Systemic factors of projected financial potential of business entities

Abstract. The main prerequisite of forecasting the level of financial potential is the knowledge of financial activity of business entities. This becomes possible if the material basis of the financial potential is identified in the form of an isolated system, which consists of a definite number of elements and has distinct properties of financial resources. The algorithm of forecasting the level of financial potential is developed through a sequence of phases of cost management of financial flows of 2,276 agricultural business entities located in Zaporizhzhya, Kherson and Mykolaiv regions that specialise in crop production in 2009-2015. The implementation of the algorithm is performed by means of forecasting the movement of financial flows, speed and changes in the cost of formation of financial flows, as well as by determining the real cost of cash flows based on inflation losses, depreciation, exchange rate fluctuations in the internal and external markets. It was established that the accumulated liquid financial resources and a continuous increase in cash receipts of the studied enterprises can be considered satisfactory, however the nominal quantity of financial flows with regard to their strength and likelihood of change in their value over time indicates a gradual deterioration of fiscal balance and a slowdown in the formation of investment income of business entities. It has been determined that the synchronisation of cash inflows and outflows accelerates the flow of financial resources, capitalises the temporarily free balance and makes it possible to conduct investment operations with regard to possible terms of return and risks of financial activities of business entities. The author has proposed an appropriate model which statistical quality, value and reliability is sufficient for the use in forecasting the level of financial potential of agricultural entities.

Keywords: Financial Resources; Financial Potential; Financial Projecting; Cost Management of Financial Flows; Business Entities

JEL Classification: G11; G14; G17; O22

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Ключові слова: фінансові ресурси; фінансовий потенціал; фінансове прогнозування; управління вартістю фінансових потоків; суб’єкти господарювання.
1. Introduction

Prior to the formation of peculiarities and laws of the objective world, scientific knowledge of interrelationships of various things and the object under research can help to single out individual components, identify their properties and ground each of them separately according to its casual relationships, penetrating deeper into the process of acquisition of skills of forecasting the level of the financial potential of a business entity as a prerequisite of forecasting the level of financial potential is the knowledge of financial activity of business entities. This becomes possible if the material basis of the financial potential is identified in the form of an isolated system, which consists of a definite number of elements and has distinct properties of financial resources. Identification of the quantity of financial potential of business entities allows us to determine interrelated and interdependent phenomena, specific characteristics and relations in defining systemic factors of its forecasting. It is obvious that the modern scientific field of research of financial potential is provided within a few theories that use systematisation of knowledge and ways of transferring knowledge to several multidisciplinary stages of the cognitive process in managing the value of financial flows. In this sense, the stages of development of financial theory determine the characteristics of financial forecasting in economic space, which is the implementation of the cognitive process in forming the model of systemic factors of forecasting the level of financial potential of business entities. It is necessary to understand and consider those features while taking managerial decisions that will synchronise cash inflows and outflows, accelerating the process of obtaining financial resources and temporarily capitalise the balance, managing the cost of financial flows, providing a comprehensive assessment and multifactorial modeling of stable financial condition of agricultural entities. This variability of financial transactions of business entities should cover all possible changes in the structure of sources of funding. Secondly, the total amount of financing is changed when transactions provide regrouping in the structure of property assets [15]. That is, the variability of operations is determined by the need to fund variable costs and costs associated with the replacement of machinery and equipment [16]. Thirdly, the balance between financial resources and their sources should be retained after any transaction. This equality occurs during redistribution of available financial resources, which means either an increase or a decrease in the projected level of financial potential [17, 105].

2. Brief Literature Review

The financial potential of a business entity is often studied according to the prognostic viewpoint related to forecasting the financial position of the company and the formation of its financial system. That was developed in the works of L. Robinson, P. Barry and J. Kilbstein (Robinson, Barry, Kilbstein, 1984) [1], R. McGrath & I. Macmillan (McGrath, Macmillan, 1995) [2], E. Brighem (1997) [3], L. Basovskiy [4], I. Bernar and Zh.-K. Kolli [5], V. Boronos [6], V. Heyts [7], H. Kramarenko [8], H. Chesbrough (Chesbrough, 2010) [9], J. Lan (Lan, 2014) [10], L. Leyfer [11], J. Gaspar, P. Vasconcelos and O. Alonzo (Gaspar, Vasconcelos, Alonzo, 2014) [12], Carl J. Lagerkvist (Lagerkvist, 2005) [13]. However, the analysis of published works revealed that methodological guidelines for forecasting the level of financial potential aimed at efficient management of the value of financial flows of micro level with varying probability of the process of their implementation are underdeveloped in scientific sense.

3. The Purpose of Research is to Develop Systemic Factors of the Projected Level of Financial Potential of Business Entities Aimed at Increasing and Effective Management of the Value of Financial Flows

4. Results

The financial potential should be considered as an important strategic tool for sustainable development of business entities because the existing structure of financial flows, which is formed on the basis of the current legislative framework, does not affect the effectiveness of the management of their value in the medium and long term. This fact does not allow us to evaluate their real capabilities. In this regard, systemic factors of forecasting the level of financial potential ensure the formation of a strategic vector for sustainable development of business entities.

Theoretical knowledge of financial relations of a business entity makes it possible to generalise the definition of systemic factors of the projected level of financial potential of a business entity as a sequence of stages of creating the projected phenomenon regarding the management of value of financial flows, which is derived from the relationship between elements of the system adaptive to financial activities of a business entity in response to changes of internal and external environment.

Systemic factors of the projected level of financial potential operate in the environment and alter the patterns of internal and external sources of financing in financial relationships. This leads to strong economic and financial relationships. They expand parameters of financial potential. The identification of systemic factors of financial potential with the projected form of managing the cost of financial flows simplifies the implementation of financial activities of a business entity and, therefore, provides methods, techniques and completeness of perception of organising the process of financing.

The expansion of the prognostic approach to functional properties of systemic factors of the projected level of financial potential is not limited by time and space. However, space and time are forms of perception of organising the initial targets of financial forecasting. The implementation of these factors in the process of financial forecasting provides an objective directional movement of financial resources which are very mobile. In this regard, financial relations appear and they are accompanied by relevant financial flows (Table 1).

Financial relationships between business entities, government and non-governmental institutions related to the management of the cost of financial resources form a distributive function [14, 35]. Therefore, in a long-term period of functioning of business entities the material basis of the projected level of their financial potential is not the distribution of funds, but the direct use of financial flows and sources of funding.

The practical application of systemic factors of the projected level of financial potential is an effective methodical approach to determine the basic qualitative parameters of the management of the cost of financial flows, providing a comprehensive assessment and multifactorial modeling of stable financial condition of agricultural entities. This variability of financial transactions of business entities should cover all possible changes in the structure of sources of funding. Firstly, each financial operation determines a transaction cycle of the financial flow, during which there is a change in the structure of financial resources and sources of funding. Secondly, the total amount of financing is changed when transactions provide regrouping in the structure of property assets [15]. That is, the variability of operations is determined by the need to fund variable costs and costs associated with the replacement of machinery and equipment [16]. Thirdly, the balance between financial resources and their sources should be retained after any transaction. This equality occurs during redistribution of available financial resources, which means either an increase or a decrease in the projected level of financial potential [17, 105].

It is necessary to understand and consider those features while taking managerial decisions that will synchronise cash inflows and outflows, accelerating the process of obtaining financial resources and temporarily capitalise the balance, making real investments and accounting for the possible terms of return and risk. The term of investment opportunities during which a certain amount of residual funds may not be in cash should be aimed at the implementation of short-term investments. Return on investment should cover inflationary costs of depreciation and secure investment income according to the target or actual profitability of property assets. The influence of liquidity for short-term financial investment of business entities is essential, namely the possibility of non-escape from financial transaction in the plan period (i.e. return of property assets into inflows). Under such conditions, the Ukrainian agricultural producers use deposit transactions involving marketable securities in order to avoid slowing down the speed of cash flows in the short term.

Making the long-term optimal management decisions relevant to financial investment significantly affects the results of the activity of a business entity providing a stable cost of financial flows, which is derived from the relationship between types of financial flows in their scope and time, as well as additional profit due to temporarily idle cash balances of assets in financial investments.

The amount and structure of funding sources has to be formed on the basis of the real possibilities of development of financial resources, payback investments and provide revenue-generating activities, including a corrective coefficient.
of the changes in the cost of financial flows over time. This allows determining the actual total cash flow of the business entity:

\[
FF_{j} = \sum_{t=1}^{T} FF_{j,t} \cdot \left(1 + \eta_{in,t}\right)^{t}.
\]

where \(FF_{j,t}\) is the probability of the \(j\) financial flow in the \(t\) period, \(p_{i} \in \{1, 0\}\), share units; \(\eta_{in,t}\) is a factor for the inflation of agricultural products and the rate of return of alternative investment destinations in the \(t\) period.

To provide effective cost management of financial flows of agricultural entities, we consider it necessary to conduct an assessment of the amount of financial flows on the basis of speed, liquidity and the possibility of changes in value over time. Determining the speed of financial flows, we should take into account every incoming financial flow (financial potential) at a certain period or the fact that it is formed in the system and comes out of it within that period. This period is determined as:

- the time interval between the legal basis for the formation of incoming financial flows (beginning of the credit creation term, fulfillment of the delivery conditions, the formation of the investment contract, etc.) and convert it to resources with the loss of dynamic properties, which is for incoming flows;
- as the time interval between the legal basis for the formation of the outgoing financial flow (beginning of the credit repayment term, the interests, fulfillment of the conditions of payment on contracts, etc.) and recognition of obligations fulfilled by contractors, which is for outgoing flows.

Thus, the speed of the financial flows reflects the number of days in which the cash flow will go from its initial state to its final state, which will indicate the performance of financial obligations by business entities and their counterparties.

A high speed of financial flow corresponds to a high level of liquidity. The speed of financial flows is determined by its size, and the time interval is a reflection of its dynamic characteristics.

As a result of the calculation of cash flows and qualitative parameters of financial flows, the algorithm of forecasting the level of the financial potential is developed through a sequence of phases of cost management of financial flows regarding 2,276 agricultural entities located in Zaporizhzhya, Kherson and Mykolaiv regions specializing in crop production. The implementation of the algorithm is performed to determine the real cost of cash flows taking into consideration inflation losses, depreciation and exchange rate fluctuations in the domestic and foreign markets. It has been established that during the period of 2009-2015 the accumulated liquid financial resources and long-term growth of receipts of sampled enterprises were satisfactory. However, during the period of 2013-2015 the nominal volume of financial flows, taking into account the strength and the likelihood of changes in their cost over time, indicates a gradual deterioration of the fiscal balance and a slowdown in the formation of investment income of business entities. Thus, the real cash flow accumulated during the seven years of activity (2009-2015) was USD -15.94 billion. A significant deterioration in 2013, affected the total amount of financial flows of the companies, which was negative and amounted to USD -1172.1 billion. The same situation reflects the value of the accumulated financial flows which amounted to USD -1734.7 billion in 2015 (Table 2).

Thus, the indicators depict the cash flow \(Y(FF)\), which is included in the set of regular flows \(\{Y_{p}\}\) in conditions of belonging of the \(j\) stream to plural streams \(\{M\}\) generated by a certain source of financial flows, the sum of financial flows \(FF_{j}\), the

Tab. 1: Structural organisation of systemic factors of the business entities’ financial potential level forecasting

<table>
<thead>
<tr>
<th>Systemic factors</th>
<th>Implementation of the projected level of financial potential of business entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity</td>
<td>The projected level of financial potential of business entities is an act of managerial influence on the basis of internal organization system.</td>
</tr>
<tr>
<td>Qualitative characteristics</td>
<td>Qualitative characteristics of the projected level of financial potential, dynamics of financial results, property and financial condition of a company, business activity, as well as efficiency of financial activity, financial stability, etc.</td>
</tr>
<tr>
<td>Insulation in environment</td>
<td>The projected level of financial potential separated from other functional subsystems of business entities by specific managerial functions of the value of financial resources and financial flows.</td>
</tr>
<tr>
<td>Generating and structuring</td>
<td>The projected level of financial potential structured by means of bank transfer payments, financial risk management, working capital management, financial planning and budgeting, attracting new financial resources, etc.</td>
</tr>
<tr>
<td>Internal interaction</td>
<td>Interaction and mutual influence of systemic factors relevant to the projected level of financial potential of the internal and external environment of a business entity.</td>
</tr>
<tr>
<td>Interaction with the environment</td>
<td>Adaptation of the projected level of financial potential of a business entity to changes in the environment (the internal systemic factors and the external environment of business entities) and the appropriate choice of alternatives of financial resources management.</td>
</tr>
<tr>
<td>Availability of integrated features</td>
<td>Forecasting the integrated level of financial potential is reflected in the integrated indications: structure of formation and use of financial resources, effective management of financial flows, profit management, management of receivables, loan management, etc.</td>
</tr>
<tr>
<td>Synergy</td>
<td>The projected level of financial potential acquires new qualitative characteristics in reflecting the results of financial activity in the interaction of various systemic factors of a business entity, and the degree of adaptation of the entity to changes in the external environment.</td>
</tr>
<tr>
<td>Targeting</td>
<td>Grounding the strategic guidelines for financial activities and forming the strategic vector for sustainable development of a business entity.</td>
</tr>
</tbody>
</table>

Source: Developed by the author

Tab. 2: The calculation of financial flows of agricultural business entities, USD billion

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross cash flow</td>
<td>410.4</td>
<td>500.9</td>
<td>545.6</td>
<td>365.5</td>
<td>249.3</td>
<td>60.7</td>
<td>1902.7</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>272.4</td>
<td>394.4</td>
<td>457.1</td>
<td>270.7</td>
<td>149.9</td>
<td>398.6</td>
<td>4540.3</td>
</tr>
<tr>
<td>Nominal financial flows:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- from operating activities</td>
<td>190.2</td>
<td>246.6</td>
<td>370.9</td>
<td>430.9</td>
<td>207.8</td>
<td>431.6</td>
<td>619.1</td>
</tr>
<tr>
<td>- from investing activities</td>
<td>-209.8</td>
<td>-331.3</td>
<td>-366.2</td>
<td>-3248.1</td>
<td>-71.9</td>
<td>-521.9</td>
<td>-2974.3</td>
</tr>
<tr>
<td>- from financing activities</td>
<td>71.7</td>
<td>225.4</td>
<td>57.0</td>
<td>285.23</td>
<td>44.3</td>
<td>184.1</td>
<td>1896.2</td>
</tr>
<tr>
<td>Financial flow in view of its strength</td>
<td>18.6</td>
<td>-29.2</td>
<td>46.5</td>
<td>56.4</td>
<td>18.9</td>
<td>-211.1</td>
<td>-744.2</td>
</tr>
<tr>
<td>- from operating activities</td>
<td>139.6</td>
<td>141.2</td>
<td>206.1</td>
<td>219.7</td>
<td>10.3</td>
<td>224.1</td>
<td>366.9</td>
</tr>
<tr>
<td>- from investing activities</td>
<td>-178.1</td>
<td>-340.5</td>
<td>-276.2</td>
<td>-2509</td>
<td>-37.2</td>
<td>-599.4</td>
<td>-2606.0</td>
</tr>
<tr>
<td>- from financing activities</td>
<td>57.1</td>
<td>107.1</td>
<td>23.5</td>
<td>2346</td>
<td>-37.2</td>
<td>164.2</td>
<td>1489.5</td>
</tr>
<tr>
<td>Financial flow considering the likelihood of its receipt</td>
<td>17.3</td>
<td>-28.1</td>
<td>-34.4</td>
<td>35.6</td>
<td>-2.3</td>
<td>-345.6</td>
<td>-1172.1</td>
</tr>
<tr>
<td>Accumulated financial flow</td>
<td>17.3</td>
<td>-10.8</td>
<td>-45.4</td>
<td>-10.1</td>
<td>-12.3</td>
<td>-369.7</td>
<td>-1734.7</td>
</tr>
<tr>
<td>Accumulated real financial flow</td>
<td>7.8</td>
<td>0.85</td>
<td>-3.09</td>
<td>-1.33</td>
<td>-1.34</td>
<td>-6.74</td>
<td>-15.94</td>
</tr>
<tr>
<td>Reference: index inflation of agricultural products (time unit)</td>
<td>110.3</td>
<td>106.4</td>
<td>130.0</td>
<td>113.6</td>
<td>91.2</td>
<td>97.1</td>
<td>124.9</td>
</tr>
</tbody>
</table>

Source: Calculated by the author
sum of individual amounts of financial flow $FF_p$ from this source and the equality interval $(t_{ij})$ the emergence of flows intervals $t_{ij}$ between flows $Y_j$:

$$Y(FF) \in \{Y_j\} \text{ if } j \in \{M\}, FF_j = FF_{p,t_{ij}} = t_{ij}.$$  

(2)

To enable comparison of financial flows in the cost of movement, we consider it appropriate to introduce an additional characteristic which is the relative cost of the financial flow, which shows the ratio between the cost of flow movement and its financial volume:

$$C_{mv,j} = \frac{C_{f,j} + C_{s,j} + C_{int} + C_{ext}}{FF_j}.$$  

(3)

The relative cost should be calculated for each incoming financial flow generated by a certain source. Thus, the relative cost for financial flows resulting from borrowing funds can be calculated as the cost of each tranche and the total value of integral financial flow from the appropriate source. For outgoing financial flows, the value is determined by the cost of losses arising under the influence of internal and external systemic factors of the projected level of financial potential.

According to Table 3, the difference in direction and composition of financial flows of agricultural entities is most clearly seen in the period of 2012-2015. It was the year 2012 when a change of ownership occurred and the companies became part of the agricultural holding. In 2012, the volume of investment obligations (USD 0.635 billion) which were directed to refill the capital assets was received as a result of redistribution of financial flows between the companies and the agricultural holding in terms of repayment of their liabilities (USD 0.149 billion), reduction of current assets (USD 0.297 billion) and, the transfer of one part of depreciation charge to the agricultural holding (USD 0.189 billion). During this period all the equity capital, the long-term debts and the short-term loans were delivered to the agricultural holding, and the total amount of the original financial flows related to investing activities amounted to USD 3.18 billion, which was accepted as accounts payable.

In 2013, the withdrawal of capital of business entities amounted to USD 0.283 billion. It was transferred to the agricultural holding in order to optimise the structure of funding sources, with USD 0.013 billion of dividends and USD 0.003 billion of repayment of bank loans.

Such a trend triggered the withdrawal of capital in the amount of USD 0.509 billion in 2014 of internal estimates and USD 0.406 billion during the redistribution of financial flows. In 2015, agricultural enterprises received USD 1.95 billion at the expense of short-term debts with regard to domestic payments, however the funds were withdrawn from the capital as a reduction in the amount of USD 2.92 billion of additional capital, USD 0.82 billion of retained earnings and USD 0.058 billion at the expense of internal transfers. According to the results of 2015 the equity of the agricultural entities was negative and amounted to USD -1.94 billion.

Thus, in 2009-2012 the entering into the structure of the agricultural holding led to a deliberate withdrawal of capital equity with sufficiently increasing active volumes of sales of the companies. During this period, the accumulated cash flow of the agricultural enterprises totalled USD -0.67 billion, while the agricultural holding received USD 2.89 billion of the accumulated net financial flow taking into account the inflation rate which was USD 1.46 billion. Accordingly, the entering of the agricultural enterprises into the agricultural holding is justified for the agricultural holding, whereas the entities (including their leasehold) may face huge financial problems in the future.

5. Conclusions

Defining the stages of the development of multivariate modelling and financial forecasting forms the system of factors of the projected level of financial potential of business entities and their structural organisation that provides a relationship between financial flows and sources of financing. However, methodological tools of financial forecasting based on financial resources, their origins and the targeted use of funding sources involved in the implementation of the financial cycle activate financial capacities of agricultural producers operating in the market environment. Furthermore, the redistribution of financial flows between various subjects of the economic system of the state, as well as at the international level, is the basis for the projected level of financial potential of agricultural entities with a specific superstructure which is financial relations that determine the realities of their existence in the financial market. Under such circumstances, the expediency of financial flows expresses the interaction between participants of financial relationships that implement adopted management decisions. In a broad sense, cost management of financial flows creates a mechanism for the implementation of transactions in the financial market.

The application of systemic factors of the projected level of financial potential value in the management of financial flows that are inextricably tied to their size, level of integrity and transparency, flexibility and openness, intensity and inertia, creates conditions for the growth of the market value of agricultural enterprises. This allows agricultural entities to function effectively in tough market conditions, establishing objectives of development of their financial system.

References


Tab. 3: The dynamics of financial flows at agricultural business entities and agricultural holding* for 2012-2015, USD billion

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Period</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural business entities</td>
<td>Incoming financial flows</td>
<td>4.29</td>
<td>0.866</td>
<td>13.31</td>
<td>5.21</td>
</tr>
<tr>
<td></td>
<td>Outgoing financial flows</td>
<td>-4.27</td>
<td>-0.77</td>
<td>-1.73</td>
<td>-5.67</td>
</tr>
<tr>
<td>Net flow:</td>
<td>- for the period</td>
<td>0.037</td>
<td>0.092</td>
<td>-0.396</td>
<td>-0.459</td>
</tr>
<tr>
<td></td>
<td>- accumulated</td>
<td>0.037</td>
<td>0.128</td>
<td>-0.143</td>
<td>-0.676</td>
</tr>
<tr>
<td></td>
<td>- accumulated discounted</td>
<td>0.030</td>
<td>0.136</td>
<td>0.173</td>
<td>-0.029</td>
</tr>
<tr>
<td>Agricultural holding</td>
<td>Incoming financial flows</td>
<td>3.49</td>
<td>0.384</td>
<td>0.916</td>
<td>3.88</td>
</tr>
<tr>
<td></td>
<td>Outgoing financial flows</td>
<td>-3.68</td>
<td>-0.264</td>
<td>-0.146</td>
<td>-1.95</td>
</tr>
<tr>
<td>Net flow:</td>
<td>- for the period</td>
<td>-0.192</td>
<td>0.119</td>
<td>0.269</td>
<td>1.93</td>
</tr>
<tr>
<td></td>
<td>- accumulated</td>
<td>-0.192</td>
<td>-0.070</td>
<td>0.632</td>
<td>2.89</td>
</tr>
<tr>
<td></td>
<td>- accumulated discounted</td>
<td>-0.154</td>
<td>-0.053</td>
<td>0.414</td>
<td>1.46</td>
</tr>
</tbody>
</table>

* The recorded cash flows of the agricultural holding are related only to the work of agricultural entities

Source: Calculated by the author
Institute of Society Transformation (IST)
Non-governmental Research & Analytical Centre, Director Dr. Oleh Soskin

Key activities:
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- Preparing of analytical materials, political and economical forecasts, commentaries and other intellectual products
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