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Article

## Formation of institutional structural determinants of endogenous influence on the level of gross saving in Ukraine

Economy and forecasting

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### Iryna Kriuchkova<sup>1</sup>

### FORMATION OF INSTITUTIONAL STRUCTURAL DETERMINANTS OF ENDOGENOUS INFLUENCE ON THE LEVEL OF GROSS SAVING IN UKRAINE

The article analyzes domestic institutional structural determinants of gross saving (GS) in Ukraine in order to identify the causes of the critical decline in GS and, accordingly, in gross fixed capital formation (GFCF) in 2019-2021. The diagnosis was made based on indicators of annual and quarterly national accounts of Ukraine with the definition of positive and negative factors influencing GS by institutional sectors, as well as subsectors of nonfinancial corporations and households. This approach made it possible to reveal the hidden causes of the decline in gross saving in Ukraine, as well as the decline in GS capitalization and the deep investment crisis in 2020. The author shows that the shock tariff increase in 2015 provoked a significant redistribution of income and savings between the institutional sectors and their subsectors. It is found that of all structural determinants, fluctuations in the level of GS in the subsector of private nonfinancial corporations are most affected by the changes in the share of gross operating surplus, (GOS) and by the large-scale outflow of financial resources through the property income channel, which varies closely depending on the growth of borrowing. These fluctuations are also affected by zero and abrupt cycles in raising the minimum wage. At the same time, it is proved that the inconsistency of the government's tariff and social policies created a two-fold gap between the statutory social standards and their actual level, which led to significant decline in living standards, especially for the recipients of property income and transfer income turning them into chronic negative borrowers with negative gross saving. This had a negative impact on the GS of the whole household sector.

Deepening the analysis to the level of GS structural determinants of the household subsector shows that the high levels of GS in the subsector of ownaccount workers and the subsector of employers do not correspond to the low levels of their gross fixed capital formation, i.e. a big share of GS of these subsectors does not become a full source of national investment.

The author outlines the directions for desired changes in the structural determinants of endogenous impact on the GS level in the household sector and proposes a number of government measures that could positively affect

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the distribution of income between the institutional sectors and subsectors and, accordingly, the level of  $GS^2$ .

**Keywords:** structural determinants, level of gross saving, gross disposable income, institutional sectors of the economy, subsectors of the household sector, subsectors of the nonfinancial corporations sector, gross fixed capital formation, social standards

**Problem Statement.** In 2020 Ukraine's GDP has fallen to the level of 2005, and gross fixed capital formation (GFCF) to the level of 2001, which is only 20% of the 1990 level. The economy has entered a new investment crisis, as evidenced by the fact that GFCF in the non-financial corporate sector actually decreased by 33.7% and in the economy as a whole by 24.4% (as compared to 2019). The main reason for this development was the fall in gross saving to 10.9 per cent of gross disposable income (GDI), three times lower than in 2004 [1].

The result of Ukraine's long-term capital deficit is a low technological level of production and a surplus of labor, manifested by Ukrainians abroad wage earners. This led to an increase in the proportion of workers' compensation (in total wages) to 17.5% in 2018 and, under epidemiological constraints, to 15.9% and 14.5% in 2019 and 2020, respectively (calculated by the author on the basis of [2]).

Ukraine belongs to the group of countries where the key endogenous factor influencing long-term economic growth is the level of gross national saving as well as the degree of its effective capitalization. Therefore, among the problems and trends that have emerged in the Ukrainian economy in recent years, the most critical is *the decline in the level of gross saving and, consequently, the decline in gross capital formation.* An in-depth analysis of the structural determinants of changes in gross saving and GFCF in the context of institutional sectors of the economy allows us to clarify the endogenous causes of these changes.

In the first quarter of 2021, compared to the corresponding period of previous year, despite the low comparative base, the drop in GFCF continued (by 7.8%) and the gross saving decreased to 1% of Gross Disposable Income (GDI), which was strongly influenced by the formation of negative gross saving in the household sector, as well as the reduction of gross income of the non-financial corporate sector to 4.5% of GDI (calculated by the author based on [3]), which was half of the safe level. The negative trend of decreasing gross saving and weaker investment activity in the household sector was influenced by the formation of negative savings by employees in 2019 and the prolonged (since 2014) and large-scale excess of expenditure over income in the sub-sector of recipients of property income and transfers.

The analysis of recent research and publications. Several monographs and articles are devoted to the problem of identifying the structural determinants of endogenous influence on the level of gross saving in Ukraine, as well as the analysis of the causes of the fall in the level of gross saving, the structure of gross saving and the negative impact of the debt burden on the prospects of investment dynamics [4-8].

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<sup>&</sup>lt;sup>2</sup> The article was prepared within the research project on "Estimation and forecasts of endogenous growth of Ukraine's economy" (registration No. 0120U105803).



Regular economic reviews of the Ministry of Economic Development, Trade and Agriculture of Ukraine actually do not analyze the level of gross saving [9], and the forecasts of economic and social development of Ukraine only state changes in the gross saving of households and provide forecast parameters of gross saving for the economy in a tabular appendix by consolidated national accounts to the forecast [10]. The National Bank of Ukraine does not analyze the level of gross saving either in institutional sectors of the economy or in the economy as a whole. In other words, there is almost no regular monitoring and analysis of the structural determinants of gross saving by institutional sectors of the economy, nor by subsectors of the non-financial households and corporations in the professional community, apart from the author's previous publications [11, 12], and in the government's economic block. And it is through such an analysis that the reasons for the decline in gross saving and the investment process can be revealed.

The purpose of this article is to identify the underlying structural determinants of the decline in gross savings in the Ukrainian economy in terms of institutional sectors of the economy and the subsector of non-financial corporations and households, which makes it possible to find out the shortcomings of government macro-structural policy that led to the deformation of national sources of economic investment and to identify areas to improve the level of gross saving.

**Presenting main material.** Retrospective studies have shown that the overall level of GS depends on the distribution of GDI among the institutional sectors of the economy [11, 12]. In contrast to the more or less stable patterns of sectoral distribution of GDI in OECD countries, Ukraine is characterized by a high amplitude of fluctuations in the structure of GDI (Figure 1), which negatively affects changes in the level of gross saving (Figure 2) and the stability of investment in economic growth.

Between 1991 and 2020, the Ukrainian economy fell into an investment crisis three times, with a decline in 1996 to 14.8% relative to 1990 levels; in 2009 to 21.5% and in 2015 to 16%, respectively. In 2019 and 2020 as % of 1990, GFCF was respectively: 26,3 and 19,9%. It is also of concern that in 2020 and in the first two quarters of 2021, GFCF was carried out mainly by reducing inventories of material current assets, rather than gross saving (calculated on the basis of [1, 3]). That is, in order to accelerate the dynamics of GFCF, macro-structural policies should be directed towards restoring a sufficient level of gross saving to ensure expanded reproduction of gross domestic product (GDP).

Over the last 18 years, the largest fluctuations in GDI and correspondingly in gross saving have been observed in the households and non-financial corporations sectors. Therefore, it is these sectors that need more detailed attention in terms of their subsectors.

The analysis of changes in the positive and negative components of GDI and gross capital formation of the households and non-financial corporation subsectors reveals which endogenous structural determinants played the largest role in shifts in sectoral shares of total GDI and, consequently, in changes in the level of gross saving.



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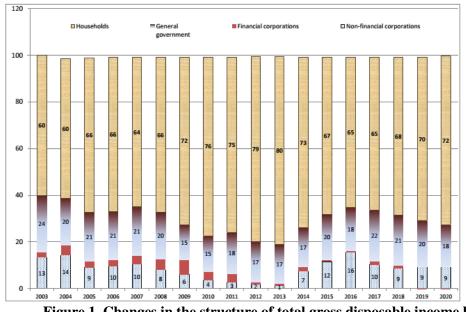


Figure 1. Changes in the structure of total gross disposable income by institutional sectors

Source: author's calculations based on State Statistics Service of Ukraine data<sup>3</sup> [1].

The analysis of changes in the positive and negative components of GDI and gross capital formation of the households and non-financial corporation subsectors reveals which endogenous structural determinants played the largest role in shifts in sectoral shares of total GDI and, consequently, in changes in the level of gross saving.

Figure 3 shows that there is a relationship between fluctuations in the GDI levels of the non-financial corporate sector<sup>4</sup> and the household sector - fluctuations in the shares of GDI of non-financial corporations and those of households are mirrored. The analysis shows that among the factors influencing the GDI levels of non-financial corporations and households, the increase in the minimum wage plays an important role. Thus, from 01.12.2003 to 31.12.2013, minimum wage increased from UAH 205 to UAH 1218.

From January 2014 to May 2016, the minimum wage was frozen, which caused changes in the GDI structure, namely a decline in the share of GDI of households and an increase in the share of GDI of non-financial corporations.

<sup>&</sup>lt;sup>3</sup> Hereinafter - since 2014 excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and parts of the Anti-Terrorist Operation Zone.

<sup>&</sup>lt;sup>4</sup> Among the institutional sectors of the economy, the main investor is the sector of non-financial corporations, whose share in the GFCF on average for the period 2000-2019 was 76.1%. But in 2020, the share of NFCs in GFCF decreased to 63.5%, which was due to the real decline of GFCF in all sectors of the economy, except the general government sector. According to our calculations, the real decline in the GFCF in the non-financial corporations sector was 33.7%, in the household sector - 4.8% and the real increase in the general government sector - 3.1%.

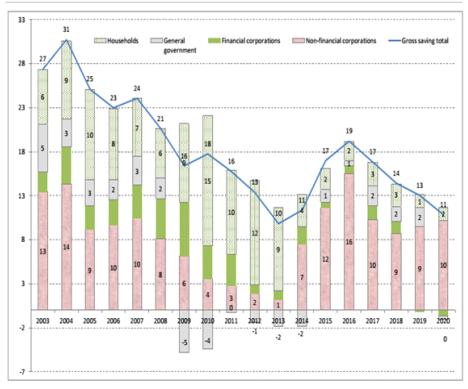


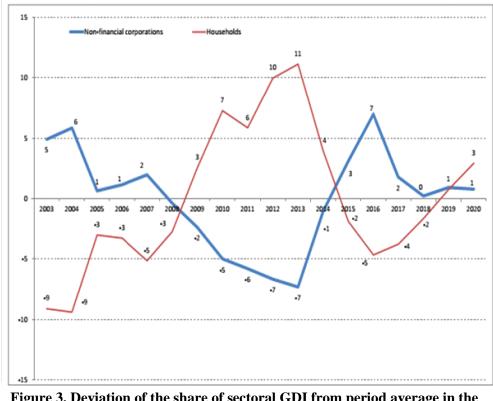
Figure 2. Gross savings by institutional sectors and in total economy, % of total GDI

Source: author's calculations based on State Statistics Service of Ukraine data [1].

Between 2016 and 2020, the minimum wage increased from UAH 1378 as at 01.01.2016 to UAH 5000 as at 31.12.2020. This caused an increase in the share of the household sector in total GDI from 64.6% in 2016 to 72.2% in 2020. That is, the government has a significant impact on changes in wages by raising the minimum wage, but it does in a jumping manner, as in some periods these changes are zero, while in others the level of the minimum wage doubles all at once (2017). This unevenness is not conducive to raising and stabilizing gross saving at a safe level.

Changes in the endogenous determinants of income growth in the non-financial corporation sector between 2003 and 2013 showed that not only the decline in gross profits by 10 percentage points (Figure 4), but also the increase in the negative balance of property income (by 6.3 percentage points) played a crucial role in the considerable decline in the sector's share in total GDI (by 12.2 percentage points). Meanwhile, in the narrower period from 2008 to 2013, the non-financial corporate sector experienced a large outflow of resources through the net property income channel, which averaged 11.7 per cent of GDI over the year.



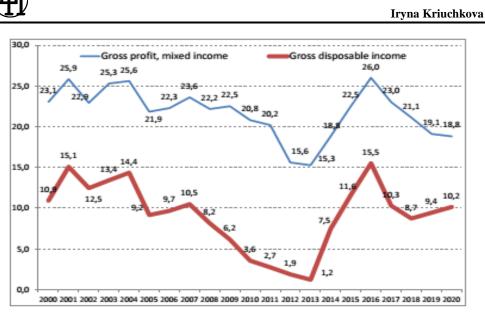


# Figure 3. Deviation of the share of sectoral GDI from period average in the non-financial corporate and household sectors

Source: author's calculations based on State Statistics Service of Ukraine data [1].

Changes in the endogenous determinants of income growth in the non-financial corporation sector between 2003 and 2013 showed that not only the decline in gross profits by 10 percentage points (Figure 4), but also the increase in the negative balance of property income (by 6.3 percentage points) played a crucial role in the considerable decline in the sector's share in total GDI (by 12.2 percentage points). Meanwhile, in the narrower period from 2008 to 2013, the non-financial corporate sector experienced a large outflow of resources through the net property income channel, which averaged 11.7 per cent of GDI over the year.

In 2011-2013, low GDI of the non-financial corporation sector was substantial affected by losses in the public non-financial corporation subsector, resulting in negative GDI of the subsector (Figure 5). The shortfall in resources to finance gross capital formation was mainly covered by capital transfers, which amounted to an annual average of 1.5% of total GDI, as well as by borrowing.



**Figure 4. Indicators of the non-financial corporations sector,** *in % to total GDI* 

Source: author's calculations based on State Statistics Service of Ukraine data [1].



# Figure 5. Gross disposable income by the subsectors of non-financial corporations, as % of total GDI

Source: author's calculations based on State Statistics Service of Ukraine data [1].

In 2015, due to higher energy tariffs, there was an increase in gross profit levels of both state-owned non-financial corporations and foreign-controlled non-financial corporations (5.1% and 6.4% of total GDI respectively), which had the effect of a sharp increase in their shares in total GDI (to 6.5% and 7.9% accordingly).

At the same time, a few changes in the opposite direction took place in private nonfinancial corporations. The share of their gross profit in total GDI fell by 5.5 percentage points and GDI fell to almost zero (see Figure 5). In other words, the tariff shock led to a massive redistribution of GDI across the subsectors of non-financial



corporation sector in favor of state-owned non-financial corporations and foreigncontrolled non-financial corporations.

As a result of this significant reduction in GS, private non-financial corporations reduced their GFCF to 6% of total GDI, which had a negative impact on the GFCF level of the entire non-financial corporate sector (Figure 6). To cover the resource gap, they had to resort to new borrowings and add another 5.3% of GDI to their accumulated debt (Figure 7).

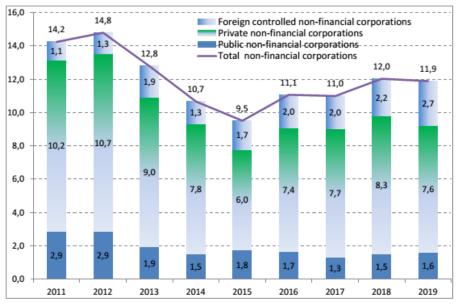


Figure 6. Gross fixed capital formation of the non-financial corporations by subsectors, *as a % of total GDI* 

Source: author's calculations based on State Statistics Service of Ukraine data [1].

In 2016, private non-financial corporations increased their gross profit rate to 17.5% and their GDI rate to 9.5% of total GDI, which also allowed them to increase their gross fixed capital formation rate to 7.4%, reduce net borrowing to 1.8%, and reduce the negative balance of property income to 5.8% (Table 1).

As shown in Table 1, private non-financial corporations consistently have a large gap between gross profit (GP) and GDI. This is influenced by the significant outflow of financial resources from property income, whose balance amounted to 8.3% of total annual GDI between 2011 and 2015.

It is the persistent fluctuations in GDI and the chronic deficit in gross saving of private non-financial corporations that cause them to constantly resort to borrowing and then widen the gap between gross profit (GP) and GDI due to the significant payments on property income. Other negative components of GDI, such as current taxes on income, property, etc. and the balance of current transfers, are less significant (see Table 1).

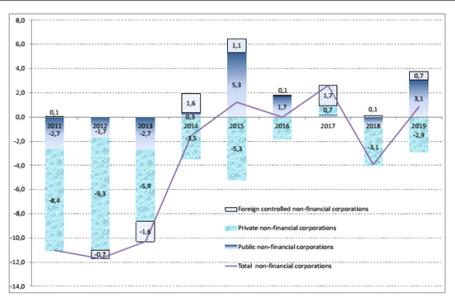


Figure 7. Net lending (+), net borrowing (-) by sub-sectors of the nonfinancial corporates' sector, as a % of total GDI

Source: author's calculations based on State Statistics Service of Ukraine data [1].

Table 1

<b>The indicators of private non-financial corporations,</b> % of total GDI										
Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Gross disposable income	3.5	1.5	1.6	4.3	0.3	9.5	6.8	6.4	4.9	
Gross profit, mixed income	17.4	12.9	12.3	14.1	8.5	17.5	16.2	14.9	12.8	
Property income earned	0.0	1.0	1.2	1.3	1.3	0.6	0.2	0.1	0.1	
Property income paid	10.5	9.7	9.3	9.0	7.9	6.4	6.4	5.9	5.3	
Balance of property income	-10.5	-8.7	-8.1	-7.7	-6.7	-5.8	-6.2	-5.8	-5.2	
Balance of current transfers	-1.0	-0.6	-0.5	-0.6	-0.4	-0.6	-1.6	-0.8	0.5	
Current taxes on income, property, etc.	-2.4	-2.1	-2.0	-1.4	-1.1	1.6	1.7	-1.9	1.8	
Gross saving	3.5	1.5	1.6	4.3	0.3	9.5	6.8	6.4	4.9	
Net savings	-1.7	-4.6	-4.6	-1.6	-4.7	3.4	0.8	1.5	-0.4	
Gross fixed capital formation	10.2	10.7	9.0	7.8	6.0	7.4	7.7	8.3	7.6	
Consumption of fixed capital	-5.3	-6.1	-6.2	-6.0	-5.0	-6.2	-6.0	-4.9	-5.3	
Changes in inventories	1.7	0.2	-1.5	0.1	-0.7	4.0	3.2	0.8	0.1	
Net lending (+), net borrowing (-)	-8.4	-9.3	-5.9	-3.5	-5.3	-1.8	0.7	-3.1	-2.9	

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Source: author's calculations based on State Statistics Service of Ukraine data [1].

From 2016 to 2019, the GDI level of private non-financial corporations decreased due to falling gross income and significant payments of property income (see Table 1). This influenced the formation of a downward trend in the level of gross saving of the non-financial corporation sector and in the economy as a whole (see Figure 2).



As can be seen from Figure 6, the subsector of private non-financial corporations is the main investor in the economy and *the fluctuation in the level of GFCF of private non-financial corporations affects the level of both sectoral GFCF and that of the economy as a whole*. Hence, the problem of increasing the level of GFCF in the private non-financial corporation subsector can be solved by reducing the outflow of resources through the property income channel, which requires replacing external borrowings by domestic ones with a reduction in their cost, as well as ensuring stable economic conditions.

In order to expand domestic lending, the government introduced the program "Affordable Loans 5-7-9%" in February 2020, under which the government compensates entrepreneurs for part of their credit burden. As of 28.12.2020, the number of applications for participation in the program amounted to 58374 with a total value of UAH 69 billion. In total, 7158 loan agreements were signed during the whole period of the program for a total amount of UAH 16.5 billion [13]. On 28 December 2020, the government adopted a resolution "On Amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 28 of 24 January 2020", focusing on additional support for small and medium businesses in quarantine conditions [14].

Indeed, during February-December 2020 there was an increase in lending to medium and microenterprises by 14% and 6%, respectively. There was a 3% decrease in lending to small businesses, but in 2021 the situation improved here as well - in January-July the balances of loans increased by 21% [15].

The performance of foreign-controlled corporations compared to private nonfinancial corporations seems much better. Since 2015, the foreign-controlled subsector of non-financial corporations has reduced the capitalization of GS and become a net lender. At the same time, the level of current income and property taxes has declined and remains stable. Although the subsector is not a prominent investor, the level of subsector's GDI rose little by little since 2015 and accounted for 2.7% of total GDI in 2019. In contrast to foreign-controlled non-financial corporations, the subsector of public non-financial corporations has reduced its level of GDI in recent years. And in 2019, although the subsector increased its GS level to 2.2% and received capital transfers on the amount of 0.7% of total GDI, its gross fixed capital formation was only 1.6%. In other words, although the government's tariff support for this subsector's income made it profitable, still its GS and GDI levels cannot be called either heavyweight or stable (Table 2).

Table 2

# The indicators of foreign controlled private non-financial corporations, % of total GDI

Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross disposable income	1.8	0.6	0.7	2.8	6.4	3.9	2.9	2.3	2.3
Gross profit, mixed income	2.0	1.7	1.8	4.0	7.9	5.6	4.5	3.9	3.8
Property income earned	0.1	0.2	0.1	0.0	0.2	0.1	0.1	0.1	0.1

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Property income paid	0.1	0.5	0.4	0.6	1.3	1.3	1.3	1.5	1.0
Balance of property income	-0.1	-0.4	-0.3	-0.6	-1.1	-1.2	-1.3	-1.4	-0.9
Balance of current transfers	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.2	0.0
Current taxes on income, property, etc.	-0.3	-0.6	-0.7	-0.5	-0.4	-0.4	-0.2	-0.3	-0.4
Gross savings	1.8	0.6	0.7	2.8	6.4	3.9	2.9	2.1	2.3
Net savings	1.2	-0.1	-0.1	1.9	5.0	2.6	1.7	0.9	0.8
Gross fixed capital formation	1.1	1.3	1.9	1.3	1.7	2.0	2.0	2.2	2.7
Consumption of fixed capital	-0.6	-0.7	-0.8	-0.9	-1.3	-1.3	-1.2	-1.2	-1.6
Change in inventories	0.6	0.0	0.5	-0.1	3.5	1.8	1.0	-0.3	-1.0
Net lending (+), net borrowing (-)	0.1	-0.7	-1.6	1.6	1.1	0.1	1.7	0.1	0.7

Source: author's calculations based on State Statistics Service of Ukraine data [1].

The gross saving rate of the household sector plays an important role in the fluctuations in the overall level of gross saving and investment in the economy. For example, in OECD countries in 2020, the gross savings rate of the household sector fluctuated from 12% in Denmark to 25.2% in Slovenia, and on average it was 19% (relative to the sectoral GDI) [16]. In Ukraine, the gross savings rate of the household sector was also quite high in 2012, amounting to 15.1% of the sector's GDI, but declined to 1.5% in 2016. From 2017 to 2019, there is a fluctuation in the level of gross household saving, mainly due to the emergence of negative saving in the *subsector of recipients of property and transfer incomes*<sup>5</sup>, and in 2019 the level of *the subsector of employees* also dropped below zero (Figure 8).

During 2014-2019, of all household subsectors, the property and transfer income subsector was the most vulnerable and steadily increased its net borrowing since 2014 (Figure 9). The reason for the decline in gross saving and transformation of the subsector into a chronic net borrower was the decline in their real gross income, especially between 2014 and 2018 (by 41.5%) (Figure 10). This means that since 2015, despite the tariff shock, the social support of the subsector was insufficient and its representatives were forced to live on previously accumulated savings, assistance from relatives or new borrowings. In 2018, net borrowing covered 26% of all expenditure (current and investment ones). The sub-sector, especially non-working pensioners, is not at the level of poverty, but at the level of survival.

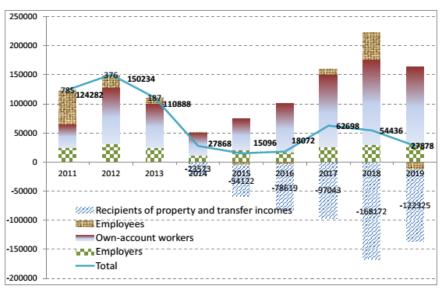
Working and non-working pensioners constitute the bulk of the subsector. According to the Pension Fund, as of April 1, 2021, approximately 75% or 8316443 persons receive old age pension with an average value of UAH *3770.23*; 13.29% or 1367192 persons receive disability pension with an average value of UAH *2825.32*; survivor's (breadwinner's) pension – UAH *3227.83* is received by 5.76% or 530902

<sup>&</sup>lt;sup>5</sup> This subsector comprises households whose main source of income is income from property and transfers, divided into the following groups: recipients of income from property; recipients of pensions; and recipients of income from other transfers.





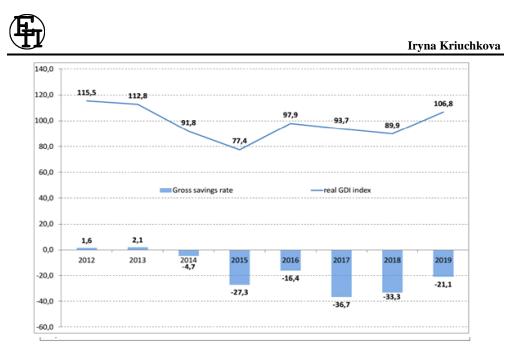
**Figure 8.** Gross saving rate of the household sector by subsectors, % of sectoral GDI Source: author's calculations based on State Statistics Service of Ukraine data [1].



**Figure 9.** Changes in net lending (+), and net borrowing (-) in the household sector by subsectors, *UAH million* 

Source: State Statistics Service of Ukraine data [1].

persons; 5.43% of pensioners or 2012345 persons receive years-of-service pension with the average value of UAH **3403,48**; social pension with the average value of UAH **1785.48** - 71 921 persons; 550487 persons receive military pension - UAH **5650.26**, and **3556** persons receive a lifetime allowance of judges with an average amount of UAH **77387.20** [17]. At the same time, the subsistence level for those who have lost their ability to work, in April 2021 prices, was UAH **3627.83** [18]. Hence, the average pension of almost 95% of pensioners is lower than the actual subsistence minimum.



### Figure 10: Changes in real GDI, *in % of previous year* and gross saving rate in the subsector of property and transfer income, *as % of the subsector's GDI Source*: author's calculations based on State Statistics Service of Ukraine data [1].

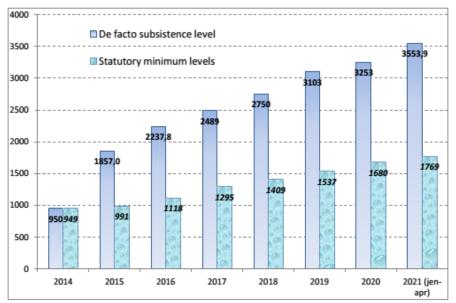
In 2019, the share of wages in gross income of this subsector was 37%. As of 1 January 2021, there were 11.1 million pensioners in Ukraine, out of them 2.7 million are working pensioners [see 17]. According to the SNA, in 2019 social benefits other than in-kind benefits, and combined with other current transfers in the property income and transferees subsector amounted to UAH 310475 million, and less social contributions and other current transfers, UAH 271063 million. In other words, if the above subsector includes all working and non-working pensioners, social benefits were less than UAH 2400 per person per month (excluding benefits in kind, aggregated with other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers), and after paying social contributions and other current transfers. UAH 3553.9 (Figure 11).

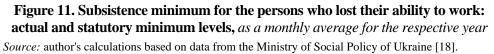
The reason for the deep decline in the incomes of pensioners was the long-standing lag between the increase in the statutory minimum levels **for the persons who lost their ability to work** and its de facto subsistence level calculated in the prices of the respective month. Figure 11 shows that the year 2014 was the last year when the actual subsistence minimum for the persons who lost their ability to work was in line with its statutory parameters. After the 2015 tariff shock, the household consumption expenditure deflator rose to 148.2%, while the statutory subsistence minimum for the disabled rose by only 4.4%. The statutory minimum subsistence level for disabled remained half of its actual values throughout 2015-2021.

Consequently, the state social guarantees supposed to ensure a standard of living not lower than the subsistence level do not fulfil their function. This category of citizens actually receives pensions well below the calculated minimum levels. Hence, only a reduction of the gap between actual and state-guaranteed standards will ensure the growth of real subsectoral GDI and make it possible to balance income and expenditure in this subsector, correct the distortion in the distribution of



GDI across subsectors of the household sector, and raise the gross savings rate of households. According to our calculations, an annual real increase of 8.5% in the statutory subsistence minimum is necessary to solve the problem within five years. This would have the effect of substantially increasing the level of gross savings in the household sector and the economy as a whole. We estimate that an annual real increase of 8.5% in the statutory minimum subsistence level over five years is necessary to solve the problem. This would significantly increase the level of gross savings in the household sector and the economy as a whole.





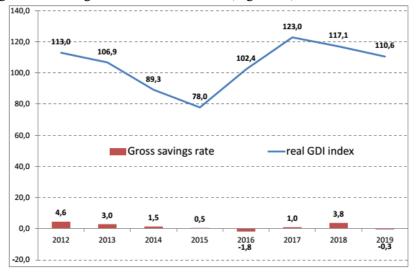
A constraint for the purposeful reduction of the gap between the legal and the actual subsistence minimum is the fact that many types of payments are pegged to the subsistence minimum, some of which are not related to the subsistence minimum as a basic social standard (e.g. fines, fees, monetary penalties, etc.). In order to streamline the scope of application of the subsistence minimum, and increase its size and the size of state social guarantees, the Ministry of Social Policy together with Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine have developed a number of draft laws approved by the government and submitted to the Verkhovna Rada of Ukraine. Among them: the draft laws on measures to streamline the system of calculating the size of the subsistence minimum, social payments, monetary payments and penalties and fees for the provision of administrative services (administrative fee) (registration No. 5045 of 08.02.2021), etc. [19]. These draft laws propose to apply the subsistence minimum exclusively to basic social guarantees (minimum wage, minimum retirement pension, and state social assistance, which is the main source of income for a person), and not to fines, fees, or automatic recalculation of a significant number of payments requiring

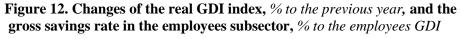


additional budget expenditures. At the same time, their adoption would improve the methodology for calculating the subsistence minimum.

A step-by-step real approximation of social standards to their actual levels was envisaged in the Budget Statement for 2022-2024, where the forecast parameters of the subsistence minimum were established based on the subsistence minimum approved in the Law of Ukraine on the State Budget of Ukraine in December this year, with an increase of 2 percentage points above the forecast indicator of the consumer price index [20]. But at the same time it is not expected that the parameters of the subsistence minimum will be adjusted in case of actual deviations of the actual dynamics of the consumer price index from the forecasted level. In addition, the assumption of only 2% of the real growth of the subsistence minimum with its twofold gap with the actual level is very small. At this rate, it would take 35 years to close the gap between these minimum subsistence parameters.

The situation is somewhat better in the largest subsector of households, the subsector of employees<sup>6</sup>. Here, the gross savings rate fluctuates slightly above zero, although it turned negative in 2016 and 2019 (Figure 12).





Source: calculated by the author on the basis of State Statistics Service of Ukraine data [1].

The main resource component of gross available income of the employees subsector is compensation of employees, which accounted for 90.9% of their GDI in 2019 (Table 3). A detailed examination of the changes in other positive as well as negative components of employees GDI helps to clarify the reasons for fluctuations in their level of gross savings in the subsector's GDI.

Thus, in the period from 2011 to 2019, the share of current transfers changed significantly, being negative in 2011 (minus 8.9% of GDI), it became positive in

<sup>&</sup>lt;sup>6</sup> Employees are physical persons who, in accordance with the law, have entered into a written or oral employment agreement (contract) with an enterprise, institution organization or a natural person, on working conditions and compensation and receive guaranteed compensation for work under this agreement.



2016 (5.4% of GDI), and increased to 6.6% in 2019. The main reason for such changes was the decrease in the employees social insurance contributions from 26.7% in 2011 to 13.3% in 2016 and to 12.5% in 2019 (see Table 3). This was due to changes in the levying of the unified social contribution (USC) in 2016<sup>7</sup>. The decision to reduce the unified social contribution rate had the effect of reducing social insurance contributions from 20.6% in 2015 to 13.3% in 2016.

Table .	3
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Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019	
		Reso	ource						•	
Gross disposable <b>income</b> + capital transfers	103.7	100.1	100.1	100.0	100.2	100.1	101.1	100.2	100.8	
Gross disposable income	100	100	100	100	100	100	100	100	100	
Compensation of employees	108.8	96.8	97.2	96.7	91.5	90.0	94.7	94.4	90.9	
Gross profit, mixed income	8.3	12.0	11.9	12.7	13.3	10.8	13.1	11.9	11.6	
Balance of property income	1.3	2.2	2.8	3.2	3.0	0.8	0.7	0.4	1.5	
Balance of current transfers	-8.9	-2.5	-3.4	-3.7	2.5	5.4	2.4	4.1	6.6	
Social benefits other than benefits in kind (received)	15.9	18.5	16.2	18.1	18.0	13.2	11.2	12.5	13.3	
Other current transfers	3.3	3.2	5.3	5.1	6.7	6.3	5.2	5.6	6.4	
Social insurance contributions (paid)	-26.8	-22.8	-23.3	-23.0	-20.6	-13.3	-13.3	-13.5	-12.5	
Other current transfers	-1.3	-1.3	-1.7	-3.9	-1.6	-0.8	-0.6	-0.5	-0.5	
Current taxes on income, property, etc.	-9.6	-8.5	-8.5	-8.9	-10.2	-8.0	-10.9	-10.7	-11.7	
Net capital transfers	3.7	0.1	0.1	0.0	0.2	0.1	1.1	0.2	0.8	
		U	Isage							
Actual individual final consumption	91.9	95.4	97.0	98.5	99.5	101.9	99.0	96.2	100.3	
Gross saving	8.1	4.6	3.0	1.5	0.5	-1.9	1.0	3.8	-0.3	
Social transfers in kind	14.7	4.6	16.3	17.2	17.9	14.0	19.0	17.5	16.5	
Gross fixed capital formation	1.0	1.3	1.5	1.3	1.2	1.3	1.4	1.1	1.2	
Change in inventories of tangible current assets	0.2	-0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	
Net lending (+), net borrowing (-)	10.6	3.5	1.5	0.1	-0.7	-2.7	0.8	2.9	-0.8	

Source: calculated by the author on the basis of State Statistics Service of Ukraine data [1].

<sup>&</sup>lt;sup>7</sup> From 01.01.2016, a single reduced rate of 22% was legislated and the maximum base was raised to 25 minimum wages. At the same time, the 3.6% unified social tax withheld from employees salaries was abolished.



The abolition of the 3.6% single social contribution (SSC) deducted from workers' wages has led to an imbalance between employees expenditure on current social transfers (including social insurance contributions and other current transfers) and current social transfers received (social benefits other than in-kind benefits and other current transfers). Employees turned from net donors of current social transfers to net recipients, which should not be observed in this subsector and requires a separate study.

As for other components of GDI, Table 3 shows that the share of gross mixed income in the GDI of employees was the lowest in 2011 (8.3%) and the highest in 2015 (13.3%) with a subsequent drop to 11.6% in 2019. In general, the gross profit of employees is a combination of different types of income and therefore it is mixed income, which, in addition to income from production of housing services for own consumption, also includes income derived from production of goods and services for own consumption. At the same time, the negative component of GDI increased, namely the share of current taxes on income and property changed from 9.6% in 2011 to 11.7% in 2019.

On an annual average basis, over the period 2011-2019, the gross savings rate of employees was only 2%. This indicates a low income and investment potential of the majority of working age people in Ukraine, which has a negative impact on the recovery of employees demand for housing.

The state influence on the employees wages is carried out mainly through increases in the minimum wage and salaries in the public sector. In 2021, during the first 11 months, the minimum wage will be UAH 6000 and in December it should be raised to UAH 6500, that is, for 2021 the weighted average will increase by 25.5%, which is higher than the forecasted consumer price index (December to December -107.3%) [21]. Although, given that CPI was 106.5% in July this year against December of previous year [22], there is a high probability that in December the CPI will go beyond the projected level, but will still be less than the growth of the minimum wage. According to the Budget Statement for 2022-2024, in 2022 the average minimum wage will increase by 8.4% and CPI to December of previous year by 6.2%, in 2023 - by 9.6% (CPI by 5.3%); and in 2024 by 6.8% (CPI by 5%) [see 16]. In other words, real growth of the minimum wage is planned here as well, but only if the actual dynamics of the CPI does not exceed the planned parameters.

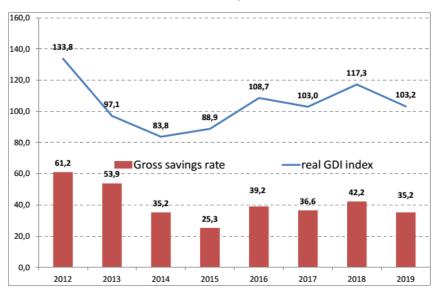
Compared with the subsector of employees, in the subsector of own-account workers<sup>8</sup>, the situation with the level of gross saving is radically different (Figure 13). For the period 2011–2019, the average annual level of GDI was about 42% of the subsector's GDI, or 4.6% of total GDI.

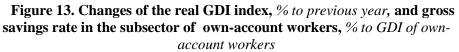
In other words, the own-account workers consistently have a large gap between gross income and consumption expenditure, which makes this subsector more credit-

<sup>&</sup>lt;sup>8</sup> Own account workers (physical persons who work for themselves - are individuals who perform labor activities on a selfemployed basis, without hiring permanent employees. Employers and the Own account workers own the means of production, are responsible for the output produced and earn a mixed income, combining compensation for own labor and return on capital invested. In addition, this subsector includes free working household members. These include persons working without pay together with other members of the household headed by a relative. For their work, they receive part of the total household income indirectly for final consumption.

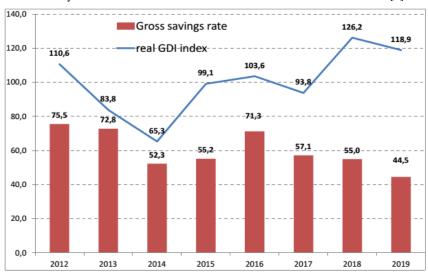


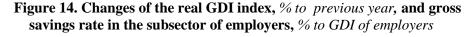
and investment-capable. From 2015 to 2019, the gross saving of the own-account workers' subsector is consistently higher than the total gross savings of the entire household sector and **3.7** times the nominal gross savings of employers. Despite this, such an investment resource does not become a full-fledged source for national investment.





Source: calculated by the author on the basis of State Statistics Service of Ukraine data [1].





Source: calculated by the author on the basis of State Statistics Service of Ukraine data [1].

Over the period 2011-2019, the ratio of GFCF to gross saving in this subsector averaged only 14.5% per annum. In other words, the gross saving of own-account workers are only partially transformed into the subsector's total gross capital



formation and mainly become a passive financial resource in the form of saving of individual entrepreneurs on deposit accounts in the banking system, where their amount is about 7% of total household deposits (calculated on the basis of NBU data) [23], or through the purchase of securities, such as government bonds, but most gross saving of own-account workers are converted into foreign cash.

The level of gross saving seems to be better than the situation with the GS level in the employers subsector, where it was 74.5% of employers GDI in 2012 (Figure 14, Table 4), and in the annual average over the period 2012-2019 it was 62%.

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Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019
	-			esource					
Gross disposable income	100	100	100	100	100	100	100	100	100
Compensation of employees	8.4	17.5	17.3	27.9	17.5	15.6	17.1	14.5	30.7
Gross profit, mixed income	56.7	46.1	53.1	79.4	74.4	56.4	75.3	76.4	94.0
Balance of property income	29.8	37.7	35.6	47.0	43.7	78.2	47.7	47.8	34.3
Balance of current transfers	6.2	-0.2	-4.5	-50.8	-32.3	-35.5	-25.8	-24.5	-42.4
Social benefits other than benefits in kind ((received))	9.1	9.3	7.8	6.0	4.1	5.6	1.2	5.8	5.5
Other current transfers ((received))	1.0	0.9	1.7	1.8	1.0	6.2	6.6	5.7	5.5
Social security contributions	-3.2	-9.5	-12.4	-18.6	-14.3	-7.1	-9.1	-6.5	-26.3
Other current transfers (contributions)	-0.8	-0.9	-1.7	-39.9	-23.1	-40.1	-24.5	-29.6	-27.0
Current taxes on income, property, etc.	-1.1	-1.1	-1.5	-3.5	-3.3	-14.8	-14.3	-14.1	-16.6
				Usage					
Actual individual final consumption	29.7	24.5	27.2	47.7	37.9	43.0	33.9	45.0	55.5
Gross saving	70.3	75.5	72.8	52.3	62.2	57.0	66.1	55.0	44.5
Social transfers in kind	3.1	3.2	4.0	8.5	7.0	10.2	8.9	7.3	7.6
Gross fixed capital formation	6.5	5.0	6.8	8.4	6.6	17.7	13.6	10.2	9.7
Net lending (+), net borrowing (-)	63.9	70.5	65.6	43.0	53.0	38.5	52.7	44.3	34.5

The components of GDI and its use in the employers subsector, %

Source: calculated by the author on the basis of State Statistics Service of Ukraine data [1].

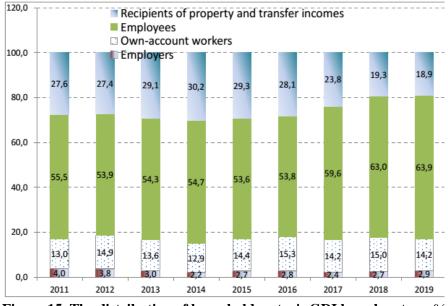
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But the investment resource received by employers in the form of gross saving is not sufficiently capitalized either. Over the period, employers gross savings was capitalized only by 16%, while the surplus resource (net lending) amounted to 51.8% on an annual average basis. In other words, employers as well as own-account workers earned an investment resource in the form of GS, although they did not become full participants in the investment of the economy.

According to the financial accounts, during 2017–2019 the household sector saw an increase in financial assets in the form of cash and deposits of UAH 254.9 billion [see 1]. At the same time, according to the NBU, the growth of the sector's deposits amounted to UAH 131.5 billion [23]. That is, over three years, the increase in cash amounted to 123.5 billion UAH (including cash in foreign currency in UAH equivalent), which is almost half of the "undercapitalized" savings (net lending) of the two subsectors - own-account workers and employers. This indicates a highly inefficient use of the savings of these subsectors.

Hence, although high levels of gross savings in the Own-account workers and employer subsectors are a potential investment resource in the household sector, but their participation in the investment still remains weak. In the structure of sectoral GDI, wage earners have the highest position, but their level of gross savings is low.





Source: calculated by the author on the basis of State Statistics Service data [1].

The share of employees in households' GDI is the highest and grew from 53.6% to 63.9% (Figure 15). And together with those who earned income from property and transfers in 2011–2019 it was 83% on average. The increase in the share of GDI of employees is due to a higher growth rate of real GDI (compared to other household subsectors). Despite this, the level of GFCF in this subsector has remained low, which is reflected in the backlog of housing construction. In addition, among wage earners there are those who help their relatives, who are non-working pensioners. Accordingly, this part of the wage earners' expenditures reduces their gross savings.



In other words, in the household sector, the two weakest (in terms of the GS level) subsectors dominate in terms of GDI share, while the subsectors stronger in terms of GS show low investment activity, which negatively affects the overall GS level.

The fall of the gross saving rate to 10.9% of GDI in 2020 is due to changes in the distribution of GDI by institutional sectors and by subsectors of the non-financial corporations and household sectors since 2015. A continuation of the fall in gross saving at the beginning of 2021 signals the threat of a further contraction of the GDP reproduction cycle below the level required for the simple reproduction of production, with a possible production phase-out.

### Conclusions

Tariff hikes in 2015 intermittently raised the gross saving rate of the public nonfinancial corporation subsector and the foreign-controlled non-financial corporation subsector, but reduced it during the year to almost zero for private non-financial corporations. This had a negative impact on the level of GFCF and on the increase in net borrowing in the private non-financial corporation subsector, with a further increase in the cost of servicing them.

At the same time, the tariff shock in the absence of an adequate increase in social standards led to a twofold gap between their legal and actual levels. Accordingly, the actual subsistence minimum was twice as high as the statutory one. In other words, since 2015, state social guarantees that are supposed to ensure a standard of living not lower than the actual minimum subsistence level (MSL) for the categories of citizens concerned have de facto ceased to fulfil their function.

The most vulnerable subsector was the property and transfer income subsector, which pushed its saving rate into deep negative territory. This, together with a fall in the level of GS for employees, had a negative impact on the level of GS both in the household sector and in the economy as a whole.

The approximation of social standards to their actual levels is envisaged in the Budget Statement for 2022-2024, but at a pace that postpones the closing of the gap for another 35 years. In fact, an annual increase in the real subsistence minimum at an average annual rate of 8.5% is needed to solve this problem as quickly as possible.

Since 2015, the government's tariff policy, against a background of weak social policy, has reshaped the entire income distribution in the country - both between subsectors of non-financial corporations and between subsectors of households. Since 2016, it has created a downward trend in the level of gross savings across the economy as a whole and turned Ukraine's economy into an economy of poverty, particularly for the least protected segment of the population - non-working pensioners.

Despite the high levels of gross savings in the own-account workers subsector and the employers subsector, and although these subsectors contribute positively to the gross saving of the household sector, their role remains passive, as only a small part of their gross saving is capitalized. The population's cash savings (essentially withdrawn from circulation) could become an important resource for investing in the economy, so it is advisable to consider the possibility of issuing governmentguaranteed targeted bonds for development purposes through specially created development institutions.



To increase the level of GS in the non-financial corporate sector, the subsector of private non-financial corporations requires the most attention, as it is the main investor in the economy, but now - due to permanent shocks to its gross profit and gross savings - has sharply reduced its investment activity. The main negative factor in the decline of the subsector's GS are the periodic decline in gross profit levels and the outflow of income through the property income channel mainly due to accumulated debts and the high cost of servicing them. A resource equivalent to more than half of the gross income of private non-financial corporations "escapes" through this channel. Therefore, with lower debt-servicing costs, the level of gross saving of the private non-financial corporations subsector could increase substantially. This could contribute to expanding credit to private non-financial corporations through the creation of development institutions (which can be either dedicated funds or existing highly efficient and reliable banking institutions). Besides, reduced discount rate and expanded monetary base would reduce debt service costs and increase the level of gross savings. The annual decline in deposit rates sets the stage for lower lending rates, but this requires a change in NBU policy towards narrowing the gaps between the cost of deposits and loans, which could turn non-financial corporations' borrowing from external markets to domestic ones.

State financial support to SMEs under quarantine through the implementation and improvement of the state program "Affordable Loans at 5-7-9%" has had some impact on the expansion of lending to SMEs in 2020 and 2021, but presently the level of involvement of the SMEs in borrowing lags far behind the number of applications for participation in the program.

In order to prevent significant fluctuations in the gross value added (GVA) structure with periodic crowding out of the gross profit share from the compensation of employees side, it is advisable to take a more reasonable approach to increasing the minimum wage parameters, namely to budget for a quarterly increase taking into account the inflation forecast. In methodological terms, there is a recommendation: when forecasting the level of gross savings of non-financial corporations, along with other determinants, take into account planned changes in minimum wage parameters.

In general, the analysis of the above endogenous macrostructural changes in the Ukrainian economy with the failure of gross saving and the impoverishment of the most vulnerable shows that the "tariff shock therapy" has not worked in favor of either investors or the population.

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### ФОРМУВАННЯ ІНСТИТУЦІЙНИХ СТРУКТУРНИХ ДЕТЕРМІНАНТ ЕНДОГЕННОГО ВПЛИВУ НА РІВЕНЬ ВАЛОВОГО ЗАОЩАДЖЕННЯ В УКРАЇНІ

Статтю присвячено аналізу внутрішніх інституційних структурних детермінант валового заощадження (ВЗ) в Україні з метою виявлення причин критичного падіння рівня ВЗ і, відповідно, – валового нагромадження основного капіталу (ВНОК) у 2019–2021. Діагностика проведена на базі показників річних та квартальних національних рахунків України із визначенням позитивних та негативних чинників впливу на рівень ВЗ у розрізі інституційних секторів економіки, а також підсекторів сектора нефінансових корпорацій та сектора домашніх господарств. Такий підхід дав змогу розкрити приховані за усередненими даними причини падіння рівня валового заощадження в Україні, а також зниження капіталізації ВЗ і занурення економіки у глибоку інвестиційну кризу в 2020 р. Показано, що шокове підвищення тарифів у 2015 р. вплинуло на значний перерозподіл

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доходів та заошаджень між інституційними секторами економіки та їх підсекторами. Виявлено, що з усіх структурних детермінант на коливання рівня ВЗ у підсекторі приватних нефінансових корпорацій найбільше впливають зміни частки валового прибутку (ВП) та масштабний відплив фінансових ресурсів по каналу доходів від власності, розмір якого коливається у тісній залежності від зростання запозичень. На зазначені коливання також впливають нульові та стрибкоподібні цикли у підвищенні мінімальної заробітної плати. Водночас доведено, що неузгодженість тарифної та соціальної політики уряду створила двократний розрив між законодавчо встановленими соціальними стандартами та їх фактичним рівнем, що призвело до значного зниження рівня життя населення, особливо одержувачів доходи від власності та трансфертів, шо перетворило їх на хронічних позичальників із від'ємними параметрами валового заощадження. Зазначене негативно вплинуло на ВЗ усього сектора домашніх господарств.

Поглиблення аналізу до структурних детермінант ВЗ підсекторів домашніх господарств, показало, що високі рівні ВЗ підсектора самостійно зайнятих працівників та підсектора роботодавців не відповідають низьким рівням їх валового нагромадження основного капіталу, тобто значна частка ВЗ зазначених підсекторів не стає повноцінним джерелом для національних інвестицій.

Окреслено напрями бажаних змін у структурних детермінантах ендогенного впливу на рівень ВЗ у секторі домашніх господарств та запропоновано ряд державних заходів, що можуть позитивно вплинути на зміни у розподілі доходів між інституційними секторами та підсекторами і, відповідно, – на рівень ВЗ

**Ключові слова:** структурні детермінанти, рівень валового заощадження, валовий наявний дохід, інституційні сектори економіки, підсектори сектора домашніх господарств, підсектори сектора нефінансових корпорацій, валове нагромадження основного капіталу, соціальні стандарти