

Business Cycle Dynamics in the Romanian Economy: Phases and Developments

By Carmen Valentina RĂDULESCU¹, Ioan I. GÂF-DEAC²,
Maria-Loredana POPESCU³, Cristina DIMA⁴

ABSTRACT:

Romania's economy is not yet sufficient / complete and competitive connected to the developed European economy and the global one. In recent economic and general political history, the political, institutional and economic changes that have taken place since 1990 in Central and Eastern Europe, including Romania, are already recognized. The article deals with the evolutionary situational stages towards the New Economy of Romania. It also describes the post-transformation horizon for achieving quasi-constant inverted levels between “tangible-intangible” for the transition to a new business cycle in the New Knowledge-Based Economy and Risk. It follows that if GDP reflects the sum of the market value of all goods and services intended for final consumption, not intermediate ones, produced in all branches of the economy within Romania within a year, by way of investigative proximity, business and cycles of manifestation of these were closely followed by dimensional evolutionary trends of similarity and aggregation with GDP. In fact, the New Knowledge-Based Economy has radically and positively changed Romania's advance towards the digitalized society, based more and more on the operationalization of intangible assets. The problem of vision, strategy and development tactics through new business cycles is found in the search for the optimal structural ratio between tangible and intangible assets (knowledge) insurers for competitiveness and sustainability.

Keywords: business cycle, Romanian economy, business, entrepreneurship, investment, new knowledge-based economy, tangible assets, intangible assets

1. Introduction

In recent years, the individual, group and networking structure of the business has undergone changes in form-content, respectively in quantity-quality, with the accentuation of the manifestation of the presence of intangible assets in the Romanian economy (Bran et al., 2023).

The obstacle of redundancy that appears / manifests itself when looking for similarities-similarities ($S_i - S_{i0}$), which characterize sub-groups, groups, respectively sub-classes and business classes according to the object of activity of a company, is increasingly observed. mission, form of organization, shareholding, knowledge, tangibility, etc.

The possible issue to be addressed is the question “how we identify ($S_i - S_{i0}$), what are the stimuli that develop the contours (edges) of the business and then, further, with the help

¹ Bucharest University of Economic Studies.

² INCE - CEMONT Academia Romana, Bucharest

³ Bucharest University of Economic Studies, Romania

⁴ Bucharest University of Economic Studies, Romania.

of search engines to group, classify and finally, let us cluster the network of businesses in the national economy.

In fact, it would be useful to canonize the organizational-operational forms of business in an economy that has become, in the first instance, "graph-networking".

This could be a road to be exploited to reach a picture, an image of the multitudes of business cycles in the Romanian economy, which prove to be dominant in phases and evolutions.

The search (S_i - S_{i0}) however, it is often empirically redundant. Only the outlines and forms of business cannot lead to their classified identification.

In mathematical conceptual terms, it is the formalization of *self-morphism* among the multitudes of business / business cycles, based on *symmetries* and *isomorphism*.

Decision trees, in this case, are based on criteria for sorting the *margins (contours) of the business*. It is important to be able to describe the properties of the contours (edges), although such knowledge is not completely relevant in the endogenous business context.

However, this approach is useful in order to obtain classifications in relation to the structure, content and potential of compatibility of a national economy (Romania) with the European / global regional economy.

Separation and further classification of business in Romania do not bring to the attention of radical, "break" boundaries, as the critical dimension of the national (quantitative) economy does not refer to areas of major competitiveness in relation to the large economies developed globally.

Therefore, *separation* and *classification* are moderate elements of the assertion chain. In other words, the success of the "business separation" operations in the Romanian economy ensures, with a high degree of certainty, the success of their classification.

Ex-ante official classifications in the field of Romanian business are not avoided, eliminated, avoided from the process of assessments for formalizing the business cycles in the national economy.

2. Related Literature

The business cycle literature is globally diversified. Mainly, the studies are usually of a comparative, relatively historical nature, but mathematical research alignments or from economic theoretical and practical perspectives are also addressed.

Since 1975 Meyer J.R. and Weinberg D.H., [10] studied the quantitative and qualitative fluctuations of the economy by trying to obtain classifications which, today (2022), are precedents / precursors of the concept of identifying similar properties / characteristics in order to form economic clusters.

They advanced the idea that "a fluctuation" comprises: 1) the recession, 2) the return / rediscovery, 3) the manifestation of the demand on the markets and 4) the stagflation. In fact, we are dealing with a *linear discriminant analysis*.

So, Ben S. Bernanke, Mark Gertler and Simon Gilchrist (1999), [3] refers to "develops a dynamic general equilibrium model that is intended to help clarify the role of credit market frictions in business fluctuations".

Shapiro M. and Watson M., [13] since 1988 they showed that “The business cycle/ growth dichotomy has been vitiated by new research on two fronts. First, research on the time series properties of main economic aggregates indicates that output can be characterized as following an integrated process and Second, some recent theories of macroeconomic fluctuations attribute all of the variability in output to real factors.”

Chauvet M., (1998), [5] says that “a dynamic factor model with regime switching is proposed as an empirical characterization of business cycles. The approach integrates the idea of co-movements among macroeconomic variables and asymmetries of business cycle expansions and contractions.”

Artis M., Krolzigy H.M. and Toroz J., (2004), [2] they think that “theoretical and empirical business cycle research has revived interest in the co-movement of macroeconomic time series and the regime-switching nature of macroeconomic activity”.

In Romania, the problem of business cycles is studied by the scientific experts from the National Bank.

Also, Caraiani P., (2008) [4] from the Institute of Economic Forecasting of the Romanian Academy identified “a mixed pattern for the cyclical behaviors of the macroeconomic time series.” and Grigoraş V. (2013), [9], uses the univariate and multivariate analysis of business cycles and interprets the multitude of business cycles from the perspective of econometric models.

3. Method and Methodology

3.1. Stages and cycles in the national economy

We advance the idea that scientific, procedural investigation of *business cycles* is quantitatively complementary to the analysis of *economic cycles* in a national economy, such as that of Romania, respectively in regional economies (of the EU, for example) or globally. It follows that the classical two-dimensional matrix vision, in which “business” and “economy” intersect and highlight their mutual dependencies, is now (2022) replaced by the n -dimensional matrix vision, in which the time axis remains referential, but *knowledge* and the *virtualization of the economic space* radically influences the typology and the amplitudes, including the meanings of the economic and business cycles, which become “*multi-economies*”.

It is important for the business cycle structures to identify covariances of the subflows of classifications, when the chronology of the business facts can be appreciated in Markov chain, but the actual business facts are non-Markovian chain.

Economics cycles are always accompanied by business / *business cycles*. (Figure 1)

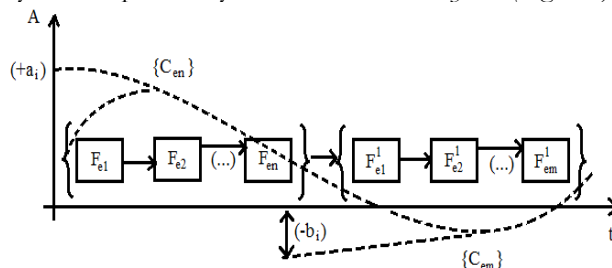


Fig. 1. Phases, stages and rising / falling economic cycles in the evolution of a national economy (Source: Authors, 2021)

$(F_{e1}, F_{e2}, \dots, F_{en}) = \text{phases of the economic cycle stage } \{C_{en}\} \text{ (growth);}$
 $(F^1_{e1}, F^1_{e2}, \dots, F^1_{en}) = \text{phases of the economic cycle stage } \{C_{em}\}$
 (decrease);
 $A = \text{amplitudes } (\uparrow)$;
 $t = \text{time.}$

The cyclicity of the Romanian economy does not extend over long periods of time. Rather, the evolutionary ruptures of the conjuncture, the contextual impairments originating in the insufficiently substantiated management, at least in the medium term, the lack of strong visions with targets towards well-defined horizons, cyclicities.

It can be appreciated that, in fact, the evolutionary linearity of an economy is almost impossible, especially when it comes to the Romanian economy, found in a deep process of structural transformation, still "not settled" almost definitively in the new economy based on digitization and artificial intelligence.

3.2. Identification and characterization of evolutionary situational stages

In the recent economic and general political history the changes are already recognized: 1) political, 2) institutional and 3) economic after 1990 in Central and Eastern Europe, including Romania. The elucidation of the situational location of the new economy in Romania can be materialized by using different methods of analysis.

The classical formulas of evolutionary examination, are not overlooked in a descriptive explanatory context, and can be useful insofar as the relationships, relationships and articulations between the component elements of the complex situational clichés in the Romanian economy.

Among them, in addition to the business cycles, in addition to the economic factor aimed at dimensional and qualitative appearance, the political and institutional parameters are taken into account. (Figure 2).

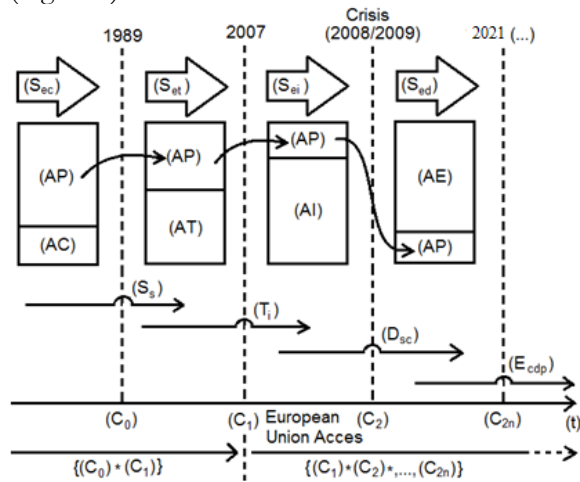


Fig. 2. Evolutionary situational steps towards the New Economy of Romania (Source: Authors, 2021)

$\{(C_0); (C_1), \dots, (C_{2n})\}$ = originating moments of business cycles in Romania; (t) = time; (AP) = political area; (AT) = transition area; (AI) = institutional area; (AE) = economic area; (AC) = area of economic centralization.

Noting with:

(S_{ec}) = centralized economy system;
 (S_{et}) = the system of the transitional economy;
 (S_{ei}) = the system of the institutionalized economy;
 (S_{ed}) = decentralized economy system;
 (S_s) = institutional transition (economic and managerial reconceptualization);
 (D_{sc}) = overcoming crisis situations;
 (E_{cdp}) = decentralized economic evolution of the market,

then, is formalized a model of the evolutionary situational stages towards the New Economy in Romania {MSE}:

$$\{MSE\} = [(S_{ec}) * (S_{et}) * (S_{ei}) * (S_{ed})] \xrightarrow{\Sigma(*C_{2n})} \max(AE)f(AP) \quad (1)$$

From the observations made and by systematizing the results from the situational analyzes in Romania, (Gâf-Deac I.I., 2016), [7], mainly, it is concluded that three distinct evolutionary stages of the "economy system" of Romania are encountered, namely:

- manifestation of *the centralized economy system* {S_{ec}} until 1989, respectively the beginning of 1990, when the centralized situational collapse that previously took place in Romania over a period of 45 years (the communist system);
- manifestation of *the transitional economy system* {S_{et}} between 1989 and 2007, when Romania acquired the status of EU member country; (i)
- manifestation of *the system of institutionalized economy* {S_{ei}} between 2008 and 2010, when Romania went through an economic crisis from the reflections of international / global economic dysfunctions; (ii)
- manifestation of *the decentralized economy system* {S_{ed}} after 2007, when Romania goes through the process of full integration in the European economic area, characterized by a capitalist economy. (iii)

Examining the political-institutional-economic structural content of each stage, in particular, results that motivate Romania's commitment to the New Economy.

3.1. Business, entrepreneurship and investments in the new real economy of Romania

In the new economy, knowledge has characteristics such as: *a)* it is tacit, *b)* it is action-oriented, *c)* it is based on rules and *d)* it changes in a quasi-permanent, constant way. (Sveiby, K.E., 1997), [14]. The increasingly intensive use of knowledge determines their effectiveness and efficiency.

In this framework, as opposed to capital, land and labor, as knowledge is used as an asset, knowledge gains appreciation.

Knowledge in the company induces a new entrepreneurial spirit. This motivates and legitimizes the actions of the top managers for the concern of transforming the entity into one with innovative businesses.

By introducing new solutions and ideas, the knowledge-based organization becomes able to capture, apply and develop the more market-oriented value of business.

Advanced knowledge / knowledge and technologies significantly transform the current competitive economy, which is certainly sliding towards the New Economy.

Moreover, entrepreneurship in the field of technologies has as a motivational support the innovation driven. In this way, technologies containing the novelty are dissipated on the markets.

Through knowledge-based businesses new alignments, horizons, locations, niches or intersections are characterized, characterized by: a) lack of investment or investment dilution; b) carrying out the rehabilitation or restructuring; c) manifesting the adaptation requirements; d) manifesting the renewal requirements. (Gâf-Deac I.I., 2017), [6]

In concrete terms, between mutual entrepreneurship and capitalization, new relationships and mutual support are obtained. The growth of entrepreneurship through innovation is a requirement of strict necessity in general *Business Coach*. The condition of real, conceptual and practical advance of business in the New Economy comes from the rate of growth of innovative enterprises in an economic area (*cluster*).

Between *science trainers* and *entrepreneurs* (in the sense of investors) new fields of action are registered.

For the present work it is shown what is the matrix of the changes of tangible and intangible assets for the transition to the New Knowledge and Risk Based Economy (*Figure 3*), interrelating the industrial and post-industrial entrepreneurship with the knowledge-based one.

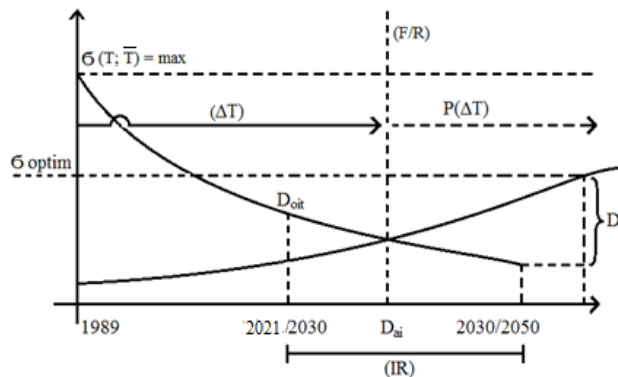


Fig. 3. The horizon of post-transformations to reach the quasi-constant inverted levels between “tangible-intangible” for the transition to a business cycle in the New Knowledge-Based Economy and Risk (Source: Authors, 2021)

- (IR) = break interval (generalized innovativeness);
 D_{ai} = the moment of decoupling intangible assets from tangible ones;
 D_{oit} = quasi-proportionality between tangible and intangible assets;
 D_i = domination of intangibility (knowledge);
 $\mathfrak{G}(T, \bar{T})$ = the level of tangible / intangible assets;
 \mathfrak{G}_{optim} = the optimal level of tangible / intangible assets;
(F/R) = break (inversion of tangible / intangible ratio);
 (ΔT) = transformations (decrease of tangible assets);
 $P(\Delta T)$ = post-transformations (reaching the quasi-constant
inverted / intangible / tangible levels).

It turns out that, in fact, total quantitative capitalization is composed of tangible and intangible capitalization.

Estimating different time horizons (until 2050), on which the evolutions aiming at changes in the proportion of capitals in total are spread, it is deduced that, in Romania, the tangible (physical) capitalization will be reduced and, accordingly, the intellectual capitalization (through knowledge) will be increasing.

By way of symmetry, the structure of entrepreneurship, of business also changes.

Essentially, entrepreneurship begins to predominate where business manifests itself in intangible terms. (Gâf-Deac I.I., 2010), [8]

As such, there are changes in the structure of capital / capitalization of companies, accompanied by modifications / adaptations of entrepreneurship / entrepreneurial behavior, generated by the new relationship between the productive-economic and the scientific sides of business, production / reproduction and distribution / consumption activities.

Thus, the real entrepreneurship in the new economy of Romania is formalized by operationalizing the capital investments in physical terms and in its intellectual aspects, expressed in ideological, virtual and intangible terms.

Naturally, there are businesses from industrial, post-industrial entrepreneurship (entrepreneurship in the Pre-Knowledge Economy) and the one from the New Real Economy.

The actual maximized capitalization will be composed of the predominant knowledge capital, accompanied by the tangible one, which will never disappear from the capitalizing process.

Mainly, in the Romanian economy it is necessary *to identify the multiplier operators* from the evolutionary procedural phases of the current entrepreneurship to the one related to the new real economy.

The proportions of intangible capital can be clustered, delimiting the known conventional and new knowledge areas, creating new equilibria.

Moreover, the whole procedural image related above, generically marks the attempts, as far as possible objectified, *to approach* the general economic disjunction, respectively *to move away* from the conventional, conventional economic conjunction.

4. Results and Comments

As the GDP reflects the sum of the market value of all goods and services for final consumption, not intermediate ones, produced in all branches of the economy within Romania within one year, by means of investigative proximity it is appreciated that the business and the manifestation cycles of they closely followed the evolutionary dimensional trends of similarity and aggregation with GDP.

In the first phase / stage after the change of system, the GDP of Romania decreased from USD 40.8 billion (1990), to USD 19.6 billion in 1992. In 1998, the GDP of Romania was 38.1 billion USD and in the period 2000-2008 it rose to 136.8 billion euros, then reaching 151.7 billion euros in 2014. (Pană M., 2014), [11]

World Bank data shows that GDP per capita (adjusted for purchasing power parity - PPP) increased four times in Romania between 1998-2015 (ie, by 303%). (Amariei R., 2016), [1] A business cycle can be outlined by aggregating the business crowd in almost all areas of a national economy (Romania) over a period in which trends are observed with relatively increasing vector meaning or, as the case may be, sinusoidal.

Confidence in the national economy has influenced the dynamism and evolution of Romania's business-based development.

Researching statistically the evolutions of the confidence indicator in the Romanian economy for the period 2000-2022 (with measurements at the given times of April of each year), according to Romanian Commercial Bank, BCR Research, European Commission, (2022), (Figure 4), it results that the highest (positive) levels were recorded in 2003-2004, and the lowest (negative) in 2009 and 2020, respectively.

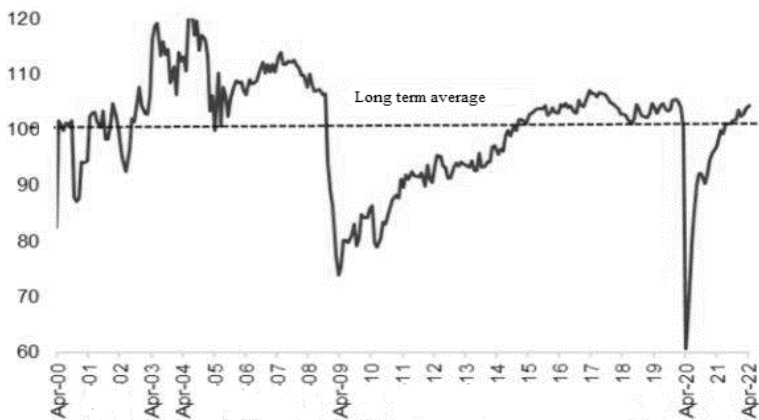


Fig. 4 The indicator of confidence in the Romanian economy for the business cycle for the period 2000-2022

(Source: Processing-adaptation after Romanian Commercial Bank, Research Dept., European Commission, 2022)

In the last 10 years, the business geography shows that the most dynamic county in terms of the number of active economic entities was Ilfov, with an increase of 138% (50,000

businesses), and Bucharest remains the leader with over 247,000 entities (18% of the national total). (Figure 5)

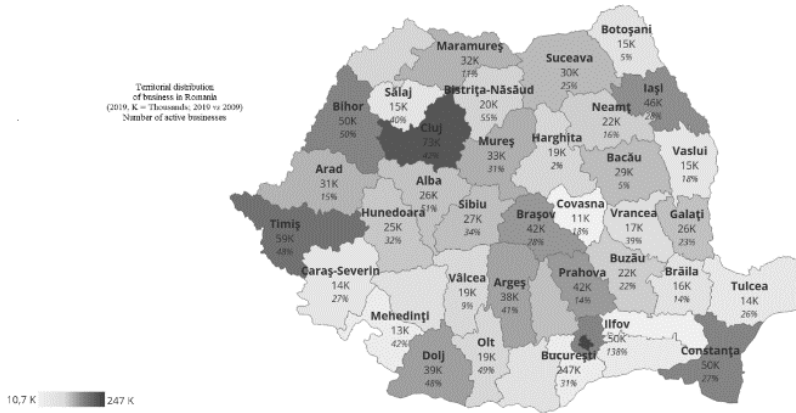


Fig. 5 Territorial distribution of business in Romania (2019 versus 2009)
(Source: KeysFin / R. Popescu, Managing Director of KeysFin, 2022)

From some analyzes (2022), [15], it results that the Romanian business in 2019 registered the lowest number of insolvencies in history (in 2019 Romania reached the performance of having the lowest number of insolvencies in history: 6500, 27% lower than in 2018 and 67% lower than in 2009).

KeysFin in the study "Trending Business", [15] points out that at that time there was a record number of organizational entities active in business (1.36 million), because according to data from the Romanian Trade Register it was nearing the end of the growth cycle post crisis.

In the last 5 years, the sectors of Construction, Transport and Storage (with 5400 companies / business more), Manufacturing (with 3400 companies / business more) and Health (with 1,800 newly established businesses) have attracted the most investors, compared to 2015.

Smădu A., Stanciu I. and Tănase A., (2016), [12] "estimates a daily aggregate indicator of business conditions for Romania using an informative set consisting of series available with different frequencies.

The methodology is based on the extraction of a common dynamic factor that synthesizes in real time the information regarding aspects of the economy: the perception of the sovereign risk, conditions of the labor market, the confidence of the investors, the dynamics of the turnover".

Such an indicator can be treated as an "unobservable variable".

5. Concluding Remarks

However, for the Romanian economy, not yet fully and competitively linked to the European and global economy, the frequency of business cycles, their amplitude, the

duration of their existence in flux, their density, their impact on the management of the economic environment, etc. they cannot be surprised with cognitive sufficiency at present times.

Rather, business cycles, once identified, classified and evaluated are images of the immediate past or recent economic history.

It is, in fact, synthetic all-encompassing, in fact the one that underlines economic "conditions", but does not reflect the "state" of the economy.

Therefore, economic cycles have no expected utility in the forecast.

In the Romanian economy, they only consolidate perceptions on an evolutionary field on which are the domestic or foreign entrepreneurs / investors.

Instead, knowing the configuration, content and trends of the business cycles, the economic policies can be adjusted in the short term.

At the same time, the more the index / indicator of measurement of the business cycles is aggregated, the more the information is included, included, constitutive, but hardly visible.

The estimation of the economic conditions, the chronology of the business cycles, their anticipation do not guarantee the complete knowledge for the formalization of series of cycles. The torsion of cycles, recessions, expansions, stagnations and so on can be found in many businesses in the Romanian economy by formalizing in a theory of business fields and in the economic practice marked by competitiveness.

References

- Amariei R., 2016, - *Supersonic economy: Romania's GDP increased by 300% in 18 years*, Rev. Capital, October 21, <http://www.capital.ro>
- Artis M., Krolzig H.M., Toroz J., 2004, - *The European business cycle*, Oxford Economic Papers, 56 /1–44, p.6
- Bernanke B.S, Gertler M., Gilchrist S., 1999, - *The Financial Accelerator in a Quantitative Business Cycle Framework*, in Handbook of Macroeconomics, Volume 1, Edited by J.B. Taylor and M. Woodford, p.1342
- Bran, F., Balu, O. F., Reynard, C., Rădulescu, C. V., Burlacu, S., Mănescu, C. O., & Gole, I. 2023, Mapping risk and performance business drivers post-pandemic. Future challenges. *Economic Computation & Economic Cybernetics Studies & Research*, 57(4).
- Caraiani P., 2008, - *Nominal and real characteristics of the business cycles in the Romanian economy*, Bucharest, p. 9
- Chauvet M., 1998, - *An econometric characterization of business cycle dynamics with factor structure and regime switching*, International Economic Review, Vol. 39, No.4, 969-96, p.1
- Gâf-Deac I.I., 2017 - *Transition to New Intangible Resource-Based Economy*, Noble International Journal of Business and Management Research, Noble Academic Publisher, Vol. 1, No. 1, pp: 1-4
- Gâf-Deac I.I., et al. 2016, - *New Development: From Linear to Nonlinear Economy. Challenges from the Perspective of Sustainable Development*, in [Economic Dynamics and Sustainable Development – Resources, Factors, Structures and Policies](#), ISBN: 9783653065718, (www.peterlang.com), pp.13-20
- Gâf-Deac I.I., 2010- *The New Economy between Knowledge and Risk*, - Infomin Ed., Deva
- Grigoraș V., - *Identification and analysis of business cycles in Romania*, The National Bank of Romania, Department of Modeling and Macroeconomic Forecasting, Bucharest, November 2013
- Meyer J.R., Weinberg D.H., 1975, - *On the Classification of Economic Fluctuation*, Explorations in Economic Research, no.2, pp. 167-202
- Pană M., 2014 - *Romania after 25 years (I)* / Real GDP growth: Economic growth and the decade lost
- Smădu A., Stanciu I., Tănase A., 2016, - *Building an aggregate indicator of business conditions for Romania*, The National Bank of Romania, Study books, No. 43 p.7
- Shapiro M., Watson M., 1988, - *Sources of Business Cycles Fluctuations*, in NBER Macroeconomics Annual 1988, Volume 3, p.112
- Sveiby, K.E., 1997- *The Intangible Assets Monitor*, - Journal of Human Resource Costing & Accounting, 2, no 1
- ***, 2022 :/www.startupcafe.ro/afaceri/afaceri-romania.