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The Contagion of Economic Crises in The Vision of the Constructal Theory

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Abstract

Through the article we try to understand certain aspects of economic reality through the eyes of the Constructal Theory. I will try to present the essential characteristics of economics revealed by C.T. and the implications of the theory in crises and economic cycles and especially in the area of crisis contagion. The mentioned theory is built in the theoretical framework of thermodynamics, but has many applications in the area of social sciences and economics. The author has written several articles on the implications of this theory in economics and this time he focuses on the contagion of crises. Due to the difficult times that the economy is going through and especially due to the explanatory and predictive failure of the empirical theories I think it is time to go back to the theory of a pencil and a piece of paper. That is, to abstract theory, a theory in the Aristotelian sense, that is, led and created by a mind that has managed to squeeze the essences of the world; a mind capable of seeing the causal links between phenomena without a prior empirical study. One such theory is C.T., a theory born directly from the mind of a teacher: Adrian Bejan. Surprisingly, this theory proved to be perfectly applicable in the field of empirical sciences. The contagion of crises has been approached by numerous theories and the time has come for C.T. to try its explanatory powers.

Keywords: Constructal Theory, flow systems, crisis contagion, causes of crises, effects of crises.

JEL Classification: A120, B300, B520

1. Introduction

C.T. appeared from an intuition of its author (Bejan, 2016), who then built it with a pencil, a ruler and a compass. C.T. it has a very high general applicability including in the study of social sciences and especially in economics. C.T. is a theory generated in the field of thought of thermodynamics and engineering. Its application in the field of economics is at the beginning of the road and I consider

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that this paper is the first of its kind (referring to contagion) in Romania and among the first internationally.

There are two ways to build a theory:

The first method: we start from some empirical data permanently observed and we find a certain pattern of repetition of these data and then we look for deeper causes.

The second method is built (through inspiration and intuition) a theory through a mechanism that tends to a priori. Through abstract, logical thinking, concepts are built and the connection between these concepts is made. The first stage in this case is to raise the logical foundations and theoretical working hypotheses. Then of course follows the confrontation with the facts. Usually in one generation the foundations are laid, and the next generation struggles with the facts and follows any adaptations and modifications of the theory. C. T. has the advantage that both stages of the theory take place in the same generation (Bejan & Zane, 2012).

C. T. sees the essence of existence in flow. Everything is a flow of both the inanimate and the animated world. The aim is towards an easier flow, a more efficient transport in large quantities. The flow must have an engine, a power source and at the same time a braking system consisting of the flow medium. One cannot do without the other. Flow resistances determine the shape of the system, more precisely the architecture of the system (Bejan, 2016).

To understand C. T. we must have in mind a river basin. There are two types of flow: diffuse and laminar. The first is undetected, invisible, unorganized; the second is in organized channels. The speed and flow time of the two types is equal. The organized flow is according to certain mathematical ratios within the types of channels. Thus appear hierarchy, architecture, complexity and inequality. The channels are from many small to few large (Bejan & Zane, 2012).

The architecture evolves so that the system covers the entire surface, the flow is as smooth and efficient as possible. A point should move as easily as possible over the entire surface to a drain point (Bejan, 2016).

The evolution of the systems is S-shaped and a new cycle overlaps with the old one without replacing it. There are no bumps on a wall, no catastrophes (Bejan & Errera, 2017).

Resistances in the system are very important. They shape the system. The system tries to distribute them evenly. There are transverse and longitudinal resistances. Systems strongly transform the environment they are in, and systems need a resilient environment to form (Bejan & Zane, 2012).

2. Problem Statement

Freedom is essential (Bejan, Errera & Gunes, 2020). The freedom of the economic system is measured by the number of characteristics that can change independently of other characteristics and freely without outside intervention but only as a result of the mechanisms of their own DNA.

The number of ways in which a system can evolve gives the degree of freedom of the system (Bejan, Errera & Gunes, 2020). For the economy we can think in a

negative way to find out the degree of freedom. That is, where are the limits of a man's action, where are the barriers. In economic terms of liberalism: the limit is the property of the individual (node) next to you; in terms of socialism the limit is bureaucratic legislation, legislation whose purpose depends, not on principles, but on certain group or individual interests.

Blocking the freedoms and forcing the system in a certain direction is only the preamble to the forced shaking movement of the system so as to get rid of artificial barriers. The system wants to follow the natural path to greater freedom and coverage of economic areas. *Shaking is a crisis* (Bejan, 2020).

On its own, an individual must consume much more energy to survive than in the alternative, where he is included in a system (Bejan, Gunes, Errera & Sahalin, 2018). The larger, more complex the system is (i.e. it has a multi-level architecture), the more energy savings occur (energy consumed per unit of good transported). At the same time, the total energy consumed increases. The result: individuals in a complex system live easier; they have more facilities available and more consumer goods accessible for use; they have more free time and the effort made for the necessary ones is diminished. All this is compared to individuals living in simple systems.

Inequality in a system is inherent (Bejan, 2020). It appears with hierarchy and architecture. Inequality increases with the complexity of the system and its evolution is towards a hierarchical configuration. Systems are evolving towards a more complex hierarchy at a certain pace. Complex represents a hierarchy that grows in hierarchical levels. A system grows in the hierarchy to cover an area as well as possible, to ensure a constant, stable, high flow and increasing flow. In social systems, inequality leads to social movements, riots, revolutions, etc. The role of the state and social organization is to reduce inequality (reducing the convexity of the inequality curve) by building canals and bringing flow to dry areas.

Inequality is an unpleasant result of complexity in terms of social ethics. Inequality is a sharp differentiation between the rich at the top and the poor at the bottom. The distribution is from many small to few large.

We think of a graph in which we pass wealth on the abscissa axis, and the number of people on the ordinate axis. The greater the complexity of a system and the freer it is: the distance on the abscissa axis between the ends of the graph lengthens and moves away from the origin (because the wealth of society as a whole increases and increases and the wealth of those considered poor); and the difference between the ends of the graph on the ordinate axis (regarding the number of those with a certain income) also increases.

Thus, the complexity of a system leads to a steep slope of the graph. The purpose of organizing the company is to: lengthen the graph on the abscissa axis; to remove it from the origin and to reduce as much as possible the height on the ordinate axis. That is: the slope of the graph curve must be as small as possible and the graph as far away from the origin as possible on both ordinates. *From the triangle we should make a trapezoid on the graph and in real life.*

Abnormal distributions in society due to aberrant interventions lead to: high-slope graphs; with long length on the ordinate axis and close to the origin on both axes. In primitive societies the curve can be divided into two. Many with little power (wealth) and very few with excessive power (wealth).

If we think of the graph: Lorenz curve of income distribution in the population; then the experiences undertaken by Adrian Bejan lead to the following conclusion (Bejan, 2020): with the increase of the complexity of the system, the convexity of the wealth distribution curve is accentuated and moves far away from the first bisector. Although the wealth of the system as a whole increases (the wealth of the poor increases), the inequality of the system is accentuated by its hierarchical complexity. I repeat, inequality is rising to a new level of wealth. The role of the state in reducing inequality and raising the wealth distribution curve and bringing it closer to the first bisector must now come into play. This will be done by decreasing the overall wealth of the system.

Reducing poverty in a modern economy means: creating artificial canals in dry areas (Bejan, Errera & Gunes, 2020). These channels must be made from saved power (savings) and taxation, etc. It is not enough to create a channel in a non-existent area, but a flow must be brought into this area; it must be connected to the main flow system; the necessary pumps must be made to carry the flow to the poor areas. That is, it is not enough to give alms in poor areas for troubled people, but you must: bring education, the health system; organize systems for the exploitation of resources in the area (enterprises); bring the system of roads and railways to poor areas.

Unfortunately, in history, we know that all attempts to rationalize poverty have failed. The benefits were marginal and minor, and often ended in violence. Why ? Because the social system itself as a flow system changes its configuration if it is left free to eliminate poverty. In order to eradicate poverty, more resources must be consumed instead, and innovation must be promoted in order to consume less energy per unit of mass transported.

However, programs to reduce inequality must not be removed. Inequality is one of the major issues leading to social movements and crises (Bejan, 2020). From the Jubilees mentioned on Hammurabi's star to today's social programs, attempts are being made to reduce the feeling of frustration and helplessness that the vast majority experience in the face of economic mechanisms. Achieving inequality must be achieved at the cost of reducing overall wealth.

The increased complexity of a system represents: higher and faster flow (Bejan, 2016). A system reaches its maximum complexity at a certain point and the law of decreasing yields appears.

The hierarchy of a system is inherent in the freedom of the system (Bejan, 2020). It comes in a package. Hierarchy can only appear after the system has reached a certain critical mass (surface, volume, flow, transported material). The hierarchy is necessary so that the system can adapt to various surfaces, events, the external environment and to gradually expand to cover as large an area as possible.

The social hierarchy gives the individual the opportunity: to work according to his interests, to collaborate, to associate and to pursue his own goal, to move on the entire economic surface and to have access to as much wealth as possible.

For example, in the case of urban areas, it is directly proportional to the area it serves. Large cities appear due to the different services that can only appear in large urban concentrations and that serve large areas.

A mature social organization is subject only to marginal changes regarding only the periphery (Bejan, Errera & Gunes, 2020).

Socialism (Bejan, 2020). The egalitarian communities desired by Marxism mean only the lack of hierarchy and architecture and widespread poverty. The system can only adapt to the environment to a very small degree, it cannot evolve and spread. Ecology has an identical approach. To evolve, a system changes nature profoundly, consumes resources, uses the environment and changes it according to its own requirements. Not changing the environment means returning to the stage of gathering and generalized poverty. The impact of a system in nature increases progressively with the hierarchy and development of architecture.

Communism: he wanted to create a fishing net-like social network. Each node (individual) to receive and evacuate an equal amount of flow. From each node to leave and come the same number of channels, and the channels to have the same length. Each node should be an input and an output. For a node to be an input and an output, resources must be evenly distributed. This only happens in the hunter-gatherer stage, when there is no exploitation.

If we overlap a perfectly symmetrical social network (like a fishing net) over unevenly distributed resources (as in the real world, i.e. flow inputs are in certain positions and flow outputs in other locations) then automatically: certain nodes receive more flow ; through some channels more flow passes, and through other channels it does not pass at all. It turns out that a hierarchical architecture is formed. In order to maintain an initial social structure (communism), resources must be taken that could have been used to develop the system and used to maintain (by force) the original form. Because the system evolves inherently, communism was an ankylosed social structure.

The end of communism meant superimposing an approximately symmetrical network over an area with unequally distributed resources. Those closest to the flow (resources) became rich, the rest became impoverished and thus the oligarchy appeared.

The key to evolution is innovation (Bejan, 2020). Innovation: attracts flow in areas where it did not exist before; opens new channels; increases the flow in existing channels; decreases flow resistance and more importantly finds new sources of flow. On these new sources of flow, innovation observes them in unexpected places or even creates new sources of flow, which they release into the environment.

People today are migrating to greater personal freedom where they can better fulfil themselves personally (Bejan, 2020). Freedom is what determines the contemporary flow of the population. An area with more wealth offers more

freedom, more solutions, opportunity, more decision-making options and more possible ways to follow.

3. Research Questions/Aims of the research

One of the most important aspects of crises is the contagion, i.e. the way in which failures are transmitted throughout the system. We will try to understand this phenomenon with the help of C.T., which we tried to present.

What is a crisis? A blockage in the flow system. The material that was the object of the flow does not move, it remains stuck in the pipes. Why?

If it is a real crisis (related to the field of physics itself) it means that there is no demand for certain objects in which many resources have been invested (Keynes, 2007). An example is the global car industry where more is produced than required. Much has been invested in this industry, an industry that has also benefited from generous subsidies due to strong unions. All with hope for a future increase in demand. This demand has stopped growing, and now the resources are blocked and they will need to be relocated. The process will take time and will be accompanied by many problems. It is hoped, in the desire to cover disaster, the emergence of new innovations that will stimulate demand. Example: the electric car.

Another attempt to explain the crisis is: the insufficiency of the development of the system itself to cover the entire area. Hundreds of thousands of people die of hunger or water insufficiency every year. For an individual dying of deprivation, it is of little importance whether global indicators are rising or falling. He is experiencing a permanent crisis.

Defining crises is itself a relative issue. We can talk about a local, regional or global crisis. For the inhabitants of an isolated village left without water facing the problem of extinction, it is too unimportant whether an average person in Germany will be forced to postpone for a year or two the purchase of a new car with the latest improvements because it is just an economic crisis.

References to cycles and crises are linked to a part of global society. The most technologically advanced. It is constantly expanding, expanding the periphery and including new areas, and the areas left outside it are gradually diminishing.

In addition to the current global system, there are isolated local systems. They are little influenced by the global major system and in turn have an almost non-existent influence on the global major system. They will certainly be included in it in the future.

When we talk about current cycles and crises, we are certainly referring to the main global system in which most states are included (and of course those with a major flow of flows). For the global system to suffer, a critical mass of problems is needed; or the system subordinated to the global one, which is affected, must be large enough for the accumulated problems to spread. The critical mass of the accumulated problems or the critical mass of the affected subordinate system (subsystem that will problematize the flow in the entire flow system) cannot be

established exactly quantitatively prior to the occurrence of economic crises. Theoretically we can give a qualitative description of the trend.

It does not matter where the blockage occurs. Most likely most blockages occur in the money flow system. Money as symbols of the condensation of the power of movement is the easiest to corrupt and manipulate. It is connected to the real flow system. What happens in one system is related to what happens in the other. I remain a follower of the Austrian School, so I consider that the critical mass of problems appears with maximum probability in the money flow system (Mises, 1966). What happens next?

From the point of view of C.T. we distinguish two types of problems:

First. There are artificially overstated economic areas by inoculating resources far beyond the natural need. The reason: games of interest. The canals in the artificially supervascularized and artificially pressurized area are destroyed, the pressure is too high for the system category in the area and then the flooding, with the surplus of artificial flow created, of the areas kept artificially, dry or lower vascularized (and which normally with a free system would have been vascularized). Where is the problem? It takes time for canals to form in the dry and flooded area. As an example we can stick to what I wrote about the automotive industry and lending (by banks) without prior savings of various industries.

Second. In systems where unexpected flow resistances occur, the natural tendency of the system is to distribute the resistances evenly throughout the system so as to facilitate easy flow throughout the system. Crises are in this case a blockage, a brake on the flow and automatically the system will try to distribute the resistances evenly throughout the system. This is, we believe, the mechanism by which contagions occur.

The elements that limit crises in our vision are:

First. Restrictions on the membranes that delimit the state systems between them. Represents the legislation that regulates the inflows and outflows of a country.

Second. Bureaucratic regulations that had previously created unnecessary and artificial resistance in the system made it difficult to run, but which now prevent the crisis from spreading.

The two restrictions, mentioned above, lead to flow resistances (even in the case of a non-crisis economic situation), but they do not reach the critical mass so as to affect the entire flow system. But they only affect the local, state level.

From the point where the crisis occurs, it is distributed radially in the system (King, 2017). The intensity rate decreases progressively. The major problem is modern technology that has made the centre of a crisis everywhere or at least in the major centres of vascularity.

The differently distributed resources on the surface of the globe have led to the emergence of different specialized flow systems. Concentrated vascularizations occurred in certain areas that expanded and then coupled to other flow systems. So that a commodity / good is distributed as much as possible. The emergence of states and related bureaucracies has led to: the emergence of selectively permeable

membranes between states and the state bureaucracy that has imposed flow resistance artificially depending on more or less artificial criteria.

States have evolved towards increased economic separation and simultaneously towards economic integration. The secret of well-being consists of two simultaneous movements: specialization (depending on resources) and integration. The deeper the differentiation and the deeper the connection of the parts, the greater the wealth is (SedLacek, 2013).

A deep and broad global connection ultimately means permeabilizing membranes between states until dissolution so that goods / ideas flow freely. Any removal of barriers between states (tariff or otherwise) will streamline the circuit as a whole without taking into account the benefits of one area or another. For the global system one region is no more important than another and a node - an individual is no more important than another. So when a part of the system faces a problem (blockage, leakage or excessive flow) the system will try to distribute the resistors everywhere or eliminate the excess flow.

The way the banking system works leads to an acceleration of the cash flow far beyond the possibilities of the flow of real goods or over the rate of innovations, which improve the real flow (Soto, 2006). The result is that the flow system tries to get rid of this artificial surplus.

The question remains. When a Ponzi scheme breaks down, where does the money go? Because no one in the history of breaking these bubbles has tracked down the money and everyone has gone bankrupt. The answer in the light of C.T. is that the flow in the channels turns into a diffuse flow (i.e. unorganized into channels), exactly as in the initial stage and can no longer be identified; it spreads uniformly amorphously in the banking-financial area.

4. Research Methods

The methodology used in this article and especially in C.T. it is an Aristotelian type a priori. The human mind is constantly facing a lot of chaotic data. Certain mechanisms innate in the human mind are constantly trying to detect a configuration of the appearance of this data. The mind is constantly looking for a connection between data, a pattern. Is causality in the human mind or does it really exist in reality? This question remains open. What does the empirical data link: a simple whim of the mind or is there really an objective connection?

Adrian Bejan has a brilliant intuition. Adrian Bejan had the intuition that existence is a flow. But the flow is according to some mathematical rules and principles. It all starts as a flow that unfolds to infinity. He lays down his intuition on paper using only simple mathematics. Everything is connected with an absolute mathematical necessity. But then surprisingly the applied mathematics used by him is also used by nature. Wherever C.T. has been applied, it explains things impossible to explain before, it has great predictive power.

In this article I have taken over the conceptual apparatus of C.T. and applied it to the contagion of economic crises. I only used the narrative argument. This type

of argument is mainly used in the social sciences and especially in the historical sciences. The logic of the article is narrative.

5. Findings

The organized system of financial institutions and modern technology have led to the translation of problems from their centre of occurrence and intact movement to other vascular centres, without the phenomenon of gradual decrease with a certain rate of toxic flow. Any flow is diluted in time and space as a result of the inevitable law of entropy increase. By taking a toxic stream from one region and moving it identically to another, it is possible to multiply the toxic stream without the possibility of decreasing its strength. It is the story of the crisis of 2008. A toxic asset has been multiplied and distributed throughout the system while maintaining its original strength.

A state system has the choice to sweep within a range of two limits. 1. The first of the limits is total isolation. The risk is total rigidity. Isolation leads to the use of resources only from within borders. The result depends on the area, population; but regardless of their size, they will reach blockage, ankylosis. Regardless of the rate of innovation, they can only have a local effect and can only refer to local resources. No matter how favourable, an innovation that cannot connect to local resources is dead. 2. The second limit is full opening. The risk is that too frequent changes can lead to chaos, instability, too fast for minimal adaptation to occur by the local population. The population itself can change too often, genetically or mentally for a minimal dynamic balance to appear between the population and the environment, a balance necessary for a minimum well-being.

Changes that are too fast have a detrimental effect identical to the situation without changes. The population of a region, a state, must be inserted somewhere in a place in the wide range between the two extreme limits: rigidity and chaos.

In all areas dealing with living beings, it is found that the survival of a system and its evolution for the better depend on two things: 1. the specialization of its component parts as deep as possible and 2. their connection (their integration) as wide as possible. Globally, this means the specialization of areas / states as well as possible according to their resources / abilities as deeply as possible, but at the same time their integration, their connection (Reinhart & Rogoff, 2009). The reverse of the medal is represented by the economic cycles, the contagion. The widest possible integration of local systems leads to the creation of a global system without barriers. There will be no barriers to the good or the toxic, because the system is trying to distribute both evenly. The system wants to cover the entire surface as well as possible without taking into account the benefits of one area or another.

The alternative is to think of protection measures to reduce the negative impact of innovations. Example: Gradual reception of innovations and their effects in a given state. Testing innovations, leaving room for manoeuvre in case negative effects occur. It is possible to allow time for the positive and negative effects of an innovation to subside. Observing the negative effects of a new discovery

and finding the remedy to mitigate, diminish or cancel these effects. All this with the thought of avoiding the appearance of rigidity in the system due to a paralyzing caution.

Specialization and integration are the two keys to evolution in living systems, they also have a negative downside. Any obstacle in the operation of a certain specialized area on a certain product / commodity will stop the distribution and flow of that object. If an area specializes in a certain commodity, which is used as an intermediate product for some industries and there are problems (for various reasons) in the production of that good, then there will be a shut down for dependent industries. The problem with today's economies and industries is that everyone depends on everyone, there is almost no longer a production chain independent of other production chains (Schumpeter, 1976). An interrupted area closes all areas. It takes time for the system as a whole to change and gain other flow channels in addition to the blocked ones.

This is the story of the communist industry from the time of Nicolae Ceaușescu. The communist president tried to build an economy independent of external flow, self-sustaining. This meant building industrial branches and factories to cover all known economic areas. These factories were integrated into a self-sufficient flow system. The problems appeared related to raw materials, i.e. to the inputs of the self-sufficient industrial system. They were largely missing from Romania and had to be purchased at high prices from abroad. A single factory at the base that had to procure expensive raw materials bankrupted the factory and industry and then blocked the entire flow system (Hayek, 1998).

The communist industrial system did not have the necessary flexibility to adapt, fragment and use local resources, saving as much as possible. The attempt to standardize the vascularization centres, their bureaucratic connection was made to the detriment of the natural vascularization of certain centres based on skills and resources according to requirements, real needs, related to the natural tendencies of evolution. The bankruptcy of a single node in the spider web has led to the rupture of ties, the isolation of neighbouring nodes and the spread of the scenario in all directions of the economy. The problem was exacerbated by the centralization of the system, centralization that prevented a local adaptation (the only possible one), an adaptation that would have saved certain parts of the system. The bloc economy cannot go through bureaucratic decisions (Friedman, 1982).

6. Conclusions

The external conditions of a system are not stable, a permanent and especially gradual and local adaptation is needed because the very changes of the environment are gradual. Changes have a certain level of importance and are gradual, they require a certain critical mass to become significant for a certain hierarchical level of decision making. The changes are permanent, but some are important and some are not. It must be decided very carefully which change is significant and for which level of decision. Changes have a common general distribution: from many small to few large. Thus, the decentralized system can

easily adapt to small changes, of which it is not known which can increase into large changes.

Small changes in the external environment can lead to unexpected emergent effects that can only receive a specific response for a certain hierarchical decision step. The emerging effects of environmental change can in no way be reduced to a number of environmental characteristics. The emerging characteristics of the environment can only be found, described and not explained. The changes are gradual without a clear delimitation between previous and subsequent states. Changes have overlapping boundaries and you need focused attention to anticipate a favourable change (or not) in front of which you need to adapt your behaviour.

The same problem now arises globally by the specialization of a certain area on a certain type of commodity, raw material, capital good, consumer good, etc. Blocking the specialized area quickly leads to the spread of the problem throughout the global system. First the industries dependent on the first area stop and then gradually with a certain rhythm the problem spreads throughout the economic system.

The positive: the global economy is flexible and especially decentralized and can change its configuration for the use of alternative resources. Instead, it needs as much freedom and time as possible. An attempt to block the flow on national criteria will reduce the flow throughout the system; differentiated by areas. Some will be saved (suffering great shortcomings), but to the detriment of others and based on the shortcomings of others (Stiglitz, 2016).

One of the major problems of the global economic flow system is financial innovation. Without bringing real value added, it influences the way of economic organization and offers power of movement to some industries that would remain only at the project stage in the absence of these innovations (Krugman, 2013). Things go awry when financial innovations get out of hand and become art for the sake of art. If innovation no longer aims to promote the real economy but only to enrich its own creators, then we are certainly on the road to disaster.

Excessive mathematization beyond the possibility of controlling financial innovations easily leads to deception and misunderstanding of innovations by their buyers (Roubini & Mihm, 2010). Excessive mathematization plus their transmission into the flow system without the possibility of diluting the toxic elements in the innovations are the recipe for disaster. Their concentration in certain financial centres turns these centres into black holes of finance. When toxicity has reached a critical mass, the centres implode and attract into their abyss what is good and what is bad. Modern technology has achieved the performance that it can translate without dilution, in time or space, any innovation so that both positive and negative effects remain intact.

The 2008 crisis was due to financial innovations bought and spread in all global financial centres (Krugman, 2008). Toxicity hidden in mathematical formulas remained intact wherever toxic assets were hidden. The implosion of the centres when the toxicity reached critical mass was simultaneous. The radial flows from all

centres stopped simultaneously and took the opposite direction being attracted by the gravitational force of the centre.

Although the positive effects of financial innovations may diminish, it may be desirable in the case of financial innovations to have certain filters in their adoption in various financial centres associated with different states (Stiglitz, 2010). Their adoption can be done with caution, after understanding the mechanisms of operation, beneficial and less beneficial effects and after they have been fragmented and analysed carefully both in pieces and as emergent effects (effects that cannot be deduced from understanding of the parties). It is probably desirable to wait a period of time from the creation of financial innovation and its implementation in the initial financial centres and its adoption in the other centres.

With the elimination of gold as a universal currency, the only resistance to flow in the field of financial flow is represented by the prudence of financial decision makers and the rules and regulations of the financial system (Minsky, 2008). There are no perfect rules and regulations, and in general the financial regulatory system follows the trial and error method, i.e. the rules are adopted after the disaster has occurred, so caution in adopting innovation in the financial field is welcome.

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