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Public Debt of Ukraine: Features of Formation and Influence on Economic Growth

Abstract. Introduction. Nowadays, Ukraine's economy, as well as other economies, suffers from the global crisis due to Covid-2019. Expenditures of the country increase with a considerable rapidity, especially on healthcare and social protection. Taking into consideration the fact that accumulated budget revenues do not always cover the necessary expenses, country is in need to take credits to cover the budget deficit, which arises. These loans constitute public debt, the increase in maintenance costs of which may lead to a slowdown in economic growth, which is already taking place in Ukraine.

Purpose. Determination of the features of the formation of public debt in Ukraine and research of its impact on economic growth in 2011-2019. To achieve this goal, the following tasks are envisaged: study of the main stages of the formation of public debt in Ukraine; analysis of the dynamics and structure of public debt 2011-2019 years; research of the relationship between domestic and foreign debt and GDP with the help of a two-factor model; interpretation of the results and recommendations for optimizing the structure of public debt.

Results. The article examines the formation of Ukraine's public debt since the country's independence (1991). Based on statistics and the work of domestic scientists, a brief description of the nine main stages of formation and accumulation of public debt was identified and provided; the structure of public debt (by sources, maturities and types of creditors) for 2011-2019 is analyzed; the dynamics of internal and external debts during the specified period is represented; an empirical analysis of the relationship between domestic and external debt and GDP is done; The Medium-Term Public Debt Management Strategy for 2019 – 2022 of the Ministry of Finance of Ukraine on Public Debt Management was considered. Based on empirical research, it was found that domestic debt has more positive impact on economic growth than external borrowing. The public debt management strategy for 2019-2022 developed in the context of macroeconomic stabilization contains four main objectives of public debt management and the first one is to increase the share of public debt in the national currency. Therefore, we can conclude that the results obtained in the study coincide with the strategic directions of the country's debt policy in the medium term.

Keywords: expenditures; revenues; public debt; internal debt; external debt; debt burden.

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Державний борг України: особливості формування та вплив на економічне зростання

Анотація. На сьогодні економіка України, як і економік інших країн, має негативні наслідки від світової кризи через Covid - 2019. Витрати країни зростають зі значною швидкістю, особливо на охорону здоров'я та соціальний захист. Беручи до уваги той факт, що акумульовані доходи бюджету не завжди покривають необхідні видатки, то виникає дефіцит бюджету, для покриття якого уряду необхідно залучати кредитні кошти. Дані кредити становлять державний борг, зростання витрат на обслуговування якого може призвести до уповільнення темпів економічного зростання, що і так відбувається в Україні.

Досліджено формування державного боргу України, починаючи з проголошення незалежності країни (1991 рік). На основі даних статистики та праць вітчизняних науковців було виділено та надано коротку характеристику дев'яти основних етапів становлення та накопичення державного боргу; проаналізовано структуру державного боргу (за джерелами, строками погашення та типами кредиторів) за 2011-2019 роки; наведено динаміку внутрішніх та зовнішніх боргів протягом зазначеного періоду; здійснено емпіричний аналіз зв'язку між внутрішнім та зовнішнім боргом та ВВП; розглянуто Середньострокову стратегію управління державним боргом на 2019–2022 рр. Міністерства фінансів України щодо управління державним боргом. На основі проведеного емпіричного дослідження

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було встановлено, що внутрішній борг має більш позитивний вплив на економічне зростання, ніж зовнішні запозичення. Стратегія управління державним боргом на 2019-2022 рр. розроблена в контексті макроекономічної стабілізації та містить чотири основні цілі управління державним боргом і перша з них є збільшення частки державного боргу у національній валюті. Тому можна зробити висновок, що результати, отриманні в дослідженні збігаються зі стратегічними напрямками боргової політики країни в середньостроковій перспективі.

Відповідно до стратегії Міністерства фінансів України, єврооблігації в гривнях будуть випущені для залучення іноземних інвесторів та зменшення негативного впливу зовнішнього боргу на економіку. Зменшення частки зовнішнього боргу шляхом поступового обмеження випусків внутрішніх державних облігацій, не виражених у гривні, надалі позитивно вплине на вартість валютних резервів.

Ключові слова: видатки; доходи; державний борг; внутрішній борг; зовнішній борг; боргове навантаження.

Formulation of the problem. In the modern state perspective, the needs for financial support of state functions constantly increase; therefore, the state has to spend more to meet these needs. Ordinary public revenues such as taxes, duties, fees, property and enterprise revenues, taxes, and penalties generally meet public expenditures. However, the state is faced with the public sector deficit due to reasons such as war, natural disasters, Covid-19, large infrastructure investments, financing development, economic crises, budget deficit, as well as the ever-increasing ordinary public expenditures. To overcome this situation, they refer to borrowing which in turn leads to an increase in public debt. Ukraine is no exception, so the issue of effective public debt management and the study of its impact on economic growth is relevant nowadays.

Analysis of recent research and publications. The consequences of public debt for the economy and its impact on economic growth have been the subject of research for scientists. Among foreign scientists, it is necessary to emphasize such scientists as S. L. Brew, J. Buchanan, J. Keynes, K. Marx, K. R. McConnell, T. Malthus, J. Lo, G. McLeod, D. Ricardo, A. Smith, J. Schumpeter, A. Tan and others. Based on the achievements of Western economics, Ukrainian researchers such as V. L. Andrushchenko, O. I. Baranovsky, T. P. Bogdan, V. M. Fedosov, V. M. Geets, G. V. Kucher, O. D. Vasilik, T. P. Vakhnenko, A. M. Moroz, K. V. Pavlyuk, M. I. Savluk, V. N. Sutormina investigated various aspects of public debt and its issues in Ukraine. Nevertheless, taking into consideration the fact that Ukraine has a chronic state budget deficit and

has a constant need to attract credit, occurs the issue of efficient utilization of debt, as well as the optimal ratio of domestic and foreign public debt to stimulate economic growth.

Formulation of research goals. The purpose of determining the features of the formation of public debt in Ukraine and study of its impact on economic growth in 2011-2019 years. To achieve this goal, the following tasks are envisaged: study of the main stages of public debt formation in Ukraine; analysis of the dynamics and structure of public debt for 2011-2019 years; study of the relationship between domestic and external debt and GDP based on a two-factor model; interpretation of the results and providing of the recommendations for optimizing the structure of public debt by the type of creditor.

Outline of the main research material. According to the Budget Code of Ukraine, public debt is the total amount of debt obligations of the state to repay received and outstanding loans (borrowings) as of the reporting date, arising from government borrowing [1]. Government borrowings are made to cover the state budget deficit and refinance public debt [2].

The whole logic of how the public debt is formed is clear: state spends its earnings towards society's needs, and when expenditures exceeds earnings, budget deficit acquires. State attracts extra costs in form of borrowings, consequently, that is how a public debt creates.

Based on the analysis of the works of native scientists, the formation of public debt can be divided into eight main stages.

Table 1 Stages of formation of public debt of Ukraine

Formation stage	Brief description
1991-1994 - formation of public debt	This stage is characterized by unsystematic external borrowing. In the domestic market, the main creditor was the NBU. The government attracted direct loans from the NBU and provided guarantees for foreign loans to Ukrainian enterprises. At this time, settled debt relations with the Russian Federation. At the time of independence, Ukraine had no foreign debt, as the Russian Federation took responsibility for all the debts of the Soviet Union. During this period, the introduction of its own currency took place.
1995-1996 - the period of external guarantees	Direct loans of the NBU, which were in fact a hidden issue, gradually began to be replaced by domestic government bonds and treasury bills. During this period, the external public debt begins to form due to loans from international financial organizations of economic development - the International Monetary Fund (IMF), the World Bank (WB) and the European Bank for Reconstruction and Development (EBRD). However, in general, the tendency to direct credit funds for consumption rather than investment in the economy was negative.

1997-first half of 1998 - active borrowing in both domestic and foreign markets	Ukraine's entry into foreign capital markets, the first issue of Eurobonds and the conclusion of a credit rating agreement with rating agencies: in the United States - Fitch Investor Services and Duff & Phelps Credit Rating Co., in Europe (UK) - ICSA and in Japan - Nippon Investor Service. Non-residents have received permission to conduct government bond transactions through authorized Ukrainian banks.
the second half of 1998-2000 - debt restructuring	At the beginning of this stage, a significant amount of public debt was paid, and simultaneously the domestic economy was characterized by an exacerbation of the crisis. During this period, for the first time, a number of public debt restructuring operations were conducted, which avoided default. After the 1998 financial crisis, the Ministry of Finance implemented a program to replace Ukraine's domestic debt with new debt to reduce the impact of the crisis on the country's economy, which was seen by international financial circles as a sovereign default and was immediately reflected in Ukraine's credit rating downgrade.
2001 - 2007 - a period of prudent debt policy aimed at preventing uncontrolled growth of public debt	Stage is characterized by a balanced approach to the formation of public debt. There was a decrease in the ratio of public debt to GDP and stabilization of budget expenditures on public debt payments in the range of 3.8-4.0% of GDP. These positive trends occurred both due to economic growth and due to the introduction of an effective debt policy.
2008 - 2009 – threat of loss of debt security	It is a period of aggravation of the global financial crisis, collapse of the domestic economy, growing state budget deficit and deteriorating debt security due to rapid growth of public debt (due to the issuance of domestic government) bonds to increase the authorized capital of banks and replenish the Stabilization Fund; receiving the first tranche of the International Monetary Fund; depreciation of the national currency).
2010 - 2013 – increase of debt burden	As a result of the accumulation of a significant amount of domestic and foreign debt during the previous period, this period was characterized by an increase in the debt burden on the economy of Ukraine. During this period, the country's long-term and short-term credit ratings are declining. The period 2012-2013 repaid a significant part of the debt on stabilization loans previously received from the IMF. In subsequent years, until 2014, there was no significant increase in public debt due to economic stabilization.
2014 – 2019 – devaluation of the national currency	As a result of the NBU's transition from a flexible exchange rate strategy to a floating exchange rate strategy, the national currency depreciated sharply, as a result of which the amount of public debt almost doubled. In addition, the growth of external borrowing is due to the need to increase certain items of state budget expenditures (defense, social protection) due to the annexation of Crimea and the beginning of the armed conflict in the east of our country.
2019 – nowadays – negative tendencies- if public debt formation nowadays	The ratio of public debt to GDP reaches its maximum. These negative trends are due to the effects of the financial crisis caused by the spread of Covid-19, which led to the devaluation of the national currency and a general decline in production and consumption due to quarantine restrictions.

Source: build by the authors based on [2, 7, 8, 9, 10, 11]

Let's investigate the structure of public debt. It is classified into three main groups according to the sources, maturity, and types of creditors. Public debts according to the sources are divided into internal and external debts. The data of public debt according to the sources is represented on table 2.

Table 2 Internal and external debt of Ukraine per 2011 – 2019 years in billions

Year	Internal debt (USD)	Internal debt (UAH)	External debt (USD)	External debt (UAH)
2011	20,209	161,467	24,507	195,806
2012	23,808	190,299	26,138	208,919
2013	32,148	256,960	27,932	223,259
2014	29,236	461,004	30,823	486,027
2015	21,166	508,001	34,410	825,860
2016	24,664	670,646	36,048	980,188
2017	26,843	753,399	38,490	1080,310
2018	27,488	761,090	39,699	1099,201
2019	35,020	829,495	39,342	931,874

Source: [4]

Internal borrowing refers to a country's borrowing from own national resources. This borrowing has no effect on increasing or decreasing national income. External borrowing refers to the resources provided from a foreign country that is repaid with principal and interest at the end of a certain period. External debt has

an increasing effect on national income when it is taken and vice versa has a decreasing effect on national income when it is paid [2]. The visualization of the dynamic of both this types of debts is represented on figures 1 and 2.

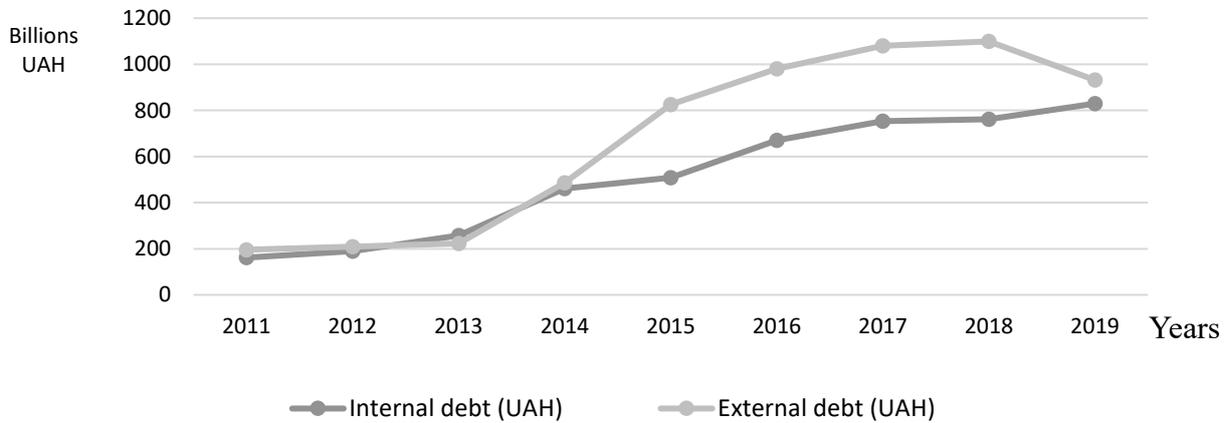


Figure 1 – The dynamic of internal and external debt of Ukraine per 2011 – 2019 years in billions UAH

Source: built by authors from [4]

The graphic distinctly shows that both types of debts tends to grow. Nevertheless, external one increases more rapidly starting from 2014 year. Such tendency can be explained by the unstable situation in Ukraine during this period (Euromaidan, the accession of Crimea to the Russian Federation and the armed conflict in eastern Ukraine), which forced involvement of extra capital to

the country. The gap between internal and external debt was almost at the same level during 2015 – 2018 years. In 2019 it significantly declined and almost reached the level of internal one.

Let's consider the same data for the same period, but in another currency – USD.

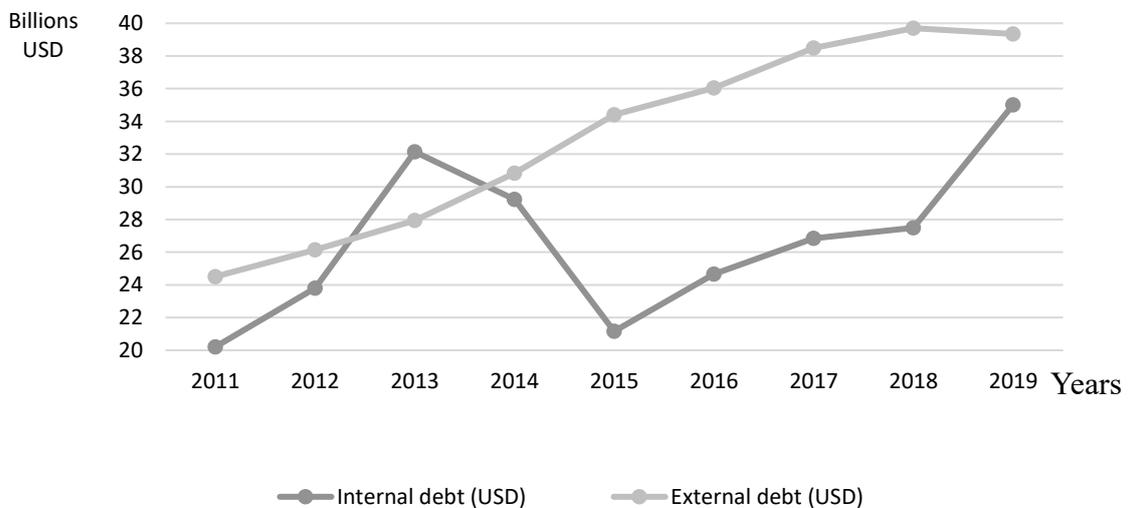


Figure 2 – The dynamic of internal and external debt of Ukraine per 2011 – 2019 years in billions USD

Source: built by authors from [4]

Comparing both graphics, it can be seen that the dynamic of external debt almost stayed unchanged, whereas the dynamic of internal one changed noticeably. The reason for it is the depreciation of the national

currency. In 2011 – 2013 years, \$1 cost around 8 hryvnas, therefore, external debt was growing with great rapidity. However, in 2014, this figure increased almost twice and in 2015, it raised to 24 hryvnas per \$1. The following

years it continued growing. Consequently, the graphic with a national currency shows gradual grows, while in foreign one the dynamic looks differently.

Let's move to another classification of public debt.

Public debts according to the maturities:

1. Short-term liabilities and promissory notes;
2. Medium-term liabilities;
3. Long-term liabilities.

Short-term public debts (floating debts) refer to debts up to 1 year. In short-term borrowing, treasury bills and treasury guaranteed bond are used. Medium-term public debts refer to debts ranging from 1 to 5 years. Long-term public debts refer to debts more than 5 years. The instrument of long-term borrowing is the government bond. These debts are provided from the capital markets

and have a higher interest rate than the interest rate of short-term borrowing. Long-term debts are classified as redeemable debts and irredeemable debts.

The long-term or short-term maturity of public borrowing determines the duration of the contraction or expansionary effects. In this respect, the short-term borrowing changes the economic conjuncture frequently, because of the more liquidity and monetization feature of short-term debt instruments. If the resources obtained by borrowing are expended, it causes an expansionary effect; if the resources obtained by borrowing are not expended, it causes a contractionary effect [2]. Therefore, let's consider the distribution by the maturities of internal public debt.

Table 3 Internal public debt of Ukraine by the maturities in billions UAH per 2011 – 2019 years

Year	Long-term liabilities	% from total amount per year	Medium-term liabilities	% from total amount per year	Short-term liabilities and promissory notes	% from total amount per year
2011	92,093	57,04	62,396	38,64	6,977	4,32
2012	99,916	52,50	84,353	44,33	6,029	3,17
2013	114,160	44,43	139,387	54,24	3,413	1,33
2014	233,334	50,61	219,317	47,57	8,353	1,81
2015	272,536	53,65	227,182	44,72	8,284	1,63
2016	392,517	58,53	274,229	40,89	3,900	0,58
2017	541,897	71,93	193,179	25,64	18,323	2,43
2018	536,510	70,49	153,895	20,22	70,685	9,29
2019	584,643	70,48	207,080	24,96	37,772	4,55
Average	318,623	58,85	173,446	37,91	18,193	3,23

Source: [4], own authors' calculations

With the help of the data, it is seen that on average 58.85% of total liabilities is occupied by long-term debts. Medium-term liabilities make up around 37.91% and 3.23% is left for short-term liabilities and promissory notes. Therefore, Ukraine is more likely to get long-term or medium-term credits due to the fact that they have 5 years and even more to cover it. Such percentage distribution acquired due to the analysis of 9 last years. However, if we consider, for instance, last three years, they show that first group of debts makes up, on average, 70.96%, medium-term occupies 23.6% and 5.42% goes to the last group. Consequently, the tendency of recent years demonstrates that Ukraine's vector of internal debts is directed mostly to long-term liabilities, which shouldn't be covered in the nearest future. So, that is a way how government taking such credits probably does not take into account how it will burden future generations.

If the funds provided through borrowing for economic development can be directed to infrastructure

investments (such as dams, roads, ports, mining, agriculture), they increase the new investments through multiplier effect. As a result, national income and employment increase; and accordingly economic development is ensured. Nowadays, less developed and developing countries, which make the development effort, resort to external borrowing due to insufficient internal [2]. The data of external public debt by the maturities is represented on table 4.

What we should obviously emphasized is the fact that short-term debts and promissory notes took place only in 2011 and made up 8.16% from total amount of debts per year. Long-term external debt, as well as internal one, has a tendency to increase. On average, it is 69.12%, whereas medium-term debt is 24.4% and other external liabilities are 5.57%. Generally, external public debt is mainly occupied by long-term debts that make up around 485 billion UAH on average for the analyzed period. For medium-term debt this sum is around 150 billion UAH and 33 billion for short-term debts.

Table 4 External public debt of Ukraine by the maturities in billions UAH per 2011- 2019 years

Year	Long-term debts	% from total amount per year	Medium-term debts	% from total amount per year	Short-term debts and promissory notes	% from total amount per year	Debts on other external liabilities	% from total amount per year
2011	106,122	54,20	58,642	29,95	15,980	8,16	15,063	7,69
2012	133,450	63,88	60,383	28,90	0	0,00	15,085	7,22
2013	143,809	64,41	64,283	28,79	0	0,00	15,167	6,79
2014	342,485	70,47	115,487	23,76	0	0,00	28,054	5,77
2015	552,957	66,96	232,061	28,10	0	0,00	40,841	4,95
2016	659,784	67,31	275,516	28,11	0	0,00	44,888	4,58
2017	799,752	74,03	231,473	21,43	0	0,00	49,085	4,54
2018	863,786	78,58	188,127	17,11	0	0,00	47,289	4,30
2019	766,154	82,22	125,498	13,47	0	0,00	40,222	4,32
Average	485,367	69,12	150,163	24,40	1,776	0,91	32,855	5,57

Source: [4], own authors' calculations

What we should obviously emphasized is the fact that short-term debts and promissory notes took place only in 2011 and made up 8.16% from total amount of debts per year. Long-term external debt, as well as internal one, has a tendency to increase. On average, it is 69.12%, whereas medium-term debt is 24.4% and other external liabilities are 5.57%. Generally, external public debt is mainly occupied by long-term debts that make up around 485 billion UAH on average for the analyzed period. For medium-term debt this sum is around 150 billion UAH and 33 billion for short-term debts.

The next classification refers to the types of creditors. So, internal debt consists of debts on loans received from the National Bank of Ukraine (NBU) and on issued securities. Domestic government bonds are government securities placed exclusively on the domestic stock market and confirm Ukraine's commitment to pay bondholders the nominal value with the coupon payments in accordance with the terms of bonds issue. The nominal value of the bond is UAH 1000. It may also be determined in foreign currency. The data of the distribution of internal public debt is shown below.

Table 5 Internal public debt of Ukraine by the type of creditor in billions UAH per 2011 – 2019 years

Year	Debts on loans received from the NBU	Debt on issued securities
2011	3,174	158,293
2012	3,042	187,257
2013	2,910	254,050
2014	2,777	458,226
2015	2,645	505,356
2016	2,513	668,133
2017	2,381	751,019
2018	2,248	758,842
2019	2,116	827,379
Average	2,645	507,617

Source: [4], own authors' calculations

According to the figures, it can be claimed that mostly internal public debt consists of issued securities, on average, they make up 99.2% from the total amount of debt per year. While debts on loans received from the NBU decline each year, debts on issued securities grow. The biggest grows can be noticed in 2014 (almost twice). It can be explained with an unstable economic situation in Ukraine in that period (Euromaidan, the accession of Crimea to the Russian Federation and the armed conflict

in eastern Ukraine). Government was in need to provide more finance into a range of spheres, like national functions, defense, etc., which lead to debt grows.

Anyway, a partnership with Government Debt and Risk Management (GDRM) Program, Ukraine is moving in the right direction for developing the domestic debt market: Increased communication with the investors, the move towards benchmark securities and the expansion of UAH investor base to non-residents [5].

Let's consider how the classification looks like for external debt with the help of the following table.

Table 6 External public debt of Ukraine by the type of creditor in billions UAH

Year	Received from international financial organizations	Received from foreign governments	Received from foreign commercial banks and other foreign financial institutions	Debt on issued securities	Debts not included in other categories
2011	84,344	10,721	15,980	0,000	84,761
2012	80,097	9,100	0,001	0,000	119,722
2013	61,904	7,279	0,001	0,000	154,076
2014	169,090	16,372	0,001	272,509	28,054
2015	337,038	32,709	0,001	415,270	40,841
2016	371,847	45,648	0,001	517,804	44,888
2017	407,468	49,296	0,002	574,460	49,085
2018	370,822	47,931	11,080	622,080	47,289
2019	292,197	38,587	33,342	527,526	40,222

Source: [4]

At the first glance, the column 'debt on issued securities' catches our attention due to the fact that up to 2014 its values were zero. External government bonds (Eurobonds) are also government debt securities (as well as domestic government bonds). They are placed on the international stock markets and confirm Ukraine's commitment to reimburse the holders of these bonds for their nominal value with the payment of income. Other insignificant values that are noticeable on the table are millions (not billions, as in the rest statistics) for received debts from foreign commercial banks and other foreign financial institutions per 2012 – 2017 years.

Analyzing debts on loans received from international financial organizations, the value of 2014 increased by 173% in accordance with the previous year. Suggested reason for it was given previously. 2015 increased by

120% to 2014 year, which can be referred to the unstable economic situation in the whole world (decline in world oil prices, etc.). Similar tendency is seen in debts on loans received from foreign governments.

Summarizing the information above, it can be claimed that the main source of debt, both internal and external, is issued securities, mostly with the help of which, state finance government deficit.

An enormous external debt leads to difficulties in the country. Consequently, let's research the impact of both internal and external public debts on the GDP of Ukraine in order to emphasize whether there is a necessity of changing the vector from higher external debt to higher internal one. The data, which was taken for the calculations is represented on table 7.

Table 7 The indicators of GDP, internal and external debt in Ukraine per 2011 – 2019 years in billions USD

Year	GDP	Change in % to the previous year	Internal debt	Change in % to the previous year	External debt	Change in % to the previous year
2011	163,16	-	20,21	-	24,51	-
2012	175,78	7,74	23,81	17,81	26,14	6,65
2013	183,31	4,28	32,15	35,03	27,93	6,86
2014	133,50	-27,17	29,24	-9,06	30,82	10,35
2015	91,31	-31,60	21,17	-27,60	34,41	11,64
2016	93,36	2,24	24,66	16,53	36,05	4,76
2017	112,19	20,17	26,84	8,83	38,49	6,77
2018	130,90	16,68	27,49	2,40	39,70	3,14
2019	153,93	17,59	35,02	27,40	39,34	-0,90

Source: [4; 6], own authors' calculations

According to the data, it is seen that the GDP decreased noticeable in 2014 – 2015 years – 27.2% and 31.6% respectively. Reasons for that were given before. The same rows show us simultaneous reduction of

internal and grows of external debts. Therefore, when Ukraine's economy faced difficulties according to the unstable situation in the world and more local reasons, which affected the east and south of the country,

government made a decision to attract more from the outside. Let's consider the dynamic of these indicators with the help of the following graphic (figure 3).

It illustrates that even taking into consideration the fact that GDP has been increasing since 2015 until now, generally, it has a tendency to decline due to an enormous fall within 2 years (2013 – 2015), when it

decreased twice. In 2019, GDP almost reached the level of 2011 year.

Concerning debts indicators, they tend to grow. The dynamic of GDP coincides with the dynamic of internal debt each year (they increase and decrease simultaneously, but on different value).

The dynamic of external debt differs from them. So, the relationship between these indicators is as follows.

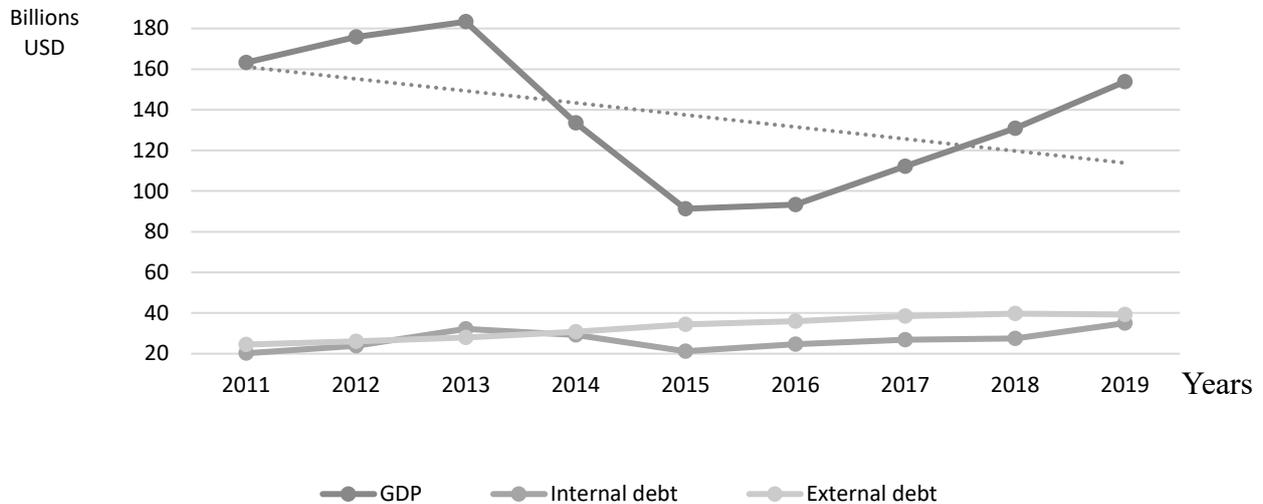


Figure 3 – The dynamic of GDP, internal and external debts of Ukraine per 2011 – 2019 years in billions USD

Source: built by authors from [4; 6]

Two-factor model was built. The equation for this model looks next way:

$$y = 181.06 + 4.53x_1 - 4.98x_2$$

According to the equation, internal debt has direct relation with GDP: with the grows of internal debt per \$1 billion, GDP increases by 4,53 billion, with fixed external debt. Nevertheless, external debt has indirect relation with GDP: with the grows of external debt per \$1 billion, GDP decreases by 4,98 billion, with fixed internal debt.

ANOVA analysis shows that $MSR(29161.87) > MS(400.19)$, therefore, the quality of the model is satisfactory. According to Fisher's test, the model is adequate with a probability of 95% ($F(72.87) > F_{cr}(19.33)$). Student's test proves that the parameters "a" (3.79), "b₁" (2.90) and "b₂" (3.83) are statistically significant with a probability of 95% (> 2.45).

The coefficients of pair correlations show that the individual relation of internal debt and GDP is moderate (0.33), whereas the relation between external debt and GDP is medium (0.61). The correlation between both types of debts is moderate (0.38).

Partial correlations showed that taking into account presence of external debt in the model, the relationship between internal debt and GDP is strong – 0.76. And

considering the presence of internal debt in the model, the relationship between external debt and GDP is even stronger – 0.84.

It was obtained that together, debts explain 74% of GDP ($R^2 = 0.74$). However, the adjusted coefficient of determination is at the level of 65,5%. So, the impact of other factors, due to the model, is 34,5%.

The calculation of Fisher's partial criteria shows that both parameters can be included in the model ($F_{x1}(9.61)$ and $F_{x2}(31.40) > F_{cr}(5.99)$).

According to the Farrar-Glauber's test ($\chi^2(1.01) < \chi^2_{cr}(3.80)$) and VIF test, multicollinearity in the model is absent. There is a homoscedasticity in the model according to the White test ($R^2 \cdot n = 4.32$, which is less than $\chi^2 - 12.6$) and graphic test.

All things considered, analysis gives us clear understanding that internal debt has a more positive effect, quantified by GDP while external one has opposite impact. This will avoid the risk of its growth due to the devaluation of the national currency and the loss of the country's debt security.

In accordance with the Public debt management strategy and program, the volume of payments to repay public domestic debt may be increased in the event of an increase in the issue of short-term IGLBs maturing in 2021. Such changes will require a corresponding increase in government borrowing.

The amount of payments on public debt service may differ from the forecast in the event of a change in the trend in the dynamics of floating rates (LIBOR, EURIBOR and inflation index) and / or the exchange rate of hryvnia to foreign currencies.

Conclusions. The stage of formation of the debt nowadays is characterized by an increase of external borrowing, which is to some extent due to the need to increase certain items of expenditure of the state budget. Public debt is divided into internal and external

debt. Investigation of the structure by the maturities showed that debt mainly consists of long-term liabilities. The division of public debt by the type of creditor, highlighted that mostly country obtain debt by issuing government bonds. Decrease of the share of external debt by gradual limitation of non-UAH denominated domestic government bond issuances, that is a strategy of Ministry of Finance of Ukraine, will positively influence on the value of foreign exchange reserves in further perspective.

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