Also, market concentration can be limited with institutional program, which should contain such constraints as:

- only individuals holding Ukrainian citizenship should own land after land market formation;
- land owned but not cultivated should be a subject to fines and possible loss of the right of use after two years of non-cultivation;
- new landowners should be given two options to organize production: they could farm individually or they could set up associations by pooling together the newly distributed land;
- land should be free of land taxes for few years of market adaptation;
- soil degradation prevention and amelioration should be financed and coordinated largely by the government [9].

In general, strategic role of land market in Ukraine stipulates active governmental participation in land ownership and land use regulation. For example, government should establish special fiscal regimes for agricultural land sales on derivative market and prohibit conversion of agricultural land to urban land, while stimulating exhausted land purchasing. Government should provide sound land cadastre management and monitoring of such indices as: land exhaustion, soil depletion, land development and land reclamation. Also, information system development for registration, arbitrage, controlling of land sale and lend lease [10] and avoiding of market shocks, overestimation of assets, fictitious capital expansion, derivative "overheating" of land market should help to stabilize land market.

JEL classification G38

Conclusion. Land market formation in Ukraine strongly influenced by different contradictions such as: liberalization of land market while unprofitable agricultural production, active use of derivative instruments under global financial crisis, total large-scale transformation of agricultural land into urban or suburban land etc.

Private land ownership abridgement, responsibility for improper land use and land conversion, restriction of TNC participation in land concentration is a subject for further researches.

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THE DEVELOPMENT OF FORECASTING METHODS FOR INCOME TAX OF UKRAINE IN THE MEDIUM TERM

Досліджено підходи до розробки методик прогнозування податку на прибуток підприємств при формуванні Державного бюджету України. На основі зарубіжного досвіду та вітчизняного законодавства запропоновано методику розрахунку прогнозу зборів розглянутого податку у середньостроковій перспективі. Запропоновано сценарні підходи для розрахунку прогнозних значень в залежності від впливу зовнішніх та внутрішніх факторів на 2013-2014 роки.
Ключові слова: податок на прибуток підприємств, сценарний прогноз, бюджет.

Исследованы подходы к разработке методик прогнозирования налога на прибыль предприятий при формировании Государственного бюджета Украины. На основе зарубежного опыта и отечественного законодательства предложена методика расчета прогноза сборов рассматриваемого налога в среднесрочной перспективе. Предложены сценарные подходы для расчета прогнозных значений в зависимости от влияния внешних и внутренних факторов на 2013-2014 годы.
Ключевые слова: налог на прибыль предприятий, сценарный прогноз, бюджет.

The approaches to develop methods of forecasting the income tax were researched while forming the Government budget of Ukraine. Based on foreign experience and domestic laws the method of calculating forecast charges was considered in the medium-term. A scenario approach was proposed to calculate predictive values depending on the external and internal factors for the 2013-2014 years.
Keywords: Income tax, scenario forecast, budget.

Fiscal reform remains a key issue of public policy in Ukraine. The Economic reform programs for 2010-2014 identified the necessity for strengthening financial and fiscal discipline, introducing medium-term planning of public finance [1]. It must be noted that planning budget incomes and expenditures as well as funding budget programs is only possible with well-performing forecasts. At present it is of paramount importance to adopt the methods of forecasting in the medium term at the state level and approve them by the regulations.

The problem of medium-term forecasting revenues of budgets in different levels is becoming very actual for scientific research and for practical activities of central government. The use of medium-term budget planning affords an opportunity for participants of the budget process to agree the strategic plans according to the available budget funds within the framework of the draft budget for the relevant year and for subsequent periods, provide a transition to the formation of long-term budget policy [9]. While implementing the medium-term budget planning and forecasting the task of high priority is to consider new approaches to the formation of budget revenues, the main budget taxes.

The development of medium-term budgeting and making forecasts for the medium-term are considered in scientific investigations of such scholars as G. Akerlof, J. Stiglitz, R. Solow, J. Tobin, T. Efimenko, I. Lunina, I. Lutyy and others.

The active implementation of medium-term forecasting and planning requires the development of new methods of forecasting, based on overseas experience, adapted to the Ukrainian context and meet the objective of the state economic policy.

The Ministry of Finance of Ukraine with International Bank for Reconstruction and Development provided a joint Project "Public Finance Modernization", which was approved by the Law of Ukraine "On Ratification of the Loan Agreement between Ukraine and International Bank for Reconstruction and Development" (№ 591-VI, 24.09.2008). Under this project a number of methods for forecasting indicators of budget revenues was developed. These techniques were confirmed by the order of the Minister of Finance of Ukraine (№ 1646, 24.12.2010). The methods were used to predict performance of revenues in short-term period, but the individual components of these techniques can be considered as the basis for a medium-term forecasting methods.

The main budget taxes of the Consolidated budget of Ukraine, which form the dominant part of the tax revenue, are the value added tax (VAT), income tax, tax on personal income and excise tax. In table 1 the dynamics of the Consolidated budget of Ukraine for 2002-2010 is presented. One can see that income tax is about 12-18% of total revenues, taking the third position after VAT and personal income tax.

Table 1. **Dynamics of the Consolidated Budget of Ukraine in 2002-2010, mln.UAH.**

Index	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tax revenues	45393	54321	63162	98065	125743	161264	227165	208073	234448
Taxes on income and income taxes, taxes on the increase in market value	20222	26759	29375	40789	48963	69189	93753	77533	91388
Corporate Income Tax	9398	13237	16162	23464	26172	34407	47857	33048	40359
Tax on personal income	10824	13521	13213	17325	22791	34782	45896	44485	51029
Taxes on property	587	600	659	833	1085	1355	1558	1538	1905
Fees for use of natural resources	2450	2780	3384	3981	4747	5948	9292	11231	12710
Domestic taxes on goods and services	18192	18561	22739	43366	61164	71914	107037	107683	115933
Value Added Tax	13471	12598	16734	33804	50397	59383	92083	84597	86316
Excise tax on domestic goods	3605	4659	6092	7347	7557	9072	10230	17934	23715
Excise tax on imported goods	493	587	613	599	1051	1496	2553	3690	4601
Taxes on international trade and external transactions	2366	3795	5067	6722	7373	10038	12303	6929	9072
Other taxes	1575	1827	1939	2374	2411	2820	3222	3159	3440
Non-tax revenues	14697	18227	24572	31778	40548	48553	60544	58436	73837
Revenues from capital operations	1101	1788	2534	2804	3218	6373	6702	3653	3143
Official transfers	292	213	418	183	154	105	135	645	180
Trust Funds	472	737	844	1354	2148	3641	3347	2160	2773
Total income (net of intergovernmental transfers)	61954	75286	91529	134183	171811	219937	297893	272967	314506

Source: Prepared according to [6]

The declaration of corporate income tax of the State Tax Service of Ukraine is the basis of the information to calculate corporate income tax according to the method approved. A forecast of economic and social development of Ukraine is the basis for the information of macroeconomic indicators. The information reported to the State Tax Service of Ukraine is used to take account of the impact on forecasted income of tax arrears, provided instalments of tax overpayments and other factors.

The analysis of the methods for forecasting revenues in the medium-term, used in the international practice, has shown that the main methods of forecasting budget-tax of the Republic of Kazakhstan and Ukraine have much in common. Let's investigate the possibility of adapting these methods to the conditions of Ukraine.

The basis of the forecasting methods of the Consolidated Budget of Ukraine in the medium-term must be the principle of affordability, which is realized by using a relatively small number of endogenous and exogenous macroeconomic indicators, most of which are public and declared in such government documents as:

• Basic directions of budgetary policy for the relevant year;

• A Resolution of the Cabinet of Ministers of Ukraine "On Approval of Forecast performance of the Consolidated budget of Ukraine for major revenue and expenditure and financing" for the relevant period;

• Consensus forecasts of the Ministry of Economic Development and Trade of Ukraine;

• Forecasts of the International Monetary Fund and World Bank.

The peculiarity of the developed methods of forecasting is application of such parameter as "effective tax rate". By this term it is assumed the ratio of total revenues from a particular tax to the value of the real tax base.

Unlike the rates stipulated by tax legislation, effective rate reflects not the value of tax deductions for the potential base, but the amount of tax revenues on real tax base, which is less than the potential due to the exclusion of certain items from taxation. The effective tax rate may differ from the legally established tax rate because of consideration of tax benefits, the use of several (other than standard), tax rates, the availability of tax arrears, avoiding of paying, etc.

Methods of calculating corporate income tax. The **first approach** to the forecasting of corporate income tax is based on the projected gross domestic product by the formula:

$$CIT_t = GDP_t \cdot S_{effect}$$

where CIT_t – income tax in the future forecasted period; GDP_t – GDP in the forecasted period; S_{effect} – the average effective rate.

$$S_{effect} = \frac{CIT_{t-1}}{GDP_{t-1}} \cdot 100$$

where S_{effect} – the average effective rate; CIT_{t-1} – the average amount of corporate income tax for the previous three periods, including reporting; GDP_{t-1} – gross domestic product in the previous period.

The **second approach** uses the information about the charged and the amount paid corporate income tax in terms of large taxpayers subject to monitoring State Tax Service (STS) of Ukraine, the results of annual recalculations of tax declarations.

The forecast for this option is based on estimates of expected income tax on profits from large taxpayers this year and the determined share of income taxes of large taxpayers in the total income tax for the previous three years, including reporting.

Thus one should exclude from the expected income tax such payments as: one-time payments, unsystematic, independent on industrial activity payments, including large size of annual recalculations received by temporary factors (price fluctuations, structural changes) and the amount the same percentage for acts of inspections.

The calculation of the projected amount of corporate income tax revenues as a whole is determined by the formula:

$$CIT_{forecast} = \frac{CIT_{estimated}}{D_{fact}} \cdot V_{temp}$$

where $CIT_{forecast}$ – the forecasted sum of corporate income tax; $CIT_{estimated}$ – the expected tax revenue from large taxpayers in the current year; D_{fact} – the share of income taxes of large taxpayers in total revenue as a percentage; V_{temp} – the rate of growth of gross domestic product for the planned period.

The calculation of expected annual income taxes from large taxpayers should be predicted by the formula:

$$P_{estimated} \frac{P_{reported} - P_{onetime}}{M_{fact}} \cdot 12$$

where $P_{estimated}$ – the expected income tax revenues of the current year; $P_{reported}$ – income tax revenues for the period of the current year; $P_{onetime}$ – one-time tax revenues; M_{fact} – the number of months in the reporting period of the current year.

However, the calculated values do not include various economic and political impacts that largely determine the efficiency of enterprises, and therefore their profits. There is a need to adjust the forecasts obtained according to the world demand, cyclical economy and other factors. The main difficulty to achieve the required accuracy of medium-term budget forecasting is adequate consideration of significant variability of the Ukrainian economy and its significant impact on parameters of external factors, associated with current trends in the global economy. An important aspect is a strict adherence to the medium-term planning stages, which include budget forecasting and coordination of relevant regulations.

The analysis of progressive international experience shows that medium-term forecasting of budget revenues is conducted by several independent methods. For each of them the selected statistics with different economic nature is used. This enables to level errors and improve the quality of forecasts. In the forecast the risks of change exogenous and endogenous factors are taken into account, which let creation of scenario forecasts.

Scenario forecasts revenues of the Consolidated budget for the 2012-2014 are the main directions of economic development. Design and analysis of scenario forecasts revenues of the Consolidated budget will allow to identify trends in revenues, to outline the set of priority measures to balance the budget, determine the future tax burden, provide quality social protection, choose the effective ways of constructing budget policy, in particular to assess the availability of health care and education, determine the level of social security, to combat and prevent poverty.

Based on practical medium-term budget forecasting, which is supported by the World Bank and tested in some post-Soviet countries, it was developed and proposed a methodological approach for predicting the main budget taxes in Ukraine.

The peculiarity of the suggested approach is that in predicting tax revenues several different methods are used, including the effective tax rate, which is the ratio of total income of a tax to the value of the tax base in the previous and current periods.

When building a forecast it should be taken into account the basic provisions contained in such documents as:

• the Program of economic reforms for 2010-2014 "Prosperous Society, Competitive Economy, Effective State";

• the Resolution of the Verkhovna Rada of Ukraine "On Main Directions of Budgetary Policy for 2012";

• the Resolution of the Cabinet of Ministers of Ukraine "On Approval Forecast Performance of the Consolidated Budget of Ukraine for Major Revenue and Expenditure and Funding for 2011-2013";

• the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Forecasts of Economic and Social Development of Ukraine for 2012 and of Macroeconomic and Social Development of Ukraine for 2013 and 2014";

• Tax Code of Ukraine.

Three possible scenarios of the Ukrainian economy were considered: pessimistic, macroeconomic (most realistic) and optimistic.

As for the pessimistic forecast revenues it can be highlighted the following factors, which can have a significant impact on the trend of reduction of budget revenues:

• the possibility of another wave of global financial crisis;

• rapid growth in energy prices and accordingly the cost of production;

• worsening of the external economic situation: regular price fall in the world commodity markets;

• increase of world prices for natural gas;

• strengthening the downward trend in the foreign exchange market and the significant issue to finance the budget deficit;

• spread of insolvency in the real economy, reduction of employment and increase the number of unemployed.

In particular, it is assumed that the reduction of the Consolidated budget revenues from corporate income tax during the forecasted period may be affected by such factors as lowering world prices for products made of metal and iron ore and increase of energy prices. Pessimistic forecast revenues of the Consolidated budget for the 2012-2014 period predicts that the Consolidated Budget of Ukraine in 2013 will grow from 453.2 billion UAH to 461.5 billion UAH in 2014, i.e. an annual growth of these revenues in the period studied is estimated about 3.1%.

The macroeconomic scenario is based on the assumption that the established relationship between budgetary revenues and macroeconomic parameters generally will remain for 2012-2014, i.e., the structural changes will not happen. In this case, the calculation of the forecasts can be made on the basis of macroeconomic factor models. The estimates of macroeconomic parameters approved by the Cabinet of Ministers of Ukraine were used as exogenous variables. According to this scenario in the 2012-2014 it is estimated the economic growth in Ukraine about 4.2%. According to the macroeconomic scenario, the Consolidated Budget of Ukraine in 2013 will amount to 464,4 billion UAH, in 2014 – 483,7 billion UAH.

The optimistic forecast revenues of the Consolidated budget of Ukraine is based on the following assumptions:

• the increase of the efficiency of public investments will remain as well as their concentration to support technological innovation for the modernization of domestic production and infrastructure development;

- the share of investment expenditures of the Consolidated budget to GDP to a level not less than 5% of GDP since 2012 will gradually be increased;
- regulatory framework in investment, innovation and technology transfer will be improved;
- extensive network of technology transfer involving all its subjects will be developed;
- the processes investing businesses in the field of scientific and technological activities on the basis of public private partnership for the production of high-tech industrial products will be activated.

The optimistic scenario assumes that carrying out the sound protectionist policy will increase the share of transport and high-tech equipment in the structure of engineer-

ing. It is supposed that the diversification of external markets will be held, more products will be presented in machine building [8]. The increase revenue of the Consolidated budget for the period 2013-2014 is assumed in average of 5%. Under the optimistic scenario, revenues of consolidated budget of Ukraine in 2013 amount 473.5 billion UAH, in 2014 – 491.6 billion UAH.

Calculations of the Consolidated Budget of Ukraine according to the most probable risks of the national economy and public sector in the medium-term were the basis to form the scenario forecast revenue from the tax on profits of enterprises of Ukraine for 2013-1014 years (table 2).

Ta b l e 2. Scenario forecasts of corporative income taxes for 2013-2014 years, UAH bln

Articles revenues	Pessimistic		Macroeconomic		Optimistic	
	2013	2014	2013	2014	2013	2014
TOTAL revenues (excluding transfers)	453.2	461.5	464.4	483.7	473.5	491.6
among them: tax revenues	405.4	409.7	415.2	427.9	422.7	435.0
among them: CIT	57.1	58.5	60.8	64.7	61.7	65.2

The proposed method of forecasting the medium-tax profit of Ukraine, based on the principle of availability in application, increases the transparency of the budget process, increases trust between taxpayers and government managers that control budget funds, and therefore, improves the efficiency of their use.

Thus, the article suggests the method of forecasting the revenues from corporate income tax, depending on the actions of internal and external factors, calculated forecasts of revenues for the period of 2013-2014 using three scenarios of the development of Ukrainian economy. The key feature of the proposed approach is using the effective tax rate, which is the ratio of total tax incomes to the value of the tax base in the previous periods.

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