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Y.Malakhovsky, PhD in economic
National Technical University, Kirovograd

Quantitative relationship between the amount of income and consumption in macroeconomic region (part 1)

This study aims to investigate the quantitative relationship between the level of production, actual income and consumption in Ukraine. For greater clarity, the individual figures are compared with data of other countries. The research based on a dual approach to the consideration of GDP as the market price of domestically produced goods and services in terms of income and expenses. This approach provides the possibility to produce consistent estimates of consumption of economic resources of the country, to study the structure of consumption in the context of separate institutional units.
final consumption expenditure, actual final consumption, ratio between income and consumption, methods of calculating the level of consumption, consumption multiplier

Ю.В. Малаховський, доц., канд. екон. наук
Кіровоградський національний технічний університет
Кількісний аналіз зв'язків між обсягами доходів і споживання в макроекономічному регіоні

У публікації поставлено мету дослідити кількісні співвідношення між обсягами виробництва, формування доходів і споживання в Україні. Для більшої наочності окремі показники порівнюються з аналогічними для інших країн. Дослідження базуються на вивченні валового внутрішнього продукту, як матеріальної основи споживання, з точки зору систем формування доходів і здійснення витрат. Такий підхід забезпечує можливість отримувати узгоджені оцінки рівня поточного споживання економічних ресурсів країни, вивчати його структуру у розрізі окремих інституційних одиниць.
кінцеві споживчі витрати, фактичне кінцеве споживання, співвідношення між доходами і споживанням, методи розрахунку рівня споживання, мультиплікатор рівня споживання

Introduction. Since 1991, Ukraine was faced with the problem of developing an independent macroeconomic policy that would fit into the realities of transformation from command to a market-oriented economy. Practical implementation of system of national accounts provides an opportunity to develop an independent policy of raising the living standards of the population taking into account the international experience. It is therefore of the interest to examine the features and ties between systems of income and current consumption in Ukraine.

Especially, taking into consideration the development of modern income system in Ukraine, we are interest in: (1) what the proportion of final consumption funds to the level of national production is, revenues of various institutions of Ukrainian economy; (2) how to increase the real income of the population and soften the negative effects of transformation processes in economy today.

Literature review. Qualitative changes in the area of production, growth and quality of consumption are impossible without radical transformation of mechanism of regulation of incomes and wages. Today, post soviet scientists produce numerous objective and subjective significant effects on this [1-7]. The most important procedure for developing on income policy is to determine the material basis of its dynamics and structure in future.

Significant narrowing of the regulatory functions of the state is observed in Ukraine today. This is especially true on the level of income and working life.

Thus, the state cannot completely abandon such regulation. The reason for this situation is the weakness of market mechanisms for self-regulation, lack of most effective business owners with the goal of real restructuring and long-term production development.

The purpose of this publication is to study the patterns of proportions between the level of production activity on the formation and distribution of income institutional sectors, as well as calculate the actual end-use of funds that constitute the material basis for increasing the working life of the population.

Conceptual framework. Income and wages policy based on the laws and regulations of the public distribution system set up national income, which is part of the gross domestic product (*GDP*), which is similar to the gross national product (GNP). Logical and quantitative nature of these relationships illustrates the following ratio 1-33.

GDP is the total market value of the country's manufactured goods and services during the year taken viewed from two perspectives: income and expenditure [8].

Gross domestic product (GDP), its resources on the stage of macroeconomic accounts production, calculated as the difference between output (in fixed prices), taking into account the net taxes on products and intermediate consumption:

$$GDP = O_{bp} + NT_{prod} - IC, \qquad (1)$$

where O_{bp} – domestic production of goods and services in basic prices;

NT_{prod} – net taxes on products (gross taxes minus subsidies);

IC – intermediate consumption [9, 10].

As a collection of all types of generated income, the GDP is calculated in the III quadrant of input-output table, and also at the stage of formation of macroeconomic accounts of income revenue by the relation:

$$GDP = CE + \underbrace{NT_{pi} + NT_{other}}_{NT_Y} + \underbrace{(NOSMI + CFC)}_{GOS(MI)}, \qquad (2)$$

where CE – compensation to employees;

NT_Y – taxes less subsidies on products, imports and other;

NT_{pi} – taxes on products and imports, net;

NT_{other} – other taxes associated with the production, net;

$GOS(MI)$ – gross operating surplus, mixed income (the sum of net operative surplus, mixed income ($NOSMI$) and consumption of fixed capital (CFC)).

At the stage of using income, in the compilation of macroeconomic account "Allocation of primary income" the GDP translates into gross national income (GNI), gross balance of primary incomes in terms of institutional sectors, according to the next relation:

$$GDP = GNP + (CE_{distr}^{first} - CE_{gener}) + (PI_{in} - PI_{out}) + (NT_{\Sigma}^{distr} - NT_{\Sigma}^{gener}), \qquad (3)$$

where $CE_{distr}^{first}, CE_{gener}$ – compensation to employees carried out in stages, respectively, the initial distribution of income and its formation;

PI_{in}, PI_{out} – net property income received from other countries and paid to other countries;

$NT_{\Sigma}^{distr}, NT_{\Sigma}^{gener}$ – net taxes on production and imports, paid in stages, respectively, allocation of primary income and its formation [11].

At the stage of secondary distribution of income received, its gross value of the current carried is formed (Gross disposable income, GDI) by the following relationship:

$$GDI = GNP + (CT_{in}^{inc} - CT_{out}^{inc}) + (CTR_{in}^{other} - CTR_{out}^{other}) + (SB_{in}^{other} - SB_{out}^{other}), \qquad (4)$$

where $CT_{in}^{income}, CT_{out}^{income}$ – balance of current taxes on income received from other countries and paid them;

$CTR_{in}^{other}, CT_{out}^{other}$ – balance of other current transfers received from other countries and paid out;

$SB_{in}^{other}, SB_{out}^{other}$ – net social benefits other than in kind, that received from other countries and paid them [12].

At the stage of determination of final consumption expenditure, in the use of disposable amount, is allocated to final consumption expenditure, gross savings, which is carried out taking into account adjustments for changes in net assets of households in private pension funds (ACAHHPPF):

$$GADI = (FCE_{end}^{ind} - FCE_{end}^{col}) + (AHH_{ngpf}^{res} - AHH_{ngpf}^{uses}) + (NS + CFC), \quad (5)$$

where $FCE_{end}^{ind}, FCE_{end}^{col}$ – total final consumption expenditure by households (HH), non-profit organizations that serve HH (NPISHs) and the general government (GG) sector;

$AHH_{ngpf}^{res}, AHH_{ngpf}^{uses}$ – balance adjustments to the size of changes in the value of assets of households in non-government pension funds, the difference between the amount of resources and use;

GS – gross savings, the amount of net savings (*NS*) and *CFC* [13].

At the stage of final consumption, GDP (in terms of direct costs) decomposes as a sum of four funds:

$$GDP = GI + PCE + GGP + NE, \quad (6)$$

where *GI* – gross investment (business investment expenses – for gross fixed capital formation, changes in inventories current assets, net acquisition of valuables);

PCE – personal consumption expenditure (final consumption expenditure by HH, consumption of NPISHs, the cost of individual final consumption expenditure in the amount of GG sector);

GGP – procurement of goods and services (costs of collective non-productive consumption of the general government);

NE – net export (export less import) [14-16].

Further, gross investment (GI) present as the sum of consumption of fixed capital, depreciation (*CFC = A*) [16] and net investment (NI) (the sum of net fixed capital formation (*NFCF*), changes in inventories (*ΔInv*) and net acquisition of valuables (*NA*)), i.e.:

$$GI = A(CFC) + NI(NFCF + \Delta Inv + NA), \quad (7)$$

Note that during these calculations, we use data on capital formation account, ignoring the part in shaping it rough net acquisition of nonfinancial assets and net lending (borrowing) [ibid].

As a result, the expression [6] becomes to:

$$GDP = [A + NFCF + \Delta Inv + NA] + [PCE_{HH} + \overbrace{PCE_{NPISH} + PCE_{GG}^{ind}}^{\text{cost of public administration}}] + GGP + NE \quad (8)$$

Accordingly, the net domestic product (NDP) on the stage of making of macroeconomic production account will be:

$$NDP = GDP - A, \quad (9)$$

or

$$NDP = NI + PCE + GGP + NE, \quad (10)$$

where NI – net investment (business investment expenses – net fixed capital formation, changes in inventories current assets, net acquisition of valuables);

Net national income, which is formed at the stage of distribution of primary income, is calculated similarly to [9]:

$$NNI = GNI - A. \quad (11)$$

Net disposable income, which is formed at the stage of secondary distribution of income received, calculated by the ratio:

$$NDI_{disp}^{form} = GDI_{disp}^{form} - A. \quad (12)$$

It follows that the GNI, GVA in terms of the formation of income is:

a) reduced by the amount of costs and fees that are not related to the payment of the proceeds part of the GDP

$$GNI = GDP - (A + TBI), \quad (13)$$

where TBI - taxes on business, indirect;

or

b) reduced by the amount of TBI part of the NDP

$$GNI = NDP - A, \quad (14)$$

or

c) reduced by the amount of net taxes on products (net primary income received from non-residents) value of GDP

$$GNI = GDP - TP_{net}. \quad (15)$$

In terms of institutional sectors, among which include: non-financial corporation's (NFC); financial corporation's (FC); general government (GG); households (HH); non-profit institutions serving households (NPISH), at the stage of production is forming GVA, which is balancing by the following relationship:

$$(O_{bp} + NT_{prod} - IC) - (A + TBI) = GVA_{NFC} + GVA_{FC} + GVA_{GG} + GVA_{HH} + GVA_{NPISH} - FIS, \quad (16)$$

where $GVA_{NFC}, GVA_{FC}, GVA_{GG}, GVA_{HH}, GVA_{NPISH}$ – gross value added, which is created in the relevant institutional sectors;

FIS – financial intermediation services indirectly measurement.

At the stage of formation proceeds of institutional sectors, GVA can be represented similarly to expression (16), with a GVA of each institutional sector is represented as the sum of compensation of employees, net taxes linked to production, gross profit, mixed income:

$$GVA_i = CE_i + NT_i^{prod} + GOS(MI)_i. \quad (17)$$

Similarly, from relation (3), the gross balance of primary incomes in the process of distribution of primary income is worked out in details.

The adjustment is the sum of GVA added with regard to the actual wage, net taxes on production and imports, net property income, which is calculated for each institutional sector. During this impact detailing payment of financial intermediaries is eliminated.

And following considerations GNI is the sum of net primary income received by resident of institutional units, including initial income derived from rest of the world.

Therefore,

$$GNI_{first} = EC_{NFC} + CE_{distr}^{first} + GOS(MI)_{\Sigma} + NT_{\Sigma} + [PI_{in} - PI_{out}] + FIS, \quad (18)$$

where EC_{NFC} – compensation of employees in stages of distribution of primary income;

$GOS(MI)_{\Sigma}$ – an institutional sector's gross operating surplus, mixed income;

NT_{Σ} –net taxes on production and imports;

$[PI_{in} - PI_{out}]$ – net property income of countries;

FIS – adjustments in the amount of financial intermediation services indirectly measurement.

Similarly, from relation (4), detailed gross disposable income for the second stage of the distribution of institutional sector's income. The adjustment takes into account the redistribution of income between sectors in nature, and therefore distributed not disposable income, but its adjusted value, increased the size of social transfers in kind.

As a result, all types of institutional units' income are formed, which later used by the scheme (5). Unlike the consolidated national accounts for use disposable income account for institutional sectors' adjusted disposable income are not taken the change in net assets of households in private pension funds (ACAHHPPF).

The main conclusion to be drawn from the calculations is that national income is generated by all owners of resources. It is the basis, the actual resource for public consumption, but not equal to it.

Construction of analytical tables for a macro-region. Comprehensive resource for the actual final consumption of the population of Ukraine (AFC_{Σ}) is a collection of individual varieties adjusted available income (which can be spent on actual collective final consumption of GG sector and individual actual final consumption of HH) (Table 1).

The same table for comparison, compiled from national consolidated accounts of Spain (Table 2) [17].

Tables are filled out on the basis of the national accounts of the institutional sectors. They make it possible to determine not only the size, but also the specific position titles of certain sources of consumption funds, which is one or another stage of institutional unit revenue sharing forms the total amount of actual final consumption of resources (both individual and collective).

In the process of compiling some indices are calculated from the phase of distribution of primary income. It should be noted that at the stage of formation of institutional sectors' profit, the source of final consumption are linked with net taxes to production which are formed in GG sector and for HH.

As can be seen, the basis for the formation of actual final consumption of resources is not the GNI, but its adjusted value:

$$GNI_{correct} = + SDI_{net}, \tag{19}$$

where GNI_{api} – gross national income, which is calculated on the stage of the primary distribution of income (allocation of primary income);

SDI_{net} – net secondary income distribution.

In a first step to further divide the calculation of GNI^{Δ}_{api} growth for the next item:

- gross national income (GNI_{GG}) at the disposal of the general government;
- gross national income (GNI_{HH}) available to households.

This way,
$$GNI^{\Delta}_{api} = GNI^{GG}_{api} + GNI^{HH}_{api} =$$
$$= \left[GOS_{GG} + NT^{cons}_{pi} + ID^{fao}_{GG} + R^{ma}_{GG} + P^{nc}_{GG}\right] + \left[MI_{HH} + CE_{gener} + ID^{fao}_{HH} + R^{ma}_{HH}\right], \tag{20}$$

where GOS_{GG} – gross operating surplus (organizations and institutions) of GG sector;

NT_{pi}^{cons} – net taxes on production and imports of GG sector, allocated to AFC;

$ID^{fao}(ID_{GG}^{fao} + ID_{HH}^{fao})$ – interest, dividends and similar income (removal corporative income, reinvested (retained) profits for companies with foreign direct investment, income from property owned by policyholders) excluding lease payments for the use of produced assets – buildings, structures, machinery and equipment – are classified as payment for services when calculating the final consumption, deriving for the owners of financial assets;

$R(R_{GG}^{ma} + R_{HH}^{ma})$ – rental income of owners of land, mineral resources and other tangible material assets from rough putting them out to other institutional units (excluding fees rough intangible assets (patents, licenses, know-how, etc.) that appear in the account of other changes in volume of assets);

Table 1 – Resources of disposable income for Ukraine, millions of UAH

Accounts	Year	Uses					Adjustment financial intermediation	Total
		NFC	FC	GG	HH	NPISHs		
I. Production								
Value added, gross/ Gross domestic product (GVA, GDP)	2005	**256552**	**19617**	**56843**	**60366**	**2625**	**-7402**	**388601**
	2009	**497127**	**65907**	**139314**	**140878**	**4104**	**-50849**	**796481**
II. Generation & allocation of primary income								
Operation surplus and mixed income	2005	98608	9469	8367	58967	766	-7402	168775
	2009	208296	41759	14857	131567	1046	-50849	346676
Compensation of employees	2005				218384			218384
	2009				477953			477953
Taxes less subsidies on production & imports, net	2005			56080				56080
	2009			115329				115329
Property income, net	2005	-30317	11442	4491	7549	7		-6828
	2009	-116311	68515	5317	-3177	4		-45652
Adjustment financial intermediation	2005		-7402				7402	0
	2009		-50849				50849	0
Balance of primary incomes / National income, gross (GNI)	2005	**68291**	**13509**	**68938**	**284900**	**773**	**0**	**436411**
	2009	**91985**	**59425**	**135503**	**606343**	**1050**	**0**	**894306**
III. Secondary distribution of income								
Net balance: Current taxes on incomes & wealth	2005	-21990	-1184	41229	-17774			281
	2009	-26362	-3201	76470	-45368			1539
Net balance: Social contribution & benefits	2005	1450	142	61210	-62827	25		0
	2009	5133	382	118906	-124449	28		0
Net balance: Social benefits other than in kind	2005	-3369	-142	-81074	84617	-36		-4
	2009	-7566	-279	-196242	204101	-28		-14
Net balance: Other current transfers	2005	-2995	-17	3184	9922	4459		14553
	2009	-6291	621	4803	23095	6513		28741
Gross disposable income (GDI)	2005	**41387**	**12308**	**93487**	**298838**	**5221**	**0**	**451241**
	2009	**56899**	**56948**	**139440**	**663722**	**7563**	**0**	**924572**
IV. Redistribution of income in kind								
Social transfers in kind	2005			-49418	54145	-4727		0
	2009			-120213	127292	-7079		0
V. Use of income								
Saving, gross (GS)	2005	-41387	-12308	-12959	-46214	-494		-113362
	2009	-56869	-56753	44574	-82184	-484		-151746
Final consumption expenditure(FCE)	2005	**0**	**0**	**31110**	**306769**	**0**	**0**	**337879**
	2009	**0**	**0**	**63801**	**709025**	**0**	**0**	**772826**

Sources: Author's calculations from [18], [19].

Table 2 – Resources of disposable income for Spain, millions of euro

Accounts	Year	Uses: NFC	FC	GG	HH	NPISHs	Rest of the world	Total
I. Production								
Value added, gross/ Gross domestic product (GVA, GDP)	2005	**426352**	**36731**	**106172**	**239961**	**4560**		**908792**
	2009	**499257**	**63196**	**144366**	**267253**	**5627**		**1053914**
Consumption of fixed capital	2005	77749	4720	14932	40923	402		138726
	2009	102522	5590	18864	50576	474		178026
Value added, net / Net domestic product (NVA, NDP)	2005	**348603**	**32011**	**91240**	**199038**	**4158**		**770066**
	2009	**396735**	**57606**	**125502**	**216677**	**5153**		**875888**
II. Generation & allocation of primary income								
Operation surplus and mixed income	2005	152612	17787	14932	193250	402		378983
	2009	182806	39976	18864	218591	474		460711
Compensation of employees	2005				430655		1237	431892
	2009				516673		1480	518153
Taxes less subsidies on production & imports, net	2005			101812			2835	98977
	2009			79608			-3204	76404
Property income, net	2005	-40509	1607	-10368	33582	211	15477	0
	2009	-56132	-8021	-8039	44420	321	27451	0
Balance of primary incomes / National income, gross (GNI)	2005	**112103**	**19394**	**106376**	**657487**	**613**		**895973**
	2009	**126674**	**31955**	**90433**	**779684**	**795**		**1029541**
National income, net (NNI)	2005	**34354**	**14674**	**91444**	**616564**	**211**		**757247**
	2009	**24152**	**26365**	**71569**	**729108**	**321**		**851515**
III. Secondary distribution of income								
Net balance: Current taxes on incomes & wealth	2005	-30024	-5699	99105	-62974		-408	0
	2009	-19927	-4458	101010	-76179		-446	0
Net balance: Social contribution & benefits	2005	6092	5188	117447	-128413	26	-340	0
	2009	8883	7798	140327	-156632	21	-397	0
Net balance: Social benefits other than in kind	2005	-6092	-4888	-105473	116509	-46	-10	0
	2009	-8883	-6301	-152669	167950	-50	-47	0
Net balance: Other current transfers	2005	-7880	-1194	-7306	682	7983	7715	0
	2009	-9900	-1622	-11003	1356	9307	11862	0
Gross disposable income (GDI)	2005	**74199**	**12801**	**210149**	**583291**	**8576**		**889016**
	2009	**96847**	**27372**	**168098**	**716179**	**10073**		**1018569**
Net disposable income (NDI)	2005	**-3550**	**8081**	**195217**	**542368**	**8174**		**750290**
	2009	**-5675**	**21782**	**149234**	**665603**	**9599**		**840543**
IV. Redistribution of income in kind								
Social transfers in kind (STiK)	2005			-95880	103927	-8047		0
	2009			-132200	142070	-9870		0
Gross adjusted disposable income (GADI)	2005	**74199**	**12801**	**114269**	**687219**	**529**		**889016**
	2009	**96847**	**27372**	**35898**	**858249**	**203**		**1018569**
Net adjusted disposable income (NADI)	2005	**-3550**	**8081**	**99337**	**646295**	**127**		**750290**
	2009	**-5675**	**21782**	**17034**	**807673**	**-271**		**840543**
V. Use of income								
ACAHHPPF	2005		-300		300			0
	2009		-1497		1497			0
Saving, gross (GS)	2005	74199	12501	46409	66514	529		200152
	2009	96847	25875	-54684	131122	203		199363
Saving, net (NS)	2005	-3550	7781	31477	25591	127		61426
	2009	-3550	20285	-73548	80546	-271		21337
Final consumption expenditure(FCE)	2005	**0**	**0**	**163740**	**517077**	**8047**		**688864**
	2009	**0**	**0**	**222782**	**586554**	**9870**		**819206**
Actual final consumption (AFC)	2005	**0**	**0**	**67860**	**621004**	**0**		**688864**
	2009	**0**	**0**	**90582**	**728624**	**0**		**819206**
FCE = NADI + ACEHHPF – NS – STiK; **AFC** = GADI – GS – ACEHHPF = FCE + STiK								

Sources: Author's calculations from [20].

P^{nc}_{GG} – profit of state-owned GG-sector unincorporated enterprises;

MI_{HH} – HH' mixed income;

$CE_{api}\left(NT^{cons}_{pi} + CE_{gener}\right)$ – compensation to employees, calculated under allocation of institutional sectors primary income, where:

NT_{pi}^{cons} – net other taxes associated with the production used the actual final consumption;

CE_{gener} – salary of employees, which is formed at the stage of formation of income (wages conditional on actual and calculated contributions of employers to social insurance).

Net other taxes related to production (other taxes less other subsidies linked to production) – concerning the taxation of inputs, as well as fees for licenses and permits to engage in any productive activities or other duties, payment of which is required for the activity of production units – a resident. They do not include income taxes and other revenues that the company receives and pays to the state budget of Ukraine, regardless of profitability. A complete list of other taxes and other subsidies related to production, given the Methodology of calculation of GDP and the production method of income [8]. Note that the subsidy depends on the current legislation and the influence of other factors. The list of grants is subject to change annually. Calculation of other taxes on production is carried out using the revenue side of the budget and state funds for the whole Ukraine. Other subsidies linked to production are determined according to the statement of expenditures of state and local budgets using additional information the Ministry of Finance and relevant ministries (mainly agriculture and fisheries, coal and other industries with solid fuel extraction, manufacturing, transport, cultural institutions, etc.).

Gross profit GG institutions and organizations is formed in the production process, before include interest or other income from property belonging to payments for financial or other rough material assets necessary for production.

Mixed income generated on unincorporated enterprises (HH sector), where members can carry out unpaid labor costs, which include fees for work and which cannot be separated from income (profit) of the owner or entrepreneur.

Property income is primary income deriving from owners of financial assets and uncultivated financial assets (land, mineral resources, etc.) used by other institutional units.

In the second stage, the calculation of GNI with regard to operations under the secondary distribution (redistribution) of income is adjusted. In this case, the calculations of GDI can be distributed separately for the GG and HH:

$$GNI_{GG} = GNI_{api}^{GG} + \left[CTax_{GG}^{in} + SC_{GG}^{in} - SB_{GG}^{out} + CT_{GG}^{other}\right], \quad (21)$$

$$GNI_{HH} = GNI_{api}^{HH} + \left[SB_{HH}^{mon} + CT_{HH}^{other} - CTax_{HH}^{out} - SC_{HH}^{out}\right], \quad (22)$$

where $CTax_{GG}^{in}, CTax_{HH}^{out}$ – current taxes on income, property, received GG sector and paid by HH;

$SC_{GG}^{in}, SC_{HH}^{out}$ – social contributions received GG sector and paid by HH;

$SC_{HH}^{mon}, SB_{GG}^{out}$ – social benefits other than benefits in kind received by the HH and paid by the GG;

$CT_{GG}^{other}, CT_{HH}^{other}$ – other current transfers received GG sectors and HH.

In the third stage, we calculate AGDI, taking into account transactions redistribution of income in kind. Like the previous step, we do it separately for the GG and HH:

$$GDI_{GG}^{correct} = GNI_{GG} - ST_{kind}^{paid}, \quad (23)$$

$$GDI_{HH}^{correct} = GNI_{HH} + ST_{kind}^{obtain} + NV_{HH}^{ngpf}, \quad (24)$$

where $ST_{kind}^{paid}, ST_{kind}^{obtain}$ – social transfers in kind that paid by GG sector and received by HH;

NV_{HH}^{ngpf} – net equity of HH in non-government pension funds.

In the fourth, the last stage will determine the resources of FCE and AFC, which are carried out in the sectors of GG (collective) and HH (individual) after gross savings operations:

$$FCE_{GG}^{resours} = GDI_{GG} - GS_{GG}, \tag{25}$$

$$FCE_{HH}^{resours} = GDI_{HH} - GS_{HH}, \tag{26}$$

where GS_{GG}, GS_{HH} – gross saving in GG and HH sector.

$$AFC_{GG}^{coll} = GDI_{GG}^{correct} - GS_{GG}, \tag{27}$$

$$AFC_{HH}^{indiv} = GDI_{HH}^{correct} - GS_{HH}. \tag{28}$$

Thus, we finally have:

$$AFC_{\Sigma} = AFC_{GG}^{coll} + AFC_{HH}^{indiv} = (GDI_{GG}^{correct} + GDI_{HH}^{correct}) - (NS^{\Delta} + CFC^{\Delta}), \tag{29}$$

where NS^{Δ} – net savings in the GG and HH sector;

CFC^{Δ} – consumption of fixed capital in similar institutional sectors.

The calculations are summarized in Table 3, 4.

Table 3 – The contribution of certain types of income to Ukraine and Spain FCE

Account formation phase	Elements of final consumption expenditure	Year, million							
		2005				2009			
		Ukraine		Spain		Ukraine		Spain	
		%	value, UAH	%	value, euro	%	value	%	value
First	GOS_{GG}	2,51	8367	2,19	14932	1,94	14857	2,33	18864
	NT_{pi}^{cons}	16,83	56080	14,95	101812	15,06	115329	9,84	79608
	$ID_{GG}^{fao} + R_{GG}^{ma} + P_{GG}^{nc} + ID_{HH}^{fao} + R_{HH}^{ma}$	3,61	12040	3,41	23214	0,28	2140	4,50	36381
	MI_{HH}	17,70	58967	28,39	193250	17,19	131567	27,01	218591
	CE_{api}	65,55	218384	63,26	430655	62,43	477953	63,84	516673
Gross balance of primary incomes / GNI		**106,21**	**353838**	**112,20**	**763863**	**96,90**	**741846**	**107,51**	
Second	$CTax_{GG}^{in} + CTax_{HH}^{out}$	7,04	23455	5,31	36131	36,65	280571	3,07	24831
	$SC_{GG}^{in} + SC_{HH}^{out}$	–0,49	–1617	–1,61	–10966	18,55	142001	–2,01	16305
	$SC_{HH}^{mon} + SB_{GG}^{out}$	1,06	3543	1,62	11036	–31,56	–241610	1,89	15281
	$CT_{GG}^{other} + CT_{HH}^{other}$	3,93	13106	–0,97	–6624	–15,63	–119646	–1,19	9647
Gross disposable income / GDI		**117,76**	**392325**	**116,54**	**793440**	**104,91**	**803162**	**109,26**	
Third	$GS_{GG} + GS_{HH}$	–17,76	–59173	–16,59	–112923	–4,91	–37610	–9,44	76438
	ACEHHPF	0,0	0	0,04	300	0,0	0	0,18	1497
Final consumption expenditure / *FCE*		**100,0**	**333152**	**100,0**	**680817**	**100,0**	**765552**	**100,0**	**809336**

Sources: Author's calculations from Table 1, 2.

Creation of final incomes also can be represented as follows. The ready-made and sold product takes the form of gross (monetary) gain. Since the beginning of realization the parallel motion starts:

a) the transferred cost (*c*), belonging to manufacture and can't be a source of income, hence, consumption,

b) movement of newly created value in material form, which is reflected in the consolidated balance sheet and material balance traffic;

c) the movement of newly created value in the form of cash received from the sale, which is reflected in the consolidated financial balance.

Table 4 – The contribution of certain types of income to Ukraine and Spain AFC

Account formation phase	Elements of actual final consumption	Year, million							
		2005				2009			
		Ukraine		Spain		Ukraine		Spain	
		%	value, UAH	%	value, euro	%	value	%	value
First	GOS_{GG}	2,48	8367	2,17	14932	1,92	14857	2,30	18864
	NT_{pi}^{cons}	16,60	56080	14,78	101812	14,92	115329	9,72	79608
	ID_{GG}^{fao} + $R_{GG} + P_{GG}^{nc} + ID_{HH}^{fao} + R_{HH}$	3,56	12040	3,37	23214	0,28	2140	4,44	36381
	MI_{HH}	17,45	58967	28,05	193250	17,02	131567	26,68	218591
	CE_{api}	64,63	218384	62,52	430655	62,43	477953	63,07	516673
Gross balance of primary incomes / GNI		**104,72**	**353838**	**110,89**	**763863**	**95,99**	**741846**	**106,21**	**870117**
Second	$CTax_{GG}^{in} + CTax_{HH}^{out}$	6,94	23455	5,25	36131	36,30	280571	3,03	24831
	$SC_{GG}^{in} + SC_{HH}^{out}$	-0,48	–1617	–1,59	–10966	18,37	142001	–1,99	16305
	$SC_{HH}^{mon} + SB_{GG}^{out}$	1,05	3543	1,60	11036	-31,26	–241610	1,87	15281
	$CT_{GG}^{other} + CT_{HH}^{other}$	3,88	13106	–0,96	–6624	-15,48	–119646	–1,18	9647
Gross disposable income / GDI		**116,11**	**392325**	**115,18**	**793440**	**103,93**	**803162**	**107,94**	**884277**
Third	$ST_{kind}^{paid} + ST_{kind}^{obtain}$	1,40	4727	1,17	8047	0,92	7079	1,20	9870
	NV_{HH}^{ngpf} (ACEHHPF)	0,0	0	0,04	300	0,03	195	0,18	1497
Gross adjusted disposable income GDI^{cor}		**117,51**	**397052**	**116,39**	**801787**	**104,87**	**810436**	**109,33**	**895644**
Fourth	$GS_{GG} + GS_{HH}$	–17,51	–59173	–16,39	–112923	–4,87	–37610	–9,33	76438
						0,0	0	0,18	1497
Actual final consumption / AFC		**100,0**	**337879**	**100,0**	**688864**	**100,0**	**772826**	**100,0**	**819206**

Sources: Author's calculations from Table 1, 2.

The most complete system of accounts of the formation of gross value added, domestic product, national income, disposable income, including HH, and their end-use can be made on the basis of data of the United Kingdom Statistical Authority (Table 5).

Thus, there is the following picture: NI is the basis of the personal or HH income, but not equal to it, derived from the following relationship:

$$PI_{res} = NI - \mathrm{SC} - TI_{corp} - TE_{ud} + TP, \tag{30}$$

where PI_{res} – personal income, received;

NI – national income;

SC – social contributions;

TI_{corp} – taxes on corporate income;

TE_{ud} – corporate earnings, undistributed;

TP – transfer payments (cash back (commodity) flows to a recipient of taxpayer: pensions, benefits, compensation, scholarships, etc.).

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Ю.В.Малаховський
Кіровоградський національний технічний університет
Кількісний зв'язок між обсягом доходів і споживання у макроекономічному регіоні

У публікації поставлено мету дослідити кількісні співвідношення між обсягами виробництва, доходів і споживання у макроекономічному регіоні. Для забезпечення належного рівня узагальнень дослідження проведено за даними національних рахунків України, Іспанії, Великої Британії.

Дослідження базуються на вивченні особливостей функціонування різних форм прояву валового внутрішнього продукту, як матеріальної основи індивідуального споживання, з точки зору закономірностей і пропорцій формування проміжних доходів і здійснення кінцевих витрат. Виокремлюються послідовні стадії розрахунку ресурсів здійснення кінцевих споживчих витрат і обсягів фактичного кінцевого споживання у процесі формування, розподілу і використання коштів окремих цільових фондів інституційними одиницями макроекономічного регіону. Окремо вивчається явище мультиплікативного взаємозв'язку між валовим національним продуктом, валовим доходом і кінцевим особистим споживанням.

Реалізований у роботі методичний підхід до кількісного аналізу зв'язку між обсягом доходів і споживання забезпечує можливість отримувати узгоджені оцінки рівня кінцевого поточного використання економічних ресурсів країни, вивчати його структуру у розрізі окремих інституційних одиниць.
кінцеві споживчі витрати, фактичне кінцеве споживання, співвідношення між доходами і споживанням, методи розрахунку рівня споживання, мультиплікатор рівня споживання

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