

THE RELATIONSHIP BETWEEN ECONOMIC SUSTAINABILITY AND ECONOMIC GROWTH

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ABSTRACT: *The present paper aims to identify and analyses the relationship between Economic Sustainability and Economic Growth. To attain this objective, I will define the concept of Economic Sustainability from logical point of view, using sufficiency predicates. Next, I will define the concept of Economic Growth from logical point of view, using sufficiency predicates. Finally, I will identify and analyze the relationship between these two concepts. Therefore, the paper will contribute to a better understanding of the concepts of Economic Sustainability and Economic Growth, and their relationship.*

KEYWORDS: *Sustainability; Growth; Economic Sustainability; Economic Growth; relationship Economic Sustainability- Economic Growth;*

JEL CODE: F49, O43, R11

1. INTRODUCTION

1.1. Objectives

The present paper aims to analyze the relationship between the concept of Economic Sustainability and the concept of Economic Growth.

Consequently, the main objective of the project is to identify the relationship between Economic Sustainability and Economic Growth.

To achieve this primary objective, it is necessary to accomplish the following secondary objectives:

- a. Defining the concept of Economic Sustainability
- b. Defining the concept of Economic Growth

1.2. Methodology

To attain the paper's objectives, I will use, as the main methodological instrument, the logical analysis-method of sufficiency predicates.

The document is using the classic logical analysis, the one that studies the concepts from general to particular. (Enescu Gh., 1997)

The method of defining an abstract concept using the sufficiency predicates implies the identification of those properties / attributes of the concept, which are sufficient to completely explain it. (Dinga, 2009)¹

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The sufficiency predicates must meet the following conditions:

- Completeness - the contextual verification of identified predicates that generate the concept we want to define
- Independence - no predicate is the logical outcome of another
- Consistency - no predicate is contradictory to another

So, an abstract concept that is defined by means of sufficient predicates is described by the following equation:

$$AC = (P1) \wedge (P2) \wedge, \dots, \wedge (PN), \text{ where:}$$

- AC is abstract concept that we attempt to define
- P1,...PN are the sufficiency predicates
- “ \wedge ” the logical symbol for logical conjunction

The process of defining abstract concepts using the sufficiency predicates method implies the following steps:

- a. Identifying the sufficiency predicates and checking the completeness of the sufficiency predicates that generate a construct
- b. Qualitative analysis of the identified sufficiency predicates, that infers the examination of the following requirements for each pair of sufficiency predicates:
 - independence (none is the logical result of another)
 - consistency (none is contradictory with another)

Therefore, noting with Ps the multitude of sufficiency predicates we may write:

$$Ps = \{P1, P2, \dots, PN\}, \text{ where}$$

- Ps- the set of sufficiency predicates

2. THE CONCEPT OF GROWTH

In my attempt to define the concept of Economic Growth using the logical analysis I will start from general to particular- from the more general concept of Growth to the more specific concept of Economic Growth.

Hence, I will use the method of the sufficiency predicates to define the concept of Growth-G.

These predicates are:

- a. Exclusively Quantitative-EQ-The attribute expresses the dimensional characteristic of growth
- b. Kinematic Variation-KV-The variation of the status parameter is a kinematic one (we are not interested in the cause of variation)

In conclusion, from logical point of view, the concept of Growth is defined as it follows:

$$G = (EQ) \wedge (KV), \text{ where:}$$

- G-growth
- \wedge - symbol for logical conjunction

¹ Dinga, E. (2009), Studii de Economie. Contribuții de analiză logică, epistemologică și metodologică- Economics studies. Contributions of logical, epistemological and methodological analysis, Editura Economică, Bucharest

Accordingly, we may define concept of Growth as the quantitative and kinematic positive variation of the status parameter of a phenomenon/process/system.

3. THE CONCEPT OF SUSTAINABILITY

Using the same method of logical analysis to define the concept of Economic Sustainability, firstly, I should define the more general concept of Sustainability.

I will use the method of the sufficiency predicates to define the concept of Sustainability -S.

These predicates are:

- Auto-Replication-AR-The ability of a phenomenon/process/system to replicate itself
- The ability of preservation of the aptitude of auto-replication-PAR-The ability of a phenomenon/process/system to preserve its capacity of auto-replication
- The ability to preserve its structure-PS-The ability of a phenomenon/process/system to preserve its structure

In conclusion, from logical point of view, the concept of Sustainability is defined as it follows:

$$S = (AR) \wedge (PAR) \wedge (PS), \text{ where:}$$

-S-sustainability

- \wedge - symbol for logical conjunction

Consequently, I will define the concept of Sustainability as the ability of a phenomenon/process/system to replicate itself and to preserve its capacity of auto-replication while preserving its structure.

4. THE CONCEPT OF ECONOMIC GROWTH

The succeeding phase is to define the concept of Economic Growth-EG as a species of the more general concept of Growth. Thus, I will achieve one of the secondary objectives of the paper.

To define a specific concept starting from a more general one I will identify the attributes that discern the specific concept from the general one.

The attribute that differentiates Growth from Economic Growth is the fact that dimensional variation of status parameter refers to an economic phenomenon/process/system – EP.

So, from logical point of view the concept of Economic Growth is defined as it follows:

$$EG = (EQ) \wedge (KV) \wedge (EP), \text{ where:}$$

- EG-Economic growth
- \wedge - symbol for logical conjunction

The next step is to analyze the sufficiency predicates for Economic Growth from the point of view of their:

- a. Completeness
- b. Independence
- c. Consistency

- a. *Completeness analysis*
- The property EQ describes the dimensional characteristic of Growth of the phenomenon / process / system
 - From property KV we find that variation of the status parameter is a kinematic one (we are not interested in the cause of variation)
 - The attribute EP informs that dimensional variation refers to an economic phenomenon/process/system – EP.
- b. *Independence analysis*
- EQ does not involve KV and vice versa: the dimensional characteristic of phenomenon /process / system growth can be a kinematic one (we are not interested in the cause of variation) or a dynamic one (we are interested in the cause of variation). Vice versa the fact that variation of the status parameter is a kinematic one does not include a dimensional characteristic of Growth.
 - EQ does not involve EP and vice versa: the dimensional characteristic of phenomenon /process / system growth does not involve that the phenomenon is an economic one. Alternatively, the fact that the phenomenon is an economic one does not include that the phenomenon has a dimensional characteristic.
 - KV does not involve EP and vice versa: the fact that variation of the status parameter is a kinematic one does not include that the phenomenon is an economic one. Then again, the fact that the phenomenon is an economic one does not involve that its variation of the status parameter is kinematic.
- c. *Consistency analysis*
- EQ is not contradictory to KV: the dimensional characteristic of Growth of the phenomenon / process / system may be a kinematic one
 - EQ is not contradictory to EP: we may discuss about the dimensional characteristic of Growth of an economic phenomenon / process / system
 - KV is not contradictory to EP: the variation of the status parameter of Growth is a kinematic one does not contradict the fact that the phenomenon may be economic

Thus, the Economic Growth is described as the ability of an economic phenomenon/process/system to replicate itself and to preserve its capacity of auto-replication while preserving its structure.

5. THE CONCEPT OF ECONOMIC SUSTAINABILITY

The following phase is to attain the next secondary objective of the paper namely defining the concept of Economic Sustainability -ES as a species of the more general concept of Sustainability.

The attribute that differentiates more general concept of Sustainability from Economic Sustainability is the fact that dimensional variation of the status parameter concerns an economic phenomenon/process/system –EP.

From logical point of view the concept of Economic Sustainability is defined as it follows:

$$ES = (AR) \wedge (PAR) \wedge (PS) \wedge (EP)$$

Therefore, the Economic Sustainability is the ability of an economic process/phenomenon to auto-replicate itself, to preserve its ability of auto-replication and to preserve its structure.

The next step is to analyze the sufficiency predicates for Economic Sustainability from the point of view of their:

- a. Completeness
- b. Independence
- c. Consistency
- d. *Completeness analysis*
 - The property AR describes the ability of a phenomenon/process/system to replicate itself
 - The attribute PAR reflects the ability of a phenomenon/process/system to preserve its capacity of auto-replication
 - The attribute EP informs that the phenomenon/process/system is an economic one.
- e. *Independence analysis*
 - AR does not involve PAR and vice versa: the ability of a phenomenon/process/system to replicate itself does not include that the system can preserve its capacity of auto-replication and vice versa.
 - AR does not involve EP and vice versa: the ability of a phenomenon/process/system to replicate itself does not include that the system is an economic one and the fact that the system is an economic one does not mean that it has the ability to replicate itself.
 - PAR does not involve EP and vice versa: the ability of a phenomenon/process/system to preserve its capacity of auto-replication does not include that the system is an economic one and vice versa.
- f. *Consistency analysis*
 - AR is not contradictory to PAR: the ability of a phenomenon/process/system to replicate itself does not contradict its capacity to preserve the capacity of auto-replication
 - AR is not contradictory to EP: the ability of a phenomenon/process/system to replicate itself does not contradict the fact that it may be an economic one
 - PAR is not contradictory to EP: the ability of a phenomenon/process/system to preserve its capacity of auto-replication does not include that it may not be an economic one.

6. RELATIONSHIP ECONOMIC GROWTH-ECONOMIC SUSTAINABILITY

Based on the logical definition of the concepts of Economic Growth and Economic Sustainability we may pursue the main objective of the document, namely to analyze the relationship between Economic Sustainability and Economic Growth.

To achieve this objective, we will analyze the following diagram:

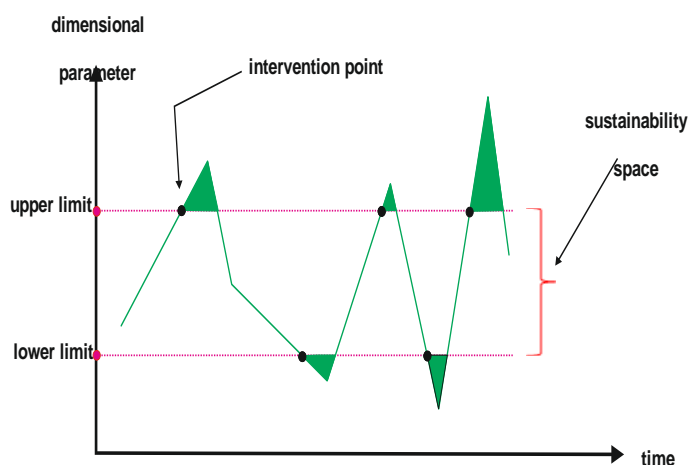


Diagram of the Relationship between Economic Growth and Economic Sustainability

Source: The author

The chart illustrates the Economic Growth (the dimensional parameter) curve and its fluctuation within and outside the so-called sustainability space.

The sustainability space is the area where Economic Growth is also sustainable. That means that within the upper and lower limit of the status parameter the Economic Growth, the economic phenomenon/process/system has the ability to preserve its structure, can replicate itself and it can preserve this aptitude.

The intersection points of the curve with the lower and upper limits are the Intervention Points. Here, the Governmental bodies or Automatic Fiscal Stabilizers² may intervene to adjust the Economic Growth to a Sustainable one.

The Intervention Points situated on the upper limit will require adjustments measures to “cool down” the economy. (For example, monetary and fiscal policies that will aim to reduce the consumption).

The Intervention Points situated on the lower limit will require adjustments measures to accelerate the growth of the economy. (For example, monetary and fiscal policies that will aim to increase public and private consumption).

The Economic Growth that is not sustainable will be corrected, sooner or later, directly by the market or by reversing policies, with negative effects over time.

Overheating the economy and growing exclusively on consumption is not healthy and it is followed by tough corrections.

²The Automatic Fiscal Stabilizer is the fiscal automatic stabilizer that is defined as the natural way to reduce changes in economic activity. The definition can be found in Aura Gabriela Socol, Cristian Socol “Estimation of mechanisms for automatic fiscal stabilization. Case of Romania.”, page 3, http://store.ectap.ro/articole/695_ro.pdf

Hence, the Economic Growth should be sustainable. (The variance of the status parameter should be within a pre-accepted range and the Economic Growth variation outside the sustainability area should be corrected).

To have a Sustainable Economic Growth we need both, monitoring measures and adjusting policies (fiscal and monetary). The adjusting policies should include automatic stabilizers.

7. CONCLUSION

Finally, we may conclude that the paper's objectives were fulfilled, and we may observe the following:

1. Considering the definition of the concepts of Economic Growth and Growth we observe that the Economic Growth is a species of the more general concept of Growth

2. Considering the definition of the concepts of Economic Sustainability and Sustainability we observe that the Economic Sustainability is a species of the more general concept of Sustainability

3. The relationship between Economic Sustainability and Economic Growth is one of mutual enhancement. The Economic Growth need to be sustainable. Its variation should be only within sustainability area. If not, we need to have instruments, such as Automatic Fiscal Stabilizers to adjust it.

4. Economic growth should be within a pre-accepted range of a stability space for achieving a sustainable development.

The paper is only a theoretical approach of the relationship between Economic Growth and Economic Sustainability. Further researches are needed to identify the most appropriate policies and other instruments that can be used to achieve the Sustainable Economic Growth.

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