

**Economic and Social Council**Distr.: General  
26 May 2011English  
Original: Russian**Economic Commission for Europe**

## Conference of European Statisticians

**Fifty-ninth plenary session**

Geneva, 14-16 June 2011

Item 5 of the provisional agenda

**Measuring human capital****Ukraine's experience in measuring the human capital****Note by the State Statistics Service of Ukraine\****Summary*

Based on the classical theory of human capital, we can study in depth such important issues as human development, economic growth, income distribution, the role and importance of education and training for social reproduction, age-earnings dynamics, motivation, etc.

Within the context of the above, the current definition of "human capital" helps not only to understand the crucial role of human beings in the economic system of the society, but also recognises the need to invest in human capital since the capital is acquired and increased through investment that provides a long-lasting economic effect. In this connection, the experience of the State Statistics Service of Ukraine (SSSU) on the development of the methodology and compilation of satellite social accounts on health, education, science and research, and social protection is noteworthy. These accounts record all the resources involved in the maintenance of the respective national systems from all sources of funding. The information of the accounts allows policymakers to make informed strategic decisions to improve the efficiency of using the human capital.

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\* This document has been submitted late for technical reasons.

## **I. Introduction**

1. Based on the classical theory of human capital, we can logically explain and study in depth such important issues as human development, economic growth, income distribution, the role and importance of education and training for social reproduction, age-earnings dynamics, motivation, etc. In particular, the theory allows us to determine the feasibility of costs, e.g. for training or change of place of employment, depending on the rate of future income growth and the duration of their acquisition. Human Capital Theory has become the ideology of significant investments in education and human development at all levels, being considered as an efficient source of economic growth.

2. In Ukraine, the theory of human capital has been transformed into a practical conceptual framework presented below.

3. Human capital is a certain stock of health, knowledge, skills, abilities and motivations that is formed by a person as a result of investment and savings and purposefully used in any sphere of economic activity, promoting growth in the labour productivity and thereby affecting increase in the income (earnings) of a person, profits of enterprises and the national income.

4. Within the context of this definition, it is necessary to note a few fundamental issues:

(a) Human capital is not just a set of the characteristics mentioned above, but a certain stock of health, knowledge, skills, abilities, motivations formed or developed as a result of investment, that is, human capital formation implies the process of human development;

(b) Human capital is a stock of health, knowledge, skills, abilities and motivations that is used to produce results. It promotes the growth in labour productivity. In other words human capital is a realized and active part of the labour potential;

(c) The use of human capital naturally leads to an increase in earnings (income) of the owner, business profits and national income, i.e. expands the possibilities for human development;

(d) Increase in income attracts investment in human capital that results in further increase in earnings and promotes the demand for human development outcomes.

## **II. System of indicators for measuring human capital**

5. Based on the definition of human capital, the system of generalized indicators for measuring it might look like this:

### **A. Reproduction of population**

Number of population

Distribution of population by age

Natural movement of population

Birth, death and natural movement rates

Death rates by age (coefficients)

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Number of pensioners  
Demographic dependency

## **B. State of population health**

Life expectancy  
Morbidity by disease  
Morbidity by age

## **C. Educational attainment**

Educational attainment (census data)  
Preschool education  
Coverage of children by pre-school education  
Number of people who have studied in educational establishments, including per 10000 of population  
Training of skilled workers in vocational training institutions  
Training of specialists in higher education institutions by branch of knowledge  
Preparation of postgraduate students  
Preparation of PhD students  
Distribution of workers by educational attainment

## **D. Labour market**

Population by economic activity status  
Number of population by employment status and economic activity  
Training by place and form of education  
Advanced training of workers by place of education and economic activity  
Advanced training by professional group  
Unemployment rate by sex and age  
Unemployed persons by duration of job search  
Labour demand by employee category  
Labour demand and supply in the registered labour market by professional group

## **E. Migration**

Distribution of migrants by flow and type of population  
Distribution of migrant citizens of Ukraine by age and educational level

## **F. Investment in human capital**

Costs for education, health, basic research and promotion for scientific and technological progress

Labour cost

Costs for training, retraining and advanced training of unemployed persons

## **III. Satellite social accounts**

6. Within the context of the above, the current definition of "human capital" allows not only to understand the crucial role of human beings in the economic system of the society, but also recognises the need to invest in human capital since the capital is acquired and increased through investment and provides a long-lasting economic effect.

7. In this connection, the experience of the State Statistics Service of Ukraine (SSSU) relative to development of the methodology and compilation of satellite social accounts on health, education, science and research, and social protection is noteworthy. The objectives for compiling national social accounts were, first and foremost, to create tools for determining the policy to improve the capabilities of social policy-makers in managing the corresponding systems. European methodology for social accounts systematizes, tabulates the information on resources and expenditures of all stakeholders in the health, welfare, education, science and research areas in a standard format that is acceptable and accessible to policymakers. By means of these accounts, all the resources involved in the maintenance of the respective national systems from all sources of funding are recorded. This, ultimately, permits to understand how the resources of the relevant social sectors are used, to study the resource allocation models, to evaluate the effectiveness of current resource use and to assess the impact of reforms in respective industries.

8. Satellite accounts are a standard set of tables displaying different aspects of the national expenditures on education, health, science and research. The accounts cover all costs, including those of the public entities, private persons and donors. In addition to determining how much money comes from each source, the accounts record the financial flows from one participant of the system to the other. Thus, the accounts give information on the sources of funding, funding organizations, they define the financial resources of all service providers and demonstrate to what extent the resources are used for implementation of specific activities.

9. Objectives of statistics in this area were set to be as follows:

(a) Define the required set of indicators and the sources for data collection, adapt the international classifications of social accounts to national specificities in order to compile them in accordance with the international standards;

(b) Systematize and collect social statistics, develop classifications of types and assignments for costs as well as acting parties by social branches needed to construct social account matrices;

(c) Develop the primary tables, aggregate the data into social accounts.

10. At present, the SSSU has developed the methodology and annually compiles four satellite accounts - health, education, science and research, and social protection. Set in standard tabular format, they show the investment in human capital - education, health, science and research.

11. The satellite accounts information is to be widely used in managerial decision-making as it allows to assess the use of resources in a particular sector of economic activity for the current period and can be used for comparative analysis of specific activity with similar sectors in other countries. As of today, the satellite accounts are a tool designed to develop a strategy and its implementation, conduct a policy dialogue, monitor and evaluate the respective system.

12. In our opinion, the information of the accounts together with non-financial data such as the coverage of population by educational programs, the number of students covered by certain educational grades and directions, network of health protection system, morbidity, population structure by economic activity status, and consumption of resources by providers of certain services allows policymakers to make informed strategic decisions to improve the efficiency of using the human capital.

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