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Introduction of the accumulative component into the pension system of Ukraine: assessing of European practices

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Abstract
In this article, the problems of functioning of accumulative pension systems in the EU countries and Ukraine are investigated. The EU countries are characterised by the presence of developed multi-tier pension systems, which significantly vary in different parameters. The common problem for the EU and Ukraine is depopulation, which creates crises in solidarity pension systems. It caused the necessity of pension reforms in many European countries to implement the accumulative components. The European Commission has established unified approaches towards the assessment of pension systems in the EU. While introducing the accumulative pension system, Ukraine intends to apply the best European experience in the pension sector.
Keywords: pension system, pension reform, retirement age, EU countries, Ukraine, insurance period, solidarity system, accumulative system, professional schemes.

Wprowadzenie składnika skumulowanego w systemie emerytalnym Ukrainy: ocena praktyki europejskiej

Streszczenie
W artykule badane są problemy funkcjonowania systemów emerytalnych w państwach Unii Europejskiej i na Ukrainie. Kraje UE charakteryzują się rozwiniętymi wielopoziomowymi systemami emerytalnymi, które różnią się znacznie pod względem parametrów. Wspólnym problemem UE i Ukrainy jest wyludnienie, które powoduje kryzysy w solidarnych systemach emerytalnych. Spowodowało to konieczność przeprowadzenia reform emerytalnych w wielu krajach europejskich w celu wdrożenia składników kumulacyjnych. Komisja Europejska ustanowiła uniwersalne podejście do oceny emerytury w UE. Ukraina jest na etapie tworzenia kumulacyjnej emerytury, korzystając z najlepszych europejskich doświadczeń.
Słowa kluczowe: ubezpieczenie emerytalne, reforma emerytury, wiek emerytalny, państwa Unii Europejskiej, Ukraina, staż pracy, solidarny system emerytalny, kumulacyjny system, branżowe systemy emerytalne.

In contemporary globalised world, the financial markets of many countries increasingly remain in a state of excessive volatility, which inevitably leads to negative consequences for a significant part of the population. Due to an increasing gap between both real and financial sectors of the economy the bigger part of resources is invested as speculative operations with a high and fast level of income (but at the same time they mean higher risk). These processes also concern national capitalised pension systems, which depend directly on them. The Great Recession of 2008 is a visual example of this problem. Since, on the one hand, the pension systems are parts of national financial problems, but on the other one they depend directly on a labor market, as a result, it doubles the risk of their stable functioning (because the negative impact is caused both by real and financial sectors of the economy). And due to the process of globalisation and integration in the XXI century, the crisis phenomena spread at an unprecedented pace (especially in the European Union – EU). In fact, the EU nowadays is caught between being a hostage of its values (like protection of human rights, the functioning of the social-oriented model of the economic system altogether), and the necessity of balancing the public financial system. Such a situation is antagonistic and certainly leads to confrontation between reformer-rationalists and trade unions, which are in a much stronger position in the International Community than most post-Soviet countries are, including Ukraine. The proof of that is a recent sequence of events in France, where the long-term international strikes occur with the demand to withdraw the pension reform, suggested by Emmanuel Macron. Such events with a purpose to cancel previously implemented funded pension systems were organised in Hungary and Poland a few years ago. In general, the EU countries are looking forward to finding new ways to reform national pension systems. And on the contrast to the "population aging" of all European continent the problem of adding to the existing solidarity pension systems the accumulative components is still relevant (which work by the principle of long-term capitalisation of accumulated assets).

As for Ukraine, the reforming of the national pension system has been implementing for over two decades (by recommendations of IMF, the World Bank, and the partners from the EU). During this period there were many well-established structural reforms. However, the efficiency of these processes is significantly decreased by two outgoing macroeconomic factors: the low level of expenses of most citizens and a high coefficient of demographic load on the payers of social contributions. By the level of pension, Ukraine has much lower positions compared to the average number in the EU. Moreover, the pension in this country is lower than in Belarus and Russia. It is interesting, that at the beginning of the 1990s right after the collapse of the USSR, Ukraine had the second-largest economy in the union, and compared to its western neighbors (e.g. Poland) – it had better opportunities for the start. In 1990 the GDP of Ukraine was 81.5 billion dollars, at the same time Poland had 62.1 billion dollars. However, the failing reforms, the deployment of corruption, the formation of elite-oligarch caste, and also the constant influence of the Russian Federation (which back then was unfriendly, and now it is hostile) have caused a radically different outcome. So in 2018, the numbers were 131 billion dollars and 586 billion dollars respectively (and the GDP per capita was 3.1 thousand dollars in Ukraine and 15.4 thousand dollars in Poland) (*Country Comparison…* WWW). Such a level of economic development has a direct impact on the pension. In addition to that, due to the depopulation and the occupation of the Donbas region and Crimea by Russia the numbers of payers of social contributions and pensioners are practically equal. It proves that the Ukrainian pension system of distribution type has a lot weaker supply of financial stability compared to pension systems in the EU countries. In Ukraine, it is a very acute problem of developing the accumulative pension, which in perspective must increase the income replacement ratio during retirement at least a little bit. It is about 30% (in contrast with the recommendations of the ILO in 40%) nowadays (State Statistics Service… WWW), which is very much lower than in the EU (Golovan 2016: p. 9). Also, the average salary in Ukraine is much smaller than the aggregate in the EU.

In general, in spite of a big amount of analytic and scholar literature about formation and transformation of existing accumulative pension systems both in the EU and in Ukraine, there is no universal and concerted approaches to provide decent living standards for retired people, which demands to carry on with the research of this problem.

The subject of the article are social-economic and politico-legal aspects of the formation and development of an accumulative component of the national pension system in Ukraine based on the experience of the EU, in particular, using the best practice of the EU countries. The purpose of the research is to develop the recommendations towards forming the most effective model of accumulative pension in Ukraine, based on the analysis of experience of the EU countries about the implementation of their capitalised components of pension systems, which could be a source of achieving social justice and increasing the internal investment potential of the country. The analysis of such experience of pension reformation could become the answer to the following research questions:

- What kind of experience of the functioning of capitalised systems in the EU countries exist?
- Whether the common practice at the EU level has a good impact on the improvement of the retirement income for citizens of the EU countries?
- What features and problems does the Ukrainian pension system have?
- Which of the best practices of functioning of the capitalised pension systems in the EU are most accepted in Ukraine?

The main research method, which is used in this article, is the economic and institutional analysis. Sources of the research are first of all the analytical documents, scientific articles, legal acts. The author uses the statistical method, which is conditioned by analysis of the statistical data – quantitative indicators of the functioning of the national pension systems. Behavioral economics could help to explain the behavior of the members of the capitalised pension programmes. Due to some difficulties, variety, and specificity of functioning of the pension systems in all the EU countries, for the most part, the generalised practice of the EU in this field was analyzed, which serves as a fundamental basis for the EU countries taking further steps towards reforming of the national pension systems and which is taken as a recommendation base by the associated EU members, including Ukraine.

The first part of the article characterises the experience of common regulation of pensions in the EU in general, including appropriate legal acts. The author further analyzes the best practice of the formation and development of the accumulative pension systems in the EU countries. Then it is pointed at peculiarities of the formation and functioning of the pension system in Ukraine, with an emphasis on the problems of development of its accumulative components, which ends with derivation of its main problems and recommendations considering the best EU experience. The article ends with a summary, in which the author points at the ultimate problems and challenges of the EU and Ukraine in the research field. This allows making appropriate conclusions and promotes the clarification of the research problems.

At the end of the XXI century at the background of the overall progress, and as a consequence raising of human welfare, the depopulation rate grows at the same time. And because there is a positive population growth rate in the foundation of the Bismark (solidarity) pension system, there is a crisis in the distributive pension system in many countries of the world, including Europe, where this trend decreases. At the beginning of the 1980s the reforms were conducted, which meant the switchover to the accumulative, capitalised pension systems and refusal of the ineffective solidarity components (which had been made in many countries of Latin America led by Chile) or multi-tier model systems of pension (e.g. European countries and the USA). The nature of the new pension models meant that the insurance contributions were not directly paid to retired people, but were accumulating on their personal accounts, where they were capitalised (they were invested in a diversified investment portfolio and were annually increased by the amount of investment income). So, by predictions of the creators, full or partly switchover from solidarity to accumulative pension systems could mean such advantages:

- the absence of dependence on the income of a working generation and budget expenses;
- the ability to choose pension programmes;
- the protection from inflation (by getting the investment income);
- the powerful tax source of internal investment sources for the economy.

However, judging by years of experience, the functioning of the accumulative pension systems cannot be interpreted unambiguously, because by eliminating one group of risks, another one will arise. At the end that was exactly the reason, which made the governments of most countries of the world form so-called multi-tier pension systems of distributive-accumulative type with its obligatory and not obligatory requirements. Unlike Latin American countries, the EU countries have become the most consistent in this way.

Experience of the European Union

In 1999 in the EU European Commission developed *A Concerted Strategy for Modernising Social Protection*, where unifying approaches towards retirements and pension systems were high on the list of priorities (European Commission 1999: p. 1314). Further, on the Lisbon Summit, EU countries agreed to deploy the open method of coordination to be used for setting common guidelines, goals, and methods of the EU framework cooperation in this sphere. Also, a common system of pension monitoring was introduced (Ervik 2006: p.1415). Subsequently, in 2001, on the Gothenburg Summit general principles of the long-term sustainability for pension systems were adopted, addressing in particular the issues such as the ability to achieve goals, financial sustainability and the ability to adjust to changeable needs (Pyshchulina et al. 2017: p. 97).

Considering a variety of multilevel pension systems in EU countries in the early 21 century, the EU tried to unify approaches towards the evaluation of the pensions systems in terms of identification of their joint goals and operation modes across the EU. The Laeken Summit confirmed that the EU approach towards the assessment of the pension system efficiency within the EU has to address three main points: adequacy of retirement payments, financial sustainability and adaptivity to needs and challenges in relevant societies (Council of the European Union 2001).

The evaluation process for the performance of the Member States pension systems is dynamic, as the regular EU Commission reports about the adequacy of pension systems prove, since new points are introduced to the evaluation indicators grid according to the challenges the pension systems face in the reality (Pension Adequacy Report 2015, 2018). It is noteworthy that according to the principle of the adequacy of retirement payments in the EU, the most effective are only mixed pension models because the risk-sharing between the state, employers and employees as the state regulation and market power in forming personal pension capital, asset management, regulatory impact, application of market and directive mechanisms in managing the processes of forming pension funds of Member States takes place.

Quite successful confirmation of unbalanced development of EU Member States' pension system is shown by Global pension index (MMGPI) 2019. By separate subcategories, Ireland had the highest rate for adequacy (81.5), Denmark for stability (82.0) and Finland (92.3). The lowest rate for stability had Italy (19.0). Research data demonstrates that many European economies face significant pressure of their pension systems: so Denmark has the highest rate for stability at level 82.0, whereas Italy and Austria have only 19.0 and 22.9 respectively (Global Pension Index WWW).

This is explained by the fact that high adequate pension payments put a significant burden on public finances, which in turn explains why the long-term financial sustainability scores very low as combined with the short-term adequacy retirement payments. Conversely, many financially sustainable pension systems provide recipients with quite low pension payments. Experts advise such countries to continue reforming their pension systems, including, inter alia, the gradual increase in the retirement age (due increased life expectancy) and the promotion of additional retirement savings (caused by growing insolvency of solidarity systems).

In general, all EU countries are based upon the rule that they guarantee the payment of basic pensions, thus solidarity pension system rules apply in the latter case. Countries with a flat-rate system provide a flat-rate pension for all citizens of the retirement age in the country, regardless of the size of income and the number of social security contributions paid during their working life (Denmark, Netherlands) and depending on the paid social security contributions but not less than the minimum (Ireland and the UK). Northern and Western European countries (the UK, Ireland, Netherlands, Denmark) have advanced occupational pension insurance. All other EU countries are a group of countries with systems, in which the size of the pension is linked to income and paid insurance premiums in the past (earning-related system) but there is a minimum retirement payments are available. This group also includes countries with state conditional-cumulative systems with dicontributions (Tkachenko 2014: p. 3). Almost all EU countries have accumulative pension systems in addition to the existing solidarity pension types linked to compulsory funded savings; non-state (private) pensions and occupational retirement payments (Pension Adequacy Report 2018: p. 80).

The voluntary retirement savings across the EU demonstrate a clear regional distribution. The voluntary retirement savings are widespread in Northern and Western Members States of the EU due to the significant role of social partners in their pension policy and well-developed financial markets. In Southern and Eastern European Member States of the EU the situation is the opposite.

It should be noted that the mechanisms of the formation of pension funds and their payment in the three systems are quite similar. In this way, funds are generated by contributions paid (by a person or by an employer), accumulated in special retirement accounts, invested for capitalisation, and then paid (either for a fixed period or in the form of lifetime pension – annuity).

Conditionally, EU pension reforms can be divided into two stages, separated by the 2008 World Financial Crisis. Thus, if the first period can be characterised by the intensive introduction of the cumulative levels of capitalised pension systems with the main priority of increasing the well-being of citizens, then in the "post-crisis" period the problem of financial balance of solidarity pension systems, as well as the reform of their accumulating components, came first. In particular, against the background of the crisis, countries such as Poland and Hungary have undertaken a number of measures to partially curtail mandatory pension systems. On the contrary, "old" countries, with established market traditions are trying to modernize and improve their own capitalised pension system in order to further attract their citizens to them (Pyshchulina et al. 2017: p. 113; Pension Adequacy Report 2015; Rudolph, Price 2013: p. 6–7). Matti Leppälä argues that the II pillar "effectively 'worked' throughout the spectrum of CEE countries. Unfortunately, the decisions to unwind these pension saving systems have for the most part been taken on other grounds rather than their efficiency" (Krzyzak 2018).

The 2018 Pension Adequacy Report indicates that "about 18.2 percent (17.3 million) of those aged 65 and over were at risk of poverty or social exclusion (AROPE) in the EU-28 in 2016: 20.6 percent of women (11 million) and 15 percent of men (6.3 million). These rates have been steadily decreasing over several years" (Pension Adequacy Report 2018: p. 27). One of the main causes of EU citizens' poverty in retirement age is their lack of involvement in the pension system. Particularly this problem concerns self-employed workers, who due to different circumstances, did not always and/or did not fully pay contributions to their pension systems since national legislation did not place such strict requirements on these categories of citizens as on ordinary employees. Therefore, when retirement, these people often receive minimal benefits (pension or social assistance).

At the present stage, the European Commission recommends the Member States to develop additional funded pension schemes more actively and continue parametric reforms of existing systems, which in the long run will increase the involvement of EU citizens in pensions (Pension Adequacy Report 2018: p.79). In terms of sufficiency, the primary function of supplementary pensions is to increase possibilities for providing income to the pension system. The ability to do this depends on several factors: population coverage; the amount of savings in the schemes (which in turn depends on the contributions paid and the efficiency of the accumulated assets); payment options. Considering the long accrual period, the formation of supplementary pensions takes 3–4 decades in order to make a significant contribution to the ultimate level of pension (solidarity and accumulated).

In the EU, there are striking differences in the distribution of pension funds' assets between countries and financial products. The shares dominate in the investment portfolios of Level 2 pension systems in Estonia, Poland, Sweden, and Switzerland. State and corporate bonds predominate in Bulgaria and Romania, with a large share of investments (65%) in government bonds in Romania. In general, during 2000–2016 there was a redistribution of investment funds' assets in equities in favor of an increase in the share of state debt instruments, which could lead to a decrease in expected income (*Compulsory Pension Systems* 2018: p. 18).

The member of British Parliament Tom Tugendhat says about the challenges of modern cumulative retirement benefits (Tugendhat 2016). "Many Governments want to transfer risk from the State to the individual (think retirement provision, healthcare provision and so on) yet the industry that is meant to facilitate this transference of responsibility isn't readily trusted. Perhaps this helps to explain why the UK is currently experiencing a record-breaking low in its savings ratio […]. However, we can't make people trust us. All we can do is to collectively behave in a consistently, reliably and predictably trustworthy way. And what can help to do that? – being transparent".[1] The European Commission, therefore, recommends that the Member States take measures to facilitate access to social protection information for people with diverse careers, in particular by developing individual accounts for individual entitlements and social protection services that will make them more transparent. It is important that the potential for developing different types of supplementary retirement savings in the country depends on several factors, such as the role of social partners in retirement policy, household savings and the development of financial markets. Surveys of Member State pension systems indicate that the most powerful approach to increasing the coverage of the population by supplementary pension schemes is to compel (Pension Adequacy Report 2018: p. 137).

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1 https://www.transparencytaskforce.org/

We emphasise that a person's participation in a funded scheme requires that he or she makes the choice regarding investment options, which creates considerable risks of wrong decisions. According to behavioral theories in economic science, a person is often unable to make rational decisions.

The experiments and observational studies outlined in the Adequacy Report for 2018 prove the need to introduce a default option (the "default effect"), which significantly increases the likelihood of making better choices when participating in retirement programmes (Pension Adequacy Report 2018: p. 137).

That means that when a person is not able to make a reasoned decision and select correct retirement option savings, the system automatically makes that choice instead.

However, in this case, the administration of the pension system should be completely transparent. Otherwise, unscrupulous managers may not offer the most effective toolkits. This situation was quite common in the countries of the former USSR. Thus, with the introduction of mandatory cumulative systems in Russia and Kazakhstan, about 90% of participants fell into the "silent" category for which the choice was made. And as practice demonstrates, this choice was far from the most effective. Often, most of the accumulated funds were directed to the purchase of domestic bonds and placed on bank deposits, which in the future reduced the amount of investment income. The same risk may await Ukraine, as the stock market remains undeveloped in the post-Soviet space. Therefore, corporate stocks, which are considered to be one of the most profitable sources of retirement investment, remain the riskiest and underutilised in the most Eastern European countries.

An analysis of the EU experiences in accumulative pension systems, including "adequacy reports", indicates that even in a long-term perspective, the harmonisation of pension benefits of the participating countries can hardly be achieved, since there will still be a large difference between pension schemes and proportions between levels in respective domestic systems, as well as the roles and shares of solidarity components in pension systems. Despite the increasing importance of accumulative pension systems, the part of the solidarity components in the EU average replacement ratio will continue being high and urgent.

Also, the results of the analysis indicate a gradual increase in the retirement age and/or insurance periods across the EU[2] (by the overall increase in life expectancy)[3]. Adequate pensions will increasingly depend on a long career. Forecast studies up to 2056 indicate that strong pay cuts are forecasted in Romania, Croatia, Poland, and the United Kingdom. Increases are forecasted in Estonia and Bulgaria. In all other calculations, the changes will not be significant (Pension Adequacy Report 2018: p. 111).

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2 The compromise solution in the EU countries has been a rather substantial increase in the length of service, the optimal value of which is at least 40 years

3 Except for Poland, where in 2016 the retirement age was reduced to 60 (from 61) years for women and to 65 (from 66) for men and will remain at this level instead of a gradual increase to 67 for both sexes, as foreseen. Polish officials say this will create jobs for young workers and thus accelerate economic growth (for the present forecasts are confirmed and the Polish economy is currently demonstrating one of the highest growth rates in the EU) (Pension Adequacy Report 2018: p.109; *System Emerytalny* 2011).

The Commission also recommends incentive measures such as: raising awareness, providing tax benefits and subsidies to employers and self-employed workers, etc.

In general, there are no attempts to introduce the fundamental pension reform in any of the Member States. The major transformations will concern parametric adjustment of existing national multi-level pension systems in order to improve their effectiveness in the future, which will be to ensure the adequacy of pension payments to citizens while ensuring the financial stability of pension systems (Moss 2017).

Experience of Ukraine

In order to fully understand the specifics of reforming and operating of the pension system in Ukraine, a brief statistical survey should be conducted. Today the population of Ukraine is rapidly aging. Over the past 60 years, the proportion of the population aged 60 and over has more than doubled – from 10% in the 1959 census to 23% in 2018, according to the State Statistics Service of Ukraine. At the same time, the proportion of the population under 19 has dropped from 34% to 20%. The median age of the country's population in 60 years has increased one and a half times: from 27.6 years to 40.8 years (Yatsenko 2018). Also, according to a survey of the Kiev International Institute of Sociology in 2018, the level of the shadow economy in Ukraine was 47.2% of the total GDP (*Riven'…* 2019). Today, there are 11.7 million pensioners or 27.7% of the total population (42.2 million) in Ukraine. The occupation of the Crimea and parts of the Donbass significantly influenced the population structure. At the beginning of 2019, the number of pensioners was 11470.4 thousand, and the number of insured persons – 13191.5 thousand. Therefore, the coefficient of demographic burden (number of pensioners to insured persons) is 0.87. In fact, this is already a critical figure, as 100 employees cannot maintain 87 pensioners. With the single social contribution size of 22%, a solidarity system with its own resources can guarantee a replacement of incomes of no more than 22–25%. The growing labour migration to the EU significantly deteriorates the situation (State Statistics Service… WWW). There will be the reduction in the workforce by 15% by 2030, and by 50% by 2050 in Ukraine. Our neighboring countries Poland, the Czech Republic and Slovakia make up for the shortage of staff by attracting migrant workers, especially from Ukraine (such a policy is being developed in Germany as well). IMF recommends Ukraine to hire more people over 55 and increase retirement age (*Ukraina vtratyt'…* 2019). These factors have an extremely negative impact on both the solidarity pension system and the public finance system as a whole. Thus, in 2017, the amount of transfers from the state budget to the budget of the Pension Fund of Ukraine (PFU) amounted to UAH 133 billion (4.5% of GDP, of which about UAH 69 billion is to cover the deficit), and in 2018 to UAH 150 billion (4.2% of GDP, of which UAH 32 billion is deficit coverage). According to the government decree, UAH 181.7 billion was planned for 2019 budget funds (4.9% of GDP, of which about 60bn. – deficit coverage). For the period 2015-2019, the average amount of additional funds raised from the state budget is 44% against 56% of own resources (Pensiĭnyĭ fond Ukraïny WWW; Resolution 2019/No14).

"The current trends of financial provision of the Pension Fund of Ukraine remain negative: the PFU budget is becoming shorter, and the share of pension expenditures to GDP is the highest among developing countries: as early as in 1970, this indicator was 7.4% [...] The forecast of the share of expenditures on pensions in GDP by 2050 gives grounds for asserting that the largest share of this indicator is in Ukraine at 26.1%" (Horbunova et al. 2018: p. 22). And for a country that has been exposed to aggression from the Russian Federation for 6 years, such budget expenditures are overly burdensome.

The results of the analysis of the PFU's budget indicate that, first, the government manages to balance the solidarity pension system and provide timely payments to pension recipients, but secondly, in fact, even with almost 1/2 financial inflows, the PFC provides for 52% of recipients up to EUR 70 equivalent.

Therefore, according to the EU criteria, Ukraine's solidarity pension system is relatively financially stable in the short term, but is not able to provide adequate benefits to pension recipients. This situation indicates, that significantly violating the principle of economic feasibility, the pension system of Ukraine can't ensure compliance with the principle of social justice, which requires either its fundamental transformation or finding alternative ways of providing retirement benefits in the future.

The legislation of Ukraine since 2003 provides for the existence of a three-tier pension system: I – solidarity, II – mandatory cumulative, III – non-state (see: Law of Ukraine 2003/1058-IV; Law of Ukraine 2003/1057-VI), but only I and III levels are actually functioning.

The results of the operation of the solidarity system are indicated above. With regard to the system of non-state pension insurance, the most important problem of development is its rejection as an alternative to the state system. Another problem is the low financial awareness of the population (compared to EU countries). A sociological survey demonstrates that, due to objective circumstances (low incomes, constant crises, loss of bank deposits, etc.), Ukrainians are not interested in obtaining more information about financial products (Panchenko 2015: p. 43).

Non-state pension provision in Ukraine is mainly provided by non-state pension funds (NPF) and life insurance companies. Thus, in 2018, 62 NPFs and 31 Life Insurance companies operated in Ukraine (FinPost 2018). Compared to 2017, there were fewer contracts with pension funds and insurance companies in 2018. Total amount of accumulated NPF pension contributions at the beginning of 2018 was € 71.8 million and life insurance premia – € 30.6 million (an increase of 31%). Pension payments from NPF for 2018 amounted to € 27.9 million (10% increase), and from Life Insurance – € 9.3 million (an increase of 94.7% compared to the same period of 2017) (*Strakhovyĭ rynok Ukraïny* WWW; *Non-State Pension...* 2019: p. 21).

Therefore, the 2017–2018 survey of Non-State Cumulative Social Insurance Market demonstrates that non-state pension funds and life insurance companies showed similar increases in the number of people involved and the amount of accumulated resources (*Pidsumky rozvitku...* 2018). In addition, a comprehensive assessment of all the indicators analyzed over the period indicates that non-state pension funds are somewhat more stable in their operations than life insurance companies.

To determine the potential growth potential of the non-state pension insurance market, an indicator of the level of potential development potential is calculated by the formula:

$$PAP = \frac{PPP}{EA_{p(18-45)}}, \qquad (1)$$

PAP – the actual level of pension activity of the population country or region; PPP– number of pension programme participants; number of all employees aged 18-45 years (approximately 75% of the total population)[4].

When calculating on the basis of statistics (State Statistics Service... WWW), we obtain a coefficient of 0.05. Accordingly, the potential for development of the private pension market in Ukraine will be 0.95. In other words, the number of participants in the system may potentially increase up to 10 times in the near future, and the amount of attracted financial resources will be much larger, since a person can pay contributions to several NPFs or insurance companies, and the size of the contributions can increase. A separate macroeconomic analysis of statistics demonstrates that the total pension assets in Ukraine in 2018 amounted to only 5.6% of GDP, which is a very low indicator. For comparison, in economically developed EU countries pension assets make up 30–77% of GDP [4].

The introduction of the second level (mandatory cumulative component of the pension system), due to the requirements of the legislation, has been constantly postponed since 2007. Thus, if the country has seen several times the corresponding rate of GDP growth and inflation, it is not possible to meet the Pension Fund's deficit-free budget requirement (the reform has been postponed by the government since the end of 2019).

In general, the mechanism of a mandatory accumulation system in Ukraine is based on the experience of Chile and the leading EU countries. However, no country can simply take over and copy the practice of a foreign country, since each country has its own peculiarities. There are still discussions in the expert environment in Ukraine about:

- administration of payment of contributions (state or market);
- centralisation or decentralisation of the accumulation system;
- experience of non-state pension funds in implementing investment strategies;
- optimal restrictions on investment of assets;
- maximum administrative costs of pension funds;
- the default choice strategy for the benefit of those participants who find it difficult to make that choice;
- the role of banks and insurance companies in the system, etc.

Also, many Ukrainian experts claim that the introduction of a mandatory savings system will increase national savings as a source of investment for the economy. However,

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[4] The methodology is proposed by L. Kryvenko and O. Meleshko (Kryvenko,Meleshko 2010: p. 186–187). The author adapted it to modern conditions.

[4] Analysed by the author

the experience of the countries of Central and Eastern Europe and Kazakhstan has shown that the gross national savings after the introduction of such systems remained almost unchanged (Schwarz et al. 2014: p.117). Experts say that in addition to purely administrative and institutional factors, the profitability of the investment (and final pensions) of the savings systems are also influenced by: the efficiency of the capital markets, in which pension assets are invested; inflation rate; regime of taxation of pension contributions, investment income and pension payments, increase in life expectancy, etc. (Bielawska et al. 2015; Klages, Rodríguez Toscano 2017: p.22).

In addition to the above risks, there are several other factors that could significantly reduce the effectiveness of the implementation of the cumulative component in Ukraine:

1) the general economic climate – the existence of corruption and the influence of clan-oligarchic structures (the risk of pension assets falling into controlled pension funds, banks and insurance companies);
2) one of the bills (No. 6677, 29.08.2019 it was withdrawn) proposed setting a very high marginal payment for financial intermediary services at 3.5% of the net asset value of retirement assets. It is estimated that paying for services at this level for 30 years would result in a cumulative loss of 43%–51% of the value of the assets of the system members, even if they receive investment income of 3% – 10% per annum. Therefore, many experts (looking at the experience of individual EU countries) propose to introduce a system of centralised administration of individual retirement accounts with a limited choice of investment options, where the rate of such costs will be at the level of 0.5–1%. There are also reservations about the compliance of Ukrainian scenarios with the IORPs II Directive (this is required) (Directive 2016/2341; *Main Issues of the Pension System …* 2018: p. 3031).
3) as most citizens of Ukraine are not able to make adequate decisions about the choice of NPFs, investment strategies, pension programmes, etc. for objective reasons, the EU experience, in particular the recommendations made in the 2018 report, indicate that the best way to solve this problem is to implement the system default options (subject to risk mitigation 1);
4) insufficient contribution of 7% to ensure a proper replacement of income. As in Ukraine the average level I replacement ratio is less than 30%, the amount of assets accumulated in the II level will be insufficient and will not provide a replacement of income at the level of at least 20% (*Compulsory Pension Systems* 2018: p. 34).

Definitely, as Svitlana Berezina (2017: p. 132) claims: "Preparations for the introduction of an accumulative system of obligatory state pension insurance need to define its parameters, to research various versions of its functioning. It is necessary to build a suitable model that would make it possible to study the most important conditions for the functioning of the pension system, to create an algorithm for determining its interrelated parameters and provide an opportunity to study various versions in the functioning of accumulative pension system".

World Bank experts warn that the introduction of the second level of increase in the deficit of the solidarity system will be quite long, since the transition period may be

35–40 years (Heinz, Rocha 2009: p. 5). This requires forecasting a fairly sound macroeconomic stabilisation policy in general.

Conclusions

The results of a conducted research point out that nowadays both the EU countries and their Eastern neighbors often get into difficult situations: on the one hand, countries must keep their obligations towards retired people, but on the other hand – there is a necessity of balancing the public financial systems. Such situations are antagonistic and as a result, they lead to confrontation between reformer-rationalists and union trades, the position of which in the International community is much stronger than many post-Soviet countries are in. All European countries have a problem of "population aging", but in Ukraine, the situation is much worse than the average European indicator. Practically all European countries face the pressure of the solidarity pension systems on their own economies.

In the 2000s the EU supranational bodies signed a number of legal acts, which regulate certain coordination of actions towards further development of pension systems in the EU countries. Since 2001 the complex researches are conducted under control of the European Commission, on which published annual "Reports about the adequacy of pension" are based. The research points to existing in the EU of multi-tier pension systems. By the level of development, the accumulative (capitalised) pension approach is better in the Northern and Western countries, in which the professional and private schemes are widespread. The development of accumulative (and occupational) pension systems is widespread throughout the whole EU's territory. However, there is no unified approach within the EU on the retirement and pensions; even the number of Central Europe and Eastern Europe countries (especially Hungary and Poland) have essentially collapsed the second levels of accumulative pension systems.

At the one hand, pension systems of these countries have the following common features: compulsory solidarity (or basic) level; accumulative components in pension schemes; storing personal information about insured persons in electronic databases; availability of financial schemes aimed to correlate the amount of pension with the personal contribution of the pension payers (Orobchuk, Zelenko 2008: p. 166).

But, in general, there is a high degree of unbalance in the development of pension systems within the EU, which makes any harmonisation efforts in this field rather a hard task, even so the European Commission recommendations seek to unify national approaches towards the pension systems with the ultimate goals that national countries in the course of reforms must provide adequate pension in terms of financial stability of public financial systems for the future.

The conveyed comparative analysis once more proves that the government of Ukraine chose the right approach to introduce the obligatory accumulative pension system because the work of non-state pension stocks, insurance companies, and bank institutions are combined in the united financial mechanism, which like the EU experience demonstrates, is a potential for lowering the risks. Therefore, the process of formation and payout of pension resources is planned to be as much diversified as possible. However, nowadays Ukraine lacks a single legal regulation introducing the second level of accumulative pension system since the number of its key positions is under discussion, in particular: the number of contributions, the maximum value of reward for an intermediary, the state guarantees, etc. And because of a big deficit in solidarity pension and institutional underdevelopment of the national stock market, the reform is postponed again. Although the results of these conveyed calculations point at a great potential increase of non-state pension market and insurance in Ukraine, the condition of constant instability of socio-economic system harms its development, so it is hard to predict it in the near future. We consider that the government must put maximum effort to implement an effective pension reform, because: first of all, the accumulative pension will be a huge investment source for economy for a long time, which has required "long-term loans" for decades; secondly, the system will play the role of "financial shock absorber", when the economic shock will occur. And last, the accumulative pension system provides the balance between the economic effectiveness and social justice, which in conditions of development in Ukraine as socially-oriented model of market economy and integration to the EU is one of the ultimate priorities of modern society development.

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