13. MODELING THE FINANCIAL BEHAVIOR OF POPULATION (I) – CONCEPTUAL ASSIGNATIONS[1] –

Emil DINGA[2]
Napoleon POP[2]
Mihail DIMITRIU[3]
Camelia MILEA[2]

Abstract

The paper shows a few conceptual assignations concerning the financial behavior of the population. Thus, there are defined attached predicates (the inclusion into the economic behavior category, the existence of a monetary factor, the action for goods and non-autonomous flows, as well as for goods and nominal flows), the sources that generate the financial behavior (acquisition of real goods and services, acquisition of financing sources, acquisition of saving sources), the process of non-autonomous financial flow formation and finally, there are identified categories of nominal flows attached to the financial behavior of the population.

Key words: logic model, financial behavior, sustainability
JEL classification: E19, E21, G17, G18, J18

I. Introduction

The economic behavior is a species of human behavior (either individually or by group, inclusively at the level of the entire society or even at the level of some integrative economic structures, such as the European Union), which relates (has in view) the economic object in all its generality. In other words, the economic behavior is that species of human behavior that generates what we call the economic process.

The financial behavior is a species of economic behavior, namely that economic behavior that fulfills cumulatively a series of characteristics (predicates, attributes)

---

[2] Victor Slăvescu Financial and Monetary Research Center, Romanian Academy.
[3] Victor Slăvescu Financial and Monetary Research Center, Romanian Academy, E-mail: dimitriu689@gmail.com.

necessary and sufficient. In order to set out these features, an overview of the general typology of goods and economic flows, therefore, implicitly, of the categories of possible economic behavior is useful.

II. The general typology of economic goods and flows

Important for us, it is the distinction between real goods and services and nominal goods and services. This distinction is, obviously, structural: affiliation to a particular class of economic activities. In the economic theory the dichotomy real economy-nominal economy is accepted[4]. Real economy means the set of economic activities, which produce goods and services that may enter directly into consumption[5]. This category of goods and services bears the generic name of *real goods and services* (BSR).

The nominal economy represents the set of economic activities that produce goods and services that cannot enter directly into consumption. This category of goods and services bears the generic name of *nominal goods and services (BSN)*. Obviously, both real and nominal goods and services, may, in turn, be monetarily expressed as real or nominal values[6]. Therefore, the economic system produces two categories of economic goods and services: BSR and BSN. Let us analyze, briefly, some logical distinctions and correlations between them:

1. *first*, it must be said that there are species of BSN that have no causal link with BSR. For example, bonds issued by a non-financial firm represent BSN that have no causal link (direct) with any type of BSR[7], also, necessarily , there may be BSR that have no causal link with BSN ;

2. *in the second place*, it must be mentioned that many of the flows of BSR generate corresponding flows of BSN - the example of the shares;

3. *third*, not every financial flow has the nature of a BSN. Those financial flows that represent financial counterparts for the real flows are not nominal flows with the meaning given here to BSN. For example, the shift of ownership over bread from the seller to the buyer is accompanied (according to the "contract of sale" between them) by the transfer of ownership over a sum of money representing the market price of bread, from the buyer to the seller. But that does not mean that in the economy there were two economic flows: one real (bread) and one nominal (price of bread). Although

---

[4] As an equivalent expression, some analysts use the phrase "monetary economics" or even "financial economics". The "phrase monetary economics" is inadequate because it expresses the characteristic of any modern economic system to carry out economic exchange through a universal means of exchange - currency. The phrase "financial economics" is, also, inadequate due to the considerations that will be made immediately on the financial-nominal distinction.

[5] Either final consumption or intermediate consumption, according to the methodology for the determination of GDP by expenditure method.

[6] Depending on whether the influence of inflation in the monetary expression is removed or not.

[7] Instead, the shares issued by the same firm have causal link with BSR: for example, their value covers (or supports on) the value of the joint stock of the company concerned.

as shown, there may be causal links between BSR flows and BSN flows, it should be noted that these causal links must be of intermediate type (in the above example, the payment of the price of bread is generated *directly* by the sale of bread, so a nominal flow is not generated). However, if, for example, we think about the granting of a credit, we see that this flow cannot be in any direct connection[8] with any real flow in the economy[9];

4. *fourth*, we say that, ultimately, financial flows (both those that are purely financial - financial counterparts for real flows, that is $\overline{FFA}$ - and those that are financial nominal, i.e. FFA) are generated, ultimately, by real flows. Therefore, the economic support (sustainable and of last resort) of the nominal flows is represented by the real flows. This conclusion is crucial for the analysis to be made throughout the study;

5. *fifth*, financial flows exert a feedback reaction (both negative and positive) and sometimes a feed-forward reaction on real flows. This allows emerging processes both in the real economy and in the nominal economy (as we speak about an innovation in the real economy - usually technological - we speak about a financial innovation or, with a less usual terminology, of a nominal innovation in the nominal economy).

Based on the above mentioned, we shall support, therefore, the idea that real economic flows and nominal economic flows are interconnected both genetically as

---

[8] In order to clarify, by definition, what we understand by direct causal link, we say that this is a causal connection that does not imply any intermediate link on the channel through which the impulse is transmitted. Whenever such an intermediate link appears in the mechanism of impulse transmission (obviously it must be clearly highlighted, either logically or empirically), we are dealing with a nominal flow. Therefore, the aggregate of financial flows include the aggregate of nominal flows from the economy as a subset (in analytical terms, we write: $FF \supset FN$, where FF represents the aggregate of financial flows in the economy, and FN is the aggregate of nominal flows from the economy). We propose to name the financial flows that are not at the same time, also, nominal flows: non-autonomous financial flows ($\overline{FFA}$). So, from an analytical point of view, we can write: $FF = FN \cup \overline{FFA}$, and, from the above definition it follows immediately: a) $FN \equiv FFA$ (nominal flows are autonomous financial flows); b) $FF = FFA \cup \overline{FFA}$.

[9] Suppose, however, the situation in which a bank loan is contracted in order to buy a immovable good (e.g. land). One might say that this is a financial counterpart to an economic transaction with BSR. In fact, it is not so, the situation referred to should be described as follows: a bank loan has been contracted (which is a FFA), the income of the economic subject involved has accrued, and from the income obtained in this way, the purchase of BSR was paid, as a financial counterpart. So, the first flow (contracting the bank credit) is a FFA, while the second flow (payment of land purchase) is a $\overline{FFA}$. In terms of logic, we should, probably, say that a real flow is a causa eficiens for $\overline{FFA}$, while the same real flow is a causa finalis for FFA. Therefore, it should be held in mind that the autonomy/non-autonomy distinction that underpins the identification of categories of economic flows refers to this distinction in relation to the BSR (e.g. we have non-autonomous financial counterparts to a nominal flow - passive interest rate for a bank deposit - but this flow remains autonomous in relation to any real flow, although it is non-autonomous in relation to a financial flow).

well as structurally and functionally, although logical or theoretical considerations force us to make semantic, methodological and instrumental distinctions between them.

Therefore, real flows may represent either effective causes or final causes (purposes) of the financial flows. In the first case, real flows generate real flows (obviously, we are talking about different real flows) or non-autonomous financial flows (financial counterparts to real flows), while in the second case, they generate nominal flows. The fact that real flows represent the final cause of nominal flows is critical, because it means dependency of last resort of any real economic activity, according to the biological and social structure of the human being.

It appears that taking into account the three different categories of economic flows (real, financial non-autonomous and nominal), there can be identified three categories of economic counterparts: a) a real counterpart (real flows "against" real flows) b) non-autonomous financial flows "versus" real flows, c) nominal flows " against " nominal flows[10].

III. The concept of financial behavior

Based on the above set, we can now try to define financial behavior. In order to reach a rigorous definition, and, at the same time, operational, we will identify, as we stated above, the necessary and sufficient predicates of the economic behavior, predicates that qualify it as financial behavior. Therefore, by financial behavior we shall understand the human behavior that:

a. *resides in the economic behavior*: this attribute is necessary because the human being (as an individual or as a social group) has associated a variety of other behaviors: emotional, spiritual, physical, moral, etc. From all the behaviors available to the human nature we must choose only the one of economic type[11] - we call that predicate E;

b. *takes into consideration a monetary factor*: this attribute requires that, in the case of financial behavior, either the cause or the effect or the intermediate links of this behavior should be represented by the currency in its different hypostases[12] - we call that predicate M;

c. *acts for goods and non-autonomous financial flows, respectively for goods and nominal flows*: this attribute requires that, in the case of financial behavior, real assets and flows should be eliminated; for example, job searching is not considered as a

---

[10] If, regarding real and non-autonomous financial counterparts, things seem to be clear, in the case of the nominal counterpart, we shall give an example to make things clearer: e.g., saving (suppose that it takes the form of a bank deposit) induces, as nominal counterpart, the passive interest rate or non-governmental credit brings about, as a nominal counterpart, the active interest rate. The exchange rate, in turn, is generated by the nominal flows situated in position of mutual counterpart: the supply of currency and the demand for currency.

[11] Economic behavior could be defined as that behavior that aims (aims, seeks) at the biological existence of the human being (or that of the social group of membership).

[12] By currency, we understand the abstract concept of a universal means of economic exchange, of fiduciary type, including financial institutions that replace the currency or represent it (the so-called means of payment).

financial behavior, although this behavior also aims, ultimately, at a monetary factor – the expected salary[13] - we call that predicate $\overline{\overline{\mathbf{R}}}$;

So, denoting the economic behavior by CE, the monetary behavior by CM and the financial behavior by CF, we can write the following formal relations:

- $CM = \mathbf{E} \wedge \mathbf{M}$;

- $CF = \mathbf{E} \wedge \mathbf{M} \wedge \overline{\overline{\mathbf{R}}}$;

We analyze the "channels" through which the financial behavior can be constituted. There are 3 "sources" that generate financial behavior:

a. formation of non-autonomous financial flows through:

1. purchase of real goods and services[14];

b. formation of nominal flows through:

2. acquisition of funding sources;

3. acquisition of saving sources.

3.1. The formation of non-autonomous financial flows

Non-autonomous financial flows appear in the process of buying real goods and services of any kind. As a result, there are the following flows (4 categories):

1. *prices*: those non-autonomous financial flows that appear due to acquisition of goods[15];

2. *tariffs*: those non-autonomous financial flows that appear due to acquisition of services[16];

3. *excises*: those non-autonomous financial flows that arise during the acquisition of a license[17];

4. *direct taxes[18]*: those non-autonomous financial flows that occur when "buying" public goods.

As stated above, non-autonomous financial flows offer to the economic subject issuing these flows a real right of ownership over the economic object that is a counterpart in the non-autonomous financial flows[19].

---

[13] For example, in the economic transaction of purchasing a bread, the financial behavior will refer only to the financial flow represented by the transfer of the real good called bread, i.e., only to the non-autonomous financial flow represented by the price of bread.

[14] We refer to private goods and services as well as to public goods and services.

[15] By goods we mean the tangible economic objects.

[16] By services we mean the intangible economic objects.

[17] By license we understand the economic objects having the nature of a real or intellectual right.

[18] Direct taxes are included in the non-autonomous financial flows category of "prices", because, by definition, they are part of the purchase price of any good or service.

[19] Although it is more difficult to represent, the "purchase" of a public good by paying direct taxes assures, also, a real right of ownership over that public good (it is a property right common to the whole society).

The question of whether non-autonomous financial flows are only issued by the analyzed economic subject or may, also, be received arises. It seems that this category of economic flows is unidirectional, i.e. it is only issued by the economic subject in question: indeed, if we imagine a situation in which this subject is the recipient of such a flow, then simply the subject concerned receives another role, namely that of supplier of real goods. Therefore, in the case of non-autonomous financial flows, there is an asymmetry: these flows are unidirectional: once the economic subject has a certain position in the economic process (mechanism), he can either only receive or only deliver such flows. In the present study, we are interested only in the aspect of non-autonomous financial flows issuance, i.e. the situation of purchaser of real goods, services or rights.

Based on the above descriptions, it appears that non-autonomous financial flows are economic flows of first order (order 1), i.e. they are transactionally related in an immediate manner[20] with the economic object, which is somehow, the efficient cause of the transaction in question.

Thus, non-autonomous financial flows are characterized by the following:

- they are in immediate relation to the economic object, which is concerned in the generic economic transaction;
    - *consequence*: they are subject only to effective type causality;
- they are unidirectional with respect to a given economic subject (in other words, the non-autonomous financial flow selects the economic subject univocally[21]);
    - *consequence 1*: they are asymmetric by association with the economic subject;
    - *consequence 2*: they are appropriate only for purchasing transactions;
- they are only means to achieve goals and they cannot be purposes themselves;
    - *consequence*: non-autonomous financial flows are only effects, they are never causes of financial behavior.

3.2. The formation of nominal flows

First, we must specify that nominal flows regard financial situation of second order (order 2), meaning that these flows are not transactionally related in an immediate manner to economic objects, which are efficient causes of the transaction in question, but they are mediated, inter-mediate causes or effects, which call rather to final causes than to efficient causes. For this reason, the symbolic meaning of nominal flows is much higher than that of the non-autonomous financial flows[22].

Secondly, nominal flows are symmetrical. This property of symmetry may be accepted under three aspects: a) a symmetry concerning the subject: nominal flows can regard the same economic subject considered as issuer of nominal flows as well as recipient

---

[20] Here, the term of immediate has not its "civilian" meaning, of close in time of the moment of speech, but his strict sense of not intermediated, about the direct causal link.

[21] Logically, it results that an economic subject cannot be under the same transactional report, issuer and receiver of non-autonomous financial flows at the same time. It is easily to observe the logic similarity with the principle of non-contradiction in the logic of Aristotle: a selected entity A cannot be non-A at the same time and under the same logical report.

[22] This is the conceptual reason that triggered the current international financial crisis: the formation of nominal flows of third order (order 3) (for example, financial derivatives) or of fourth order (order 4) (e.g., the assurance of some financial derivatives), etc.

of such flows, b) a symmetry concerning the moment in time: nominal flows may be issued or received at the same time by the same subject, c) a symmetry about the logic report: nominal flows may be issued or received by the same subject, at the same time and under the same logic report (i.e. they are of the same type, at the same time).

Thirdly, nominal flows are two-way: they may be both buying and selling. Although this property follows logically from the previous property of symmetry concerning the subject, it is useful to be mentioned separately, due to the special importance that it will have in studying and modeling the financial behavior in the paper.

In order to study the typology of nominal flows (similarly to the way we did in the case of non-autonomous financial flows), we shall organize a general typology of funding sources. The reason for calling to such a method is the following: being autonomous in relation to the real flows (as specified in the definition), nominal flows are intended, ultimately, for funding non-autonomous financial flows, which, as we have seen, are intended for being value counterparts to real flows (the latter being the ultimate goal of any economic transaction).

The general scheme that correlates the typology of economic capital with the typology of economic resources can be represented as in Figure 1:

Figure 1

**The correlation between the type of capital and the category
of economic resource**

		Economic resource					
		Material resource (RMt)	Human resource (RU)	Manage-ment resource (RM)	*Financial resource (RF)*	Informa-tion resource (RI)	Formal resource (RN)
The capital	natural	▓			▓		
	of equipment	▓			▓		
	human		▓		▓		
	cognitive			▓	▓		
	institutional			▓	▓		▓

Analyzing the situation described in Figure 1, we can draw the following conclusions:

1. there is a correlation between the identifiable types of capital and the categories of economic resources   that can be established. Both the types of capital and the categories of economic resources were established based on the following logic criteria[23] :

a. the completeness criterion : the types of capital , that is the categories of economic resources should cover the whole field of interest concerning the economic process;

---

[23] Note that the three logical criteria of developing a taxonomy are general logical criteria, which apply to any taxonomy and not only to that regarding economic objects, as in the case discussed here.

b. the consistency criterion : the types of capital, that is the categories of economic resources should be non-contradictory among them;

c. independence criterion : none of the types of capital, that is none of the categories of economic resources cannot be inferred from some combination of other types of capital, that is from any combination of other categories of economic resources.

2. the correlation between the types of capital and the categories of economic resources leads to a generational process - the generation of economic resources by the capital, according to the following diagram:

a. natural capital, together with equipment capital[24], generates material resource (RMt) and financial resource (RF);

b. human capital generates human resource (RU) and financial resource (RF);

c. cognitive capital generates three economic resources : management resource (RM), financial resource (RF) and information resource (RI);

d. institutional capital generates also three economic resources : management resource (RM), financial resource (RF) and formal resource (RN);

3. as a result of the above mentioned, financial resource corresponds to each type of capital identifiable by the logical criteria mentioned. The consequence of this is that the financial resource is "opposable", from the methodological point of view, to any kind of capital.

In other words, financial resource is generated by each type of capital, in a specific way[25].

Let's notice, now, that in terms of types of capital, the environment of the economic process is represented, as the financial resource, by all types of capital. Indeed, natural capital coresponds to the *natural environment* of the economic process, while the other types of capital coresponds, together and in their interdependencies, to the *economic environment* of the economic process[26]. We ignore for the moment and only

---

[24] We did not consider sufficiently clear to call equipment capital by the phrase "physical capital ", because there may be some semantic overlap with the natural capital that is, also, physical capital.

[25] Let us see, immediately, a logical consequence of this conclusion: all the other economic resources from the margin of an economic process (system) may be expressed in terms of financial resource. Moreover, it is known that, at both micro and macroeconomic levels, the financial value (to limit ourselves here to the patrimonial value and not to the market value) of an economic entity (e.g. a company) is given in terms of currency of all the economic assets held (more exactly, the equity capital). We point out, here, many attempts to treat economically the non-economic phenomena (see the work of Becker, Gary , especially The human behavior. An economic approach, ALL Publishing House, Bucharest, 1994) or attempts to quantify monetary of any human or social action. Without denying a certain pragmatic importance of these efforts, we believe, however, that their methodological claims (not to mention the theoretical claims) are, obviously, much exaggerated, unless they turn the methodological research on a false path, however, without a useful purpose.

[26] The fact that the financial resource is generated by all types of capital means, simplifying things somewhat, that any type of capital can, on the one hand, be expressed monetarily and on the other hand, is likely to be acquired in counterpart with the financial resource . As the reader will see, certainly, here, the generic capital plays the role of potential economic

for reasons of presentation, the obvious fact that the economic environment is part of the natural environment, being created and maintained by it . Synoptically this finding can be shown as in Figure 2.

Figure 2

The correlation between the type of capital, the environment of the economic process and the category of economic resource

			Economic resource					
			Material resource (RMt)	Human resource (RU)	Management resource (RM)	*Financial resource (RF)*	Information resource (RI)	Formal resource (RN)
Capital	Natural	***Natural environment***	▨			▨		
	Equipments	***Economic environ-ment***	▨			▨		
	Human			▨		▨		
	Cognitive				▨	▨	▨	
	Institutional				▨			▨

The first specific difference between the financial resource and the generic economic resource is that financial resource is presented in the form of currency. By currency, we understand the financial asset with the highest liquidity (or what is equivalent, in terms of logic, to the lowest transaction cost). Certainly, it is not in the least relevant here the present condition of the currency: cash or scripts, current or future, etc. It must also be mentioned that it has no relevance here, if the currency in question is an actual economic asset or just a claim of the economic process (system) over its economic environment. Although, ultimately, in a monetary exchange economy, every economic asset (hence, every economic resource) is expressed or can be expressed in currency terms, we must keep in mind that in the case of financial resource, the manifestation in currency is the only one possible, so, it is necessary, as in the case of the other economic resources), their manifestation in currency is subsidiary to that in natural units, and therefore it is irregular.

The second specific difference between the financial resource and the generic economic resource is that financial resource is subject to an exclusively external wear, driven by the economic environment and not, as with the other economic resources, to an attrition that has both an internal causality (resource use in the economic process[27]) and an external causality (generated by the economic environment where

---

resource , meaning that it will become current economic resource only through the financial counterpart. Thus, financial resource seems to play the role of an updating factor (not in the actuarial sense of the word, obviously) of any form of capital, as economic resource.

[27] The case of human resource or material resource represented by physical capital. In the case of human resource, things are rather more gradual, given that the human resource is the only economic resource capable of improvement through use (through the learning ability of the human being and the social group in which he acts). This feature is well known in what can be called the implicit cost of unemployment: a decrease in skills and potential professional

the process in question takes place[28]). "The attrition" of the financial resource, due to external causes to the economic process, regards,of course, the phenomenon of discounting. As a result of this phenomenon, the purchasing power of a monetary sum varies over time, introducing both risks and uncertainties. The most frequent case is that of reducing the real value of a monetary sum (e.g., due to monetary inflation), which generates a sui generis wear of the financial resource. The fact that the attrition of the financial resource is generated solely by the economic environment of the process is an important issue, because this phenomenon can be treated from the theoretical and methodological perspective of systemic risk (as the risk arising from variation in the regulatory framework, which produces the wear of formal resource).

A third specific difference is that financial resource is convertible, almost immediately[29], in any of the other financial resources, with one exception: the formal resource[30]. This feature is often responsible for some confusion, which is made between the financial resources and the other economic resources (with the complete exception of the formal resource and the partial exception of the information resource), namely that, in fact, the cumulative value of the other economic resources represents just the financial resource. Besides the fact that this assessment is inaccurate and confuses a number of plans of analysis, under review further, it requires some more general considerations that will lead to a classification of economic resources in terms of causal significance. Our considerations in the context are the following:

a. Economic resources may be assessed from a causal perspective, on the basis of the Aristotelian causal matrix. To this purpose, the following correlation can be realized (Figure 3).

So, the financial resource represents, together with the human resource, *causa eficiens* of the economic process. Well, just for this purpose, we can talk about the possibility that the financial resource should be convertible into any other economic resource (with the exception, already mentioned, of the formal resource).

---

performance of the unemployed person, caused by under-utilization or non-utilization for a longer period of time of the human resource in question. This feature, important, no doubt, in other contexts, will be ignored, however, in this paper.

[28] The case of the management resource, the information resource, and, especially , the case of the formal resource.

[29] Certainly, other interactions appear in the context, such as the structure of the supply of other economic resources or the elasticity of that supply to the variation of economic resources' demand (or factors of production), which makes this conversion not to be exactly immediate. However, we can make abstraction, for the moment, of these constraints that introduce some delays in the conversion, important being the principled possibility of this conversion. We give up, also, the difference (which is very important, in its own way) between economic resources and factors of production: factors of production are the economic resources that have passed the barriers of entry into the economic circuit (the known barriers: technological, economic, environmental, legal, moral). Therefore, we shall consider that economic resources and factors of production overlap, in concept (i.e. have the same denotation).

[30] Obviously, we make abstraction of the corruption (or of the more benign case, of the lobby), in which financial resources can be converted into formal resources (e.g., laws, methodologies, procedures, etc.).

The characteristic of causality of the economic resources

	Causal category			
	Material *(causa materialis)*	Efficient *(causa eficiens)*	Formal *(causa formalis)*	Final *(causa finalis)*
Material resource	x			
Human resource		x		
Management resource			x	
Financial resource		x		
Information resource			x	
Formal resource			x	

In other words, any economic resource is dependent on the possibility of procuring it that is it is dependent on funding, i.e. on the conversion of the financial resources into the economic resource in question. This possibility should be taken into consideration with the necessary precautions for the following reasons:

1) The financial resource can be converted into the non-financial resource "i", only if this non-financial resource is available on the market;

2) This availability must fulfill the availability conditions of the *causa finalis* of the analyzed economic process (system)[31] (level, structure, quality, dynamics, etc.);

3) Many times, the financial resource has only a potential (virtual) existence, for example, the credibility, which makes the economic environment of non-financial resources procurement to become "sticky".

b. Among the six economic resources , the financial resource represents a requirement for achieving and implementing the other economic resources (with the complete exception of the formal resource and the partial exception of information resource). Therefore, the financial resources could guarantee, ultimately, the existence of all the other economic resources. This is the exact sense in which the financial resource is considered *sustainability resource* for the economic process[32].

---

[31] As shown in Figure 3, causa finalis has no correspondent in any of the economic resources of the process. This is natural, because economic resources are, from the praxiologic point of view, means and not purposes (unless the human being is considered as the ultimate purpose of any private or social human action, but this sense is too large for the purposes of the present study). From the praxiologic point of view, any human action (whether private or social) can be described in the following terms: a) the action has four basic components: 1) the physical (or ontological) component, 2) the cognitive-information component (so it seems that action is prior to knowledge), 3) the normative-axiological and institutional component; 4) the psycho-motivational component; b) the action can be defined, alternatively: 1) the exertion of an influence by a system over another system, 2) the transformation induced in the environment by an biological creature that satisfies a need, 3) the teleological conduct, mediated and value producing.

[32] In the most general way, although a little forced, the financial resource could be considered, praxiologically, as means for all the other economic resources . The means – as category –

The fourth specific difference is that the financial resource has not only an objective component (available or potential broad money), but also a subjective component. The subjective component relates to the credibility of the financial resource holder on the economic market. Upon this credibility depends, crucially, the sustainability of the economic process, since it determines the sustainability (procurance) of the other economic resources. The literature devoted to financial analysis introduced a specific term, "good-will", which means exactly this imponderable aspect of the firm, closely linked to its credibility[33]. Therefore, the sustainability potential provided by the financial resource depends also on that imponderable element which, in terms of logic, is either a constraint or stiffness, as appropriate.

The fifth specific difference is that the financial resource does not, ever, follow a mono-cycle of the economic process. In other words, the financial resource is not found as such (that kind) in the immediate output of the economic process, i.e., in terms of the formalizations suggested concerning the immediate economic environment of the economic process, the financial resource will never be in $o1j$ [34],

---

defines, in a very general way, the entity (physical or institutional-organizational) through which the subject of the action (agent) forwards its intention (as momentum, energy, orientation, etc.) on the object of the action. The means may be of three categories: a) tool (in the most general sense, for example, any form of physical capital), b) institution (e.g., the rules) and c) way or manner (e.g., the management), see, also, the work of Dinga, Emil , Elements of Meta-Economics - Compendium of praxiology, published at Oscar Print Publishing House, Bucharest, 2004.

[33] The more analytical reader can find here interesting suggestions related to the issues of hysteresis or even ergodicity of non-financial firm.

[34] We talk about an approach to the problem in more general terms, namely in terms of the degree of proximity of the economic environment in relation to the economic process. If we denote by α the "distance" of the economic process from the economic environment that produces some of its inputs , let's say, the input k, then we can say that the degree of proximity of the process to its environment, from the perspective of this input - to denote that by **i-proximity$_k$** - will be $i\alpha k$. If, on the other hand, we denote by β " the distance of the economic process from the economic environment in which the same output " is sent", then we can say that the degree of proximity of the process to its environment, from the perspective of this output - to denote that by **o-proximity$_k$** - will be $o\beta k$. Therefore, the immediate economic environment of the process, from the perspective of economic resource k, will be the environment where $\alpha = \beta = 1$ (One might ask, why we give the value 1 for the case of the immediate proximity of the environment, and not give it the value 0. The explanation is simple: in most economic processes there is self-consumption: the output of the process, or a particular part of it, is reintroduced into the process as input. For these situations, we keep 0 value to allow a complete logic formalization, in case someone wants to develop such an abstract analysis - so, the case of self-consumption will be described, from the perspective of the degree of proximity of the economic environment, as follows: for i-proximity , $i0k$, and for o-proximity, $o0k$, i.e. we have the two proximities (to input and output) of forms, i.e. $i1k$, $o1k$). Of course, the formalization in this area may continue (also through development of some connection matrices that describe all i-proximities and all o-proximities).

where "j" denotes the financial resource. In most cases, the financial resource will be in $o2j$, but there can be longer cycles of „recovery" of this resource. This feature represents probably the most substantial difference between the financial resource and the rest of the economic resources. The feature discussed here is "responsible" for the fact that the financial resource issue (and, consequently, the issue of the economic process, from the perspective of the financial resource) should be evaluated, at least on medium term (it is advisable, however, the approach on long and very long term), on the one hand, and globally (or with a space expansion as long as possible[35]), on the other hand.

Therefore, in the generic sense, a standard economic process has three aggregated outputs that can lead to different sources of funding:

1. goods, services, works
2. joint stock (social capital)
3. goodwill[36]

Let us examine, from the perspective of the economic and financial world, the funding sources that can be generated by these 3 categories of outputs (Figure 4).

Figure 4

The categories of funding sources

No.	Output	Type of funding		
		Internal (self-funding)	External	
			Direct	Indirect
	Goods	1. Profit reinvestment	2. Sale of assets	
	Services			
	Works			
	Joint stock		3. Issuance of shares	
	Goodwill		4. Issuance of bonds	5. Banking credit
				6. Leasing

In addition, it would be interesting here, to develop the idea of estimating an average i-proximity, as well as an average o-proximity of the process (related to all inputs and to all outputs), and even more interesting, of estimating an absolute proximity (relative, simultaneously to i-proximity and to o-proximity of the same economic resource).

[35] The space expansion of an economic process (both from i-proximity and the o-proximity perspective) must be done from an economic perspective and not from a spatial, physical one. For a detailed and argued discussion on the economic space issues, see, also, Dinga, Emil, The inertial phenomenon in the economic process, Economic Publishing House, Bucharest, 2001), especially chapter 2, paragraph 2.1, as well as Prigogine, Ilya and Stengers, Isabelle, The New Alliance – The Metamorphosis of science, Political Publishing House, Bucharest, 1984, especially chapter IX. Interesting suggestions can be found in context, also, in Georgescu-Roegen, Nicholas , The Law of Entropy and the Economic Process, Expert Publishing House, Bucharest, 1996 (Collection Library of the National Bank), especially chapter IX.

[36] It would be interesting to analyze (but this may be a suggestion for a separate paper) the function of public goodwill in the social eligibility of the taxation systems (especially in the case of tax de-relaxation).

Therefore, the three categories of outputs can generate 6 categories of different funding sources[37]. It is noted that the most "fruitful" output category in generating funding sources is goodwill. This is explained by the fact that the economic decisions are based very much on anticipations (or, that is exactly what goodwill does - favorable predictions about the future of the analyzed economic process) and by the fact that the more developed a market economy is the bigger the share of external funding sources is[38]. Similarly, joint stock is the output with the lowest potential of generating funding sources, being only the basis for the issuance of shares.

Based on the above considerations, we can, now, establish the categories of nominal flows that occur at the level of the economic process:

I. For *providing sources of funding* (current funding) - 10 sources:

a) internal funding (self-funding)
- *current own income* (wage earnings, net profits)
- *virtual earnings[39] from self-consumption* (unpaid work in own household)

• expenditures from dis-saving
  - sale of assets
  - withdrawal of bank deposits
  - sale of claims held (shares or bonds)

b) external funding
• by indebtedness
  - bank credit
  - issuance of bonds
  - leasing

• by guarantee
  - issuance of shares

• by unilateral transfers
  - donations, inheritances, lotteries

II. For *providing the savings source* (financial investments for future funding) – 7 sources:

• by term deposits[40]

---

[37] We talk about categories of funding sources and not simply about funding sources, because each category, in turn, is historically singularized. Currently we are interested in the sustainability behavior of funding sources of each category.

[38] Ignoring the fact that the same indicator concerning the development degree of the market economy is proportional to the share of indirect external financing in total external financing. This latter weight is, however, strongly dependent institutionally: the banking degree; the degree of financial intermediation, the degree of regulation of the financial system, in general.

[39] They are earnings since they can extinguish an obligation (e.g., they extinguish the payment obligation that would occur if, in case the production for self-consumption didn't exist, the economic subject should be forced to acquire the money equivalent of goods and services generated by self-consumption) and they are virtual because they do not take a monetary form.

[40] The saving consists in receiving the passive interest associated with the bank deposit.

  1. bank deposits

  2. other banking instruments for term savings

- thorugh portfolio investments[41]
  3. purchases of shares or bonds

  4. purchases of foreign currency

  5. purchases of jewelry, works of art and other non-reproducible goods

  6. purchase of real estates

- through direct investments[42]
  7. starting a business

3.3. Conclusions

Therefore, it results that, in concept, we have 21 categories of flows related to the financial behavior of a generic economic subject[43]: 4 categories of non-autonomous financial flows, 10 categories of funding-type nominal flows and 7 categories of savings-type nominal flows.

In our opinion, however, only nominal flows regard, strictly, the financial behavior, namely, there are 17 such flows.

References

Dinga, E., 2004. *Elements of Meta-Economics - Compendium of praxiology.* Bucharest: Oscar Print Publishing House.

Dinga, E., 2001. *The inertial phenomenon in the economic process.* Bucharest: Economic Publishing House.

Dinga, E., Ionescu, C., 2006. *Macroeconomic financial programming model. Building public and private sector real unit.* Bucharest: Financial and Monetary Research Center

Dinga, E., Ionescu, C., 2007. *Macroeconomic financial programming model. Specification of model equations.* Bucharest: Financial and Monetary Research Center.

Dinga, E., Baltaretu, C., 2009. *Macroeconomic financial programming model. Invariants and structural dynamics in the economic process.* Bucharest: Financial and Monetary Research Center.

---

[41] The saving consists in receiving dividends, coupons, favorable exhange rate difference or favorable price difference.

[42] *The saving consists in cashing the expected net profit.*

[43] *Although it is possible, empirically, to "discover" categories of non-autonomous financial flows or nominal flows, which do not fall into one of the 21 classes, since these classes are identified theoretically, it will be possible that any empirical case be included, typologically, in one of these different classes. Of course, we do not shut out the possibility that, in practice, a certain empirical flow can be classified into two or more theoretical classes of flows, but, in principle, it cannot remain outside these classes.*

Dinga, E., Baltaretu, C., 2010. *Macroeconomic financial programming model. Formal aspects of the phenomenon of conservation in the economic process.* Bucharest: Financial and Monetary Research Cente.

Georgescu-Roegen, N., 1996. *The Law of entropy and the economic process*. Bucharest: Expert Publishing House.

Stengers, I., 1984. *The New Alliance – The Metamorphosis of science*. Bucharest: Political Publishing House.