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FUNDING VOCATIONAL EDUCATION AND TRAINING IN UKRAINE: WARTIME AND AFTER-THE-WAR PERSPECTIVES

Abstract. The article describes the main challenges of financing of vocational education and training (VET) in Ukraine. The advantages of VET in terms of creating prerequisites for economic growth in the post-war period make the VET efficiency improvement one of urgent tasks.

It is substantiated the key directions for transforming the system of state financing of vocational education and its reorientation from the financially-decentralized approach to the approach of differentiated financing of personnel training. The short-term objective is to form multi-channel funding approach that includes state budget subventions, private financing of staff training and public-private partnerships.

The article presents justification for increasing the amount of state funding of VET, including public transfers to VET students, as well as private funding of VET, for instance covering apprentices training costs. Corresponding policies are proposed, including public funds’ reallocation between educational programs and certain tax incentives for real sector that take part in education and training of its’ staff and apprentices.

One of the most important recommendations for a successful recovery of Ukraine in the post-war period is to strengthen the connection between professional education and training funding and strategic plans for the national socio-economic development.

Keywords: funding vocational education and training, returns on education, public funding priorities, war in Ukraine.

Formulation of the problem. Education plays crucial role in reaching the main goals of modern society: income equality, economic growth and equity.

Unfortunately all the novelties are been destroyed in times of societal upheavals and military actions. A rude violation of the rules of peaceful co-existence...
freezes the progress. Russian invasion of Ukraine knock back progressive talks on innovative role of education and human capital.

The costs and harmful externalities of postponed knowledge are growing enormously for Ukrainians who experience war challenges in education right after the coronavirus lockdown.

One of the challenges that are here and now for Ukraine in wartime is in developing efficient system of vocational education and training (VET). In the post-war reconstruction skilled workforce will play one of the most important roles.

Ukrainian VET system has accumulated some problems that can hinder addressing the challenges of post-war recovery and reconstruction. Most of them lie within the funding issues.

Overview of recent findings. VET financing is usually learnt as part of budgetary process as well as in a context of economic growth. Recent research concerning return on public funding of education show that VET has bigger rate of fiscal return than higher education [1]. This finding is important from the point of substantiating measures for structuring public spending on education in Ukraine. Furthermore, empirical analysis show that countries, whose total factor productivities are at least 59 per cent below the world technology frontier (and Ukraine is among them), should improve the quality of education, expressed by the "Skills" indicator of the Global Competitiveness Report, to get closer to the frontier [2].

The purpose of the article is to analyse government spending (initiatives) on VET in Ukraine from the point of improving vocational education and human capital capabilities in the post-war reconstruction.

Presentation of the main research material. Vocational and technical education in Ukraine is mainly financed by local budgets. Financing of vocational education after the completion of the process of financial decentralization relied on local finances for 96-97% (Table 1).

Table 1
Financing of vocational education and training from different budgets in 2020-2022

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>01-09.2022</th>
</tr>
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<tbody>
<tr>
<td>Budget financing,</td>
<td>11,52</td>
<td>12,78</td>
<td>9,99</td>
</tr>
<tr>
<td>including:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- local budgets, UAH</td>
<td>11,12</td>
<td>12,33</td>
<td>9,66</td>
</tr>
<tr>
<td>%</td>
<td>96,5</td>
<td>96,5</td>
<td>96,7</td>
</tr>
<tr>
<td>- state budget, UAH</td>
<td>0,4</td>
<td>0,45</td>
<td>0,33</td>
</tr>
<tr>
<td>%</td>
<td>3,5</td>
<td>3,5</td>
<td>3,3</td>
</tr>
</tbody>
</table>

Source: the data of the Ministry of Finance of Ukraine
Thus, in 2020-2021, 3.5% of the expenses on VET were financed from the state budget, while 96.5% of them were covered by local budgets. From November 2022, funding of VET will return to the state budget level, even for professions of regional significance. This is due to a decrease in the financial capacity of local budgets during the war, in particular due to the redirection of tax revenues previously accumulated by local budgets to the state budget.

It should be noted that the predominant financing of vocational education from local budgets is logical from the point of view of the direct proximity of local government bodies to employers, and therefore their awareness of the needs of the real sector in the workforce with relevant knowledge, skills and abilities.

The results of a survey conducted within the framework of the OECD Eurasia Competitiveness Program show that employers in agribusiness and in the renewable energy sector are very limited in contact with educational and training institutions: only 28% of producers in agribusiness, 19% in the renewable energy sector regularly contact an educational community [3]. Nevertheless, 34% of agribusiness companies that took part in the survey, state that skills gap increases their losses and decreases efficiency; 30% believe that it lowers the quality of their goods and services; 33% - that it brings to the loss of clients and markets [4].

Fiscal decentralization delegated the task of improving the compliance of professional education in Ukraine to the local level. Local government bodies have undertaken to develop ties between educational institutions and enterprises, develop professional standards, and adapt the curriculum to the requirements of specific employers. This contributed to solving the problem of the skills gap. However, the financial decentralization of the VET made the process of forecasting the needs for specialists and workers in the national labor market more complicated, and as a result, the problem of skills mismatch persisted.

One of the ways to solve the skills mismatch problem in Ukraine is to qualitatively plan budget expenditures on education, taking into account the needs of the labor market. The state of filling the labor market with the necessary labor force depends on the quality of planning the need for specialists and workforce, with respect to the necessary volumes of budget expenditures for these purposes.

In Ukraine, starting from 2014, the Ministry of Economy has been developing a medium-term forecast of the need for specialists and workers in the labor market, on which the state order for the training of relevant specialists is based. The volume of the state order for the training of specialists for the particular year is formed by the Ministry of Economy on the proposal of the Ministry of Education and Science, as well as other state customers (Ministry of Health, Ministry of Internal Affairs, etc.) and is approved by the Cabinet of Ministers. Monitoring of the implementation of the state order for the training of specialists with higher education is carried out by the Ministry of Economy and the Cabinet of Ministers through the mechanism of statistical monitoring of the state of financing of the executors of the order, and not
in the context of educational and qualification levels, types of education, branches of knowledge. This makes it impossible to carry out systematic monitoring by the executive body, which ensures the formation and implementation of state policy in the field of state orders, in terms of the quantity and quality of specialists trained at the expense of the budget. Therefore, in Ukraine, the form of state statistical observation No. 1-state order “Report on the implementation of the state order” needs to be improved by supplementing the financial indicators of the state order with natural, quantitative ones (branches of knowledge, educational and qualification levels, forms of education).

It should be noted that new hopes are vested in the Council for the Development of Professional (Vocational and Technical) Education, created as a consultative body under the President of Ukraine. Two meetings of the Council were held, during which issues of funding in the field of professional education were considered. In particular, changes in approaches to funding the industry, prospects for increasing the amount of wages for pedagogues, updating the mechanism for forming a state order for the training of qualified workers, etc. were discussed. It is expected that the new body will bring to the solution of the of skills mismatch problem. In this context we insist that only the comprehensive approach in human capital forecasting on the national level can be a solvation.

Most foreign countries are developing long- and medium-term forecasts of labor market needs. For example, in Ireland, an expert group has been created to study the problems of forecasting the professional needs of the labor market. The group is made up of government officials, employers' organizations, professionals from the Irish Industrial Development Agency (IDA) and staff from vocational education institutions. Their mission is simultaneously to provide methodological support for the process of forecasting the needs of the labor market and the development of specific practical recommendations in the field of personnel training. At the same time, the results of research by the Irish Institute for Social and Economic Research (ESRI) are widely used, which compiles, systematizes and analyzes the necessary statistical data. The Institute is constantly developing and updating a database on the demand for knowledge, skills and abilities at the national and local levels. The results of the work of the group are applied by the Irish National Authority for Proficiency Control, which requires educational organizations to better match their curricula to the modern needs of employers.

There are currently no relevant calculations and forecasts of the need for specific specialists on the labor market in Ukraine. It is necessary to put the compiling of them into practice, as well as to ensure the access of the general public to these data.

The main problem of VET education in Ukraine is in its’ low volumes of financing. The level of state financing of vocational education in Ukraine is 0.27% of GDP, which is 2-3.5 times lower than the corresponding level in developed countries (table 2).
Table 2

Government financing of vocational education and training in some OECD countries in 2017, % of GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>% of GDP</th>
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<tbody>
<tr>
<td>Austria</td>
<td>0.66</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.61</td>
</tr>
<tr>
<td>Germany</td>
<td>0.69</td>
</tr>
<tr>
<td>Finland</td>
<td>0.93</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.96</td>
</tr>
<tr>
<td>Israel</td>
<td>0.68</td>
</tr>
<tr>
<td>Norway</td>
<td>0.76</td>
</tr>
<tr>
<td>Singapore</td>
<td>0.42</td>
</tr>
<tr>
<td>Slovakia</td>
<td>0.67</td>
</tr>
<tr>
<td>Great Britain</td>
<td>0.55</td>
</tr>
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</table>


According to the Ministry of Education and Science, in 2019, state funding covered only about 60% of the financial needs of professional educational institutions in the regions. Based on this, 100% financing of vocational educational institutions requires additional budget expenditures in the amount of 0.18% of GDP.

In addition, it is necessary to take into account that in financing professional education in Ukraine, unlike developed countries, current costs prevail. That is, most of financing is directed on wages and utility payments, while the material and technical base is basically not updated. According to the World Bank, the share of capital expenditures in total public expenditures on post-secondary non-higher education in developed countries is on average 7%. In Ukraine this indicator is less than 2%.

One of the obvious ways to increase VET financing is to engage private funds. Private funds hardly reached 10% of all vocational and technical education financing in pre-war period. In contrast to Ukraine, in OECD countries a large share of VET costs is covered by business sector, for instance through dual education financing. Fiscal incentives are widely used by developed countries to increase private sector spending on VET and lifelong learning: exemption from paying certain types of taxes, for example, personal income tax of apprentices; reducing the taxable base of corporate income tax by the amount of spending on staff training; a tax credit that allows to defer the payment of income tax to cover current expenses for training [5, p. 21]. In Ukraine, the current legislation does not provide tax incentives for employers investing in the development of human capital, which negatively affects the amount of VET funding.

Countries that reached after-war growth pay much attention to the development of secondary and vocational education. For instance, S. Mundle describes how Asian policy targeted investments in upper secondary vocational education until the per capita income reached about US$8 thousand, and only then shifted the focus to general curricula [6].

If consider the amount of public funding spent on certain educational level or program as an indicator of a government’ educational priority than it can be stated that Ukraine’s priority is higher education over the VET, and that engineering is of
low priority. The post-war reconstruction needs to be backed up by increased funding, both public and private, of the vocational and technical education. An increase in funding of the engineering programs can be provided by redistribution of finance from business and law programs. According to our estimates, more than 40% of business and law programs students study free of fee that is a lot for a developing country. While only about half of engineering programs students have such privileges. As annual costs of training one student in business and law programs is precisely the same as in engineering government funding re-prioritizing could be made in favor of engineering.

The war exacerbates the problem of poverty and inequality, and also raises questions about the accessibility of vocational education. According to World Bank, the share of the population with incomes below the actual subsistence level in Ukraine may reach 70% in 2022 against 18% in 2021 [7]. In this context it very important to increase public transfers to families with pupils/students, in particular the VET students. According to the Concept of the State Targeted Social Program for the Development of Professional (Vocational and Technical) Education for 2022-2027, the amount of academic and nominal scholarships for vocational education students has been raised by more than 2.5 times – to UAH 1,250. However, taking into account consumer price index increase in 2022 three times comparing to 2021, i.e. to 30 per cent annual CPI, this amount of scholarship does not seem to provide any stimulus.

Ukrainian top governing institutions together with unprecedented number of analysts have worked out general Ukraine recovery plan. It consists of 17 fields for recovery, including education. Education development national program of the Ukraine recovery plan show high degree of elaboration of problematic issues in the educational and scientific fields, which allowed the experts to form a wide range of tasks, as well as to suggest specific ways of their implementation. The attachments to the materials of the working group contain the forecasts regarding the required volumes of state funding for activities in education and science for the period up to 2032, as well as a wide range of legislative support for the restoration of the educational sphere in Ukraine - both existing legal acts and developments and improvements in need.

At the same time, the experts of the working group did not pay attention to important issue that could “mothball” the undesirable state of VET. In particular, Goal 2 “Ensuring the content and quality of VET that meet modern requirements and needs of the labor market”, which in particular refers to the creation of conditions for wide access to VET, could be supplemented with the task of such content: “to provide vocational students with material consumable items necessary for training (special clothing, personal protective equipment at the training and production site, etc.)”. Vocational education performs important social and educational tasks, in particular, it trains socially vulnerable persons. In the context of a sharp deterioration in the well-being of Ukrainians, state funding for providing students of vocational education
institutions with material consumables will be a measure of reduction of income barriers to education and as a response to the challenge of war.

Conclusions. The designation of the main challenges of the post-war development of the economy in terms of staffing the needs of the real sector will make it possible to substantiate the key directions for transforming the system of financing vocational education. The main conclusion is the need to reorient the concept of state financing of vocational education from the financially-decentralized approach to the approach of differentiated financing of personnel training. The advantages of the latter include, first of all, the flexibility of financing, and, consequently, the stability of the system for meeting the personnel needs of the real sector, as well as the preservation of state influence on personnel policy in the medium and long term, taking into account the strategic socio-economic development goals at the national and supranational levels.

The concept of reforming VET in Ukraine envisages, in particular, multi-channel financing of vocational education institutions in accordance with reasonably certain volumes, areas and levels of training qualified personnel, the implementation of investment projects for the modernization of vocational education. Thus, in order to ensure high-quality vocational education, the volume of expenditure on vocational education needs to be increased, while it is advisable to form multi-channel funding approach that includes state budget subventions and public-private partnerships.

In the conditions of war and in view of the new demands on the labor force that will arise during the period of post-war economic recovery, the system of state orders for the training of specialists should be based on strict compliance with the needs of the real economy, satisfying the personnel needs of the accelerated economic growth of the national economy. The quality of planning the demand for specialists and workers in the labor market will determine the state of filling the labor market with the appropriate workforce, the level of labor productivity, and economic growth.

In Ukraine, vocational education is implemented at the level of post-secondary non-higher education (vocational education: colleges, technical schools, professional lyceums etc.). At the same time, high school is optional, and after completing the first stage of secondary education, the student can choose an institution for studying a working profession. To increase the effectiveness of vocational education, a flexible system of upper secondary school classes is required, with the possibility for students to choose different curricula and directions. Students moving into high school should be provided with enhanced learning opportunities that will increase their chances of getting good jobs and provide them with a foundation for sustainable employment. That is why in most developed countries at the second stage of secondary education, that is, in high school, students can choose between academically oriented (general education) and vocationally oriented programs. In this context, the reform of high school, the provision of expanded opportunities for choosing subjects, programs and areas of profile or professional training at the second stage of secondary education, is
extremely relevant for Ukrainian vocational education. At the same time, a large number of issues related to the organization of a new school network, the new content of education, management and financing of institutions of both general and vocational education remain unresolved.

The reform of general secondary education, including the upper classes of the school (New Ukrainian School, NUS), is aimed at solving this problem. The reform of the upper school is to expand the choice of subjects, programs and areas of academic (profile) or vocational training at the second stage of secondary education. The new approach to the construction of vocational education is aimed at reducing the variety of forms of vocational education (of which there are about ten) to the following four types: professional lyceum, vocational school, professional center and center for the development of vocational education.

The war in Ukraine does not allow completion of the organization of a new school network, the formation of a new content of education, the management and financing of institutions of both general and vocational education. After the end of the war, it is necessary to return to the roadmap for reforming the VET as soon as possible.

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