

Проведена декомпозиція системних цілей, технологій, об'єктів управління і цілей другого рівня в разрізі окремих складових корпоративного капіталу підприємства машинобудування, які можна виміряти. Представлена декомпозиція дозволила визначити: місце кожної окремої складової корпоративного капіталу в процесі розвитку життєвого циклу корпорації з вказанням їх цілей і завдань відносно розвитку; можливості розвитку складових корпоративного капіталу; завдання в процесі розвитку корпоративного капіталу в цілому.

Научная новизна. Розроблено теоретико-методический підхід до визначення бажаної структури корпоративного капіталу в відповідності до стратегічного напрямку розвитку корпорації машинобудівної галузі шляхом об'єдну-

вання цілеформуючих пріоритетних складових розвитку корпоративного капіталу.

Практическая значимость. Сочетание теории жизненного цикла с теорией управления капиталом позволяет получить методологию управления корпоративным капиталом, которая обеспечит проведение необходимых изменений для трансформации его структуры, достижение стратегических целей управления корпорацией с учетом этапа жизненного цикла, на котором находится компания.

Ключевые слова: корпоративный капитал, жизненный цикл организации, предприятия машиностроения, оптимизация структуры капитала

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TRANSFORMATION OF SAVINGS INTO INVESTMENTS: ROLE OF FINANCIAL INTERMEDIARIES

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ТРАНСФОРМАЦІЯ ЗАОЩАДЖЕНЬ У ІНВЕСТИЦІЇ: РОЛЬ ФІНАНСОВИХ ПОСЕРЕДНИКІВ

Purpose. Determining the structural elements of savings and clarifying the characteristics of their transformation into real and financial investment as well as studying the role of banks, pension funds, insurance companies and collective investment institutions in these processes in modern Ukrainian realities.

Methodology. Structural and functional analysis of components of using savings and general principles of macroeconomic modelling has been applied.

Finding. It has been proved that equality of savings and investment are only a necessary but not sufficient condition for achieving equilibrium. Three areas of savings use have been selected: for completion of financial and non-financial assets, as well as increasing cash reserves. It was found that part of the savings is eliminated from the process of their transformation into investment through sedimentation as cash reserves or through replenishment involved in speculative operations in the financial markets. The loss must be compensated at the expense of the money multiplier, creating a threat of building a macroeconomic pyramid and it is one of the causes of the financial and economic crisis. Funds mobilized by pension funds, insurance companies and collective investment institutions tend to remain in circulation in the financial market and do not turn into real investment. The balance of savings and investments under these conditions can be achieved only when new bank loans exceed the loans to be returned at this time. This cannot last continuously. That is why government regulation of saving processes is necessary.

Originality. The macroeconomic equilibrium model considering the different possibilities of individual parts to transform savings into investment has been improved.

Practical value. The ways of state influence on the structure of using savings, the implementation of which will improve the macro-economic, balance have been substantiated.

Keywords: savings, investments, macroeconomic balance, direct and indirect capital investments and financial intermediaries

Introduction. The generally recognized condition for macroeconomic equilibrium is the equality of savings and investment. This equality of the two indices creates

the necessary conditions for the formation of the balance of income and expenditure, aggregate demand and aggregate supply. On the contrary, their violation generates economic crisis and demands a significant fee for rebalancing from the society. Therefore, the problems of

savings and investment equality are the focus of economic theory for a long time.

Analysis of recent publications. Since the 30s of the last century, when this provision was substantiated by J. M. Keynes and was detailed in the work of his followers later, and to current days the transformation of savings in investment remains one of the key problems of static and dynamic balance. Recently Ukrainian scientists conducted some serious research on the role of financial intermediaries in mobilizing household savings and their transformation into investment [1–2]. However, the problem does not lose its relevance, because, on the one hand, the known studies leave the theoretical issues unanswered (for example, whether the concepts of “equality” and “balance” are identical), on the other hand, the dynamism of today’s life offers new opportunities and creates new challenges that require their theoretical understanding.

The objective of this article is to determine the components of the transformation of savings into investments and assessment of the financial intermediary role in the course of its implementation in the current Ukrainian realities.

Presentation of the main research and results. Most economic models in general equilibrium are limited by the assertion that savings equal investment is a condition for achieving general equilibrium. However, as noted by some modern scholars, equality of saving and investment does not necessarily mean their balance [3]. In our view, there is a “gap” in the interpretation of the concept of equilibrium at the micro and macro levels. At the micro level, the theoretical basis of the balance is formed by provisions on the equilibrium by L. Walras and V. Pareto, which were supplemented by J. Hicks, K. Arrow, G. Debreu, R. Rodner and others. They are to some extent related to the realization of the target set of economic agents (utility maximization, profit maximization, cost minimization, etc.). At the level of relations between economic subjects, the balance is achieved when improving the degree of realization of interest of one entity (group of entities) is not possible without deterioration of the other (Pareto optimality). At the macro level, equilibrium is increasingly seen as simple coincidence of certain quantitative indicators: aggregate de-

mand is equal to the aggregate supply; savings are equal to investment and so on. This “accounting equality” (by J. M. Keynes’s definition) lies in the system of national accounts, which involves determining the amount of savings as a residual, thereby balancing the total income and total expenditures.

However, it is not difficult to imagine a situation where the economy has achieved compliance with all quantitative parameters, but the available resources are not used optimally, level of meeting the needs has not reached its peak and can be improved without compromising other parameters. Then there are incentives to change the situation. And in the terms of classical definition, it means that the economy is not in equilibrium. Therefore, in our opinion, to achieve balance in key macroeconomic proportions is a necessary but not sufficient condition for achieving macroeconomic balance. Without going into detail (this is beyond the scope of this article), let us note that macroeconomic equilibrium models should be supplemented by perform indicators to assess the degree of approximation to optimality.

But in any case, achieving the macroeconomic balance requires reconciling savings and investments. So we focus more on the role of financial intermediaries in this process.

In modern society, savings (S) can be used by an owner to direct investments, ΔA_{nf} (capital investment of households, companies and the state, leading to the growth of non-financial assets), to transfer funds in various kinds of financial intermediaries, ΔA_f (gain of financial assets) or to supplement reserves, ΔR . The reserves do not come to the financial system in general. It clearly poses a threat to the achievement of the equilibrium state of the national economy. It should be noted that it is a real threat for Ukraine.

Functional approach to equality of savings and investment (functional equality) allows us to observe that different parts of non-consumed disposable income have different paths of transformation in real investments (Figure). Part of the savings that is used to increase non-financial assets is embodied in that part of the capital investment financed by the state and local budgets, enterprises’ and organizations’ own funds as well as public funds for housing. In our view, invest-

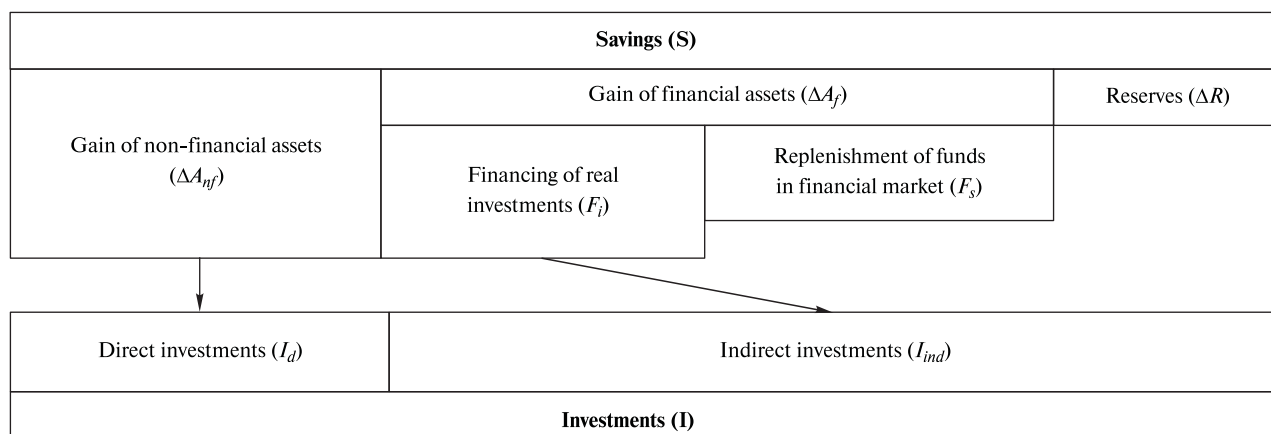


Fig. Element balance of savings and investments

ments undertaken by holders of savings may be called as direct capital investments (I_d).

A problem of imbalance between ‘gain financial assets’ as a savings element and ‘direct investment’ as an investment element does not arise, because according to the definition they are equal to each other

$$\Delta A_{nf} = (I_d).$$

According to the Central Statistical Office in Ukraine in 2015 the share of direct investments in their total value was 86.8 % [4]. This is a very high proportion, which is related mainly to the limited other sources of funding.

The problem of savings and investment imbalance stems from other savings elements. First of all, the reserves stored in cash of the financial system do not turn into investment. The scale of the problem in Ukraine can be judged on the basis of e-declaration of assets and incomes of public servants in 2015. Only members of Ukrainian parliament declared 7.4 billion UAH assets in cash while they hold only 2.4 billion UAH in banks, i.e. three times as little [5].

The main (almost the only) source of reserve replenishment is the disposable income of households. Neither the companies nor the state has legal grounds for the formation of reserves (although in practice they exist as a component of the second economy). In Keynesian macroeconomic models such cash reserves are called liquid or speculative money. Their size is considered to be a function of the interest rate, because while determining the way of storage the fund proprietor compares the possible benefit from the availability of cash and the possible loss in the case of their alternative use as a bank deposit. Speaking about the current situation in Ukraine, confining these general provisions would be insufficient. The main factors, which determine the growing proportion of reserves in savings of households, are the following:

- unstable economic situation creates needs to have and to constantly replenish cash to cover possible unforeseen expenses;
- instability of the financial system generates distrust in it. In particular, it resulted in the mass liquidation of

banks due to bankruptcy. In 2014 there were 180 banks in Ukraine; now we have only 98 [6];

- the ratio between the inflation rate and deposit interest rates is not sufficient to cover losses from reduced purchasing power. Thus, the official inflation rate in 2015 was 48.7 %, while average deposit interest fluctuated around 25 % [7];

- state policy in the field of taxation. A passive income tax (taxing bank deposit interests) made bank placements less attractive;

- underdevelopment of financial instruments cannot provide various financial services, appealing to individuals.

However, there are several factors that counteract the growth of cash reserves despite increasing action of the first group of factors. This is primarily the dynamics of real income. If real incomes are falling, the households simply do not have the ability to do special savings, including cash. Thus, in 2015 the real incomes declined by 22 % [7], which had an influence on the dynamics of cash reserves.

Another factor that inhibits the growth of savings in the form of cash reserves is devaluation of national currency against foreign ones. The fall of the hryvnia has led to significant losses in those funds kept in cash and pushed to increase savings in foreign currency. In the same area there are high rates of inflation.

The real dynamics of cash savings is a resultant of these contradictory factors. Unfortunately, official statistics do not provide information about the dynamics of cash savings. So we use our own calculations that can be done on the basis of the State Statistics Service of Ukraine. If we decrease the total income of the average per month per household on the total expenditures, the resulting difference can be estimated as increasing cash reserves. Calculation of the total increase in cash reserves for 2010–2015 is shown in Table.

The analysis shows that the maximum increase in cash savings was achieved in 2013. In the next years the effect of counteract factors has increased substantially. It led to more than triple reduction of the average redundancy rate and gain of cash saving was reduced by

Table

Calculation of the total increase in cash reserves for households [6]

	2010	2011	2012	2013	2014*	2015*
Total income on average per month per household, UAH	3369.8	3708.2	4031.9	4331.0	4470.9	5122.0
Total expenditure on average per month per household, UAH	3073.3	3458.0	3592.1	3820.3	4048.9	4952.0
Gain of cash reserves on average per month per household, UAH	296.5	250.5	439.8	510.7	422.0	170.0
Average redundancy rate, %	8.8	6.8	10.9	11.8	9.4	3.3
Number of households (ml. units)	17.71	17.65	17.60	17.57	16.54	16.48
Total growth of household cash reserves per year, bl. UAH	63.01	53.06	92.89	107.68	83.76	33.62

* Excluding the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and part of the anti-terrorist operation zone

3.2 times in 2015. So even at this scale it is a threat to the macroeconomic balance.

The third component of savings transforms into increasing of financial assets. They can take the forms of bank deposits, contributions to collective investment institutions or to pension funds, insurance premiums or acquisition of securities. Not all funds transferred by savers to financial intermediaries are transformed into investments. Some of them can actually be transferred to the real investors (F_r), which may be called indirect capital investments (I_{ind}), and some will go to replenish the funds that are traded in the financial market (speculative trading and the stock market, various operations in the currency market, etc.) (F_s). It also poses a threat to macroeconomic equilibrium.

The world experience shows that the function of mobilizing savings and their transformation into financial investments can be effectively implemented with pension funds, insurance companies, collective investment institutions and banks. As noted earlier, lack of financial instrument serves as one of the reasons that stimulates the growth of cash savings.

In contrast to international practice, where pension funds are large players in the financial market, the Pension Fund of Ukraine is subsidized and absorbs considerable part of the consolidated state budget. In 2017 the Pension Fund deficit is expected to reach 156 billion UAH [8]. Therefore, it is time to consider a more effective manager and regulator who will move from a solidarity system to the accumulation pension system.

In Ukraine the pension reform started over seventeen years ago and had to go through three stages. In fact, it stalled at the first stage. The Government announced that the accumulated pension system, the second component of the pension reform, will work in 2017 and will become mandatory for the Ukrainians under 35 years old. The state will guarantee control and safety of saving money of accumulated system [9].

However, it is expedient to note that the state pension accumulated insurance does not meet the real economic challenges. First of all, it is necessary to create independent institutions which will have the opportunity to accumulate citizens' funds, to direct them in investment projects and provide not only insurance against inflation risks, but also additional income. It is possible to achieve all these by combining the pension and insurance system reforms.

There are some obstacles on the way of the pension reform and insurance business in Ukraine in general and the development of financial and credit system, particularly in enhancing the role of these institutions in the framework of the transformation of savings into investment:

- lack of tradition to care about one's own future and be responsible for it, because the ideology of paternalistic state was dominant for decades;
- an extremely cautious attitude towards voluntary pension insurance caused by negative memories of the 90-s in the 20th century;
- the level of income and focus on current consumption does not allow the majority to allocate funds for insurance (pension, health, risk);

- the level of corruption and misuse of administrative resources may suspend serious foreign insurance and pension funds and companies from entering the Ukrainian market.

Since these obstacles are not just at the organizational level but rather at the level of values, it is not possible to overcome them by adopting a legislative or other regulation. Intervention of an external factor is required, which can accelerate the formation of the social environment.

Ukrainian business in the field of pension insurance is underdeveloped. Its formation may naturally take an extremely long time. Therefore, it is necessary to open the market for reliable international private pension funds and insurance companies. However, the difficulty lies in the fact that the price of their services is generally higher than that in Ukrainian companies. And they can work effectively only if a certain minimum market exists. In fact, the 'specificity' of the Ukrainian market and legislation does not allow companies to use international experience.

Therefore, the problem of pension savings use for the transformation into investment is a complex one and includes both the essential level (population mentality, values, etc.) and the organizational and legislative levels.

Collective investment institutions (CII) may be an important tool for mobilizing savings for investment purposes. According to the National Commission on Securities and Stock Market at the end of 2016 in Ukraine there were 300 asset management companies, 463 corporate and 1751 mutual funds [10]. However, the volume of securities, which were registered by these issuers in 2016, only slightly exceeded 10 billion UAH. It cannot be a significant source of investment. Moreover, households do not participate in the activities of CII as this institution of the financial market does not enjoy the confidence of the population. In our view, it is possible to activate households for placing their savings in CII creating deposit insurance fund individuals (like banking). However, this view requires additional study and detail.

Assessing the role of pension funds, insurance companies and collective investment institutions in terms of savings transformation into investments we should understand that according to the nature of these institutions most of the raised funds are directed to the secondary securities market and they never become a real investment (F_s). Thus, withdrawal of savings from the process of their transformation into investments needs to compensate for the loss of investment resources from other sources. Banks can help to solve this problem. Thanks to the money multiplier the banking system is able to provide more loads than primary bank deposits. This growth has to compensate the portion of savings that have not been transformed into investments and are used as cash reserves or as 'frozen assets' in the financial market.

Our studies allow making some clarifications in the model of macroeconomic equilibrium, which demonstrate various opportunities of separate saving elements to transform into investments. This can be done using the following system of equations

$$S = I;$$

$$S = \Delta A_{nf} + \Delta A_f + \Delta R;$$

$$I = I_d + I_{ind}.$$

But according to definition: $\Delta A_{nf} = I_d$. As a result

$$(\Delta A_f) + \Delta R = I_{ind}.$$

But I_s and ΔR are not converted into investment and are eliminated from the process of transformation. So the balance between savings and investments will be achieved under the following conditions

$$\alpha F_i = I_{ind},$$

where

$$\alpha = (\Delta A_f + \Delta R) / (\Delta A_f - F_s). \quad (1)$$

Analysis of the (1) shows that in case of a positive value of all components factor α is greater than 1. This means that smaller savings should turn into bigger investments. Achieving this ratio is possible in consequence of the money multiplier action associated with the issuance of bank loans. However, as we know, credit resources as a source of investment increases only in the case, when lending for the certain period of time exceeds repayment of loans. Therefore, economy will be balanced only when lending will be higher than amounts repayable. In other words, pyramid scheme is built, which ensures the stability of the economic system only in conditions of credit expansion. The financial and economic crises of recent years arise from a limitation of the constant expansion of the pyramid base. During the crisis, the coefficient α becomes negative values and results in line savings and investments.

As a result, elementwise research on conditions of savings and investment equality gives possibility not only to deepen the understanding process, but also provides the theoretical basis for improving the stabilization policy. One of the economic regulation directions by the state should be the impact on the structure of savings and the value of the coefficient α . Possible ways of such policy may be:

- reduction of the cash reserves by increasing confidence in the banking system and other financial institutions. In some periods it is possible to reach negative ΔR value, which can provide a negative coefficient and crisis-free dismantling of the pyramid scheme;

- the creation of conditions in which the real investment is more attractive than speculative operations in financial markets. This could lead to an outflow of funds involved in speculative transactions in the financial market (negative F_s), and their redistribution in favour of indirect growth capital investments;

- attraction of foreign investments that are able to compensate for insufficient savings as a source of capital investment;

- managed money issue, which under certain conditions can also be a source of investment resources.

However, the successful implementation of these ways is possible only under conditions of a balanced economic policy.

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Мета. Визначення структурних елементів заощаджень і з'ясування особливостей їх трансформації в реальні та фінансові інвестиції, а також обґрунтування ролі банків, пенсійних фондів, страхових компаній та інститутів спільного інвестування в цих процесах у сучасних українських реаліях.

Методика. Застосовано структурно-функціональний аналіз складових використання заощаджень і загальні принципи макроекономічного моделювання.

Результати. Доведено, що рівність заощаджень та інвестицій є лише необхідною, але не достатньою умовою досягнення рівноваги. Виділені три напрями використання заощаджень: на поповнення фінансових і не фінансових активів, а також на приріст готівкових резервів. З'ясовано, що частина заощаджень вибуває із процесу їх трансформації в інвестиції через осідання у вигляді готівкових грошових резервів або через поповнення коштів, здійснених у спекулятивних операціях на фінансових ринках. Втрати повинні компенсуватися за рахунок

дії грошового мультиплікатора, що створює загрозу побудови макроекономічної фінансової піраміди та служить однією з причин фінансово-економічних криз. Кошти, що мобілізуються пенсійними фондами, страховими компаніями та інститутами спільного інвестування, як правило, залишаються в обігу на фінансовому ринку та не перетворюються на реальні інвестиції. Збалансованість заощаджень та інвестицій за таких умов може досягатися лише тоді, коли нові банківські кредити будуть постійно перевищувати кредити, що підлягають погашенню на даний час. Оскільки це не може тривати безупинно, обґрунтована необхідність державного регулювання заощаджувальних процесів.

Наукова новизна. Удосконалена модель макроекономічної рівноваги з урахуванням різних можливостей окремих частин заощаджень трансформуватися в інвестиції.

Практична значимість. Обґрунтовані шляхи державного впливу на структуру використання заощаджень, реалізація яких дозволить підвищити рівень макроекономічної збалансованості.

Ключові слова: *заощадження, інвестиції, макроекономічна рівновага, прями та опосередковані капітальні інвестиції, фінансові посередники*

Цель. Определение структурных элементов сбережений и выяснения особенностей их трансформации в реальные и финансовые инвестиции, а также обоснование роли банков, пенсионных фондов, страховых компаний и институтов совместного инвестирования в этих процессах в современных украинских реалиях.

Методика. Применен структурно-функциональный анализ составляющих использования сбережений и общие принципы макроекономического моделирования.

Результаты. Доказано, что равенство сбережений и инвестиций является лишь необходимым, но не достаточным условием достижения равновесия.

Выделены три направления использования сбережений: на пополнение финансовых и нефинансовых активов, а также на прирост наличных резервов. Выяснено, что часть сбережений выбывает из процесса их трансформации в инвестиции через оседание в виде наличных денежных резервов или через пополнение средств, задействованных в спекулятивных операциях на финансовых рынках. Потери должны компенсироваться за счет действия денежного мультипликатора, что создает угрозу построения макроекономической финансовой пирамиды и служит одной из причин финансово-экономических кризисов. Средства, которые мобилизуются пенсионными фондами, страховыми компаниями и институтами совместного инвестирования, как правило, остаются в обращении на финансовом рынке и не превращаются в реальные инвестиции. Сбалансированность сбережений и инвестиций при таких условиях может достигаться только тогда, когда новые банковские кредиты будут постоянно превышать кредиты, которые подлежат погашению в настоящее время. Поскольку это не может продолжаться непрерывно, обоснована необходимость государственного регулирования накопительных процессов.

Научная новизна. Усовершенствована модель макроекономического равновесия с учетом различных возможностей отдельных частей сбережений трансформироваться в инвестиции.

Практическая значимость. Обоснованы пути государственного воздействия на структуру использования сбережений, реализация которых позволит повысить уровень макроекономической сбалансированности.

Ключевые слова: *сбережения, инвестиции, макроекономическое равновесие, прямые и косвенные капитальные инвестиции, финансовые посредники*

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