in growth rate needs to be higher and exceed 7% with an average annual growth rate of around 9%.

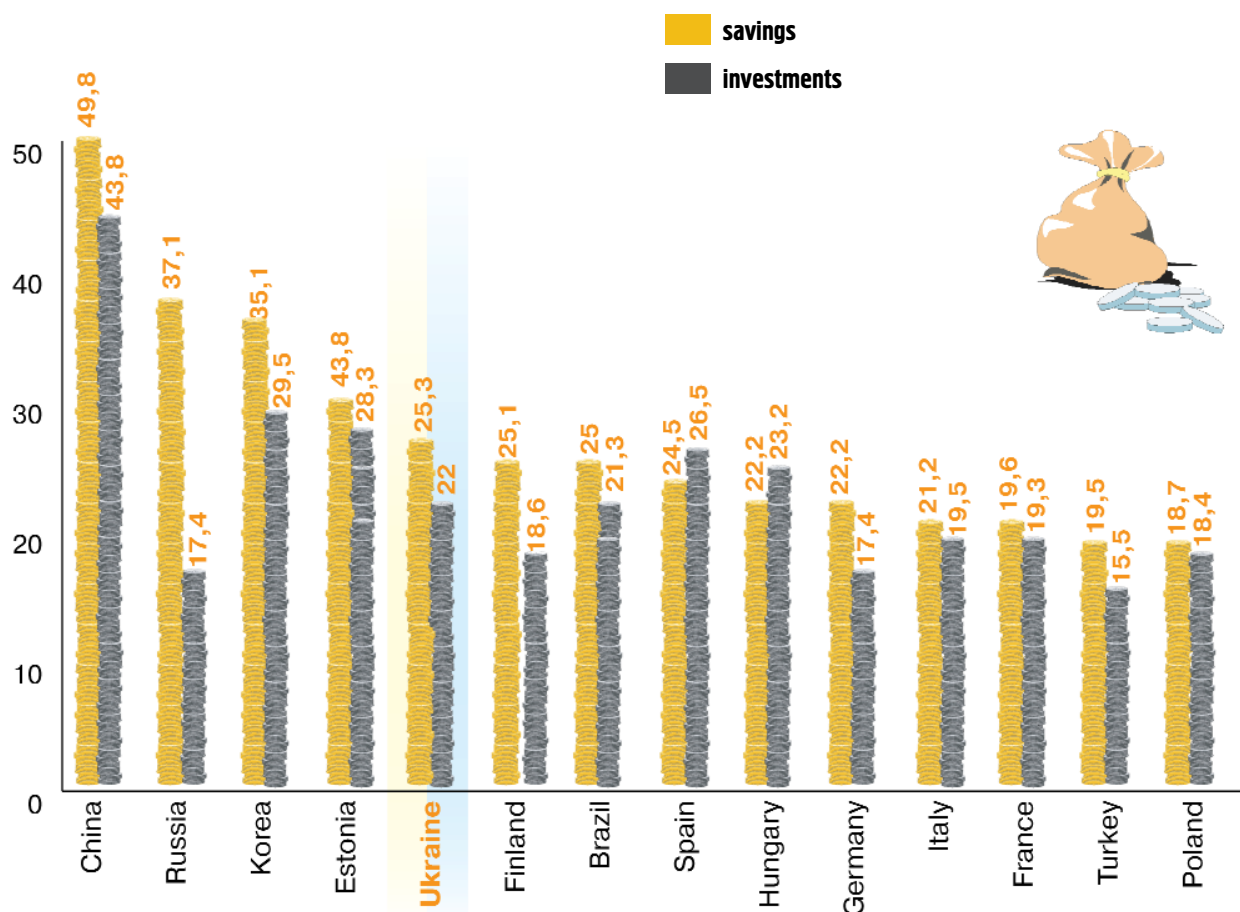
<sup>1</sup> For the period 2000 – 2005 an average growth was 7,4%.

<sup>2</sup> According to forecast data of IMD regarding GDP growth and similar forecasts of the Ministry of Economy of Ukraine, the World Bank and the International Monetary Fund, as well as the forecasts of the State Institute of economics and forecasting (National Academy of Sciences of Ukraine).



# Gross domestic savings and investments

Gross domestic savings and investments, in % of GDP



## Reasons for Ukraine lagging behind regarding these indices:

1

relatively **LOW** gross disposable income and, respectively, low level of profitability of businesses which are the key players in fixed capital accumulation;

2

negative savings and **LOW** capital expenditures by the government;

3

**INSUFFICIENT INFLOW** of foreign investments;

4

**LOW SHARE** of loans granted for investment projects;

5

**SIGNIFICANT WEIGHT** of indigent population who cannot afford building their own residence even if they were provided with loan facilities;

6


**LACK OF** government **SUPPORT** for investors (not even minimal – e.g., there is no permission for accelerated depreciation with respective decrease in tax base).

### Summary

The experience of economic growth leaders demonstrates that maintaining high growth rates is absolutely possible, but that requires certain structural conditions. First and foremost, it means increasing the level of national savings and their capitalization, attracting direct foreign investments and creating an investment surge. Comparing the mentioned indices in the benchmark countries demonstrates that Ukraine has been showing mediocre results so far both in terms of the level of national savings, and the level of investments into the fixed capital, lagging behind the most dynamic countries in terms of development rates. Such a relatively low level of investments could be acceptable for the developed countries, rather than a country with extremely worn out and obsolete fixed assets and which is in desperate need for drastic technological renovation.

The most crucial is lagging in accumulating fixed capital, being lower than the level of national savings. It could be explained, on the one hand, by «escape» of capital from Ukraine, and on the other hand by inadequate inflow of foreign capital. During 2000-2005 Ukraine had negative balance on «Capital transactions and balance of payments financial transactions» account, i.e. the weak economy acted as a donor of capital for other countries. In 2004 such donor activities accounted for over 7% of GDP.

## Foreign experience



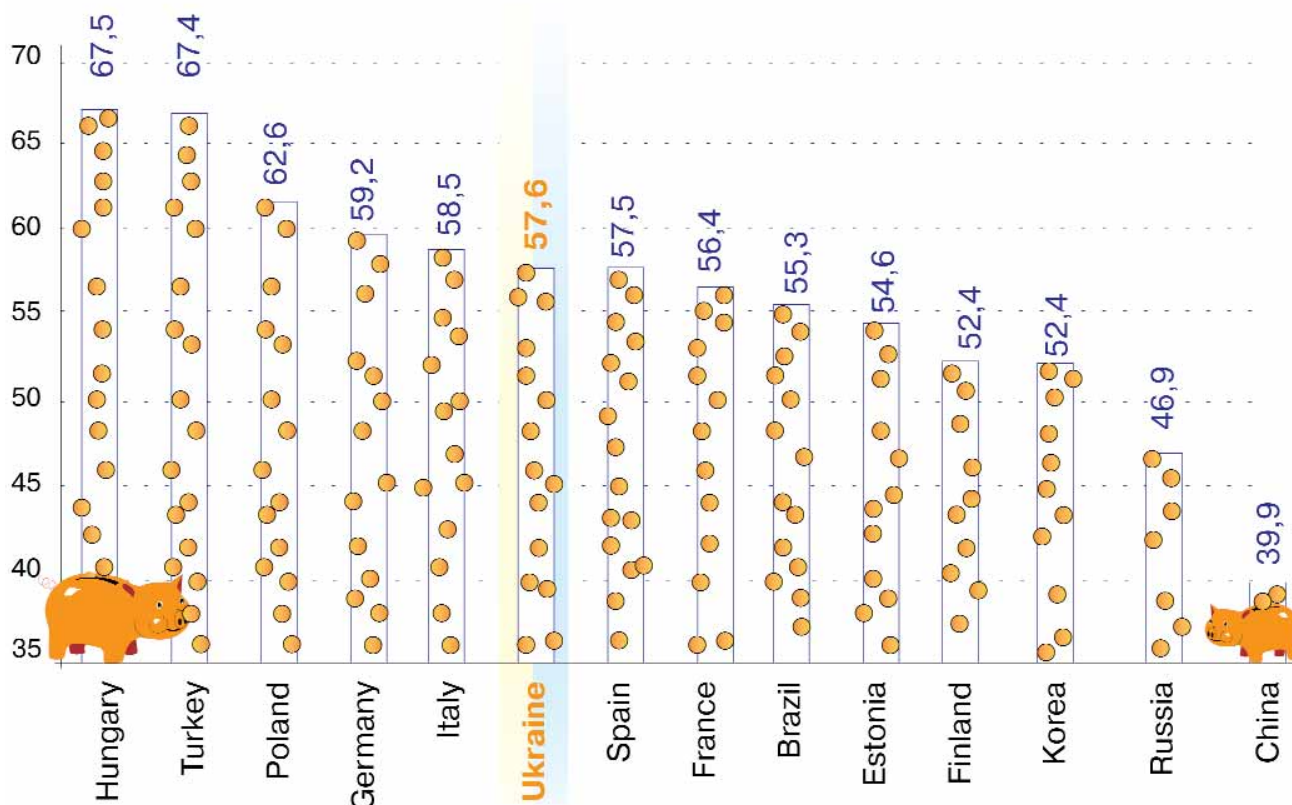
A representative example of a country that reached its innovation and investment development phase is **China**. It is far ahead the rest of the world in terms of level and rates of increase in national savings and accumulation of fixed capital, which ensures the high rates of economic development for the country. The main source of investments for China is its extraordinary national savings, rather than foreign investments. There are several reasons for this phenomenon: first, the Chinese population saves the lion's share of its disposable income (about 30% as against 8-9% in Ukraine); second, the businesses have a rather high level of income saved (around 14% of GDP), including large capital transfers from the government (5% of GDP as against 0.8% in Ukraine); third, they retain a high level of government capital expenditures (8% of GDP as against 3% in Ukraine). Investment dynamics is based on an extraordinarily high level of national savings and low level of consumer expenditures. The state has minimized its consumer expenditures and shifted a range of problems related to education opportunities, medical facilities, and even taking care of elderly people (rural population is forced to save «for a rainy day», since they do not receive pension) to population.

The reverse side of Chinese development model is a rather low level of consumer expenditures (39.9% as against the average across the EU-15 – 53.3%). As a result, the investment development in China is far better than social development; it provides a relatively sustainable cheapness of workforce, which attracts foreign investors who «bomb» Chinese economy with capital investments. At the same time low consumer expenditures makes people spend nearly half of a family's budget on groceries.



# Private end-consumption

## Private end-consumption, % of GDP, 2005



Level of private end-consumption provides a basis for evaluating the degree of a country's orientation towards consumption (in contrast to capital formation), since the process of recovery is essentially aimed at satisfying the needs of population for consumption (this is irrelevant to the levels and quality of government services received and housing). Ukraine has a rather high level of private end-consumption, which was 10 percent lower in 1992.

### Main reasons for such level of end-consumption:

1

fairly **LARGE SHARE** of gross disposable income of households in GDP;

2

relatively **LOW PROPENSITY OF POPULATION** for savings and, respectively, synchronization of people's income and expenses;

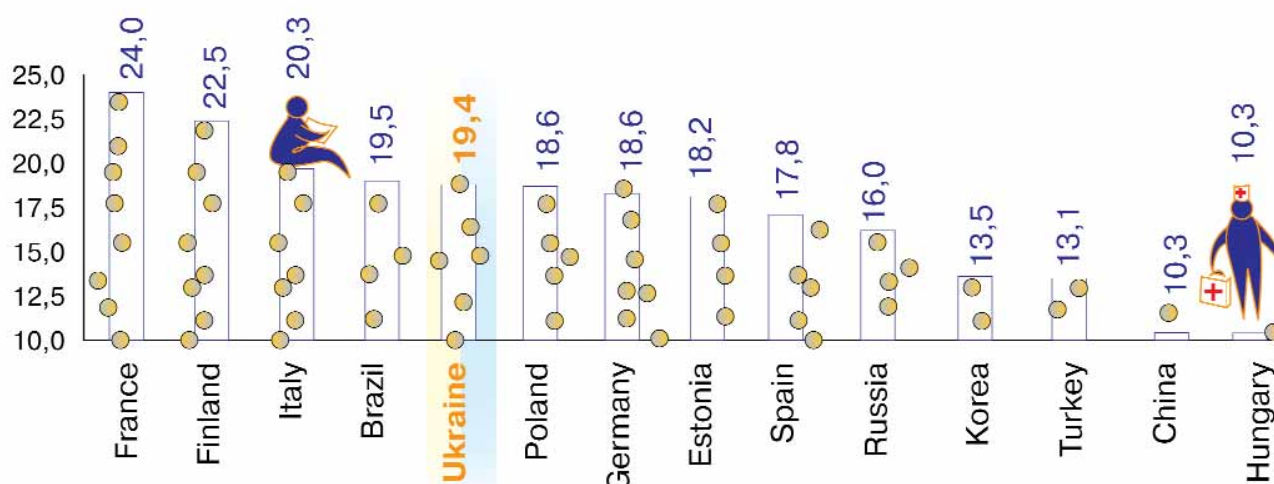
**LOW CAPITAL FORMATION LEVEL.**

3



# Consumer expenditures in general public administration (GPA) sector

## Consumer expenditures in GPA sector, % of GDP, 2005



### Reasons for excessive level of expenditures in GPA sector:

- 1 **LARGE SHARE OF GDP** reallocation through the budget;
- 2 **PRESERVING** certain **TRADITIONS** for forming social infrastructure inherited from socialist times (in fact, their efficiency decreased as a result of social and economic crisis);
- 3 **LARGE** and continuously expanding **BUREAUCRATIC ESTABLISHMENT**;
- 4 **LOW EFFICIENCY** of government services and squandering, which is one of the main reasons for deterioration of Ukraine's ranking with regard to competitiveness of government institutions.

**Level of consumer expenditures in general public administration sector (GPA)** provides information on what share of their income a citizen and a business of a certain country spend to solve the general social problems in the following areas: education, health protection, environment, quality infrastructure, etc. However, a high portion of such expenditures does not mean high quality of individual and collective government services (their quality is ranked on the basis of surveying).

As a matter of fact, had Ukraine been among the 61 countries analyzed in the IMD's annual report, it would have been one of the top-twenty countries due to its high level of government end-consumption. It has one of the highest levels in monitoring group, which along with private consumption increases the total level of consumer expenditures up to 77%.

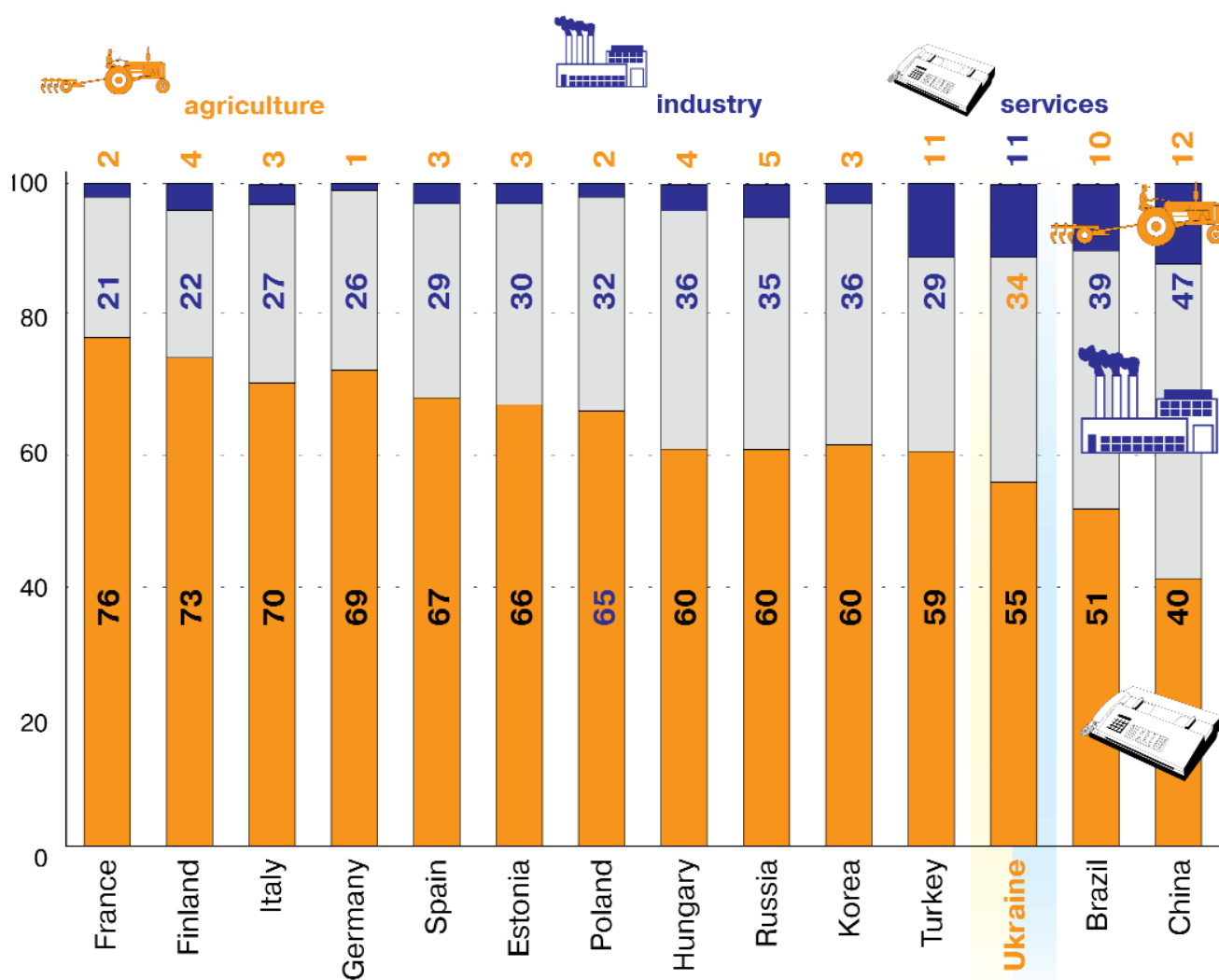
### Foreign experience

Large part of the state in GDP, which is shown in its consumer expenditure level, could be perceived in a positive way if only the maximum transparency of budget costs and high quality of services are provided. For example, for **Finland**, with its highly efficient socially-oriented development model, the efficiency of government institutions is generally recognized. In contrast to China, an ordinary person in Finland receives high quality free services in the amount which adds about one-third to monetary income, while pensions and allowances account for just about one-fifth of gross disposable income of households. This means a high level of caring both of the young (free education, etc.), and of the elderly population.



# Gross added value by industries

GAV by industries, %, 2005



## Factors that defined the present GAV structure by industries:

1

**LOW INCOME** of population lead to the situation when a lion's share of expenditures is spent on agricultural products and food, while the minor share is spent on paid services;

2

**LOW DEMAND** for R&D, which account for mere 1.2%<sup>3</sup> in the businesses' expenditures as against 5-9% in the world's mature economies;

3

foreign **COMPETITIVENESS** of manufacturers, mainly on raw materials market and pre-processed products market, and their inability to compete on high-technology and medium-technology production markets (with rare exceptions);

4

**INABILITY** of manufacturers of investment resources to adequately **SUPPLY** the domestic market (nearly 90% of Ukrainian investment market is filled with imported investment goods, where high-technology products account for 18%, medium-technology products account for 73%, medium-low-technology products account for 7.2%, and the rest is represented by low-technology products<sup>4</sup>);

5

**ENHANCING ROLE** of trade and financial **MEDIATORS** with respective expansion of service industry, and lagging with regard to volumes of paid services rendered to population.

The level of services in Ukraine is too low in comparison with the benchmark countries, whereas the share of agriculture is excessive. Gap with regard to these indices is critical for Ukraine.

### Summary

Production structure in terms of GAV represents one of the major aspects of economy. This index demonstrates a relative backwardness of Ukrainian economy. During economic crisis, the Ukrainian economy acquired characteristics of a raw-material-oriented economy. Yet, in the recovery period the manufacturing industry became even more raw-material-oriented.

At the same time the level of service industry significantly enhanced, especially regarding financial and trading services. Thus, comparison of gross added value structure with the similar index for other countries shows the Ukraine proximity to Turkey and Brazil, which corresponds to these countries' proximity in terms of GDP per capita index in parity prices.

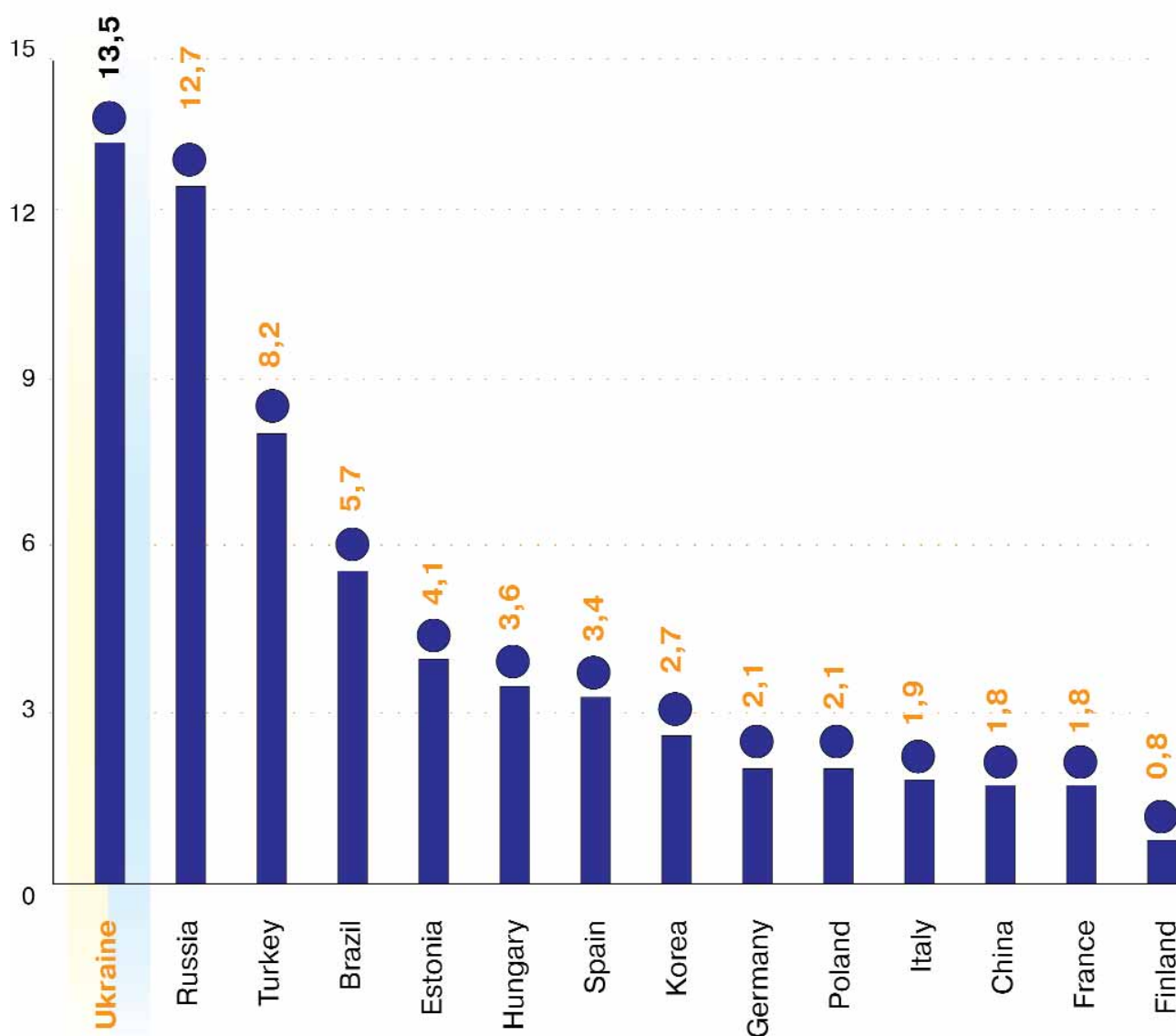
<sup>3</sup> Calculated on the basis of «Expenditures-Production» table, 2004.

<sup>4</sup> Calculated on the basis of information of State Statistics Committee of Ukraine regarding foreign trade under 10-digit codes using OECD methodology.



# Consumer price index

## Consumer price index (average annual)



## Inflation

**Inflation** is one of the most significant factors of sustainability of macroeconomic environment, which represents a precondition for the economy's competitiveness. In 2005 Ukraine demonstrated the highest level of this index in monitoring countries group, which is the evidence of critical gap behind the mature economies.

## The main reasons for high inflation:

**INCREASING COST** of imported crude oil and, respectively, fuels and lubricants on the consumer market;

1

**INCREASING VOLUMES** of imported consumer goods as a result of rapid expansion of the consumer market;

2

**INCREASING COST** of foodstuffs, especially meat and related products, milk and dairy as a result of drop in livestock;

3

**INCREASING** in utility and transport **TARIFFS** resulting from external price shocks;

4

**INCREASING COST** of services in education and health protection due to wage rise.

5

## CCU's Recommendations

**In terms of macroeconomic indices of GDP per capita and the average annual growth rates Ukraine is lagging behind many countries monitored. With regard to many structural aspects it shows mediocre results; however, reaching the dynamic development track requires certain structural changes. The worst index of inflation rate demonstrates significant dependence of economy on imported energy carriers and their prices. In order to enhance the competitiveness, we must remove the critical gaps of Ukraine behind developed economies in terms of macroeconomic indices. This requires the following measures:**

1. Increasing accumulation of fixed capital along with decreasing consumer expenditures.
2. Aggressively pursuing the experience of institutionally developed countries (e.g., Finland), enhancing the efficiency of government services and preventing government squandering.
3. Developing and introducing a strategy for attraction of direct foreign investments into high-, medium-technology production

in Ukraine in order to create an investment and innovation surge.

4. Promoting the secure protection of owners' rights (especially, regarding minority owners) and establishing highly developed and competitive financial markets.
5. Establishing partner relationships among businesses, government, and people and promoting reliable and fair «rules of the game», which will curtail income shading.
6. Developing and introducing a program for import substitution (particularly, as a part of the program for increasing the competitiveness of economy), especially on the investment resources market, where the Ukrainian share is meager.
7. To legally secure the structure of expenditures for various levels of budgets by economic items in order to prevent further distortions and disproportions between their consumer and investment components.
8. Establishing and stirring up the partnership among government, businesses, and people for the purpose of a major project titled the «Competitive Country».

# Share of foreign trade and exports in GDP

## Share of foreign trade in GDP, %, 2004



Ukraine – 2005

The reason for the Ukrainian economy being heavily dependent on foreign trade development is a longer and more profound recession in domestic demand as against the foreign one. This was caused by the following factors:

1

in early transformation processes – by «shock» price liberation of foreign trade and breaking up the previous industrial connections with the former USSR Republics, which led to drastic reduction of production (especially in high- and medium-technology), profits of entities, and, correspondingly, domestic demand;

2

further, an inconsistent domestic economic policy, which resulted in inflation processes, accumulation of debt, both foreign and domestic, budget deficit formation, lack of people's credit to the government policy;

3

on recovery phase, the advanced development of the economy's raw materials segment.



## Exports of goods, % of GDP, 2005



### The reasons for growing share of export:

1

Due to insufficient internal demand, the domestic manufacturers were forced to enter international markets, which allowed them to take advantage of the external factor in economic growth.

2

**HRVYNIA DEVALUATION** in August 1998, entailed an increase in price competitiveness of economy, which added to further export development.

Today, the degree of openness of Ukrainian economy with regard to the level of foreign trade «quota» is rather high. Considerable openness of economy combined with low levels of product and market diversification make it vulnerable to shifts of global economic trends and economic policies of the major trade partners in terms of applying a wide range of protective measures. The only way to increase an economy's sustainability is to maintain a high competitiveness level. Thus, not only are the volumes and dynamics of a country's foreign trade important, but also its depth of integration into the world community's economy, the degree of diversification of products and markets, as well as the scope of its trade relations.

# Quasiopenness of the Ukrainian economy

Despite the high foreign trade quota and share of exports in GDP, the Ukrainian economic system is more likely to be considered **QUASIOPEN**. There are several reasons to support this opinion:

1

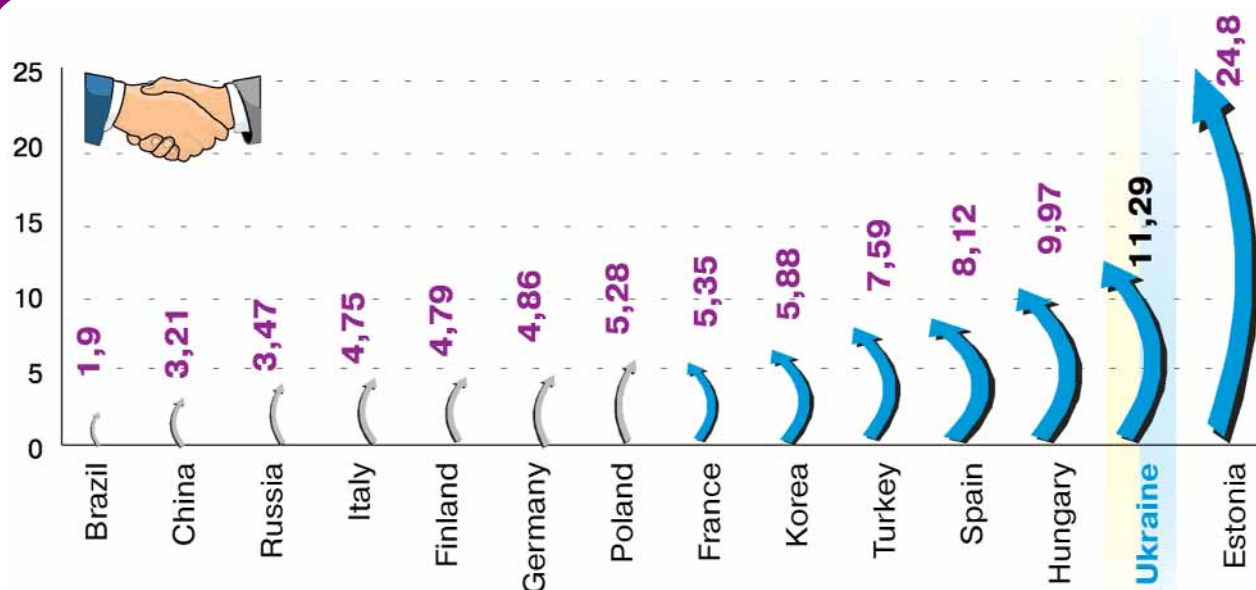
Significant dependence on foreign demand resulted from the underdeveloped domestic market.

2

High external openness of an economy should be based on differentiated export flows. However, Ukrainian manufacturing specialization and orientation towards exports, which were inherent to the soviet economy, have scarcely changed since then.

- intermediate consumption products account for 76% of exports of products, with metallurgy and chemistry products that have an obsolete manufacturing capabilities and a limited product range, accounting for over 40% and about 10%, respectively;
- transportation services account for 73% of total export of services. Presently, the development of this sector of services is determined by operating the pipelines constructed back in USSR period, the share of which in transportation services runs up to 43.7%. This is substantially the main reason why Ukraine belongs to the countries with high percentage of export of commercial services within GDP.

## Export of commercial services, % of GDP, 2004



Ukraine – 2005 p.

Such structure of export flows demonstrates significant dependence of Ukrainian economic development on foreign raw materials markets, as well as on the government agreements concerning the terms and conditions for transporting energy resources through Ukrainian territory.

When an economy is highly transparent, the sustainability of its development and its resistibility to external fluctuations are dependent on the level of competitiveness of goods and services on the world market. Ukraine has goods and services of very low quality, i.e. today the structure of exports of manufacturing products mostly consists of goods with low and medium technology level (23,6% and 60,9%, respectively), which prevents Ukraine from being able to compete on the world market in terms of quality of goods produced even by the traditional businesses.

### This is caused by the following reasons:

- high level of depreciated fixed assets in manufacturing industry (59.3%) and in the national economy as the whole (49.3%). The reform period did not bring about the required renewals of production capacities in traditionally export-oriented industries;
- insufficient innovations progress: in industry, the portion of enterprises which introduced innovations in the I quarter 2006, accounted for mere 7.9% (60-70%, for mature economies), and the share of innovative industrial products in the total volume of sales was only 5%;
- low level of investments of GDP to perform full-scale upgrade. In 2005 gross accumulation of fixed capital was merely 22%.

### Foreign experience



The critical feature of Chinese economy is the country's investment-oriented budget. Annual volume of government investments equals about 5% of GDP. The efficiency of government investments in China is promoted by wide application of private and government partnership mechanisms. The government and private investors provide mutual financing for construction and exploitation of infrastructure projects. The major investment flows are concentrated in 5 free economic zones representing the «growth poles», which provides an opportunity to prevent the «dispersion» of funds for big range of projects.

Chinese authorities consistently apply its industrial policy aimed at the accelerated upgrade and expansion of markets for Chinese products distribution. One of the major tasks is restructuring and upgrading the country's industrial system. The machine-building, metallurgy, petroleum production, chemistry and petrochemistry, pharmaceuticals production, coal mining, construction materials production, light industry and electrical power engineering are the priority industries.

Despite the fact that China has certain advantages over the other countries in labor-intensive manufacturing, the

government pays significant attention to the need for increasing the output of hi-tech products and increasing competitiveness of Chinese products on the world market. For instance, the latest version of automobile industry development program requires that the domestic manufacturers ensure satisfying domestic demand and enter the external markets with their products. According to government officials, the country's objective is to reach by 2010 the export of automobiles and their spare parts for the amount of USD 100 billion (today – USD 4 billion).

The main element of Chinese policy in terms of increasing competitiveness of industry is promoting inflow of foreign investments to gain the access to the cutting-edge technologies by establishing joint ventures and conducting training programs for Chinese professionals.

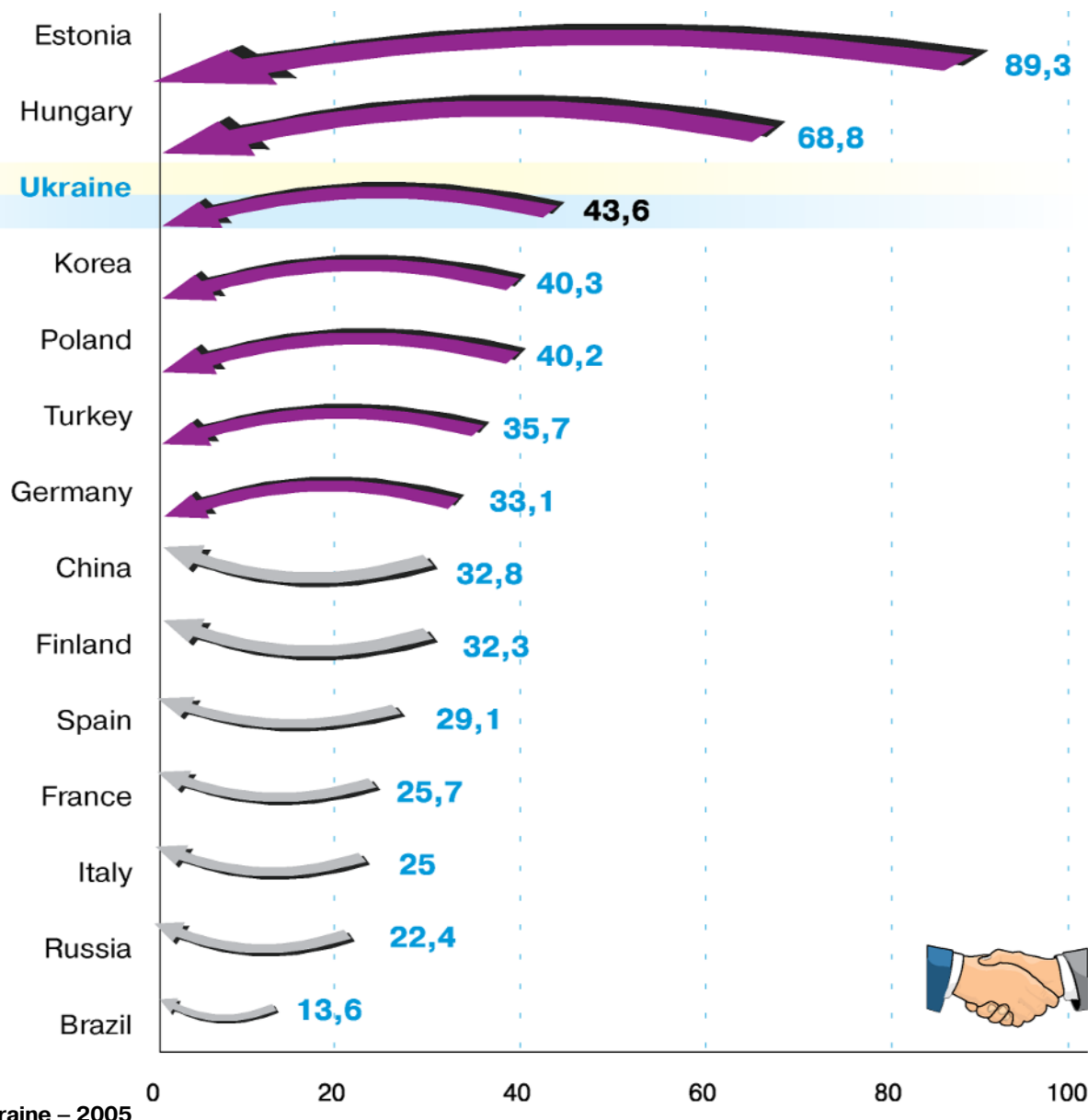
Due to the reforming of the Chinese Academy of Sciences, which was aimed at implementing the scientific achievements into production, the scientific and research institutes and universities integrated with private high-technology companies that obtained technological support for their innovative activities as a result of such integration.

### Summary

Manufacturing new types of hi-tech products, which will continue in high demand for a long time, using obsolete and depreciated equipment is no longer possible. Critically low level of innovation activities of the national enterprises increases the gap between Ukraine and other countries regarding quality of products and limits the potential for development. All these factors will slow down an increase in labor efficiency, and, therefore, hinder solutions to social problems and, consequently, will not allow to diversify production and expand both external and domestic markets to make national economy less dependent on the external shocks.

# Import of goods and commercial services

## Import of goods and commercial services, % of GDP, 2004



**The fourth reason** for quasiopenness of the Ukrainian economy is its quite heavy dependence on imported raw materials. On a whole, the portion of imported goods in the intermediate consumption of Ukrainian industrial producers is 48%, and for manufacturing is 51%.

## Reasons for substantial dependence on imports are:

1

significant energy consumption of the national industry, which is 3 to 5 times higher in Ukraine than in the developed countries. **THE LACK OF DOMESTIC ENERGY RESOURCES** makes Ukraine heavily dependent on external energy resources (oil – 90%, gas – 70%);

2

considerable **DEPRECIATION OF FACILITIES** in fuel and energy sector, lack of efficient energy saving system, as well as accounting and control over the utilization of energy resources. The volumes of disposal of depreciated property, plant, and equipment in fuel and energy sector substantially exceed the volumes of newly introduced facilities;

3

correspondingly, the **QUALITY** of national products **IS LOW**, which results from the use of obsolete production technologies and depreciated equipment.

## Summary

Considerable dependence on imports is another fact supporting underdevelopment of the Ukrainian domestic market and inefficient industry structure. High energy consumption puts the Ukrainian energy security in jeopardy due to fluctuations in prices for energy carriers. The domestic market, especially investment market, has substantial reserves for import substitutions; however, it cannot progress in this relation in view of lack of sufficient investments into machine-building renewals and new economy development. High growth rates in imports of goods that could be produced by our domestic manufacturers are connected with insufficient support from investors, high credit rates, and accumulated corporate debts.

# CCU's Recommendations

**External transparency of economy needs to be rational and based on ongoing increase in efficiency, competitiveness and maintenance of national security. If the system of measures aimed at integration of Ukraine into the world economy is implemented, we need to combine the pragmatic openness with limited, sensible protectionism. The world practice has witnessed the success of such policy. The only way to reach progress in substituting imports is to create the attractive investment environment especially for developing innovative and eco-innovative clusters.**

## Foreign experience



There are several examples of the state protectionism, which led to positive results within limited period of time. In particular, such state industrial policy in post-war France allowed recovering and preserving many industries (automobile production, aircraft production, atomic energy production, etc.). With time, as the objective was reached and the internal and external development conditions changed, this policy was declared inefficient and cancelled; however, it helped France obtain its «own» position in the united Europe.



Starting 2005 France has been implementing an ambitious program for increasing competitiveness through deployment of innovations poles within innovative clusters network integrating science and business.



The companies operating in this environment were exempt from tax duties. Nearly the same path was followed by Ireland in its development of IT industry.

Chinese policy is unique. It features a complicated combination of institutional reforms, traditional ways to attract foreign investments, and some elements of protectionist industrial policy.



We cannot jump to peremptory conclusions; however, we should point that in the long run the export-oriented policy was more successful than the policy oriented at developing production to satisfy domestic demands. Of course, it does not mean that it is impossible to successfully combine strategies at a certain stage of development.

India is another similar example of High Tech development policy. The technological park created by the state has essentially turned into free-trade

US agricultural policy still envisages significant number of protectionist measures.



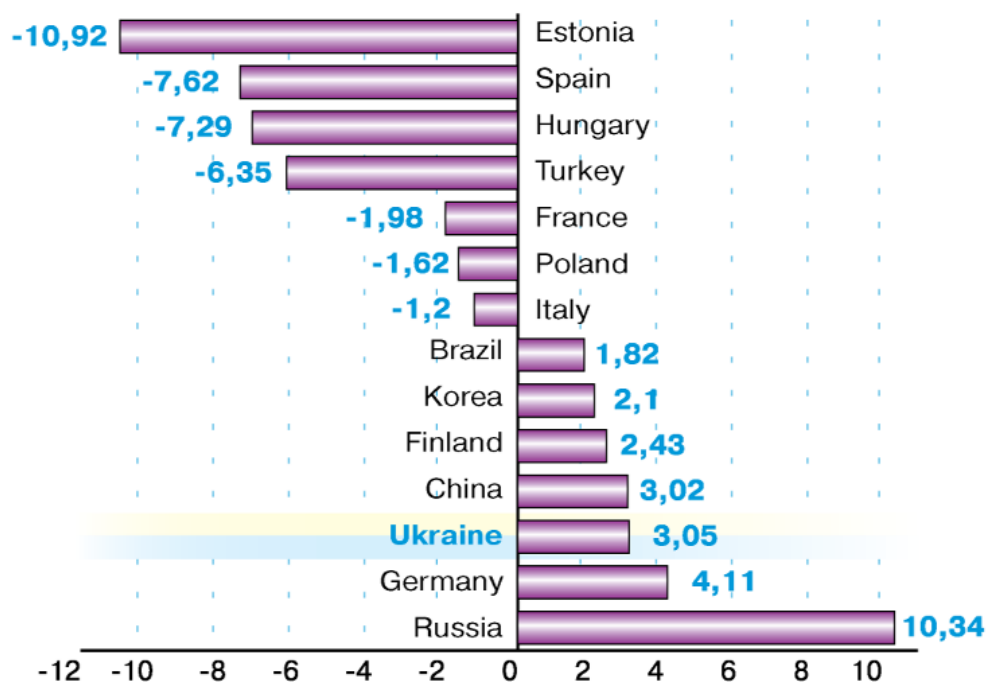
1

Opening the national economic system to the world should presuppose reasonable steps aimed at **PROMOTING CAPITAL FLOW**, creating **FAVORABLE INVESTMENT CLIMATE**, implementing customs, currency, tax and credit policies, which affect not only the overall scope of the country's interaction with the world, but also its quality.

2

Ukraine needs **TO ATTRACT INTERNATIONAL CAPITAL AGGRESSIVELY**. This will allow compensating internal investment resources that are insufficient in the stage of transforming the national economy. Current high quasiopenness of Ukrainian economy preserves our status as a net exporter of our own capital. The leading countries analyzed herein, with which Ukraine was put into the same group, unlike Ukraine have a significant positive account of capital and negative account of current transactions.

### Account of current transactions, % of GDP, 2005



3

To ensure the processes of capital inflow to Ukraine it is advisable **TO SPEED UP THE ADOPTION OF THE STATE PRIVATIZATION PROGRAM**, increase efficiency of investments into infrastructure by combining government financing with proactive attraction of private capital through concessions schemes and public and private partnerships.

4

In order to increase the competitiveness of the national products on the world market, it is important **TO PREPARE A PROGRAM FOR CREATION AND IMPLEMENTATION OF INNOVATION MODEL OF ECONOMY DEVELOPMENT**, which should define: the directions for structural transforming the economy; priorities for innovation and scientific and technological development; strategic marketing of the markets of technologies, capitals, services, goods; system of financing of innovation activities; ways to shape innovation infrastructure, protection of intellectual property, its capitalization, commercialization, and transferring.

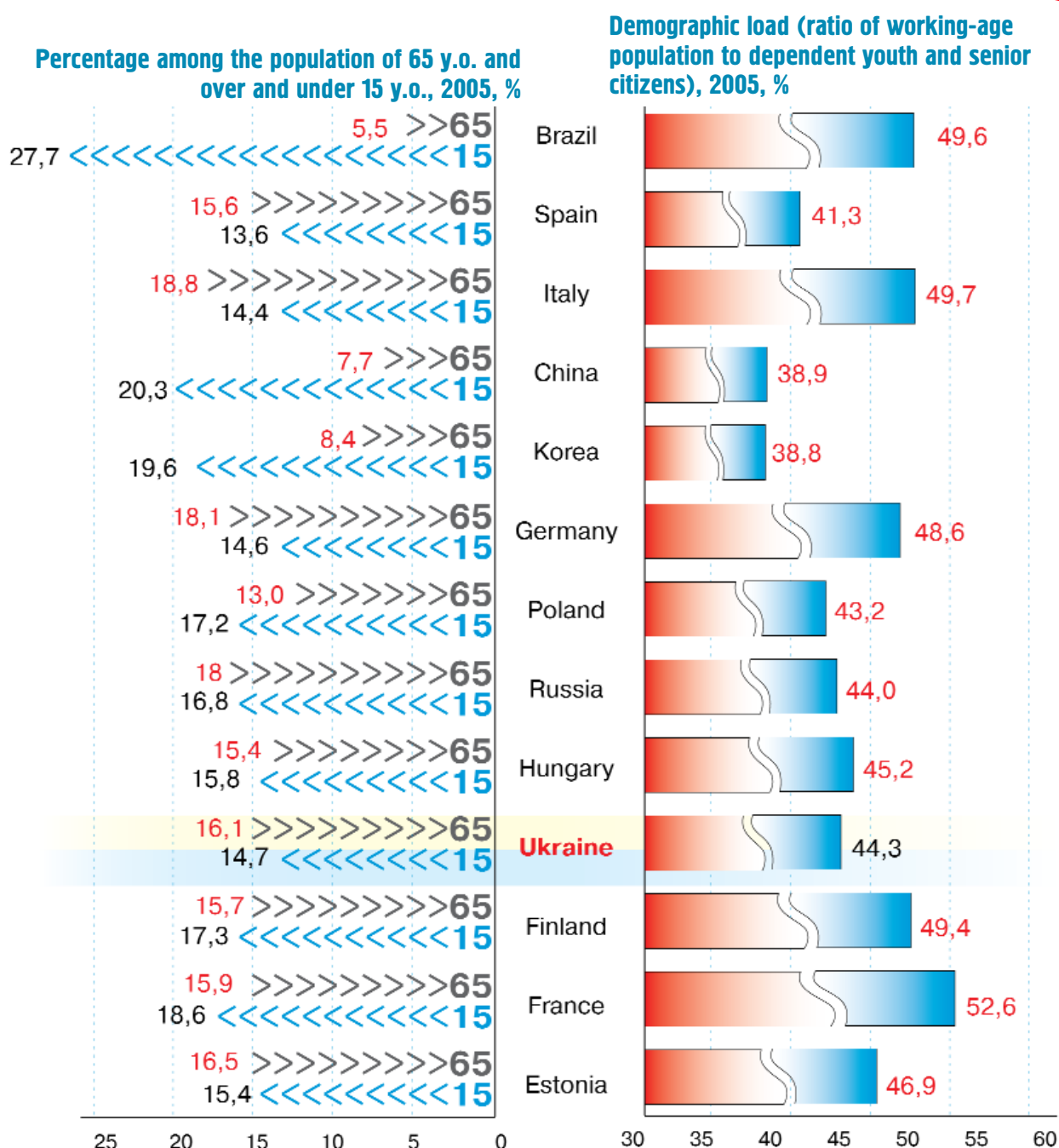
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In order to decrease the scope of use of energy resources and lessen the economy's dependence on imported energy carriers, increase the competitiveness of the national products, it is vital **TO DEVELOP AND IMPLEMENT ENERGY-SAVING TECHNOLOGIES AND TAKE APPROPRIATE MEASURES FOR TARIFF-BASED REGULATION OF ENERGY CONSUMPTION**, introduce economic incentives for economical use of energy resources, promote development of alternative and recovering energy engineering, enhance diversification of energy resources supply.

Ella Libanova,  
doctor of economic sciences

# Demographic aspects of labor force competitiveness

## Demographic aspects of labor force competitiveness



## Reasons for such ranking of Ukraine:

1

Despite a widely spread belief in Ukraine regarding an extremely high demographic load, **A LOW RETIREMENT AGE**, which was established back in the 1930s, is more critical than ageing of Ukrainian population.

2

**THE AGEING OF LABOR FORCE ITSELF** – the share of senior working-age citizens (40 y.o. and older) within the entire working-age population (from 18 y.o. until the established retirement age, i.e. 55 for women and 60 for men) is gradually gaining: from 40.7% in 1995 to 43.4% in 2004. This makes professional training and retraining of labor force more complicated.

3

Extremely negative is the index of average life expectancy at birth, with regard to which Ukraine lags behind all the countries compared, except for Russia.

4

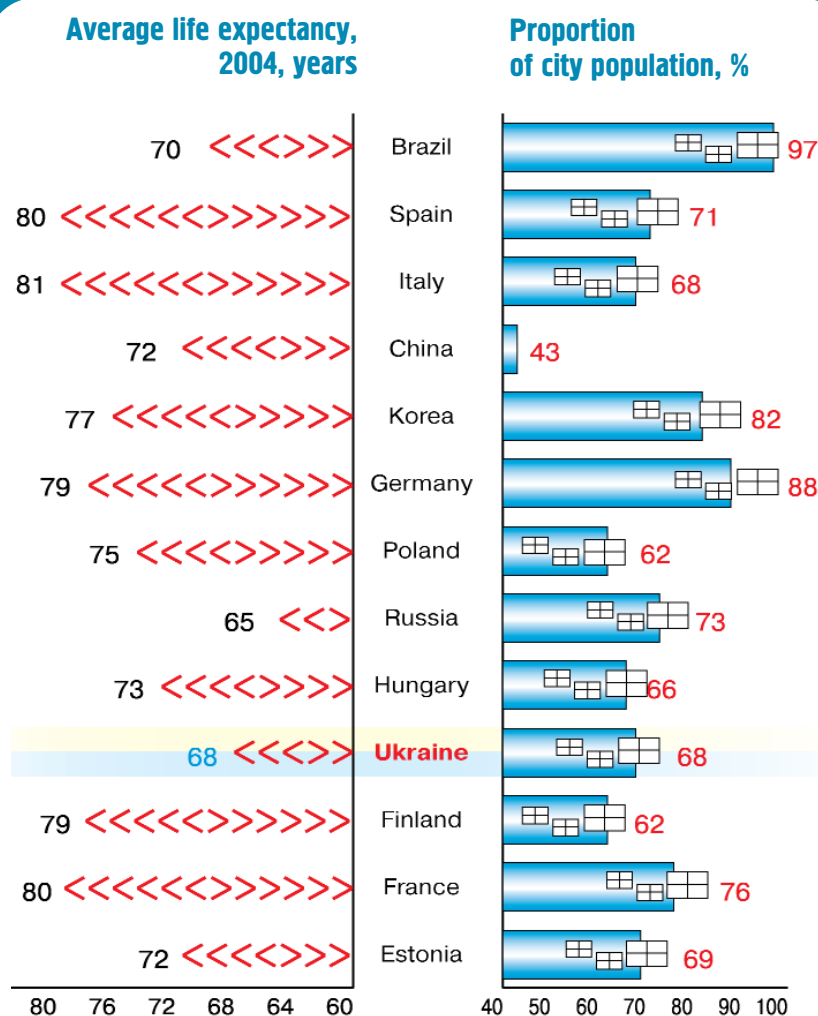
**THE HEALTH** of the population is **CRITICALLY BAD**: about two thirds of the population are in poor health during 12 months, and every sixth person of this group notices deterioration of working ability.

5

For every seventh household, due to a number of reasons, the appropriate **QUALITY MEDICAL PRODUCTS** and **SERVICES ARE NOT AVAILABLE**, although 94%<sup>1</sup> of population believe they need the mentioned products and services, while only 40% of population estimate their health as good.

## Comparing to other countries

The death rate of men and women in Ukraine is much higher than in most European countries. However, most losses for Ukraine are brought by premature male mortality. Difference between male and female life expectancy in Ukraine is 11.3 years, which nearly complies with CIS (11.0) and most other former USSR Republics standards, but significantly exceeds the respective indices in the mature economies (Iceland – 3.8, Denmark and Sweden – 4.4, Great Britain – 4.6, Greece – 4.8). This gap results from excess mortality of men of the most active age, i.e. 20-54 y.o., whereas men die nearly 3.5 times as much as women of the same age. 26.9% of Ukrainian population dies in the age under 60 – Russia is the only country with the higher index (29%), and the respective index for the neighboring countries is about 20%.



<sup>1</sup> According to the «Investigation of Life Conditions of 10092 Households in 2005».



# Education and professional training of labor force

The role of senior citizens and demographic load (ratio of working-age population to dependent youth and senior citizens) are vital in the context of the entire country's competitiveness, since, traditionally, a country's competitive advantage is its young population. If this is the case, the proportion of economically active population increases, the burden of pensions decreases, therefore, the availability of new skills and knowledge increases.

Quantitatively, Ukraine is nearly the same as most developed economies, however, this rather high status is mostly gained due to middle-aged and senior persons. With regard to the youth, despite substantial increase in the number of people obtaining higher education, the proportion of such people within the population of 25-34 y.o. has significantly dropped.

## Such situation was brought about by the following factors:

**1**

Under conditions of limited opportunities for getting reasonably paid positions, 2.5 to 3 million economically active Ukrainian people – mostly 20-49 y.o. – **HAVE TO SEEK EMPLOYMENT ABROAD**; in this regard the official recruitment intermediaries facilitated an employment of a little over 40 thousand people. During the «peak» demand for temporary labor force the number of such employees reaches 5 million people, and the average employment term for our fellow citizens working abroad is about 6 months.

**2**

Most of migrant employees are people possessing vocational technical and comprehensive secondary education. However, **MANY HIGHLY EDUCATED YOUNG PROFESSIONALS LEAVE UKRAINE** in search of a better life. This outflow will inevitably grow as a result of Ukraine joining the Bologna Process, recognition of Ukrainian educational certificates by the developed countries and simplification of the procedure for temporary employment of Ukrainians abroad.

**3**

**THE QUALITY OF PROFESSIONAL TRAINING OF LABOR FORCE IS LOW**, i.e. many graduates do not work according to their major, and after graduating from vocational school many young people have problem finding a job and turn to employment centers to obtain recommendation to apply for retraining.

4

Despite an increase in demand for highly qualified employees in industry, construction, transport, entailed by introduction of new technologies and the need for production expansion, **THE SUPPLY** of qualified labor force **DECLINES**, while the supply of unqualified labor force remains high. About one third of economically active population does not possess professional education.

5

**A NEW PROFESSIONAL EDUCATION SYSTEM HAS NOT BEEN CREATED.**

6

Since the long-term **FORECASTS REGARDING LABOR MARKET ARE NOT AVAILABLE**, the efficient professional training system cannot be introduced.

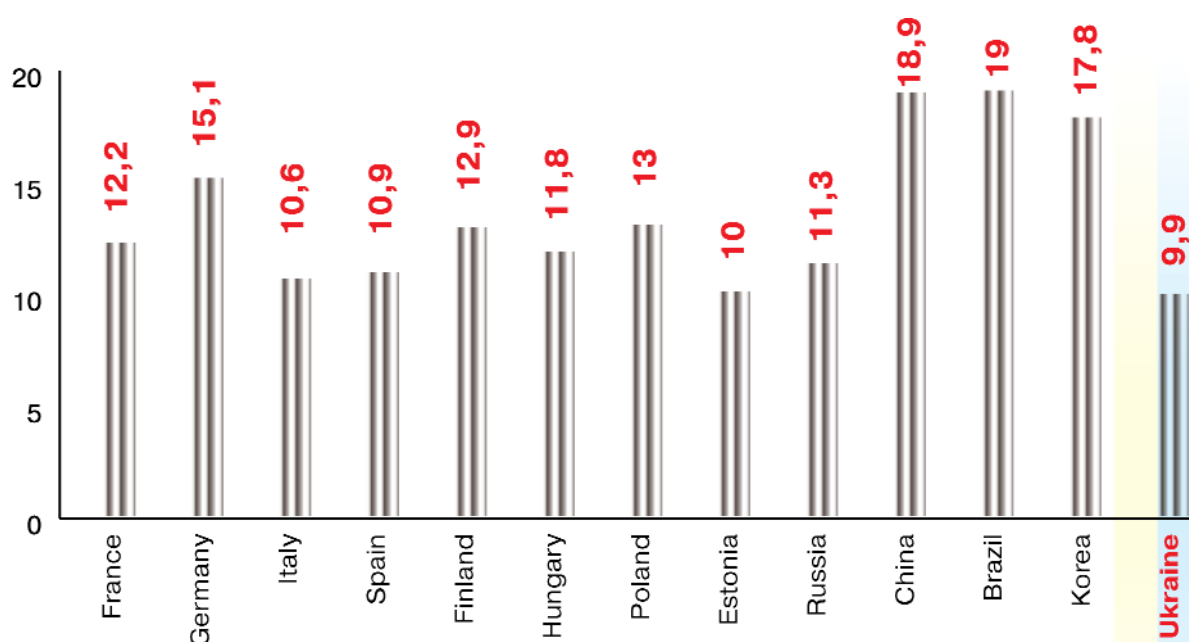
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The higher education **SYSTEM IS DISTORTED**, i.e. the excessive supply of economists with inadequate supply of specialists in engineering (the number of graduates in economics rose by 28.4% for 2004-2005 academic year alone, while the portion of graduates in engineering dropped from 33.8% in 1996 to 22.8% in 2004. It has started increasing only this year). The same situation is in the vocational technical education.

8

Significant government efforts to provide the population with high level of education remain inefficient despite the fact that Ukraine is leading with regard to the ratio of the number of students to the number of professors among the countries monitored.

## The ratio of the number of pupils to the number of teachers in secondary schools, 2003, persons



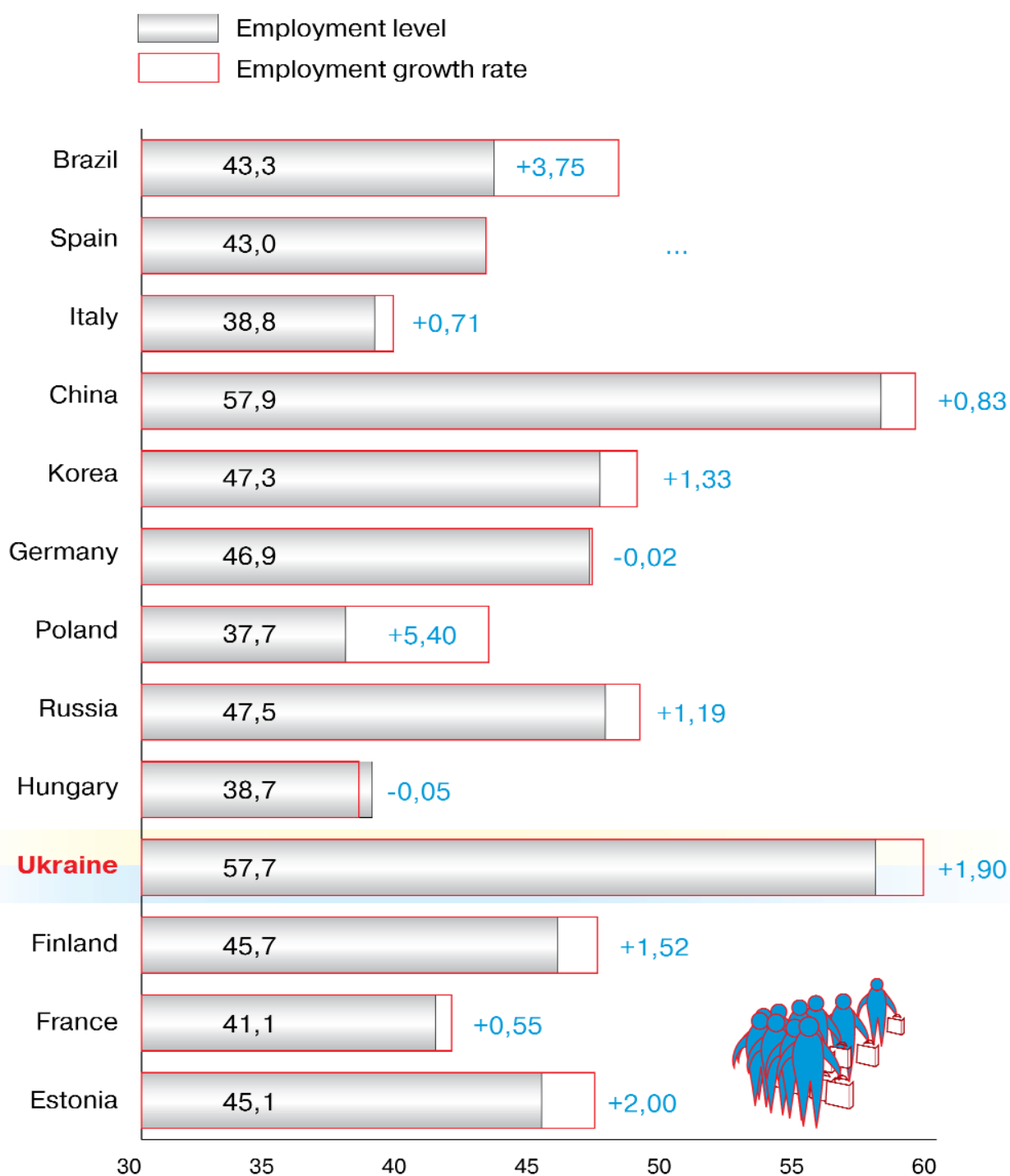
## Reasons for Ukraine lagging behind with regard to this index:

There is still a significant number of the so-called rural ungraded schools, where the quality of training cannot meet the modern requirements, especially with regard to information systems, foreign languages, natural sciences.

The education develops extensively (during 1990-2006 the number of students dropped by 25%, whereas the number of secondary schools decreased only by 0.9%, and the number of teachers increased by 1.1%), which leads to a blind alley. The sphere needs reforming drastically.

# Employment of labor force

## Employment features, %, 2005





Employment and unemployment indices show whether labor force meets the requirements of the national labor market, hence, its competitiveness. However, Ukrainian high showing among the benchmark countries (the employment has first started to increase since 2005) does not reflect the actual situation, which is much worse in terms of a number of factors:

1

Overall increase in employment by 50% is reached due to the retirement-aged persons, since young and middle-age persons not willing to be underpaid often **WORK ABROAD**. (For example, during 2004-2005 the employment level of most productive-aged population declined with the employment level of people over 60 having increased (it exceeds 20%).)

2

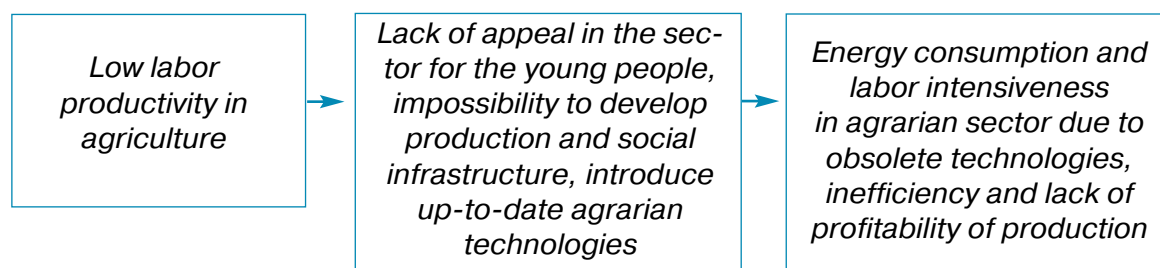
**THE VARIATIONS IN THE AGE-SPECIFIC LEVELS** of employment for rural and city resident result from:

- different pace of economic changes,
- city residents being more oriented towards hired labor,
- agricultural workers being significantly underpaid, which does not stimulate rural population to offer their labor force on the labor market.

3

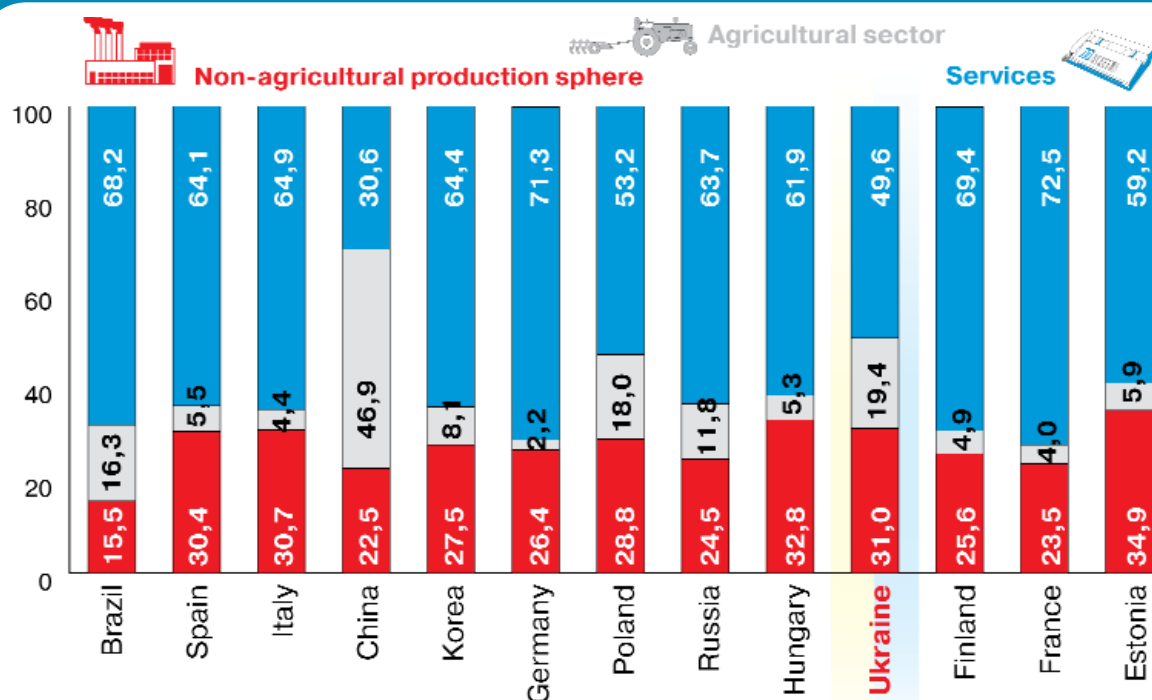
Employment **STRUCTURE DISTORTED**:

- excessive employment in agriculture (does not meet the standards for urbanization level of Central and Eastern European countries) shows the critical inefficiency of Ukrainian agrarian sector;



- large portion of people employed in non-agricultural production demonstrates that Ukrainian economy is raw-material-oriented – service sector prevails in the mature economies;
- redistribution in favor of unqualified workers slows down introduction of new technologies and transition to new (post-industrial) stage of economy development.

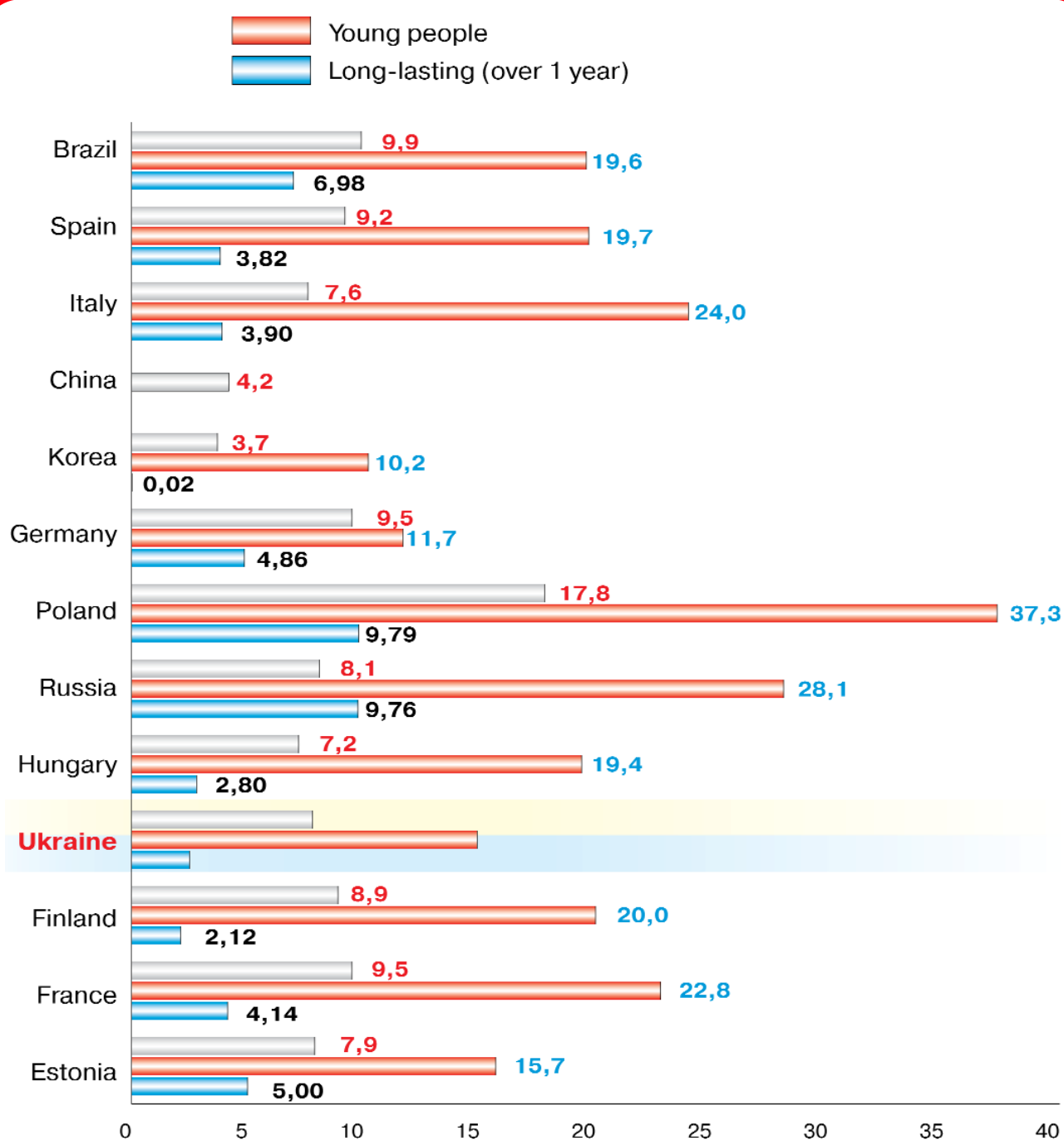
## Sector employment structure, %, 2005





# Unemployment

## Unemployment level, %, 2005



## According to the international standards the level of unemployment in Ukraine has never been excessive. This is affected by the following factors:

1

**EARLY RETIREMENT AGE**, i.e. upon reaching the retirement age most people out of work do not aggressively search for a new job, and are accounted for as economically inactive population, rather than unemployed;

2

**LACK OF WELL PAID JOBS**, which results in out flow of the significant number of working-age population from the domestic labor market;

3

permanent **DECREASE IN UNEMPLOYMENT SCOPE** since early post-crisis period;

4

**LOW LEVEL** of long-lasting (over 1 year) unemployment, since after long-lasting unemployment an unemployed person suffers lack of social adaptation (loss of social skills);

5

**INCREASE IN THE WEIGHT** of those unemployed with unemployment period up to 1 month (the so-called friction unemployment, which shows the dynamics of changes rather than problems on the labor market).

### Note!

Labor force competitiveness, especially rural, remains low, which could be seen from the number of working-age people who had lost their confidence in possibility to find a job. It shows the critical nature of situation in the rural segment of the labor market and the lack of real opportunities for overflow of labor force to other regions or sectors.

## CCU's Recommendations

Ukraine gradually loses the advantages it used to have around 20 to 30 years ago. At present, the level of professional training of Ukrainian labor force, mostly young people, lags behind the respective indices of the neighboring countries, which represents a critical gap for this country. The level of competitiveness of labor force is not adequate to be able to reach the economic breakthrough and narrow the gap separating us from the developed countries.

### The following measures can help to improve the current situation:

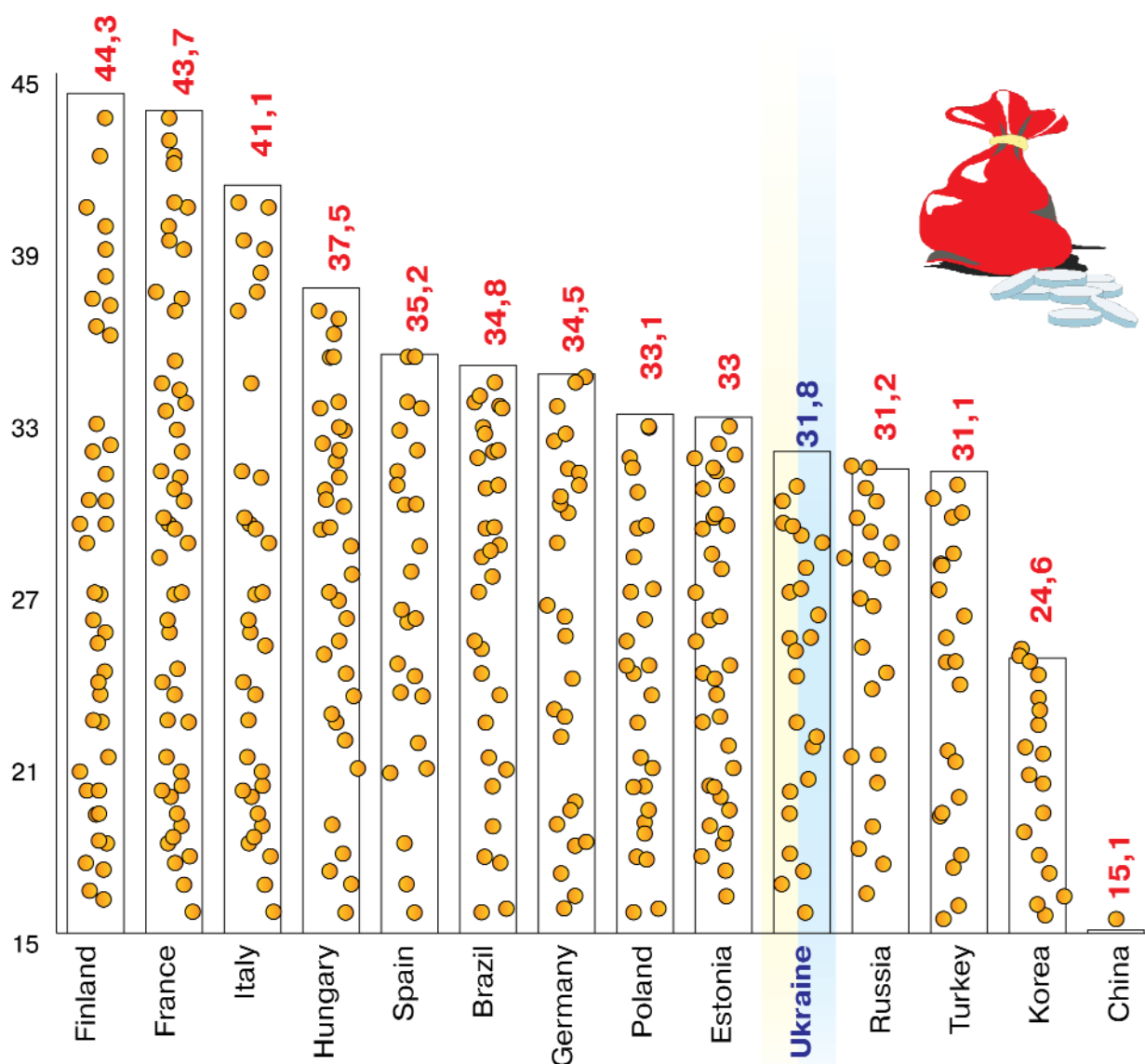
1. Fundamental change of the country's development model: The Ukrainian economy's competitiveness cannot be defined by cheapness of the labor force; experience of the most successful countries in transition period and developed countries, which perform the economic breakthrough in XX century, shows that the high motivation of the labor force to increase and realize its potential gains advantages on the modern stage of development.
2. Rationalization of the professional structure of specialists' preparation with professional education (both high and secondary), coordination with the economy demands for speeding up the results of raising the level of labor skills.
3. Rationalization of labor migration, in particular, stimulation of migrants to return to Ukraine.
4. Improvement of labor conditions, extermination of alcohol usage during the working hours, shortening of smoking, implication of standards of healthy life-style with the goal of decreasing labor force losses due to untimely death and invalidity.



Inna Lunina,  
doctor of economic sciences

# Total level of taxes and obligatory payments

Taxes and obligatory social insurance contributions, % of GDP



**The total level of taxation in Ukraine is rather low as compared with the countries where the government (like in Ukraine) provides a wide range of social benefits and guarantees.**

Total level of taxes and obligatory payments (% of GDP), which is characteristic of the whole system of government profits, is affected by various factors:

- 1** type (model) of social state, which affects the level of social guarantees, and the extent of leveling of people's income;
- 2** level of government investments and capital transfers;
- 3** economic policy by the government, for example, regarding certain industries, small and medium-sized enterprises, investments, including risky investments, as well as regarding certain regions;
- 4** globalization and tax competition processes;
- 5** tax administration efficiency;
- 6** tax discipline and tax morals in society, which, in turn, depend on the number of law-abiding citizens, as well as the quality of the services they receive from the state due to the taxes paid and the trust to the government.

## Foreign experience

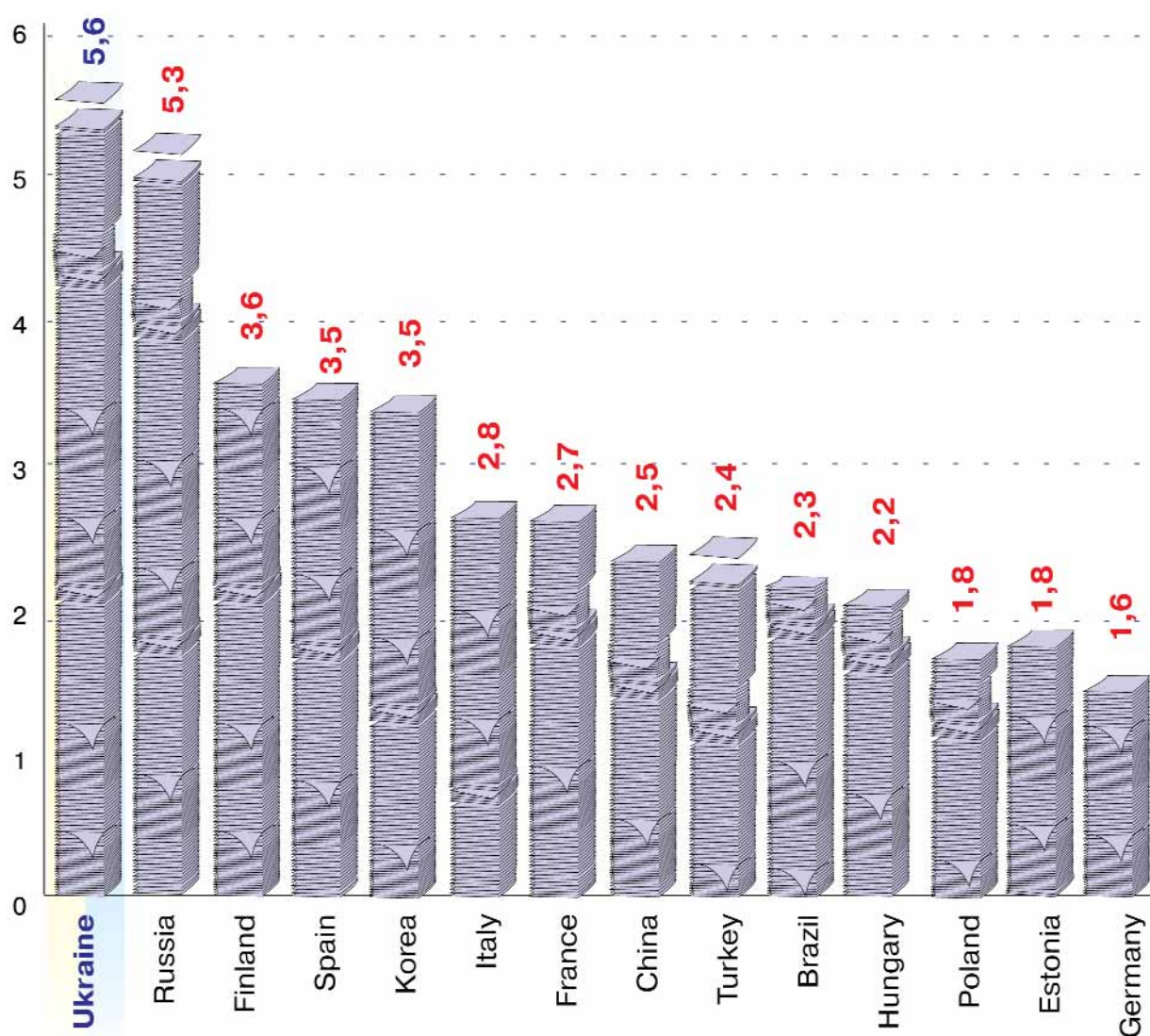
The high level of government profits in Scandinavian and Western European countries results from the necessity to finance a wide range of government social guarantees, measures of the government policy aimed at ensuring the employment opportunities and leveling of income. Whereas in China the low level of taxes and obligatory payments results, particularly, from the absence of the comprehensive obligatory pension insurance system.

Through recent decades globalization processes toughen competition of the countries with regard to mobile production factors. Thus, many European countries undergo tax reforms aimed at reducing tax burden on economy with respective minimizing risks of capital outflow.



# Corporate income taxation

Budget proceeds from corporate income tax, % of GDP





**Proceeds to the Ukrainian budget from corporate income tax (CIT) are rather high due to the following:**

**1**

in Ukraine calculations of taxable income and procedures for corporate income tax payment **DO NOT COMPLY WITH INTERNATIONAL STANDARDS**, in particular, they do not take into account all the expenses in calculating taxable income, which leads to CIT overstatement;

**2**

starting 2003 Ukraine **HAS CANCELLED ACCELERATED TAX DEPRECIATION** of fixed assets (except for the entities engaged in space activities), which does not provide the incentives for the enterprises to renew their property, plant, and equipment and leads to their continuous wearing out;

**3**

Ukraine's CIT **RATE IS HIGHER** than in some European transition economies, which impairs competitiveness of economic environment;

**4**

in addition to CIT, state and public companies as well as joint stock and holding companies and other business entities share capital of which contain state shares (stocks) are required to make **ADDITIONAL PAYMENTS** to the Ukrainian state budget against part of their profit (income) on a pro rata basis with reference to the amount of state portion of shares (stocks) in their statutory funds;

**5**

**TAX AND FINANCIAL ACCOUNTING ARE PERFORMED SEPARATELY** with tax authorities not only monitoring the enterprises' compliance with tax legislation, but also interpreting it.

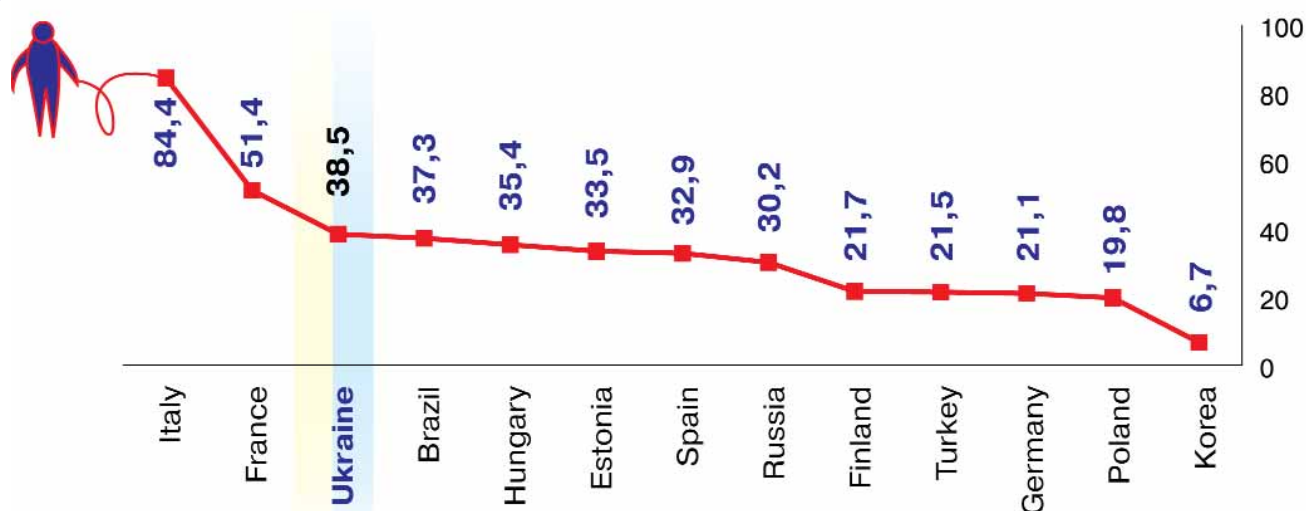
## Foreign experience

Many countries provide CIT relief for income used for the purposes of forming reserves to cover unexpected expenses and losses. Thus, Poland exempts from taxation deductions for settlement bad debts (within 5 years). Italy, Spain, and Germany exempt from taxation funds aimed at settlement of unexpected expenses, while Spain, France and Finland exempt from taxation funds accumulated for subsequent investments. Many countries apply accelerated tax depreciation of property, plant, and equipment.

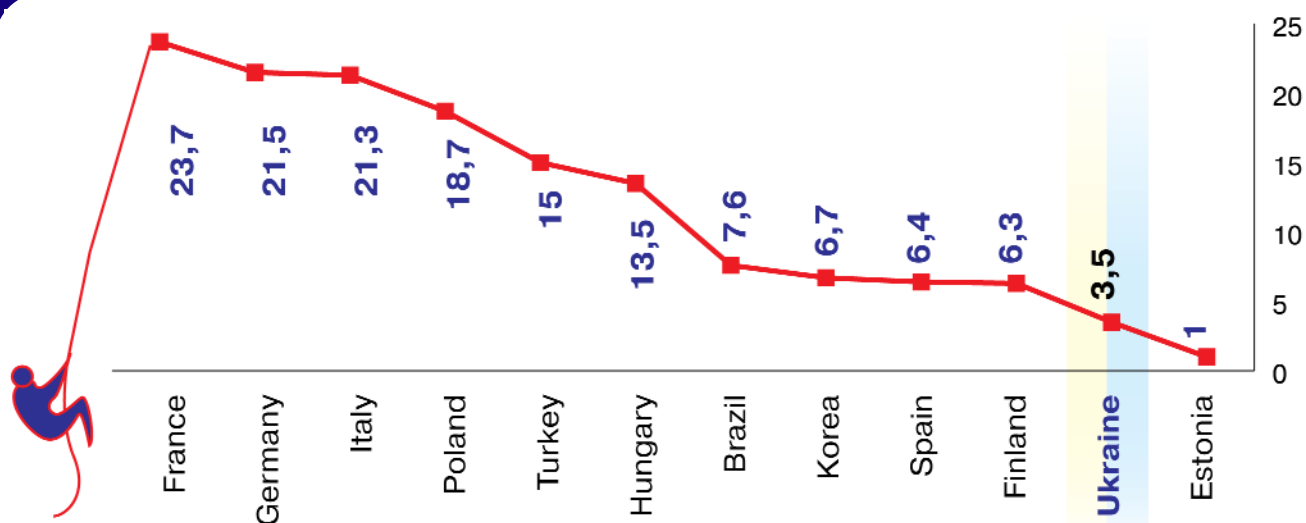
Most countries – new members of EU have decreased their CIT rates: Latvia – up to 15%, Hungary – up to 16%, Poland and Slovakia – up to 19%. Estonia applies CIT only to profits distributing among the shareholders and plans to decrease its rate to 20% in 2007.

# Contributions by employers and employees to the obligatory social insurance funds

Contributions made by employers to the obligatory social insurance funds, % of income equal to average GDP per capita



Contributions made by employees to the obligatory social insurance funds, % of income equal to average GDP per capita



**Employers account for about 90% of the obligatory social insurance contributions, which has been a tribute to the tradition that had started back in the Soviet era.**

**Generally high level of the obligatory social insurance contributions can be explained by the following reasons:**

**1**

Retirement age is much lower than that of many European countries.

**2**

There are special taxation regimes stipulating considerably lower contributions to the Pension fund for small businesses and entrepreneurs.

**3**

**THERE ARE NO CORRELATIONS BETWEEN CONTRIBUTIONS TO THE PENSION FUND AND THE AMOUNTS OF PENSIONS PAID TO INDIVIDUALS.**

**4**

The effective legislation imposes significant liabilities on the state with respect to pension benefits to certain categories of employees.

## **Foreign experience**

The obligatory social insurance contributions by employees in Hungary and Poland exceed 13%, and in the developed European countries – 20%, whereas in Ukraine they do not exceed 4%.

## **CCU's Recommendations**

The critical gap of Ukraine behind the benchmark countries is not so much relevant to the overall level of taxation, as to the taxation structure with its pressure on manufacturers and employers, drawbacks in tax administration, high level of labor and capital taxation, as well as uneven distribution of tax burden among the Ukrainian enterprises as a result of impact of shadow economy, where most of the income avoids taxation.

### **Ways to improve Ukrainian taxation system**

It is essential to redistribute tax pressure by decreasing the level of taxation of manufacturers and employers, as well as the poorest citizens against increasing the level of taxation of consumers (especially the most prosperous) and gains from properties.

This requires speeding up pension reform in order to create an efficient and fair pension system, as well as taking measures aimed at increasing the efficiency of utilization of the obligatory social insurance funds.

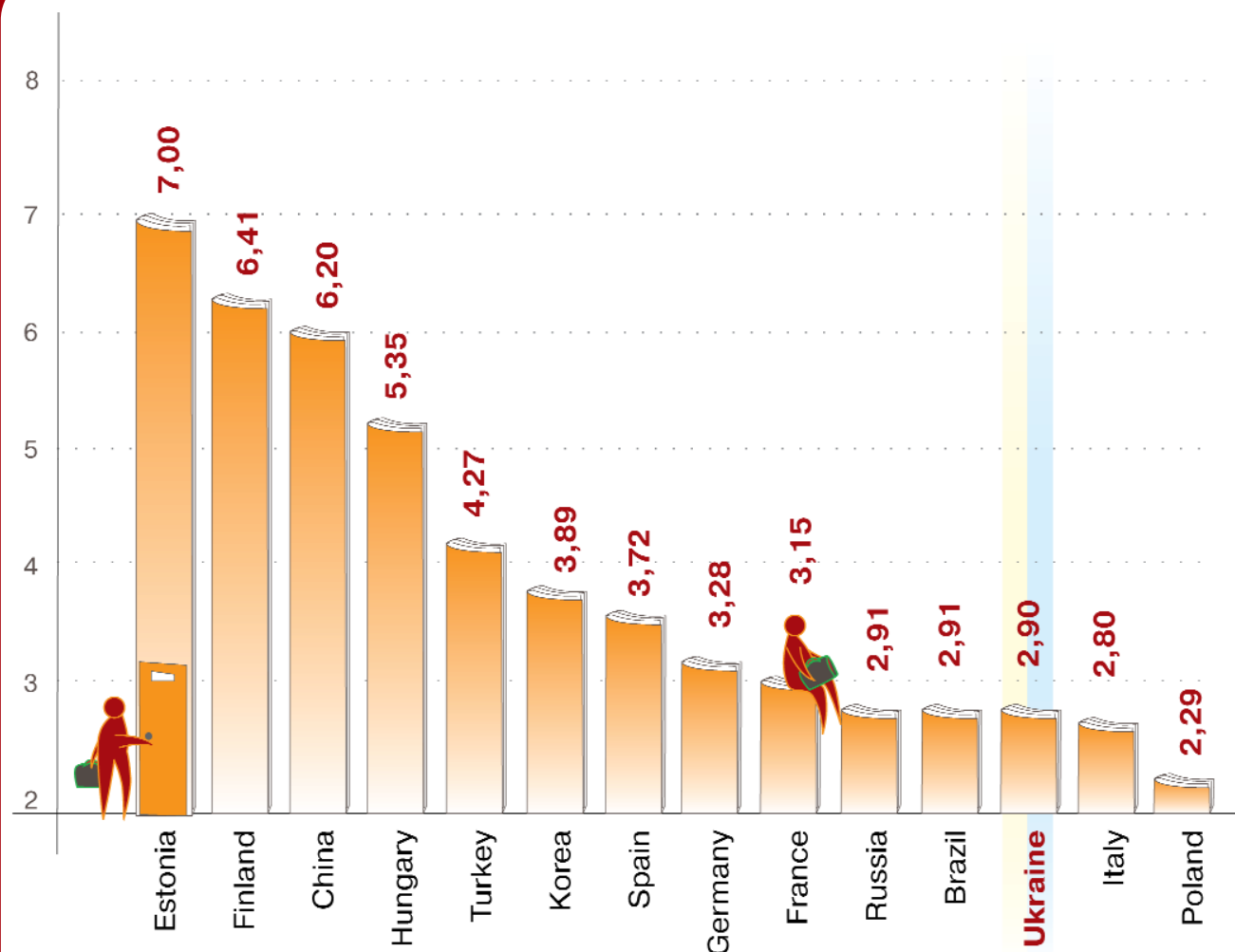


**Olga Makara,**  
candidate of economic sciences

# Estimating the effect of legislative and regulatory policy on businesses competitiveness

(Maximum 10 Points)

## Effect of legislative and regulatory policy on businesses competitiveness



## The reasons for negative estimates of the effect of legislative and regulatory policy on businesses competitiveness by Ukrainian business community:

1

The legislative and regulatory policy in Ukraine **LACKS PURPOSEFULNESS, CONSISTENCY, and PREDICTABILITY**, i.e. the major factors determining business confidence in government.

2

**INEFFICIENCY OF REGULATORY REFORMS** under which a certain number of regulatory acts have no effect whatsoever, and a significant portion of them hinders regular course of business.

3

**LACK** of the transparent and clear **LEGAL FRAMEWORK** for the business combined with some administrative **IMPEDIMENTS** to introducing laws.

4

**WEAKNESSES** in registering businesses, as well as granting permits and issuing licenses.

5

**THERE IS NO PROGRESS WITH TAX REFORM**, neither are any steps taken to improve the reporting system.

## Foreign experience

**Estonia** shows the best ranking with regard to government credibility in the legislative and regulatory sphere. This country was the first among the post-soviet countries to become one of the top-20 competitive countries, leaving some of the well-developed European countries far behind. One of the reasons for such a rapid growth was awareness of the need for creating the most favorable conditions for business development. Successful anti-corruption measures, well-thought-out macroeconomic and financial policy, as well as support for high-technology production enabled Estonia to pave the way for using competitive advantages. At present, Estonia is in its intensive transition to knowledge economy. However, even despite emphasizing technologies and innovations, the business efficiency factor remains one of the fundamental principles of development. Estonia is one of the world's top-ten competitive economies in terms of rankings regarding the quality of regulatory policy, access to loans, trade barriers, tax impact on incentive to development and overall efficiency of tax policy.

**China** could be cited as another illustrative example. The government here is responsible for developing and releasing the main regulatory directives, as well as strict monitoring over their enforcement. State regulation significantly affects the conditions of business development, and this effect is beneficial, which is supported by the fact that China has improved its position in the global competitiveness ranking by moving up from 31 to 19. Chinese government efficiently applies all possible regulatory policy levers and creates legislative framework for entrepreneurship. However, the civil society institutions, i.e. nongovernmental organizations and public associations, are virtually deprived of being able to affect the economic policy. State and bureaucratic, rather than business interests prevail in the country. Ukraine witnesses just the opposite: by not observing its main principles of legislative policy in the realm of entrepreneurship development (practicability, adequacy, efficiency, and transparency) the state hinders business development, yet, business is becoming more active according to the market scenarios.

## Effect of regulatory and legislative policy on the overall competitiveness of Ukraine

Provided the adequate state regulatory and legislative policy is introduced, it may ensure the efficient functioning of market mechanisms, create reliable legal environment to implement private initiative, promote competition and law observance. The Ukrainian legislation stipulates that the state regulatory policy is aimed at prevention from adopting impracticable and inefficient in terms of economy regulatory acts,

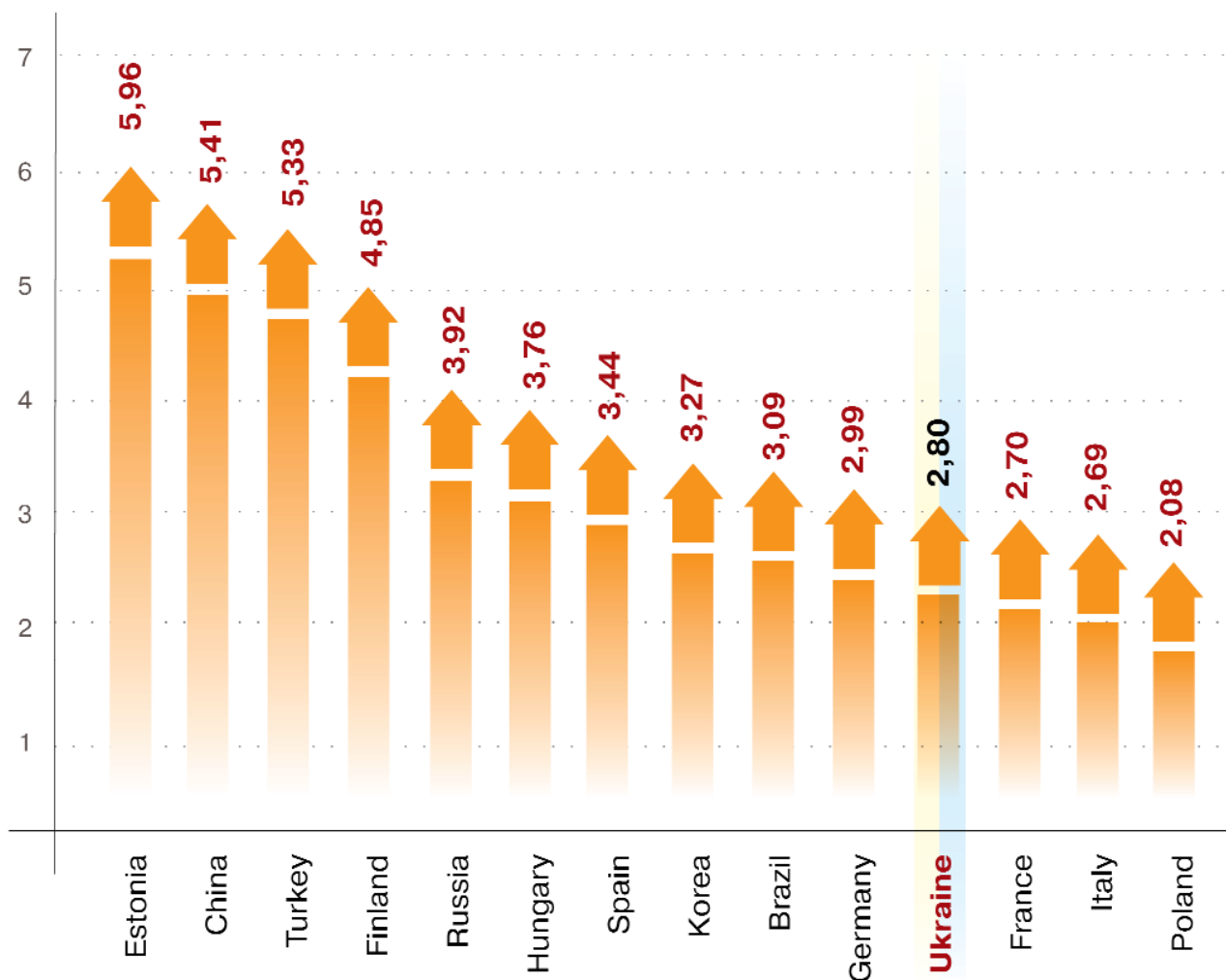
minimizing involvement of the state into entities' activities and removing obstacles to implementing business activities. In the event that in the course of regulatory policy the principles of practicability, adequacy, efficiency, harmony, predictability, transparency, considering public opinion, are complied with, the regulatory reform promotes improvement of business climate. This is common for all the EU.



# Adaptability of government policy to changes in economy

(Maximum 10 Points)

## Adaptability of government policy to changes in economy





## Foreign experience

**Turkey** is a perfect example of a country aggressively pursuing its objective to join the European Union. The main progress in adjusting the government's policy to changes in Turkish economy took place due to meeting the requirements set by the European Community to governments planning to join the EU regarding adapting the legislation and implementing economic reforms. This is the only way for new member countries to obtain the advantages provided by EU membership.

**Polish** government has substantially ceased measures aimed at business climate support. Indices formed on the basis of indicators of business environment started deteriorating and dropped by some points against the average trend typical of the entire country even back in 2004. This country's business is not perceptive of the government's messages regarding reference points and prospects for future development. The society starts being discontented with government economic policy. This is another fact to support the idea that ignoring regulatory factors leads to losses and further decrease in overall ranking of the country's competitiveness.



## Ukrainian government policy is incapable to promptly adapting to changes in economy due to:

country's political instability, which results in economic issues being solved in accordance with a residual principle: in 2006, the government and parliament substantially **SUSPENDED THEIR EFFORTS** regarding legislative substantiation of economic policy;

**OVERCOMPLICATED** and over-formalized decision-making **PROCEDURE** in the course of business activity deregulation;

**LACK OF EXPERTS** qualified enough to perform the qualitative analysis of regulatory impact, efficiency control, review and classify regulatory documents;

**LACK** of feedback, **DIALOGUE** between government and society;

**LOW PACE** of bringing the domestic legislation in conformity with the requirements of EU.

1

2

3

4

5

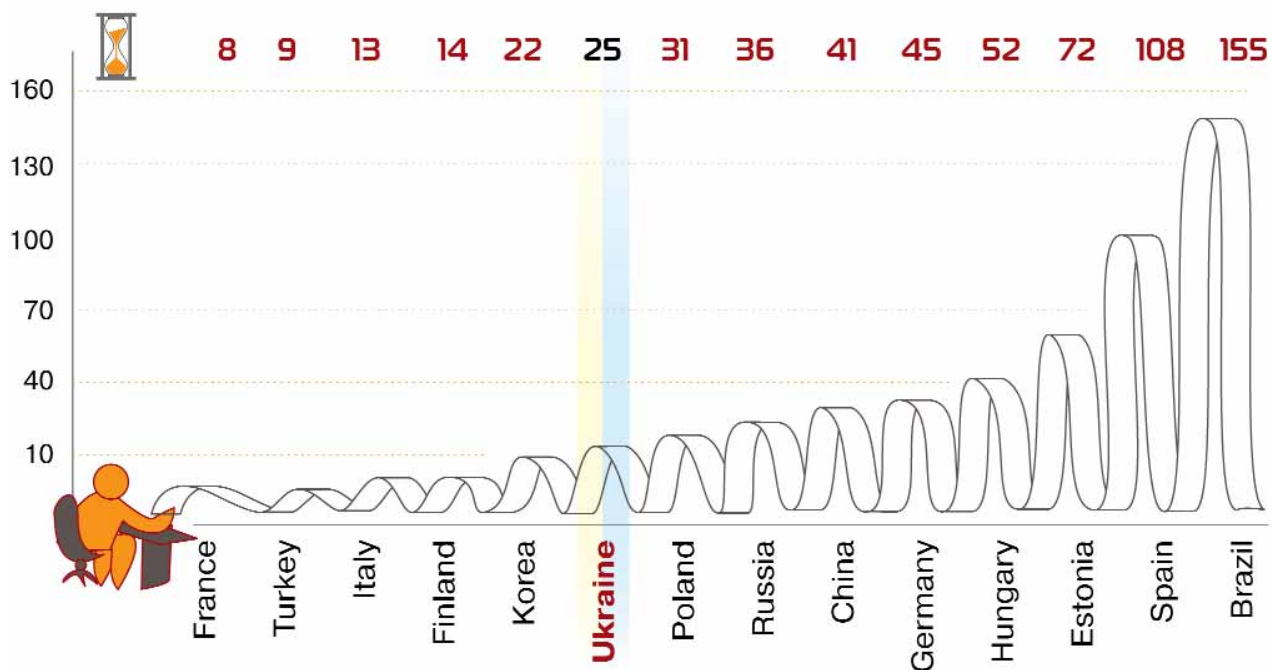
## Effect of adaptability of government policy on overall competitiveness of Ukraine

Investors believe the main factor that will promote competitiveness development is sustainability and predictability of government policy and legal environment. However, this sustainability only implies being able to forecast operating results, rather than the idea that legislation does not need to adapt to changes in economy. Building up a more up-to-date public administration system with national legislation improved will only increase the overall country's competitiveness. Ukraine has a number of burning economic issues that must be solved in terms of legislation; however, there have not been any changes made to the legislation for the past year.

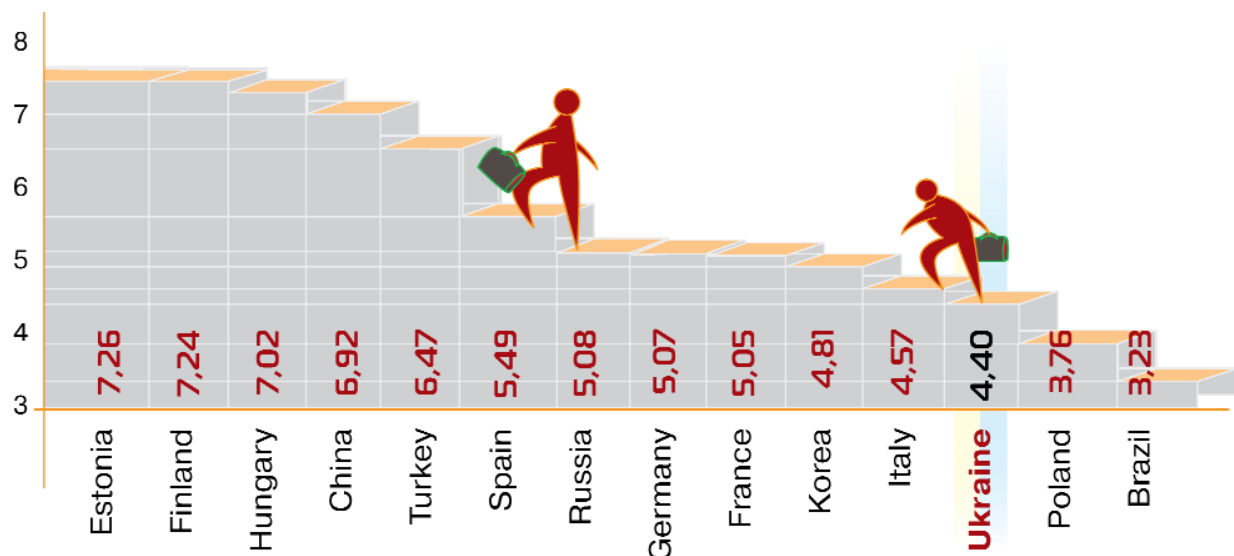
Developing and introducing efficient changes to the tax system may promote the development of national entrepreneurship competitiveness provided the principles of law supremacy are observed and the world's best practices in building up efficient taxation models are taking into consideration. Broadly, legislation shall be reformed according to the practice of EU and WTO member countries.

# Starting up a new business

## Number of days for business registration



## Easiness of starting up new firms (Maximum 10 points)



## Starting up a new business in Ukraine is not easy because:

1 Introducing a «single window» registration procedure has not been completed.

2 Many business activities **REQUIRE ISSUING SPECIFIC LICENSES** and/or granting permits. The procedures for issuing licenses and granting permits are over-bureaucratized, time-consuming and awkward (as of today, 150 laws, 500 government regulations, and over 150 other local and industry-specific regulatory documents are effective in the sphere).

3 Establishing some types of legal entities **REQUIRE** double registration.

4 A number of **UNREASONABLE REQUIREMENTS** to the information necessary for state registration.

### Foreign experience

In 2005, the new business start-up period in **Hungary** significantly increased (from 52 to 72 days). However, this did not convey any adverse message to the business: the number of respondents approving the legislative support for starting up a new business even increased. It demonstrates that registration period is an important, yet not the major factor indicating that business environment is favorable for new firms.

**Italy**, where registration terms are rather insignificant, ranked 52nd with regard to legislative support to new firms entering business. In recent years, Italy has experienced a drop in efficiency of its government and social institutions, which is fatal for the economy. Italy ranks last among the «old» fifteen EU members. It ranks even lower than most countries that joined the EU later.



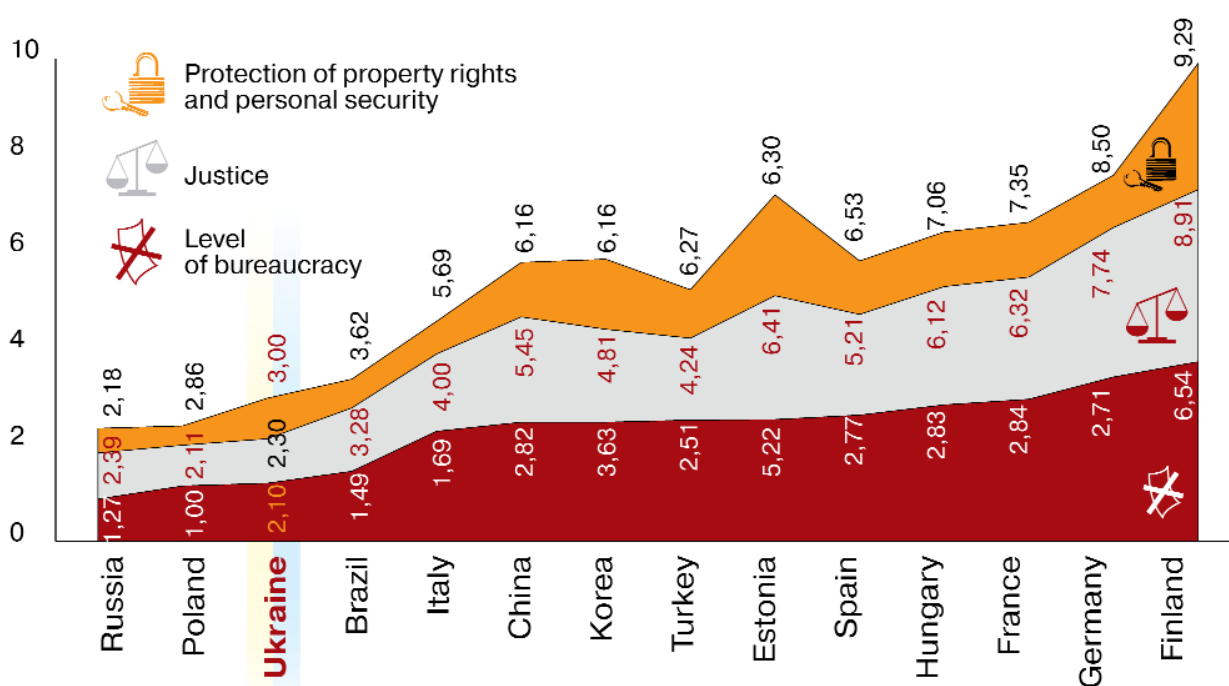
### Effect of easiness of business start-up indicators on the overall competitiveness of Ukraine

The ability to enter the business easily is one of the main indicators of regulatory policy. If a state declares support for small and middle business, it is supposed to take care of straightforward registration process with minimized number of permitting procedures. However, at present, according to surveys regarding legislative support for new firms establishment procedures Ukraine rank extremely low, which is the evidence of the adverse environment for a new business.

The precondition for sustainable economic development is a radical change in the role of the state, which is supposed to arrange for fast and easy start for entrepreneurs. The «rules of the game» in business need to be changed in a way that will allow entrepreneurship to spread massively around the country; and this is the only way to prevent Ukraine from losing in global labor distribution and to make sure Ukraine does not lose the competitive advantages it still has.

# Quality of state institutions

## Quality of state institutions (Maximum 10 points)



## Effect of quality of government institutions on the overall competitiveness of Ukraine

Availability of public justice, independence of judicial system, guarantees for personal security and protection of property rights, and the low levels of corruption and bureaucracy in the country are the major preconditions for shaping the competitive economy. It is obvious, however, that in order to improve the situation in the country, the only regulatory or economy policy levers are not sufficient.

Bureaucracy cannot be removed by means of orders or laws. The only chance to get rid of it is to create such an environment that would make it impossible to use the excessive number of rules and regulations by the officials for their own benefit. Ukrainian bureaucrats have virtually privatized the government functions and started cooperating closely with large private capital,

and in some cases with organized crime, which significantly hinders the horizontal development of business and increase in the country's competitiveness; yet, it provides the opportunities for accumulating capital both to individual officials and bureaucrats, and large financial industrial groups. In order to build up the competitive market economy based on private property and supremacy of law, it is vital to ensure the efficiency of all government institutions and perform administrative and judicial reforms. Manageable bureaucracy, increased public confidence and credibility of judicial system and government on the whole, revised relationships between the state and business guarantee an increase in efficiency of economic system and the country's competitiveness.

## The main reasons for weakness of state institutions in Ukraine:

1

**INTERESTS OF GOVERNMENT** (political elite having direct access to the country's resources) **PREVAILING** over the citizens' rights; lack of the proper balance between the state, the civil society, and the market;

2

**WEAK MANAGEMENT INSTITUTIONS** accompanied by lack of transparency and accountability, which lead to overwhelming bureaucracy and corruption; delayed administrative reform;

3

**MONOPOLIST TYPE ECONOMY DOMINATING**, under which government economic policy becomes subject to abuse ensuring protection of interests of government, its allies, or separate business groups. This means that some financial industrial groups use the state for their own business benefit;


4

**LACK** of clear government **CONCEPT** of private property right protection; the versions of laws «On Property» and «On Joint Stock Companies» have not been adopted;


5

urgent need for reforming judicial system: lack of institutional independence of courts and judges from legislature; lack of disciplinary control over judges; the practice of court hearings in the defendant's absence with judgment rendered by default; inefficient process of legislative enforcement.

## Foreign experience



**Hungary** ranks first among the post-socialist countries, i.e. its public institutions efficiency indicators rank higher than the general index of economy competitiveness growth. Hungary has been consistently implementing its judicial and legal reform since early 1990ies. Moreover, it demonstrates low levels of bureaucracy and legally protected property right. However, the recent political clashes show that the underlying civil society in this country also leaves much to be desired, and there are some reasons for drop in public institutions quality ranking.



All the three indices in **Estonia** show nearly the same high level of trust of people to the state institutions. The country's government performs deregulatory policy, takes some reasonable steps aimed at protecting private property rights; they have successfully accomplished their judicial reform. Furthermore, Estonia has one of the lowest bureaucracy levels among the countries monitored, i.e. the government bodies have very limited opportunities to involve into economy.

## CCU's Recommendations

Ukraine may lag well behind the rest of the countries monitored in terms of quality of policy regarding regulatory, budgetary, and taxation spheres, as well as development of government institutions and appropriate quality of commercial and social legislation. Unless the situation changes, not only may it result in preservation of the overall low level of country's competitiveness, but also in business deprived of opportunity to contribute to increasing country's competitiveness. Thus, the «better» public institutions are, the more significant role may and will play private business in economy and social life. In order to prevent Ukraine from losing the potential maintained by international experts, Ukraine needs to take a number of drastic steps immediately:

- carry out administrative reform to ensure efficiency of the government institutions to promote radical changes in relationships between business and government;

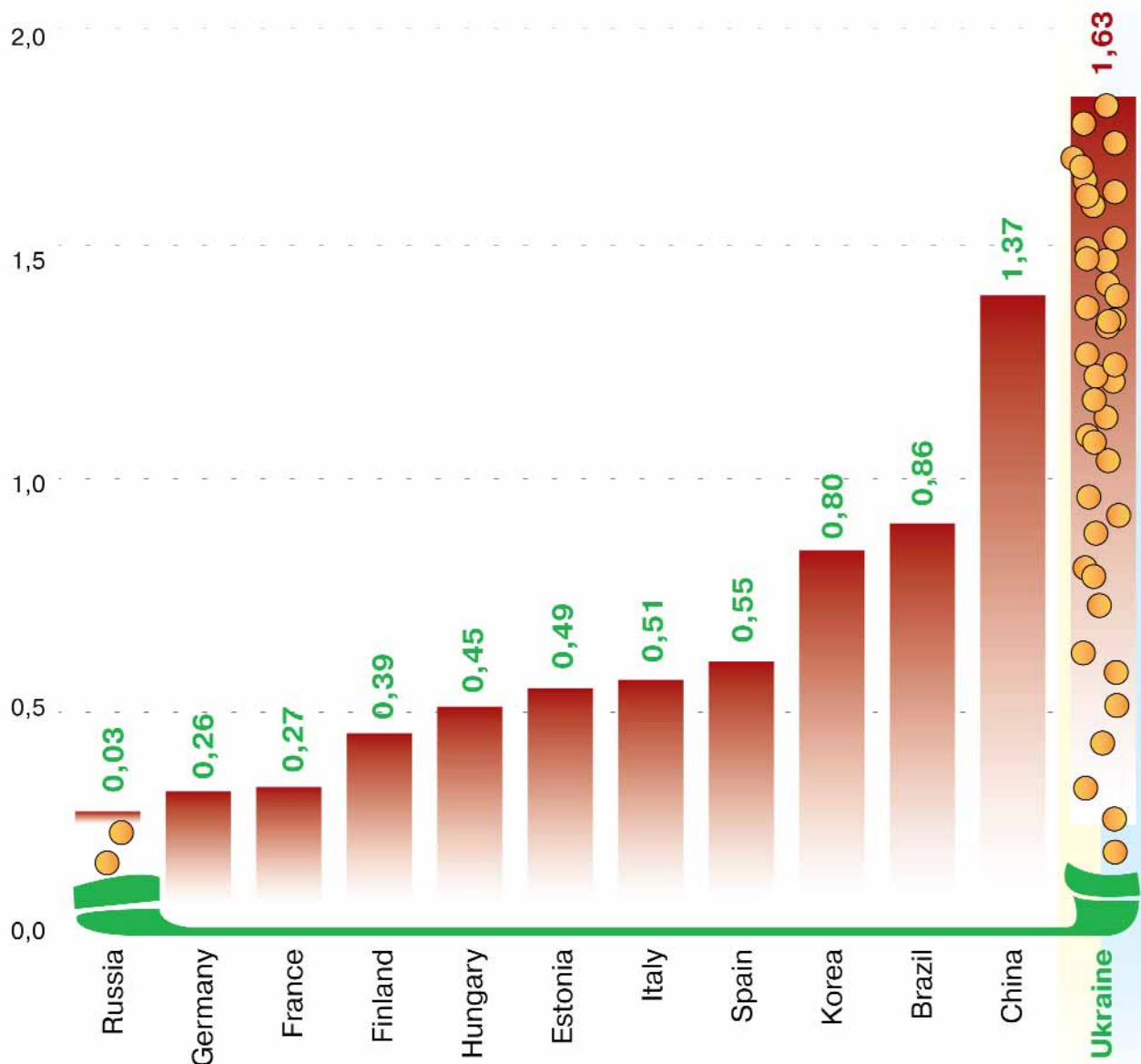
- adopt Tax Code in order to build up a clear and regulated tax base and organize tax administrating;
- finalize procedures for deregulation of business activities and ensure implementation of Ukrainian laws regarding registration and approval system;
- introduce practicability, transparency, predictability, efficiency and sustainability principles in legislative policy. One of the top priorities is reconciliation of contradictory regulations in Civil and Commercial Codes of Ukraine;
- improve corporate law in order to protect private property rights; approve the new version of the Ukrainian Law «On Property» and the Law «On Joint Stock Companies»; make amendments to several other laws;
- carry out reform of judicial system, which would ensure its independence, responsibility, and competence, as well as substantially reform the legislative enforcement system, since currently there are significant problems ensuring court decision enforcement.



Sergiy Zakharenko, candidate of economic sciences  
Daria Astapova, junior researcher

# Investments into telecommunications

Countries ranked by investment into telecommunications, % of GDP, 2004





**According to the World Economic Forum Competitiveness Report 2003-2004, Ukraine ranked 70th in terms of level of information and communication technology (the «ICT») development out of 102 countries measured.**

Despite the large volume of the investments, they are **INSUFFICIENT** and **INEFFICIENT** due to the number of reasons:

**1**

**INCONSISTENCY OF GOVERNMENT POLICY**, including investments into communications and ICT regulation;

**2**

**LACK OF INCENTIVES** from the government to promote investments into the industry;

**3**

government **LACKING STRATEGIC VISION** of development of the industry;

**4**

**TIME LAGS** between development of the industry and the approval of the respective decisions by the government;

**5**

**INEFFICIENT PROTECTIONISM POLICY** regarding state interests on the telecommunications market.

**However, Ukraine ranked first among the benchmark countries due to:**

- high business profitability in telecommunications industry;
- sustainable positive dynamics of investing in the industry due to its high profitability.

**Significant investing promoted positive changes on the telecommunications and ICT market:**

- information and communication technology has become one of the most dynamic industries in Ukraine (after the crisis the Ukrainian IT market grows by around 30% per year);
- the market is widely segmented, which provides the opportunities to increase its growth rate;
- IT companies continue to increase their potential aggressively by attracting loan capital, issuing bonds, and CLNs;
- during 2000-2004, average annual increase in the number of computers was 25%; the rate of construction of primary communications lines grows; there is also an increase in the level of digital technology availability throughout the country's cities and towns; the average annual growth rate for Internet has reached 50-55%, while the total number of Internet users has more than tripled for the past two years.

## Foreign Experience

According to the information provided by UNIDO Technology Foresight Summit 2003, the average annual growth of the global information and telecommunication technology market for the last decade was 6-8%, whereas for the countries like China, Vietnam, and Poland it ran up to 25-27%. The distribution of the market among the various world regions is quite heterogeneous, which corresponds to their respective overall economic development. Thus, USA accounts for 34% of the world market, Europe – 29%, Japan – 12%, and for the rest of the world it is 25%. Singapore stands out in terms of production specialization in ICT industries. ICT industries account for nearly 46% of total volume of manufacturing industry in that country. The major share here belongs to production of office and computing equipment (24%), electron tubes, and other electronic components (16%). There is no similar level of specialization in any other country even among the OECD countries, where the most specialized countries are Korea, Finland, Ireland (16%), and Japan (14%). Asia is leading in terms of ICT specialization level among the emerging economies. Thailand follows Singapore with specialization level of 38%. The ICT industries account for a meager share in manufacturing industry of Latin America, while in Africa the ICT are being developed in few countries.

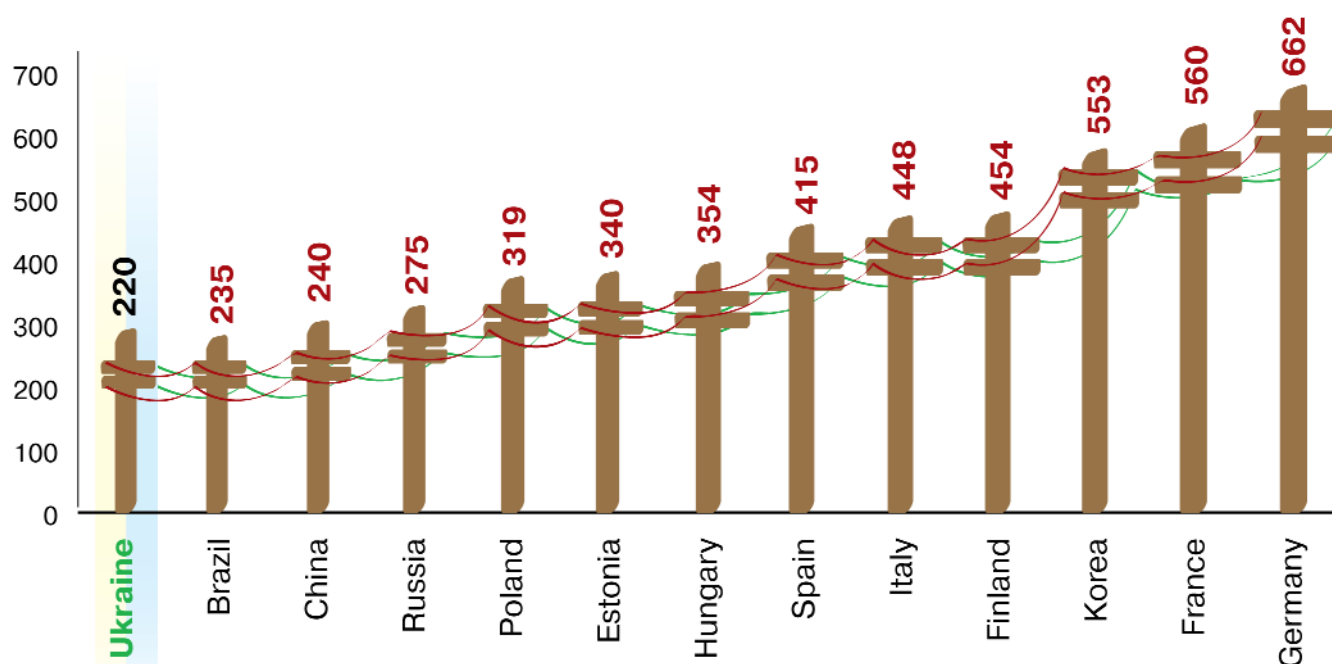
## Effect of the index on the country's competitiveness

Today, the competitiveness of the world's leading countries is promoted by the development of «new economy», which is based on hi-tech companies and businesses, primarily, in the real sector of economy, relying on information capabilities of global telecommunications. At the same time, lagging behind other countries in ICT sphere impairs scientific and technical achievements, hinders their transforming into technologies, and substantially reduces the country's competitiveness.

The projects of the Ukrainian National Program for Electronic Communication Development aimed at promoting IT industry are not fully financed (it was substantially accomplished only during 2000 and 2003).

# Number of fixed telephone lines

Number of fixed telephone lines per 1000 people, 2004



Despite such a low showing of Ukraine, it witnesses an increase in absolute and relative indices of number of telephone lines during 2000-2004. The total number of telephone lines in 2004 compared to 2002 was 100.9%, with residential telephone lines accounting for 105.1%.

## What makes Ukraine lag behind:

Fixed-line telephone communications remain the **MOST MONOPOLIZED TELECOMMUNICATIONS SECTOR**, i.e. 8.5 million out of 10.6 million subscribers are served by Ukrtelecom with the share of private operators not exceeding 20% of the market.

**STATE-RUN COMPANIES** (Ukrtelecom and Utel) **CONTROL** the lion's share of the most lucrative market segment, i.e. international and intercity communications services.

Telecommunications are **UNEQUALLY DISTRIBUTED OVER THE COUNTRY'S TERRITORY** among entities and individuals; telecommunications are scarcely available in rural and upland areas with their relative availability being two or three times lower than the average across the country.

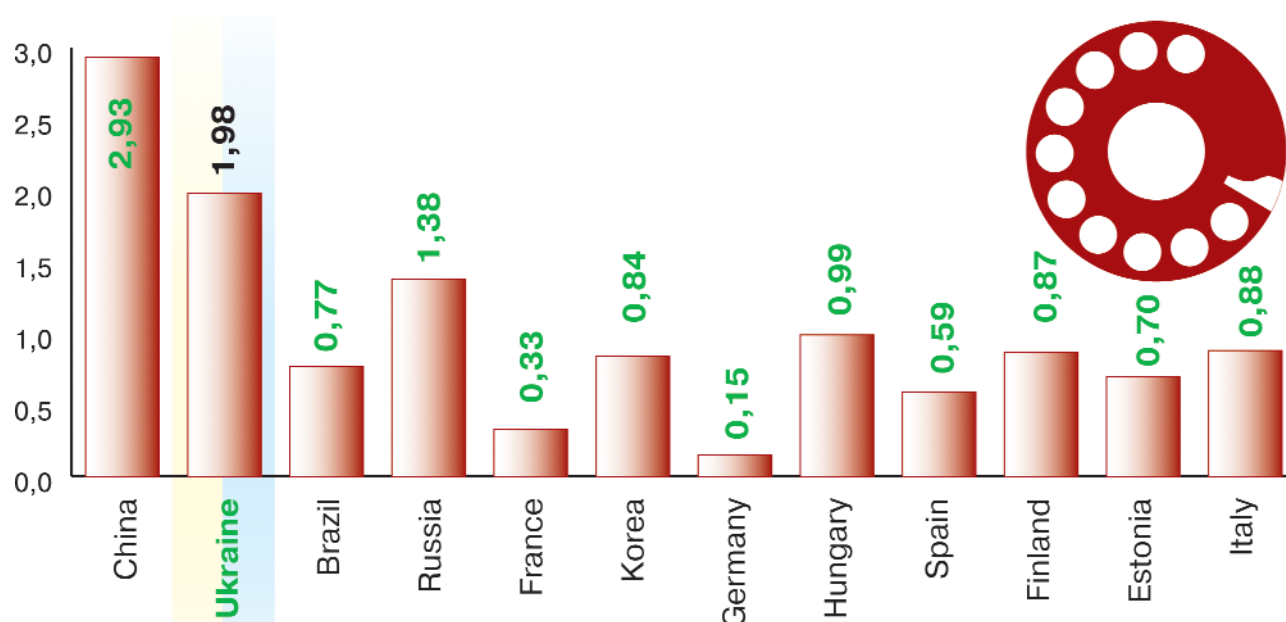
**LACK** of government **SUPPORT** for the operators in rural and upland areas.

## Forecast

Ukraine will not be able to catch up with Europe regarding the availability of fixed telephone lines even after Ukrtelecom is privatized, and the ratio between the fixed-line and mobile communications will shift in favor of the latter in the long run.

# Cost of international calls

**Cost of international calls from fixed-line telephones (USD per 3 min. at peak hours for an international call to the USA, 2005)**



## Reasons for Ukraine lagging behind

According to telephone line operator OJSC «Ukrtelecom», the high cost of international calls is the result of overcharging as compared to other European countries.

## Effect of the index on business intensiveness and manageability

Revenues from international telephone call services account for the major share in total county's revenues from rendering international communication services, which shows that this type of international communication has the priority, particularly, in business (thus, proceeds from mail service accounted for 2,75% of total amount of proceeds from communication services, telegraph accounted for 1,81%, computer-based communication accounted for 2,31%, cellular accounted for 14%, and fixed-telephone communication accounted for 77,67%).

Thus, high tariffs adversely affect the country's business development and hinder the full-scale communications process and business relations with foreign partners.

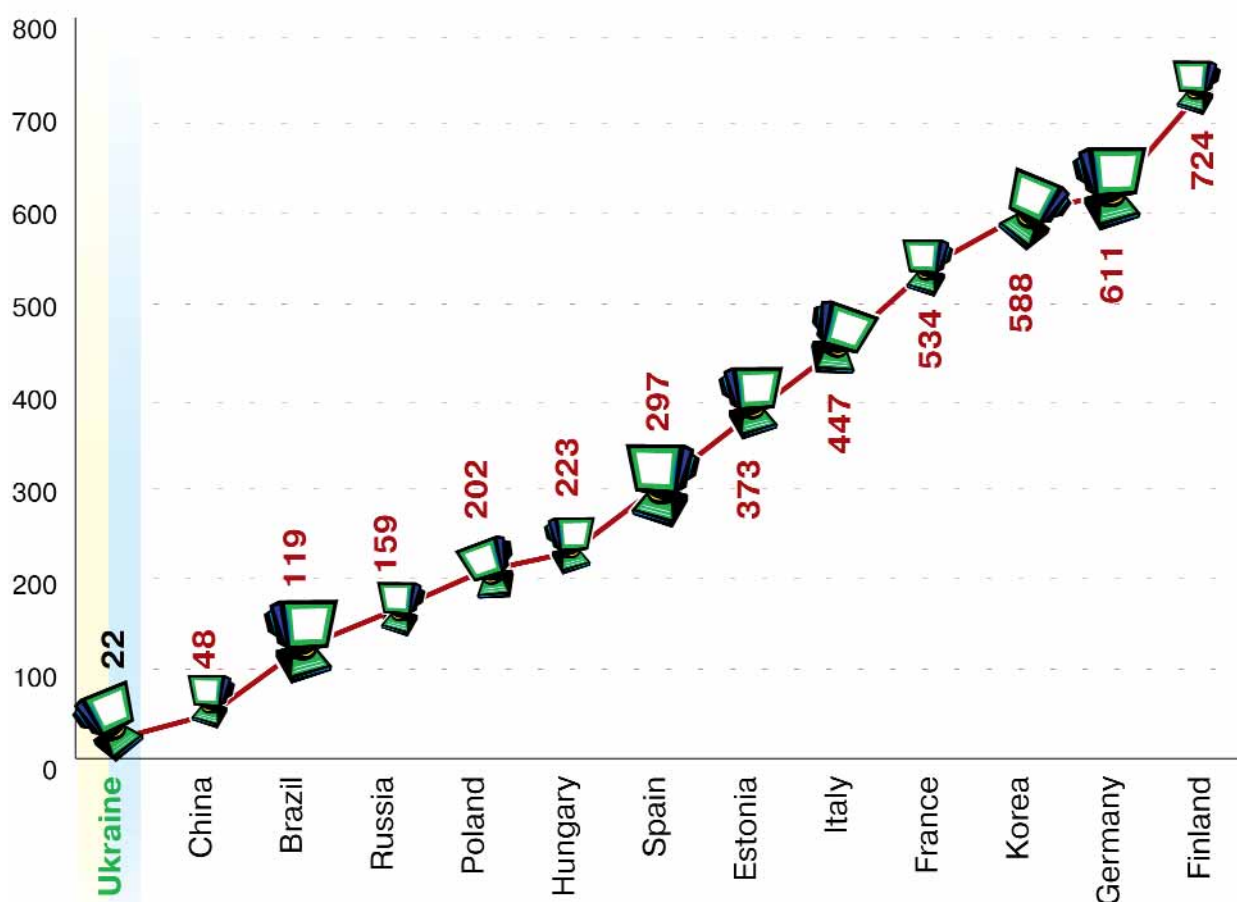
## For your reference

The cost of international calls includes value added tax (VAT) on the basis of the Law of Ukraine «On Value Added Tax», which was 20% in 2004. (1 sec. = USD 0.0092; 1 min. = USD 0.6624 inc. VAT; 3 min. = USD 1.9872 inc. VAT). As of today, the new Boundary Tariffs are effective, which were introduced in accordance with the Resolution by the National Commission for Communications Regulation of Ukraine (from 15.07.2006 to 31.10.2006 and from 01.11.2006).



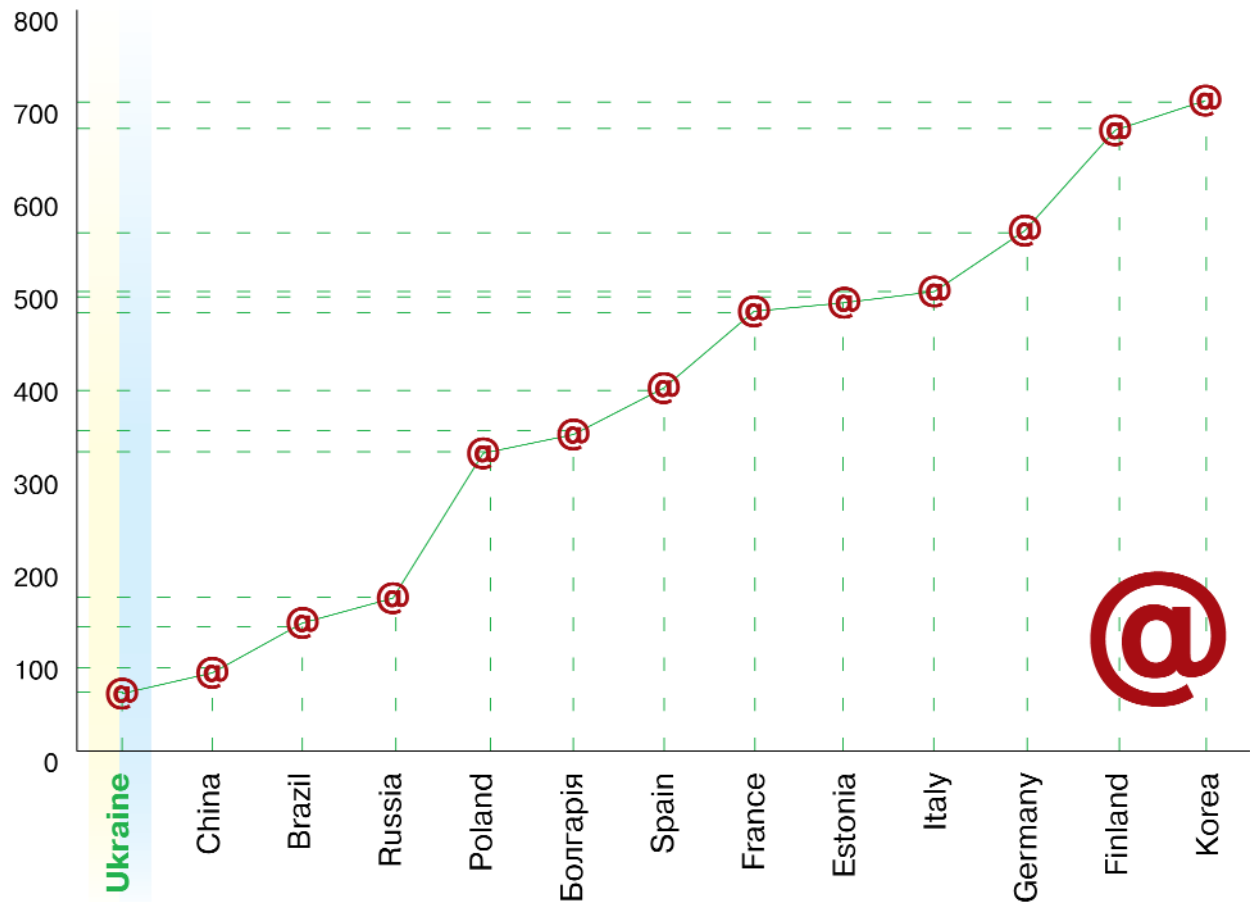
# Computerization and Internet usage

Countries ranked with regard to the number of computers per capita (per 1000 people), 2005.



The total level of computerization of the national economy is low, despite the positive dynamics of increase in the number of computers per 1000 people and the retail sales of computers.

## Number of Internet users per 1000 people



The number of Internet users has increased annually by 70% for the past 4 years. However, according to the forecasts, by the year 2007 it will only reach 10% of the country's population, which is about 4.67 million people.

### Reasons for Ukraine's poor showing regarding the number of mobile phones, PCs, and Internet users per thousand people:

- 1 **LOW STANDARD** of living of people;
- 2 telecommunications are **UNEQUALLY DISTRIBUTED** over the country's territory **AMONG ENTITIES AND INDIVIDUALS**; lack of government support for the operators in rural and upland areas;
- 3 **LACK** of government **SYSTEMATIC APPROACH** towards priority development of telecommunications infrastructure and information society.

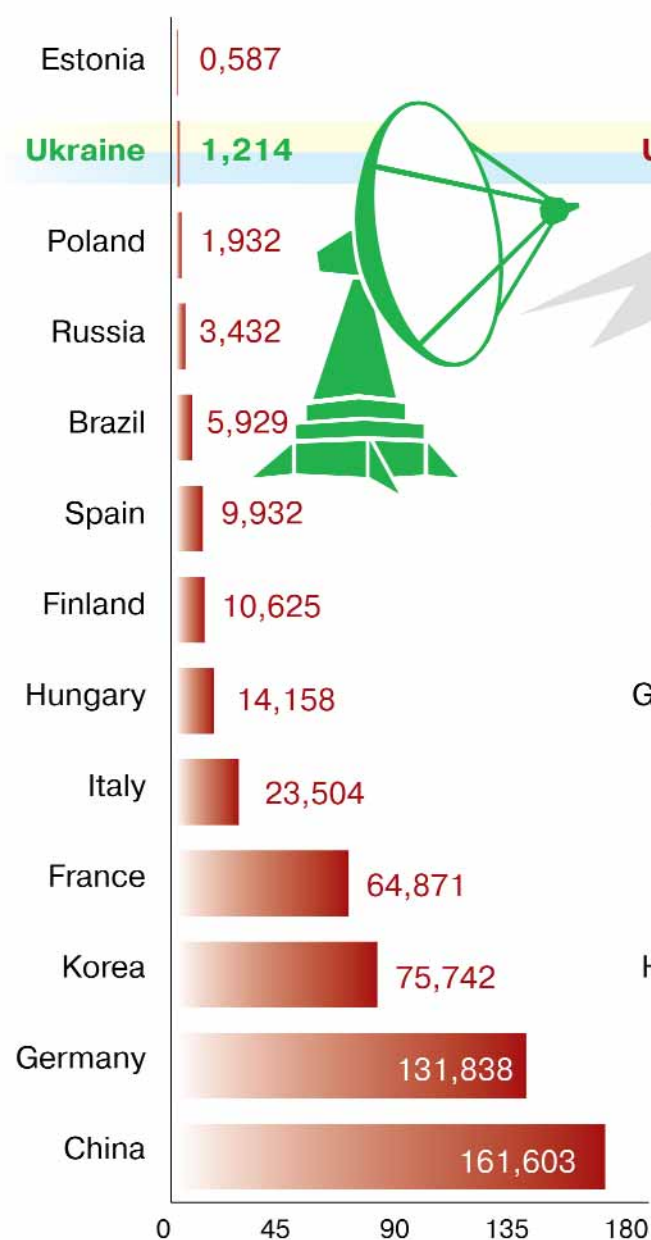
### Major factors hindering Internet access availability:

- computer base growing at low rate;
- limited capabilities of telecommunications infrastructure.

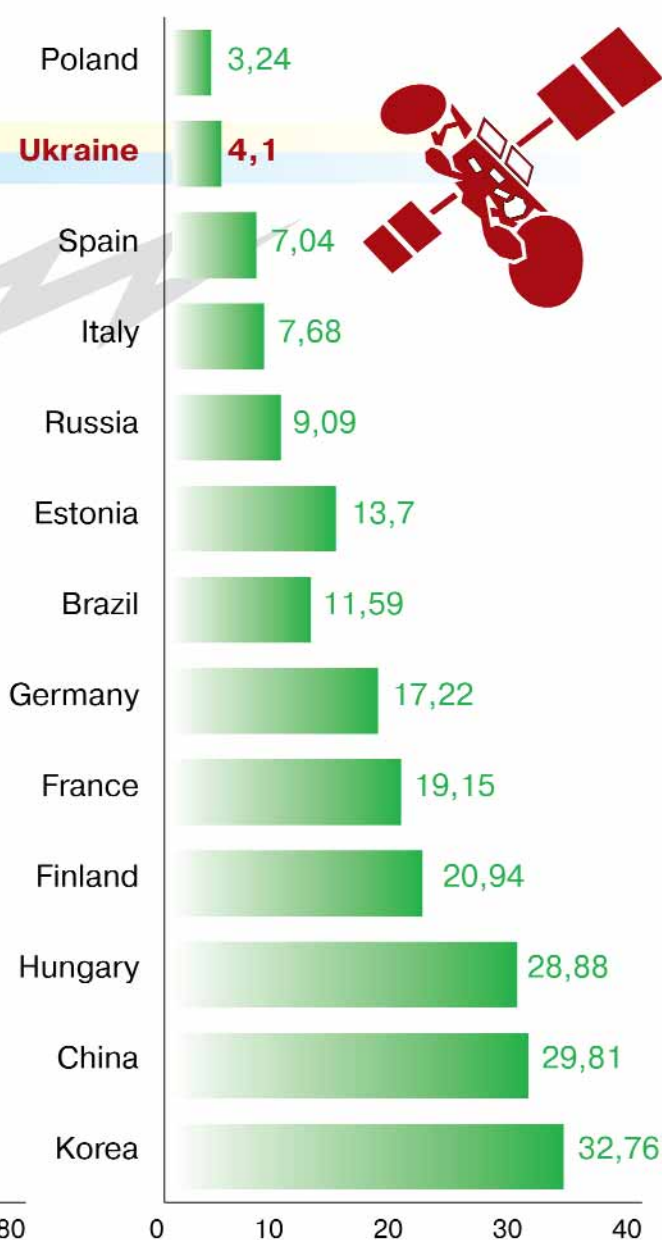


# High technology export

High technology export  
(USD, millions, 2004)



High technology export  
(% of industrial exports, 2004)





Although exports of IT services in Ukraine have been growing dynamically, the country has not been able to catch up with reference countries.

## Reasons for Ukraine lagging behind:

1

**LACK OF** government **STRATEGY** for IT industry development and protection of government interests on this market;

2

**ABSENCE OF EFFICIENT LAW-ENFORCEMENT MECHANISMS** with regard to intellectual property protection, which prevents large international companies from establishing their R&D centers in Ukraine;

3

**NEED FOR MARKETING SUPPORT** to enter international market and software localization for various countries (translation into different languages);

4

**LACK** of highly qualified **MARKETING MANAGERS** capable of bringing a high-quality software product to the international market;

5

Ukrainian executives **LACKING BUSINESS CONTACTS** with potential corporate customers;

6

**VERY HIGH FEES** of highly qualified foreign experts;

7

**LACK OF INFORMATION** on the Ukrainian scientific achievements in the IT sphere on international markets;

8

**OBSTACLES HINDERING REALIZATION** of uniform technology and investment policy in telecommunications sphere, with numerous network operators and service providers having poor investment potential.

## Foreign Experience

**China** is aggressively pursuing its national policy of increase in high technology exports. In particular, export profits of PCs in 1990-1998 amounted to USD 227 million, and in 2000 they rose to USD 10 billion. Exports have grown considerably after 1994 when the government created off-shore zones and decreased taxes to attract foreign investments. The main items on high technology exports represent products manufactured by foreign computer companies. However, China has managed to make exports exceed its imports by exporting several products: PCs, hard disks, and printers.



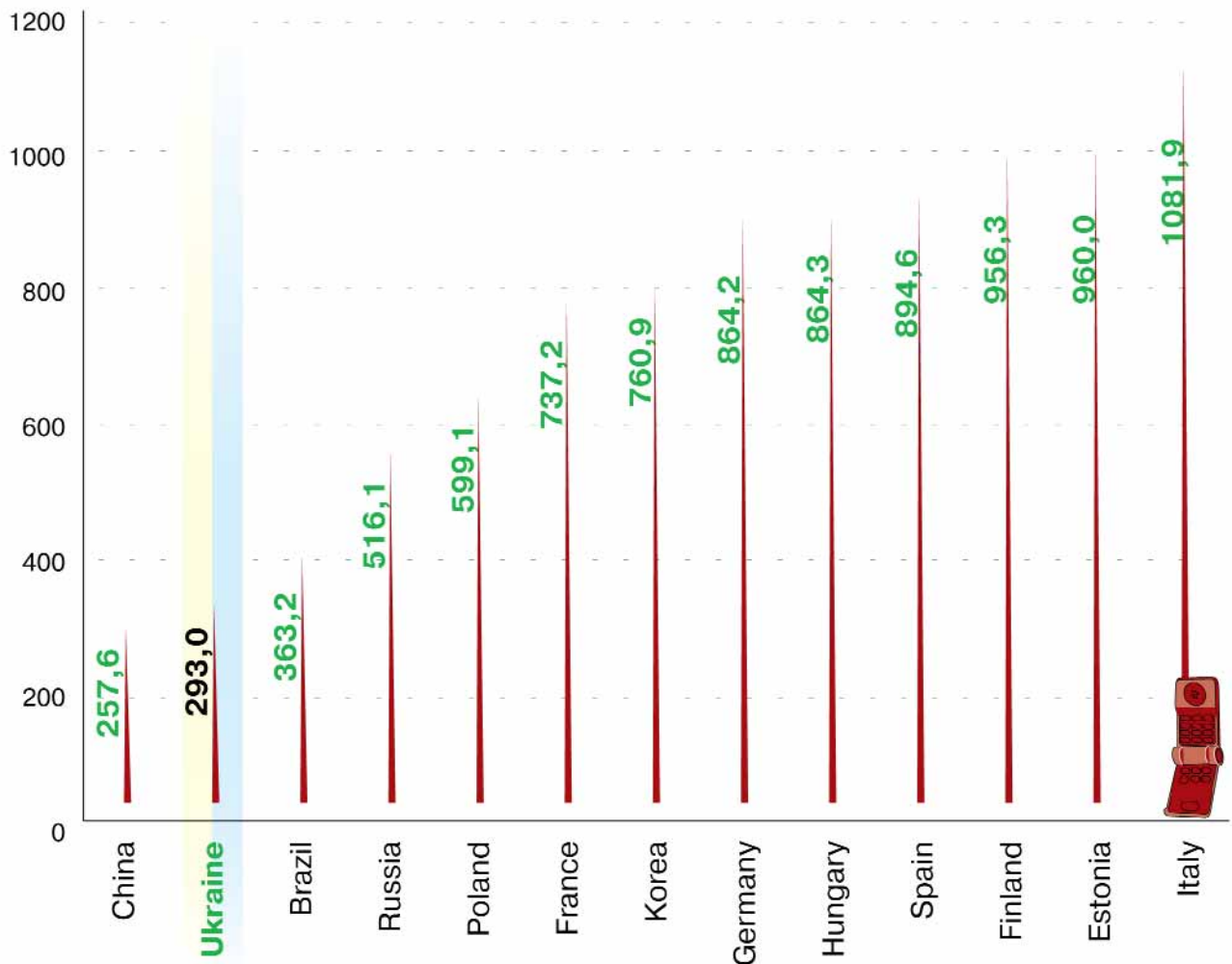
## Recommendations

Promotion of domestic IT industry on the world market and support of export companies' certification in accordance with international standards (ISO 9001 and CMMI) should become an important tool for stimulating exports. Particularly, in order to promote Ukrainian IT industry it is necessary to promote a purposeful marketing strategy aimed at improving an image of Ukraine as a country possessing highly qualified professionals and successful companies that offer their competitive IT services (Ukraine ranks 7th with regard to the number of certified programmers (23 thousand experts), yielding to USA, Russia, India, China, Ireland, and Israel). It could be advisable to develop outsourcing (off-shore programming services), under which programmers merely participate in creating a software product by request of a well-known Western firm in accordance with the algorithm provided.



# Number of mobile communications subscribers

Number of mobile communications subscribers per 1000 people, 2004



## Ukraine ranks low regarding this index despite the following facts:

1

Mobile communications in Ukraine has been developing rapidly for the past 4 years; in 2004, mobile communications in Ukraine were available to 29.61% of total country's population.

2

Mobile communications networks continue to be the most dynamic sector in the communications market; they cover substantially all the country's regional and district centers, with coverage area and number of subscribers surging up.

**Number of mobile communications subscribers tends to grow because of foreign companies (primarily, Russian) being proactive on the Ukrainian market.**

## Why Ukrainian mobile communications market continues to grow (doubled for the past 2 years):

- The market remains the duopoly in fact, since 2 national mobile operators control over 90% of subscribers (most European countries' markets feature at least three operators with pan-country coverage area).
- Lack of competition in Ukraine enables the operators to maintain higher prices to preserve extraordinarily high profitability.
- To maintain the growth rates the operators have to attract the less solvent subscribers. Thus, the client base currently grows primarily due to the owners of prepaid mobile packages showing low average monthly service consumption.

**Presently, mobile communications leave other types of communication far behind in terms of growth and development of coverage area growth and account for 20% of total volume of telecommunications market.**

## CCU's opinion

Overall, the domestic ICT market is undergoing its intensive formation stage. The increased number of computers triggered an increase in volumes of informatization services. However, a role of information and communication technologies in social and economic development must also be increased, since they have not been applied aggressively enough in Ukraine so far in order to develop the modern forms of relations existing in the world among the consumers (C2C), the businesses (B2B), and the government bodies (G2G). Ukraine, notwithstanding the recent rapid IT development, has not been able to reduce a gap between the mature economies and Ukraine in terms of availability of information technologies for the economy and the society.

### Forecast

Despite some lagging behind, Ukraine has significant scientific, technological, and human potential to create on its own territory highly-developed information and communications infrastructure with subsequent full-scale integration into global information society. It is obviously a positive sign that Ukraine has overcome the considerable technology gap between its market and the leading Western ICT development centers. Intellectual capital accumulated in Ukraine in the sphere of software and system integration enables our country to try to claim its position among top-ten countries manufacturing high technology IT products.

Inna Shovkun, candidate of economic sciences  
Taisia Shchedrina, candidate of economic sciences

# Total expenditure on scientific, research and development work (R&D)

Countries ranked by total expenditure on R&D, % of GDP



## Reasons for Ukraine lagging behind benchmark countries:

1

**LIMITED FUNDING** for science and implementing innovations in production (under the effective legislation, education-related expenditures shall not be lower than 10% of GDP, whereas actual spending ranges from 4 to 5.6% of GDP; expenditures on R&D should amount to 1.7% of GDP, whereas the actual spending amounts to 1.37% of GDP. Funding for innovation activities should be at least 10 times higher than spending on R&D, whereas their actual ratio in Ukraine is 1:1.15);

2

**LACK** of reliable **SUPPORT OF THE LEVEL** (regarding GDP) of expenditures on fundamental science;

3

**NONCOMPLIANCE WITH PROVISIONS** of the Law of Ukraine «On Research and Technical Activities» dated 1998 #284-XIV (Article 6. Guaranteeing 30% of the total expenditures on science of the Ukrainian State Budget for funding the state research and technical programs according to their priorities) – the programs funding is suspended or delayed for the uncertain term.

## Foreign experience

The countries – leaders on the high technology production market – exercise strict control over the share of expenditures on fundamental science within GDP.

**Israel** ranks first in the world with regard to level of R&D funding – 4.3% of GDP (USA – 2.2%), as well as regarding the number of research publications per capita. The country ranks second with regard to the number of graduates and fourth regarding expenditures on education (7.6% of GDP). Every single dollar invested into Israeli science brings 15 dollars from exports of high technology products manufactured in the country. Israel ranks second best in the world next to Silicon Valley, USA, among the world hi-tech centers. The country derives USD 13-14 billion (1993 – USD 4.7 billion) annually from sales of its hi-tech products.



## Effect of the index on the country's competitiveness

As a result of the above-mentioned, Ukraine experiences a gap between investing money into education, knowledge production and its application. Moreover, the scope of our country's participation in the world's hi-tech markets is significantly lower than it should be. However, the volumes of R&D solutions aimed at applying the most promising technology processes, particularly, biotechnologies, IT, wasteless, aerospace, and other technology processes of the future have increased recently.

# Business expenditure on R&D

Countries ranked by business expenditure on R&D, %





## There are several reasons causing low interest of the Ukrainian business in R&D solutions:

1

**LIMITED DEMAND** for R&D solutions on the part of the real sector due to the loss of the domestic investment market;

2

**LACK OF IMPLICATION** of indirect innovation stimulation **METHODS**, particularly, enhancing ties between science and production;

3

science being **SEPARATED** from the real sector (71.1% of organizations belong to the government and the ratio has been the same since 1995);

4

**LACK OF FAIR COMPETITION** among the enterprises on the domestic markets, most of which are monopolized;

5

**DROP IN** and subsequent unstable increase in demand for innovation goods and services on the domestic market;

6

**LOW LEVEL** (especially on the early stages of reforms) of competitiveness of the domestic goods and services, which, in turn, results in low level of production capacities utilization and deficit of working capital to order R&D and new technologies;

7

**WEAKNESSES IN TAX LEGISLATION.**

The main sources of funding for the science are a state budget, funds received from the domestic and foreign customers (the latter are interested in cooperating with Ukrainian science which keeps high level of scientific potential). The major customer of R&D in the real economy sector is industry, which accounts for 46% of total expenditures on R&D, including manufacturing (41%), predominantly high-technology production. Among the foreign sources, the biggest contributor is Russian Federation investing in joint projects.

## Foreign experience

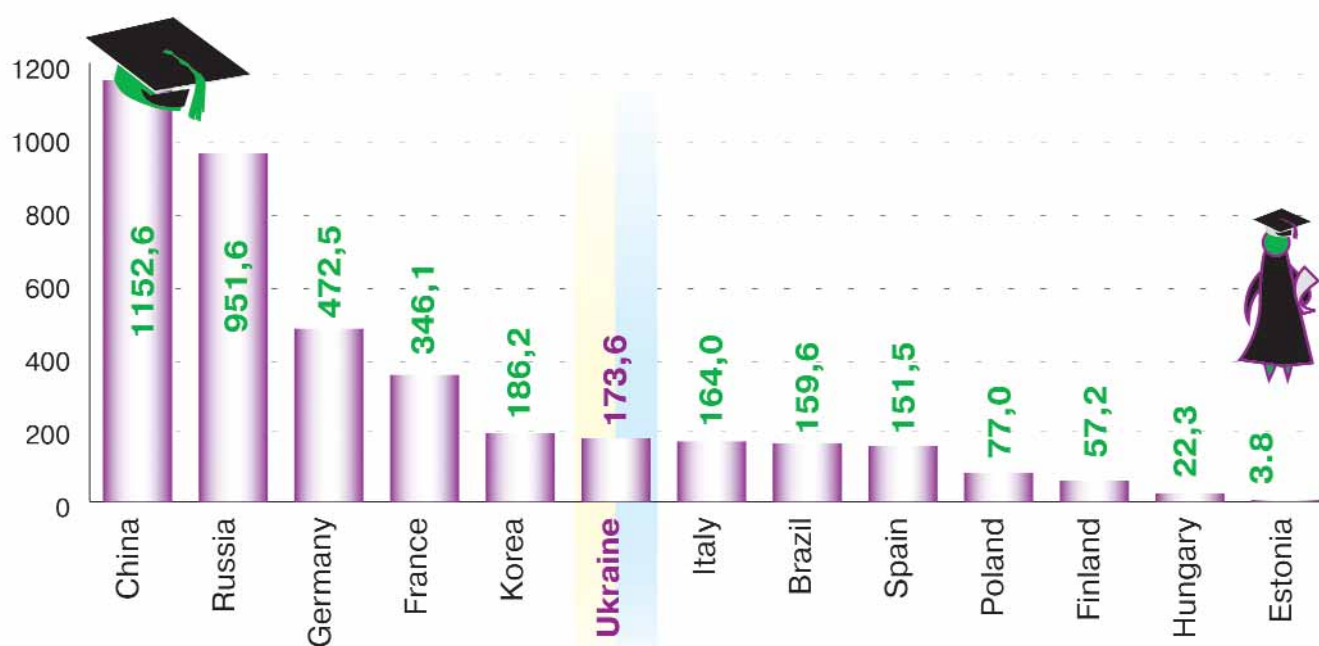
The innovative economies concentrate the major share of R&D solutions in corporate sector, mostly private; particularly, in the **EU** countries the portion of such R&D accounts for 65%, in Japan – 71%, **USA** – 75%, **Romania, Czech Republic**, and **Slovakia** – 50-55%. Great Britain and other countries with new economy based on application of knowledge in production and services sphere, do not have any specific science industry at all, scientific activities are concentrated in corporations, firms, universities, and private laboratories included into innovation clusters.

**Finland** experiences high concentration of business investments into science and R&D, especially in industrial electronics (50%). This fact provides explanation to why Finland ranks high in terms of scientific infrastructure. Nevertheless, traditional industries still play an important part in the country. The fundamental principle of the economic success of Finland in the late 1990ies was increased labor efficiency in the business sector (3.5% per annum) and in the industry (15% per annum). Mutual efforts by the government and the business triggered a «Silicon Valley Effect», i.e. people share their ideas and knowledge within a company, which is typical of the knowledge based economy.



# R&D personnel

Total R&D personnel, '000 persons



Total number of R&D personnel per 1000 people of country population



**Ukraine shows mediocre results among the countries ranked in terms of total number of full-time R&D personnel, because of the following reasons:**

1

During years of reforms it lost substantial human, material, and finance resources, which resulted in no practical importance of research of Ukrainian scientists.

2

In Soviet era, science was one of the government's top priorities; however in the late 1980ies science suffered many problems and weaknesses:

- excessively long-term cycle for creation of innovations;
- delays in shifting priorities and molding new avenues of research;
- developing noncompetitive devices and equipment for public benefit;
- low labor efficiency.

3

During 1990ies the number of people working in R&D declined.

In this context, problems inherent to the available scientific environment become especially obvious:

- inappropriate scientific potential structure (academic sector employs 33.4%, higher educational establishments – 6.6%, industry-specific – 53.5%, plants – 6.5%: decrease in the number of people working in R&D led to decrease in the share of industry-specific and plant-related science);
- rapid ageing of Ukrainian science, i.e. the average life expectancy for doctor of sciences in 2004 was 61 y.o., candidate of sciences – 52 y.o.

The percentage of scientists among the Ukrainian population is adequate to ensure the scientific-based approach to economic development, which is characteristic of the post-industrial societies. However, a scientist in Ukraine is dozens times less financed than abroad.

**Disproportions in Ukrainian scientific potential result from:**

1

inadequate financing of significant human resource potential;

2

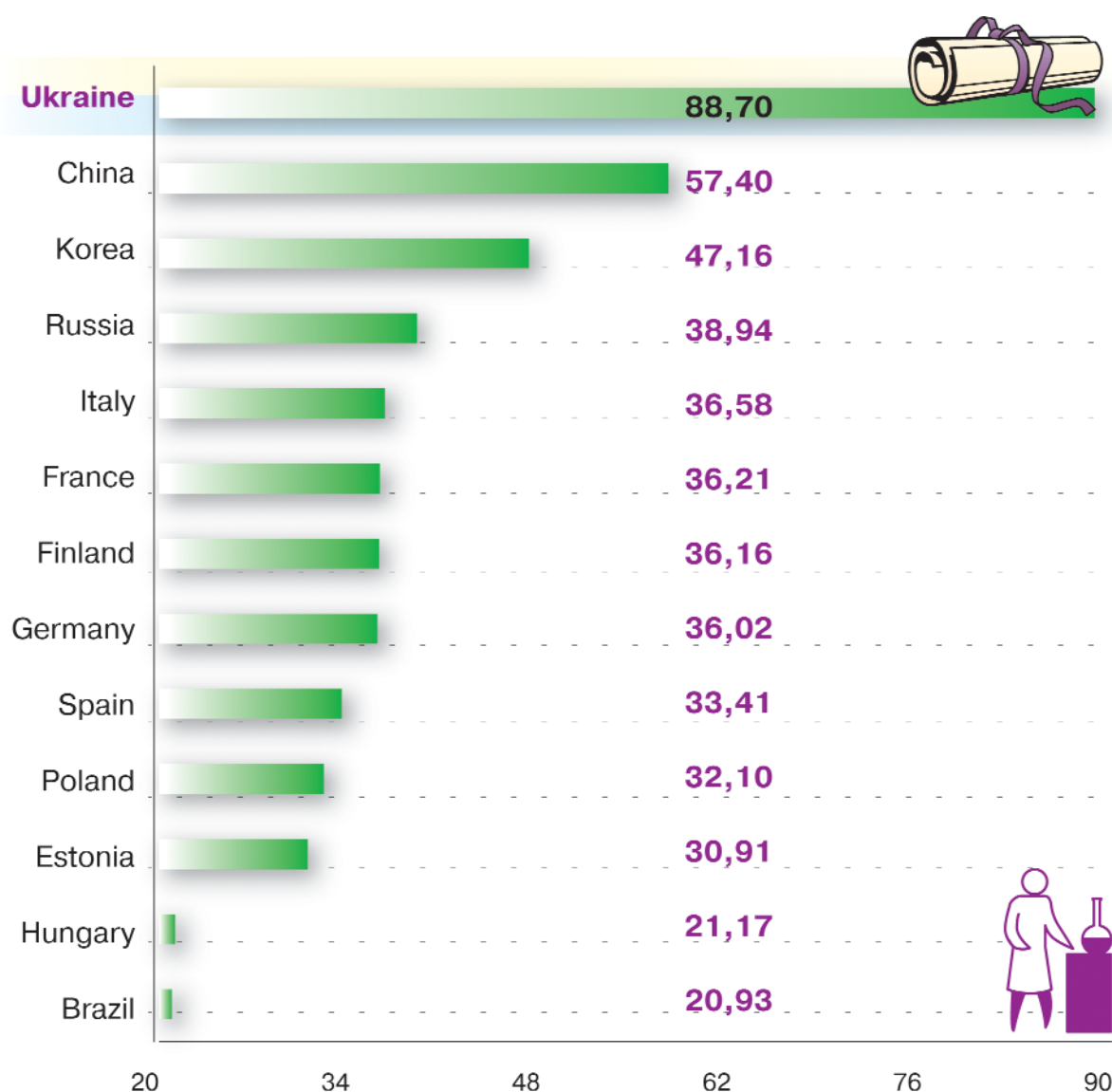
scientists being insufficiently supplied with necessary up-to-date research equipment;

3

Ukrainian scientists having limited access to the global information resources.

# Academic degrees

Academic degrees (% of first academic degrees) among people working in R&D



## Reasons for Ukraine leading in level of training to obtain academic degrees:

1

For the years of independence the number of academic institutions offering training to obtain academic degrees in Ukraine increased significantly (postgraduate education programs – 1.6 times as much, doctorate education programs – 2.5 times as much, postgraduate students – twice as much, doctorate students – 2.4 times as much).

2

Weight of specialists possessing academic degrees among R&D professionals is 20%, and remains the same for 2001-2004. However their number as compared, for instance, to 2003, increased by 1.6% to reach 21.1 thousand persons (4.1 thousand doctors and 17.0 thousand candidates of sciences).

3

Postgraduate and doctorate programs primarily offer degrees of candidates and doctors of sciences S&E (Scientific Engineering) (21% and 22% of total number of postgraduate and doctorate students), as well as in Economics, (18% i 12%), which is supposed to have a positive effect on the level of R&D solutions, their scientific substantiation and economics development on the whole.

### Note! Dynamics of change in percentage of doctorate and postgraduate students leads to personnel deficit in innovation sciences:

The number of postgraduate and doctorate students in Natural Sciences and Scientific Engineering decreases as against the number of highly qualified professionals, especially doctors of sciences in Economics and Pedagogy.

New technologies, let alone innovative inventions, do not prevail in new solutions: the number of solutions in new technologies dropped 4 times compared with 1991.

Human potential is not distributed as required by developing innovation activities and building up innovation model.

### Overall, the recent trends regarding the number of academic human resources in Ukraine are desperate:

as of the end of 2004, compared with 1995, all sectors of science suffered drop in the number of human resources up to 38.6%;

age structure of scientists and scholars holding academic degrees working in economics has deteriorated. For example, over a half of candidates of sciences have reached or are about to reach the retirement age. The average age of doctors of sciences has substantially reached the retirement age;

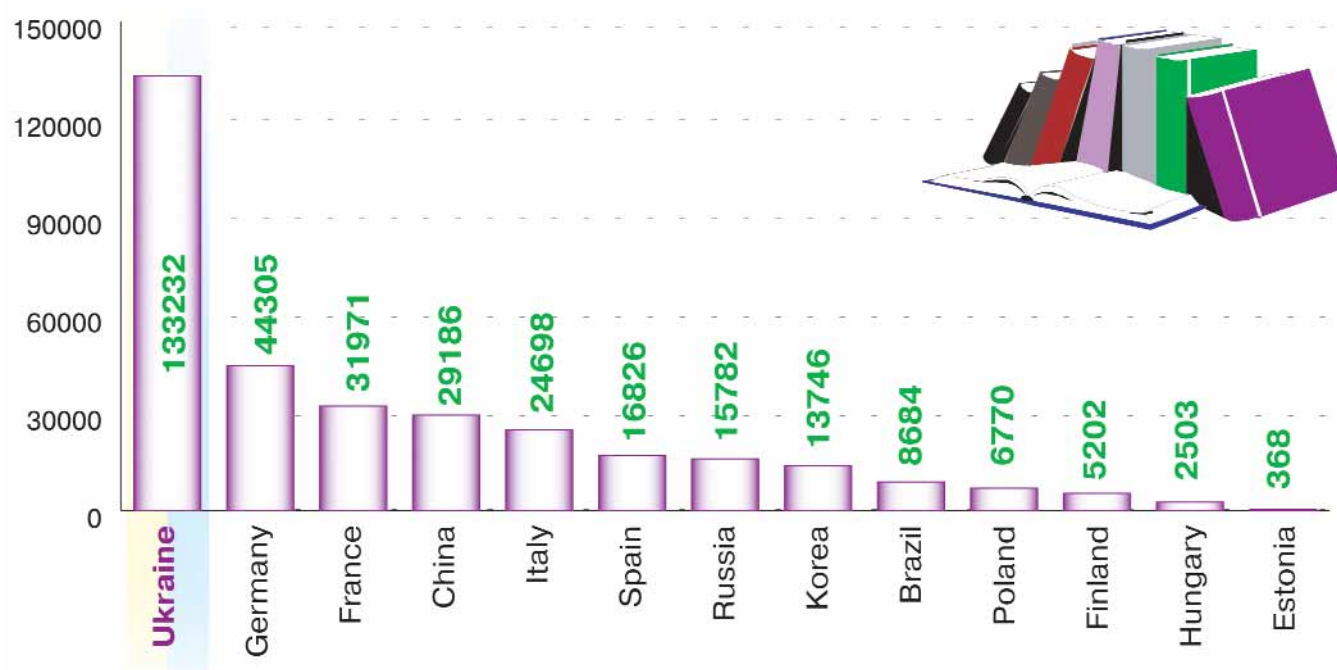
the number of scientists leaving Ukraine has increased (over one third of candidates of sciences under 40 has left Ukraine. The same index relating to doctors of sciences from 41 to 55 y.o. in 2003 was 53.8%).

## Forecast

**Unless there are still no proactive steps taken by the government regarding the quality recovery of human potential of the contemporary domestic science and education in the future, not only will the implementation of a new model of knowledge economy development be jeopardized, but also the possibility to keep the critical mass of fundamental world-class innovations.**

# Patents and scientific articles

Countries ranked with regard to the number of scientific articles, units



Figures for Ukraine show the number of scientific articles and monographs

**Ukraine ranks first among the monitored countries in terms of the scientific articles published.**

## However

The said **NUMBER IS OVERSTATED** due to double accounting. Since most scientists combine jobs in the higher educational institutions or research institutes and they have to file reports to both employers on the number of publications, therefore, the same publications have been accounted twice.

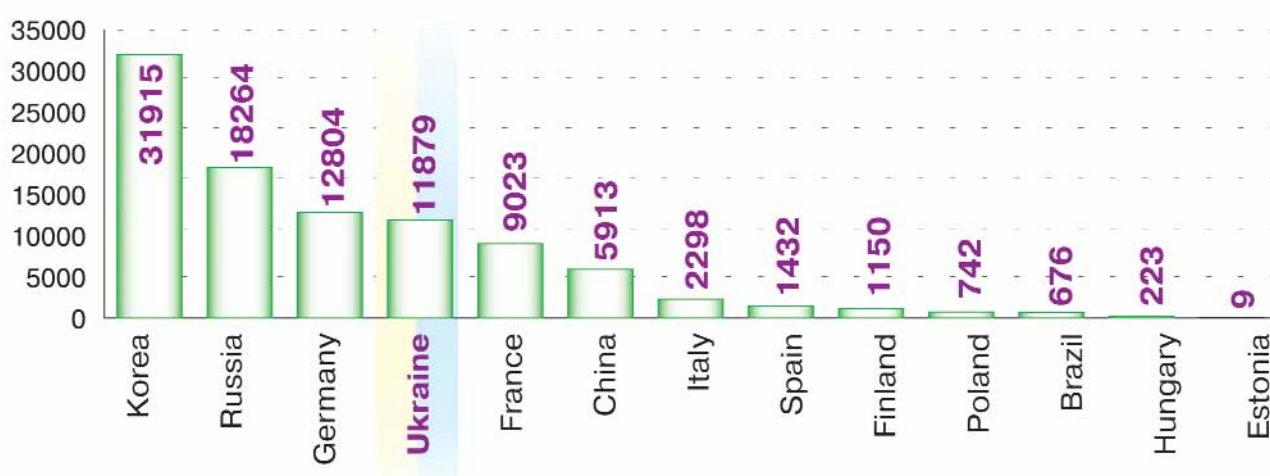
In order to assess the quality of academic products published, it is important to obtain some data regarding whether those products are recognized and referred to abroad. According to the information contained in the SCOPUS database (abstract database) being one of the most comprehensive sources of the world's scientific information (as of 12.10.2006), it is obvious that:



	China	Russian Federation	Finland	Ukraine
Number of scientific publications reflected in SCOPUS system by country of authors origin, thousand	99,4	30,7	10,0	5,8
Number of references to the first 2000 most frequently referred publications out of total list, thousand	43,1	30,1	29,2	7,4
Average number of references to one publication out of the most frequently referred to	21,7	15,1	14,6	3,7

Ukraine's indices are significantly lower than those of the rest of the countries. This demonstrates little popularity and low reference rate of the domestic publications abroad.

## Countries ranked by the number of patents granted to residents



Ukraine has the most intensive patent-related activities in the world.

## Statistical data regarding this index are materially overstated due to the number of reasons:

1

Prior to 2004, according to the effective legislation, the State Department of Intellectual Property accepted applications and granted the so-called declarative patents, which are subject to processing under the simplified procedure (in 2004 the number of patents granted for inventions totaled to 9907, 71% of which are declarative patents).

2

In 2004, only 10% of industrial enterprises introduced innovations, which is shown by low patent-related activities, whereas in 1995 this index was 22.9%. In mature economies the portion of such enterprises reaches up to 70-90%.

The main reason of inadequate results of scientific and technologic sphere functioning is the lack of modern organizational structure of management of scientific and technological and innovation activity, which should involve all the business levels (state, industrial and regional) and would be the efficient system based upon the principles of modern governmental, administrative and innovation management, partnership between state and private sectors.

To make good the critical gaps of Ukraine (if compare to the countries monitored) it is necessary to define the development of the national innovation system as the priority goal of the state policy, i.e.:

1. To solve the complex problems in the spheres of education, science and technologies by means of creation of innovation clusters and joining the European programs, in particular the 7th Framework program of EU regarding the competitiveness and innovations.
2. To create the favorable institutional conditions for entrepreneurs and innovators.
3. To overcome the secluded life style of the scientific and R&D institutions by means of integration of science, innovation and technological sector of industry and entrepreneurship in the framework of the strategy of structural and innovation development.
4. To favor the implication of scientific investigations by intensifying the scientific work division and cooperation between the scientific institutions of all the ownership forms and stirring up the competition between them.
5. To integrate the scientific, industrial and financial structures and create the science intensive corporations, which would consolidate R&D with production companies of similar activities.

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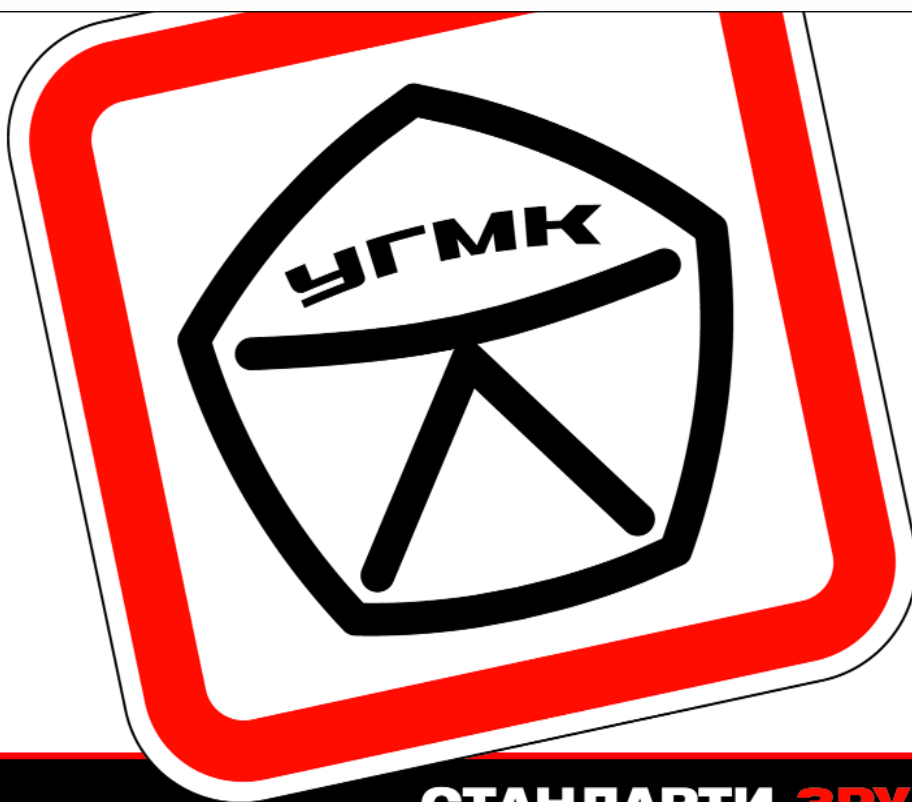
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