

Vasin, Sergey Mikhailovich

## Article

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## Review

# A Theoretical Review of Socio-Economic Dynamics and Structural Transformation of Society: Traits and Constraints in Validating Response Processes Due to Unpredictable Factors

Sergey Mikhailovich Vasin 

Department "Economic Theory and International Relations", Penza State University, 440026 Penza, Russia; pspu-met@mail.ru

**Abstract:** To investigate and create theories of socio-economic dynamics has always been relevant for professionals in theoretical and applied economics. These theories are urgent in periods of global and catastrophic events since, on the one hand, they can explain the emergence of critical structural changes in society, and on the other hand, they can determine the likelihood of surviving of crisis processes. However, there are some drawbacks involved therein, and the poor ability to predict unexpected and shocking events, such as the COVID-19 pandemic, is a key one. The presented review outlines transformation patterns of socio-economic systems stemming from diverse contradictions. Some widely known transformation theories of socio-economic systems are presented. The major traits of such theories and specific approaches to explaining the features of the emergence and development of dynamic processes are demonstrated. The feasibility of practical application, as well as constraints in explaining and predicting the transformation of society, is indicated. Some theories that consider the transformation of society as a distinct process are specified, and approaches that characterize major transformations as elements of socio-economic dynamics are defined.

**Keywords:** socio-economic dynamics; transformation; catastrophe theory; theory of pathoeconomics; theory of transition economy; cycle theory; evolutionary theory; institutional theory; synergetic approach; civilizational approach



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## 1. Introduction

Socio-economic dynamics has long been studied by economists, sociologists, policymakers, and historians. There are many theories attempting to explain the changes in society. These theories form the basis for the formation of social development models built for the purpose of predictive analytics and the development of system management tools. We can say that these goals have been achieved in some respects, and the dynamics of the development of society can indeed be predicted with a greater or lesser degree of certainty.

The purpose of this work is to present an overview of societal transformation studies, including both transformation patterns of socio-economic systems and views on the sequence of changes, and specific transformation theories that consider the processes of transformation and socio-economic dynamics in general. Particular attention has been paid to the limitations to explain the reaction of society to the impact of unpredictable shock factors, such as pandemics.

Transformation seems to be a rather complex category. Despite the understanding of its place in the process of socio-economic dynamics, it has often been presented in studies as an unclear process that carries significant risks to sustainable development (Blythe et al. 2018).

Some studies of dynamic processes have identified economic development as a process of transformation that goes hand in hand with increasing complexity (Metcalf and Foster 2004; Antonelli 2011). In our opinion, it is quite difficult to agree with the statement of the identity of economic development in its unity and the process of transformation. However, this definition hides a regularity that assigns a special role to the process of

transformation in economic development, from which it follows that deep transformations can both complicate the system and simplify it regarding its economic dynamics. According to [Natera and Castellacci \(2021\)](#), during the growth and development process, economies undergo a process of transformation that leads them from lower to higher degrees of complexity. Complexity is viewed by the authors as some factors (growth engines) that drive the economic development process. On the one hand, at lower levels of complexity and development, economic dynamics is mostly driven by one or a few factors (e.g., capital accumulation). On the other hand, at higher levels of complexity and development, economies are often driven by a large variety of factors (e.g., physical and human capital; innovation and imitation; industrial changes; exports and foreign direct investments) and the interaction and feedback effects among these factors.

The remainder of this paper is organized as follows. Section 2 considers the academic views on the category of the transformation of socio-economic systems and related concepts. It also highlights the most obvious patterns of transformation presented in the studies. Section 3 describes the theories of transformation of socio-economic systems encountered in research both as a distinct process and a part of the general process of socio-economic development. A review of research perspectives, followed by our assessment of the advancement level on each theory, is provided in Section 4. The main limitations regarding the development of the considered issues and prospects for further research are presented in Section 5.

## 2. The Concept and Transformation Patterns of Socio-Economic Systems as Classical Structural Processes

### 2.1. Categories, Process and Scope of Transformation

In our earlier studies ([Vasin 2007](#)), we generated a diagram of the transformation process that explains both the reasons for the emergence of transformation changes and the fundamental depth of dynamics leading to deep transformations. We regard system transformation as a progressive transformation of the structure due to changes in its structural elements, which go beyond the possibilities of the system's self-organization at the previous level. We have introduced the concepts of "deformer", "critical deformation", "system self-organization limit", and "transformer". These categories are discussed below. We have identified growing contradictions among various elements within the system as the main reasons for such dynamics. These contradictions can lead to both evolutionary and revolutionary transformation. However, it should be emphasized that an important, specific feature of such changes is the ability to detect them, as well as to predict their occurrence and development. Therefore, such changes and transformation can be managed. The direction of transformation often depends on those people who will best manage the available information about upcoming changes or about the state of the social system in general.

An analysis of research works regarding transformation of society and socio-economic system found few publications devoted to systemic transformation process, that is, those relating to society as a whole. Most often, such works refer to some aspect represented by a particular area or a sector in an integral system.

These study are mainly about the transformation of individual countries ([He et al. 2020](#); [Fedorenko and Litvinova 2019](#); [Domakur 2012](#)), industries ([Naegler et al. 2021](#); [Rozanova 2020](#); [Shen et al. 2021](#); [Zhigulina et al. 2018](#); [Babkov 2011](#); [Csonka et al. 2021](#)), regions ([Shogenov and Kushkhov 2015](#)), the innovative component of society ([Huang et al. 2022](#); [Stepanov et al. 2021](#)), the legal system ([Barsukov 2019](#); [Dzybova 2007](#)), etc.

Social transformation in combination with business dynamics can be considered a particular field. According to [Mohamed et al. \(2022\)](#), just as transformation occurs in the inclinations and habits of individuals, it also occurs in the priority of production, resulting in the generation of companies of a new character, which are at the forefront of the economic scene, such as companies in the technical and service sectors, including Microsoft, Apple, Amazon, Alphabet, Facebook, and Alibaba. Moreover, giant companies have retreated in

industries such as automotive, oil and gas, and others. From this transformation, physical capital has shrunk dramatically and has been replaced by human capital; these two sectors (physical and human) differ in terms of the number of workers, the areas of factories, and the machines used for production.

However, it should be noted that the regularities inherent in the implementation of systemic transformations are also characteristic of some particular cases.

There is the category of deep transitions found in some works. In our opinion, these transitions are long-term waves of system development, including deep transformations of society. There are some patterns determining the level of ongoing changes. Deep transitions are long-term, connected, radical system shifts in the same direction. A deep transition is formally defined as a series of connected and sustained fundamental transformations across a wide range of socio-technical systems in a similar direction (Schot and Kanger 2018).

## 2.2. Transformation Patterns

Basically, it is crucial to distinguish between natural laws and the laws of socio-historical development. The former are much more stable, more fundamental, and weakly responsive to economic, social, political, and other changes. The latter are characterized by much higher volatility in response to external influences.

Moreover, the laws of socio-political development are sometimes manageable. In particular, there may be a controlled regression and decline, hence leading to transformation. The reasons for such manageability can vary greatly, but as a rule, they can lie in a different area than the economy and be aimed at resolving environmental issues or saving life and health in the event of the sudden impacts of negative factors (Smith et al. 2021).

Furthermore, these dynamics have also been observed at the level of the spiritual component of society, which is the basis of civilization. Toynbee (2010) regarded any civilization as a response to either challenge of history, although he considered a substantial force of inertia, which always accompanies civilization transitions as one of the properties of civilization.

There is a certain logic even at this level of dynamics when it comes to changing paradigms. Gadzhiev (2021, pp. 16–33) pointed out the following regularities, which either are the reasons for the transformation of society and even the change of civilizations or characterize transformation processes:

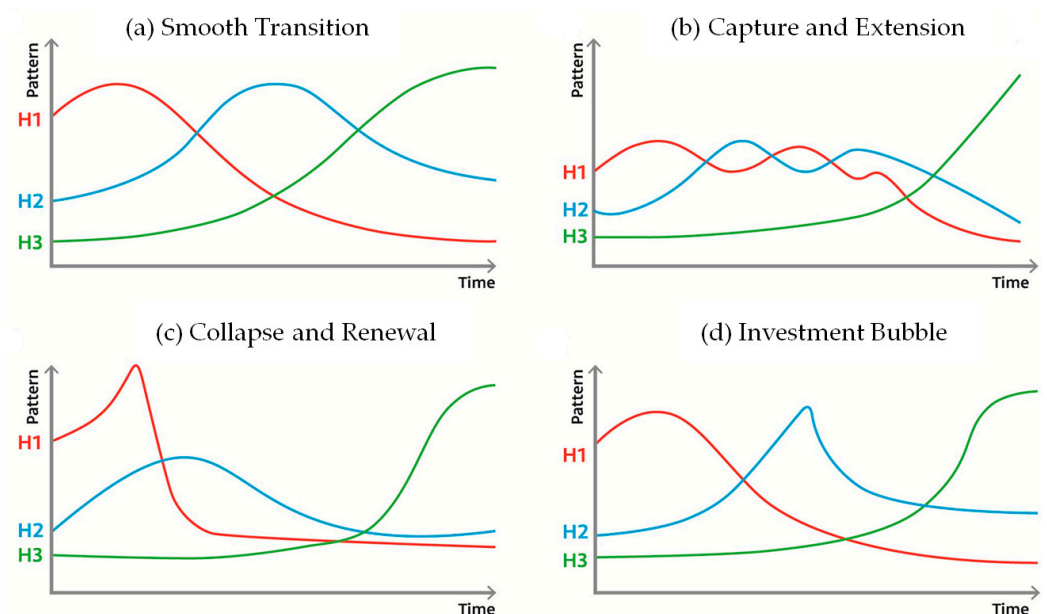
- Emergence of radical ideas that correspond to and support national-historical, socio-cultural, political-cultural, spiritual-moral, and religious environments;
- Exhaustion of the current paradigm as a fundamental value system that meets the requirements of new challenges;
- Formation of efficient and promising vectors for socio-historical development as a result of the interaction of variables represented by socio-cultural, political, and cultural determinants; priorities and restrictions that are being constantly changed and renewed and contradictions and conflicts;
- Manifestation of contradictions, competition, and conflicts that characterize human nature and human communities;
- Achievement of a certain level of social inequality, which acts as an inevitable and necessary condition for the development of civilization;
- Excessive displacement of existing values, ideals, norms, and worldview-opposing and conflicting trends or a notable manifestation of parallel institutional factors as prerequisites for the process of formation and evolution of the paradigm;
- Uneven transformation of any socio-political system that changes in many of its aspects while maintaining continuity in others.

Lapaeva and Maslennikova (2014) indicated the integrated general transformation patterns of economic systems:

- Formation patterns of a specific structure of the transformation economy, comprising elements of both fading and emerging systems, as well as intermediate forms that play the role of transitional bridges between these systems;

- Priority formation patterns of new forms of social order to the detriment of the reproduction of old relations characteristic of the former system;
- Emergence and growth patterns of economic macro-disequilibrium as opposed to macro-equilibrium, which is characteristic of stable systems, which do not include transitional systems;
- Emergence patterns of various alternative development options and directions in economic dynamics, creating uncertainty in choice and ambiguity in the final performance.

Patterns are clearly manifested in the course of transformation. At the same time, there are multivariance of the process and uniqueness of the features that determine such patterns (Figure 1).



**Figure 1.** Archetypes of system transition and transformation. Source: [Fazey and Leicester \(2022\)](#). H1–H3—the combinations of the three transformation horizons. (a–d)—various types of transformation dynamics.

The combinations of the three transformation horizons are shown in Figure 1. The first horizon (H1) represents the dynamics of the dominant socio-economic system in the present. The third horizon (H3) represents the expected dynamics of the system that will replace H1. In turn, the second horizon (H2) is a pattern of transition activities of the socio-economic system within H1 and H3. Let us consider the nature of the patterns that manifest themselves in various types of transformation dynamics.

The first archetype is smooth transition (Figure 1a). It presupposes a natural, smooth transition from one socio-economic system to another through an intermediate transition zone. The dominant H1 pattern declines, as it is no longer viable for changing conditions, while the new H3 system grows steadily to replace the dominant system. There is a wave of innovation in the H2 transition zone, which helps the new H3 pattern to emerge. The archetype implies a managed and gradual process, without significant shocks and discontinuities and only limited resistance. To a greater extent, the patterns of evolutionary transition are manifested here, occurring only due to the gradual replacement of old ways of doing things in new ways. In this pattern, there is practically no question of any serious contradictions. Smooth transitions are usually rare, especially in social and environmental domains, because there are usually strong social forces of resistance to change. According to [Fazey and Leicester \(2022\)](#), when smooth transitions do occur, they tend to be in commerce or technology, in which there is much wider acceptance that industries can be disrupted and replaced through the normal operations of the market. Smoother transitions usually occur



when there is appropriate infrastructure to support each stage of system transition, enabling norms to be challenged, creative destruction, innovation, and renewal. In the event of the emergence of unexpected critical factors, the transformation of the socio-economic system will take a different path; in this case, it is hardly possible to avoid sharp dynamics.

The second archetype is capture and extension (Figure 1b). With this archetype, there is a natural struggle of the original version to maintain its position through innovation. Capture and extension occur because of the gravitational pull of the dominant pattern and the way in which market mechanisms inevitably incentivize efficiency in existing systems and reward incumbents. Beyond the market, capture and extension also occur because government and public actors are primarily mandated to maintain and improve, rather than transform, the H1 systems upon which people depend. Powerful systems actively absorb new ideas and innovations, adjusting them to the policies of dominant coalitions, turning promising H2 initiatives into sustaining innovation, and suppressing transformation. The overall outcome is substantial innovation, which is captured to maintain and improve the H1 system, but delayed emergence of a H3 pattern. From the point of view of combating sudden factors of critical influence, the mechanism of operation of this model of dynamics is largely justified and understandable: the system does not work for transformation, but it functions under the conditions of the tasks of survival and maintaining order; therefore, the emergence and development of innovations are aimed at restoring the lost stabilizing factors. In turn, after the initial adaptation of the system to unexpected impacts, the ways in which it transforms begin to be considered, especially with deep, catastrophic impacts.

The third archetype is collapse and renewal of the dominant system (Figure 1c). One can see that this model is the most catastrophic for society as a whole. A natural and sharp failure of the dominant system occurs when trying to preserve it through the injection of assets into the maintenance of the lives of various institutions characteristic of the system without innovative development. Authors have provided a vivid example of the collapse of the socialist system after long-term artificial maintenance of its life (Fazey and Leicester 2022). Apparently, the changes of the late 1980s turned out to be belated and did not lead to the desired result of preserving the dominant social principles: the system somehow collapsed, but at the same time, innovation activity was weak, and the strategy for further development was based on the experience of developed countries. In practice, those actions were unsuccessful and resulted in a severe socio-economic crisis over a long period of time.

Finally, Figure 1d represents the investment bubble archetype, which is based on the pattern of investment growth according to the principle of geometric progression, with the appearance of investment demand from the innovation that caused the initial and, therefore, adequate supply. Subsequent overinvestment can create an investment bubble in relation to innovation, which, however, after a certain time after a failure may be reborn as part of a new transformation horizon (H3). This version of the transformation process can be illustrated by the example of the COVID-19 pandemic, when investment activity was generated by the emergence of new technological solutions related to disinfection. The mass production of such products may not have been as large as investors expected, hence the emergence of an investment bubble. However, having undergone a negative experience, a society systematized the production of many products related to countering the pandemic as a whole, thereby increasing its readiness for the impact of such factors of influence on the socio-economic system.

As for the stability property of a system, we note that the dynamics of the level of its self-organization does not coincide with the dynamics of the level of social development. For example, the limit of a system self-organization is not necessarily at the lowest level of the state of its socio-economic development. On the contrary, according to Kondratiev (2002), both revolutions and wars more often occur on the upward wave of the cycle due to the struggle for ownership and control of resources, which, during the previous recession, accumulated enough for the development of society. In other words, a revolution needs a strong leader who understands the weak points of the current government and business and who knows how to mobilize solidary human resources. The result can be

both a restructuring of the spheres of influence of business and government circles and a change in the social structure of a particular country. Although the level of development of the socio-economic system prior to the revolution can be quite high and be in positive dynamics, the contradictions can be so strong that the system cannot organize itself and is transformed into a new formation.

Is it possible to calculate the parameters of the system self-organization limit? On the one hand, there are critical levels of indicators of various functional areas of the social system (Andrianov 2008). On the other hand, the exceeding critical levels of indicators do not always lead to the transformation of the system. This decline is significant and subsequently turns into an upsurge, and the system is restored. There is a challenging issue: what are the conditions for the dynamics of system changes to exceed the limit of self-organization, resulting in the subsequent transformation of society?

We single out indicative risk scales for some functional areas (Andrianov 2008, pp. 143–291), which significantly affect the entire social system if changed. When analyzing the quantitative and qualitative characteristics of the selected zones, risk ranges are more or less accurately determined when there is the possibility of a transformation transition (Tables 1–4).

**Table 1.** Indicative risk scale for inflation.

Inflation rate	Optimal	2–3%
	Threshold	40%
	Critical	100%

**Table 2.** Indicative risk scale for the state budget balance.

Level of income and expenses	Optimal	Deficit of up to 2% of GDP with economic growth of 2% per year
	Threshold	3–5% of GDP
	Critical	More than 6–8% of GDP
Debt-to-GDP ratio	Optimal	-
	Threshold	-
	Critical	More than 60% of GDP

**Table 3.** Indicative risk scale for the formation and use of gold and foreign exchange reserves.

The amounts of gold and foreign exchange reserves	Optimal	-
	Threshold	-
	Critical	Less than 8% of GDP
Excluding the possibility of default on government's external obligations	Optimal	-
	Threshold	-
	Critical	The volume of reserves is less than the amount consisting of the cost of covering imports and the cost of payments on external public debt
Ability to do without external borrowing during the year	Optimal	-
	Threshold	-
	Critical	Unfeasible

**Table 4.** Indicative risk scale for social protection of the population.

Gini coefficient	Optimal	0.250–0.260
	Threshold	0.350–0.370
	Critical	0.410–0.420

There are major measures to regulate inflation: changing an interest (discount) rate or refinancing rate, determining required reserves, performing operations on the open market, refinancing commercial banks, and inflation targeting.

Considering the above material and looking ahead, we hypothetically assume that the existing research in the field of the theory of socio-economic dynamics has been distanced from explaining the phenomena that occur in the event of an unforeseen impact of shock factors that lead to significant changes in society. We will test the hypothesis in the next section.

### 3. Theories of Transformation of Society

Theories characterizing the dynamics of the development of society can be classified according to the principle of limiting the dynamic process by certain frames. Some theories explain specific changes or transitions (transformations) from one form to another (the catastrophe theory, the theory of pathoeconomics (economic pathology), the theory of transition economy, the cycle theory, etc.). Other theories describe the socio-economic dynamics in a continuous flow with stagnation and transformation, with smooth growth and decline, etc. (the evolutionary theory, the institutional theory, and synergetic and civilizational approaches).

The conducted theoretical analyses of various theories of socio-economic dynamics form the basis for understanding the features of the transformation of socio-economic systems. At the same time, it is often impossible to explain such dynamics via a single theory. Complex and informal broad views and assessments of various cases of dynamics to explain the prerequisites, the course of the process, and an increase in the level of systemic stability are inevitable. It should also be noted that the separation of theories from each other is also erroneous. The boundaries between them are blurred, and the principles are often similar. From this fact, the conclusion follows regarding the expediency of their complementarity, as well as the explanation of one theory at the expense of another.

#### 3.1. The First Group of Theories: Transformation as a Distinct Process

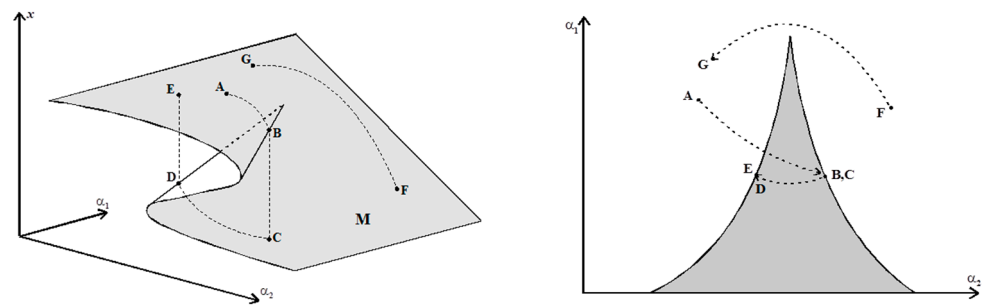
##### 3.1.1. Catastrophe Theory

The key contributors to the catastrophe theory are [Thom \(1975\)](#), [Zeeman \(1977\)](#), and [Arnold \(1990\)](#).

The catastrophe theory is a theory that studies the instability of various systems ([Burtseva and Voronov 2016](#), p. 43). This theory is a synthetic science formed on the basis of topology and mathematical analysis, which studies the qualitative behaviors of nonlinear dynamic systems when changing their parameters ([Borodin et al. 2015](#)). A catastrophe is an abrupt change in the state of a system that occurs in the form of its response to a smooth, gradual change in external factors ([Arnold 1990](#), p. 8). However, the dynamics of the economic system can be traced incrementally: from a state of equilibrium to oscillatory dynamics with increasing amplitude, leading (but not necessarily) to an abrupt change in a state (catastrophe) ([Arnold 1990](#), pp. 21–23; [Nedel'ko 2010](#)). It is this growing dynamic that makes it possible to predict the future based on signs of minor movements. It is important to determine at what stage and how far the system is from the point of catastrophe. In other words, it is possible to determine theoretically some indirect signs: if the considered system approaches the point of catastrophe ([Burtseva and Voronov 2016](#), p. 47) or bypasses it with uniform dynamics. Accordingly, it is possible to predict the behavior of the system and influence the trajectory. Thus, the well-known visual models of this theory (fold, cusp, swallowtail, butterfly, and various umbilics) schematically reflect the potential courses of



possible events: smooth or abrupt. One of the most illustrative models is shown in Figure 2. More complex models are based either on this model or the fold model. Here, the F–G trajectory is smooth, without jumps (catastrophes). It is unspecified how long it will remain as such. However, in the absence of external (or internal) disturbances, the probability of systematic dynamics is quite high. At the same time, the A–C trajectory implies an abrupt downward response of the system to the gradual impact of some factor, while the C–E trajectory is an abrupt upward response.



**Figure 2.** An elementary image of the Whitney cusp. Source: (CyberPedia n.d.).

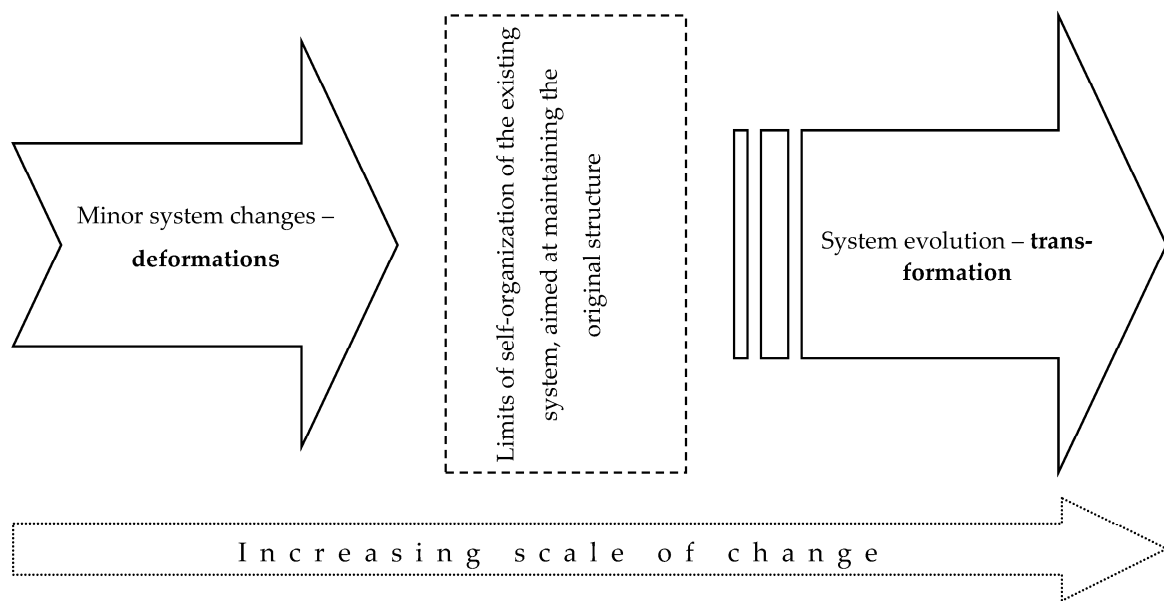
Researchers have specified a number of signs of the system to approach a disaster (Burtseva and Voronov 2016, p. 48):

- Bimodality—the emergence of several different new and stable states is observed;
- Spasmodicity—unstable states are notable and easily modified;
- Violation of symmetry—the system can quickly change even with a slight impact of external conditions; the choice of alternatives is ambiguous, while earlier development could result in the choice of equivalent (symmetrical) alternatives;
- Divergence—the irreversibility of the system and the inability to return to its original position;
- Hysteresis—an event (result) that has occurred remains in history, despite its causes perhaps disappearing;
- Critical slowing down—many efforts, regardless of their scale, do not lead to notable changes in the situation (Chulichkov 2001).

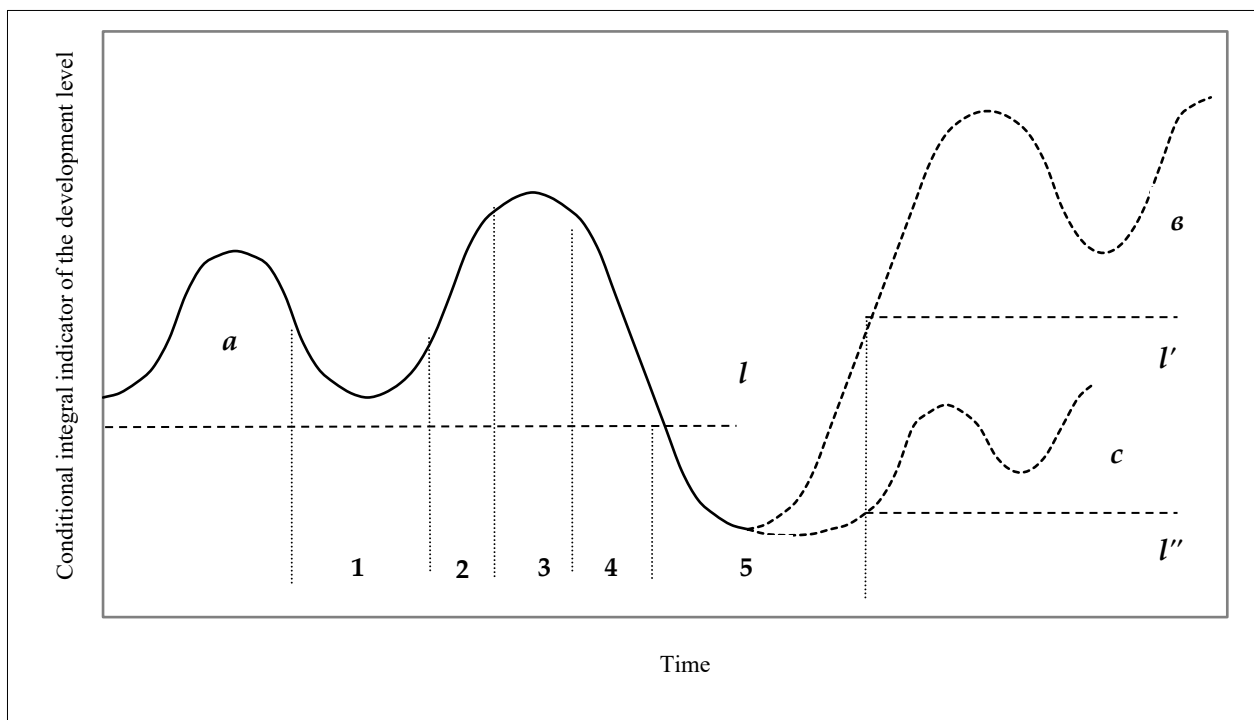
In addition, according to Burtseva and Voronov (2016, p. 48), there are two inevitable signs of approaching disaster:

1. Expansion of noise fluctuations prior to the point of catastrophe, being observed for a short time. This phenomenon is called micro-level life, which becomes notable and significant during a crisis of the system. In turn, macro variables lose their consistency and are eliminated;
2. Slowing the rhythms characteristic of the system, and even if oscillations are artificially induced in some way, it will be possible to observe their attenuation and an increase in low frequency.

Considering the catastrophe theory in terms of the theory of the transformation of socio-economic systems, it can be noted that the cusp is the limit of the system self-organization, and if it is reached, the self-organization function can no longer keep the system within the framework of the existing equilibrium forces. In this situation, it is transformed. The development level of a new system in relation to the predecessor system depends on the level of the new self-organization limit. (Figures 3 and 4 complement each other. The latter is a more detailed illustration of the generalized transformation process presented in Figure 3.) If the level of the self-organization limit is higher than the previous one (conditionally,  $l < l'$ ), it may correspond to the C–E trajectory; otherwise (conditionally,  $l > l''$ ), it may correspond to the A–C trajectory.



**Figure 3.** System metamorphosis process. Source: (Vasin 2007).



**Figure 4.** Dynamics of changes in the socio-economic system. Source: (Vasin 2007). Components of the graph of the dynamics of the socio-economic system: *a*—actual dynamics of changes in the socio-economic system; *b* and *c*—potential vectors for post-transformational change, where *b*—progressive post-transformational changes, and *c*—regressive post-transformational changes. Periods of dynamics of the socio-economic system: 1—deformation; 2—progressive changes; 3—stabilization; 4—regressive changes, recession; 5—transformation. *l*, *l'*, *l''*—self-organization limit lines of the system: existing (original), progressive, and regressive systems, respectively.

Changes (oscillations) of the system can be called deformations by analogy with elastic physical bodies, when the latter take their former shape after their deformation (deformation of a rubber ball). During deformations, the system does not lose the principles

of its construction, although it undergoes the stages of progressive changes, stabilization, and regressive changes. With serious deformation of the system, when the limit of self-organization is exceeded, system transformation or an abrupt change occurs.

It should be noted that the theory does not consider the impact of sudden factors on the system, potentially leading it to catastrophe (in our case, transformation). The catastrophe theory emphasizes the opposite situation: it is the gradual impact that leads to transformation. The concept of a gradual impact implies at least a theoretical possibility of observing its development, indicating that a catastrophe can be predicted.

The catastrophe theory can be used in relation to the economy, mainly to explain the spasmodic behaviors of socio-economic systems. On the one hand, the theory contributes to identifying the causes of transformation in terms of determining the essence, nature and trajectory of subtle dynamics that lead to the transformation of the system. On the other hand, the theory can contribute to the forecasting of transformations in case of timely identification of the key dynamics of any factors of the external and internal environments.

### 3.1.2. Theory of Pathoeconomics (Economic Pathology)

The key contributors to the theory of economic pathology are Gizatullin, Luzin, Pavlov ([Gizatullin and Pavlov 1995](#); [Luzin and Pavlov 1993, 1999](#); [Pavlov 2007](#)), Zagaitov, Yanovsky, and Yablonovskaya ([Zagaitov et al. 2009](#)).

A characteristic feature of this relatively novel and not universally recognized theory is a predominantly negative approach to economic dynamics. In fact, it studies economic crises and their causes, although it also investigates their prevention. However, unlike other theories and concepts, this theory associates crises with the emergence and development of so-called pathologies in socio-economic systems. According to this approach, the changes caused by such pathologies should a priori be negative. The emergence of this theory coincides with the transformation of the socialist space and the socio-economic systems of the states of the former socialist bloc; therefore, the theory is of Russian origin. The system of the socialist state was recognized to be ineffective, hence the predominance of the negative orientation of the proposed theory.

[Pronoza \(2013\)](#) associated economic pathology exclusively with the phenomenon of pathology in medicine. In fact, by drawing the maximum analogy, the author constructed a template scheme in which he replaced medical terms and definitions with economic ones.

[Pavlov \(2007, p. 52\)](#) specified crisis factors, forms and types of crisis conditions, the ways, and methods of its overcoming as the research areas of economic pathology. At the same time, various types of reforms, regularities, and specifics of crisis conditions and economic problems of the analysis of emergency situations are the subjects of economic pathology research. One can regard the theory considering options for overcoming crises conditions as its positive approach to the study of economic dynamics.

Particular attention should be paid to the fact that "... economic pathology is understood as a fairly long-term deterioration in the parameters that characterize the state of production systems" ([Pavlov 2007, p. 54](#)).

The question arises regarding whether the methodological apparatus of this theory can support the search for decisions on the readiness of the socio-economic system for unexpected impacts, as well as options for effective prevention of consequences.

In our opinion, a special methodological apparatus has not yet been created within the framework of the implementation of the theory proposed about 20 years ago. Those principles and approaches that have existed in economic theory have not changed much until now if we discuss the specifics of anti-crisis management in general. The authors of this field of research also made little progress in the methodology of the approach that they proposed. This lack of progress is verified by their various publications, which are rather similar to each other. In particular, in the works by the authors on economic pathology, which were published of more than 10 years apart, there is this statement: "Currently, this branch of the economy is in its infancy ... " ([Pavlov 2007, p. 53](#); [2018, p. 146](#)). It should

also be noted that the search engines of English-language scientific publishers do not return works with the keyword “pathoeconomics”.

There are numerous examples of economic pathology manifestations in the literature (Pavlov 2012; Dmitrieva 1992). However, the examples themselves do not yet form a scientific apparatus, which, in our opinion, has not yet been formed, and no patterns have been identified; therefore, this theory is actually present only to designate a group of problems in the economy. According to Yamilov (2015, pp. 74–75), the absence of a theoretical and methodological apparatus of economic pathology allows one to attribute this area of knowledge to transitional and crisis theories. Nevertheless, he attempted to search for the boundaries of the theory of pathoeconomics. As a result, the researcher came to the antithesis that underlies the process of defining the subject area with two opposing categories—the pathology and the norm. At the same time, the author identified the problem of defining the norm, stating that, without a clear definition of the norm, it is impossible to talk about pathoeconomics as a science.

Zagaitov et al. (2009, pp. 60–62) mentioned the relationship between the norm and the pathology, and they traced certain rules that characterize the theory of economic pathologies, in particular:

- Pathologies never lead to the collapse of economies; in other words, economic activity has never stopped, regardless of the economic pathologies (or their combination) that affect it;
- Local pathology can be recognized as the norm if, on a global scale, it leads to an acceleration of economic growth;
- Economic pathologies are not synonymous with economic contradictions;
- Criminal relations, in their pure form, do not correspond to economic pathologies.

Finally, it should be noted that the key aspects of the theory of pathoeconomics have been applied by specialists, as a rule, from the countries of the former Soviet Union. For example, Kazakh researchers have listed a number of characteristic forms and features of economic pathology in Kazakhstan (Myrzakhmetova and Khalitova 2021, pp. 25–26):

- Low diversification of the economy due to the country’s predominant orientation toward the development of export-oriented and extractive industries and the weak development of processing industries with high added value;
- Dependence on the world conjuncture of commodity markets and oil prices;
- Moral and physical obsolescence of fixed assets and of material and technical bases in various industries;
- Low quality of residential and commercial construction;
- Underdeveloped transport infrastructure;
- Low level of the development of education and science in comparison with developed countries;
- High level of the shadow economy (up to 35% of the country’s economy);
- Ubiquitous manifestations of corruption, both at the level of relations between business entities and in the highest echelons of power;
- Instability of the national currency.

As one can see, the listed pathologies are characteristic manifestations in many countries of the former Soviet Union, and they form a broad experimental basis for the theory under consideration.

In our opinion, this theory can currently be used as an integral tool for some global theories covering socio-economic dynamics on a larger scale. The reason is that, in other theories, particularly the cycle theory, the scientific apparatus is described in more detail and more clearly, allowing it to be used for fundamental and applied research.

### 3.1.3. Theory of Transition Economy

The key contributors to the theory of transition economy are [Buzgalin \(2002\)](#), [Ryazanov \(1990, 2001\)](#), [Kolganov \(Buzgalin and Kolganov 2001\)](#), [Balcerowicz \(2003\)](#), [Kolov \(2004\)](#), [Altman \(2010\)](#), etc.

Like the theory of pathoeconomics, the theory of transition economy emerged in Russia and in the countries of the former socialist bloc against the backdrop of the same historical events. For a relatively long time, this theory was called upon to explain the phenomena occurring at the transition of two formational phases—from socialism to capitalism—and to help accelerate this transition with minimal losses. Currently, the theory of transition economy extends to the dynamics that conditionally lie within the boundaries between the past and present systems. In other words, the object of this theory is the state of the system when both the old form and the new one are somehow present therein. A so-called bipolar structure is formed based on the interaction of various economic orders ([Brodskiy 1998](#)). According to [Ekubova \(2016\)](#), the theory of transition economy studies changes that take place in the transition from one system of economic organization to another, rather than within any system. The transition represents, in fact, a major and significant stage in the transformation of systems. The key reasons studied by this theory are various kinds of contradictions.

In this context, if we analyze the nature of intrasystemic contradictions in assessing the causes of systemic changes, then we study intersystemic contradictions and the struggle between the old and new systems in assessing the transition from one system to another. The resolution of such contradictions leads, as a rule, to a change in systems ([Ekubova 2016](#), p. 87).

[Altman \(2010\)](#) viewed the main problem of transitional systems as the inflexibility of traditional institutions to be transformed. Moreover, he noted that, in case success has been achieved, there has been active government action to shape the appropriate institutional parameters. Previously, [Gubar \(2000\)](#) noted that, by 2000, a significant decline in the economy had stemmed from a number of reform errors and institutional insecurity.

[Kolov \(2004, p. 141\)](#) specified the two types of transition economy depending on the original system. Evidently, in the first case, it is a transition from a command economy to a mixed one in the countries of the former Soviet Union; in the second case, it is a transition from a traditional economy to a mixed one in developing countries.

According to [Barkovskaya \(2012\)](#), in contrast to traditional systems—market or command—administrative—the transition economy is actually not an independent economic system, or rather, the transition economy does not represent any system since the command—administrative system has already ceased to exist, and the market system has not yet been formed.

Since the emergence and growth of contradictions are evolutionary processes, and the factors of unexpected influence are more sudden, the nature of changes as a result of their impact on the socio-economic system is somewhat different. At the same time, it is vital to note these factors as possible initiators of contradictions and, as a result, initiators of transient processes, although this relationship looks somewhat doubtful. Still, we do consider these processes to be largely evolutionary in nature.

However, there are similarities between a system that has encountered a sudden and unpredictable impact and a transitional system. These similarities are a high degree of uncertainty in both cases and a high risk of decision-making due to low predictability. [Susjan and Redek \(2007\)](#) specified such uncertainty in the case of transitional systems. According to the authors, uncertainty in the transitional economic environment is enhanced by such factors as institutional transformation, political and social instability, and legacies of the past.

Finally, it is especially important to determine the nature of the behavior of a socio-economic system in a transition economy in response to the impact of sudden factors, particularly those of a pandemic nature.

The theory of transition economy shows the barriers to economic development in the process of changing socio-economic models. Using the experience of countries that faced

changes in social structure will help to avoid many erroneous decisions and problems in the process of building a more highly organized system. However, since this theory should be considered in conjunction with other theories of economic dynamics, it provides a structure for making political and economic decisions, both in the field of correcting pathologies and in terms of building an institutional environment.

It should be noted that the emergence of a state of transition economy is predictable since the change in social formations is provided for by both dialectical and civilizational approaches, as well as other theories. One can foresee the transition to a new system that eliminates current contradictions provided that the problem of social contradictions in the current system is understood. At the same time, one should not forget that a sharp transition is fraught with an excessive number of new intersystem contradictions, which can cast doubt on the very fact that a new, “targeted” way of life can be achieved by the socio-economic system.

One should remember the risks of unbalanced replacement of one order by another in the process of transition. On the one hand, a collapse is inevitable in case of a breakdown of the old system without the readiness of new institutions. On the other hand, if new institutions come into force along with functioning old ones, a serious conflict and recession can be expected until the restoration of the old system (Brodskiy 1998; Soukup and Rozmainisky 2018).

#### 3.1.4. Cycle Theory

The key contributors to cycle theory are Hayek (2018), Kondratiev (2002), Lescure (1908), Schumpeter (1939), etc.

This theory combines a set of theories that characterize the wave dynamics of the development of society. The classification feature of theories is most often the period during which the full cycle of the wave passes—from the beginning of the upward period of the wave to the end of the downward period.

A number of studies have led to the emergence of models that represent relatively shallow changes that do not lead to a significant transformation of society. These changes are short Kitchin cycles of 3–3.5 (2–4) years, industrial and capitalist Juglar cycles, classic investment cycles (7–11 years), medium-term Kuznets cycles (15–25 years), etc. There are more complex models to explain and predict deeper transformations, including the change of order, formation, and civilization. These theories include Kondratiev’s theory of large cycles of economic conjuncture (47–60 years) and secular logistics cycles (150–350 years).

Evidently, these cycles are superimposed on each other, and shorter Kitchin or Juglar cycles, for instance, are naturally observed in the course of a large cycle.

It can be said that the theory of cycles justifies the objectivity of fluctuations in the process of development of society, distinguishing it from neoclassical economic theory, which claims that the economic system always strives for equilibrium (Akaev 2022, p. 14).

Many authors have argued over the causes of cyclicity, which form the basis of such theories as Hawtrey’s monetary theory, the theory of overaccumulation, the theory of underconsumption, “psychological” theories, theories linking the economic cycle with the harvest, the theory of the commercial and industrial cycle, etc. (Haberler 2005).

Kondratiev (2002) explained the large cycles of the economic conjuncture by the mechanism of “aggregation, accumulation and dispersion of capital sufficient to create new main productive forces” (Figure 5).

The cycle stages are characterized by the following patterns (Kondratiev 2002, p. 400):

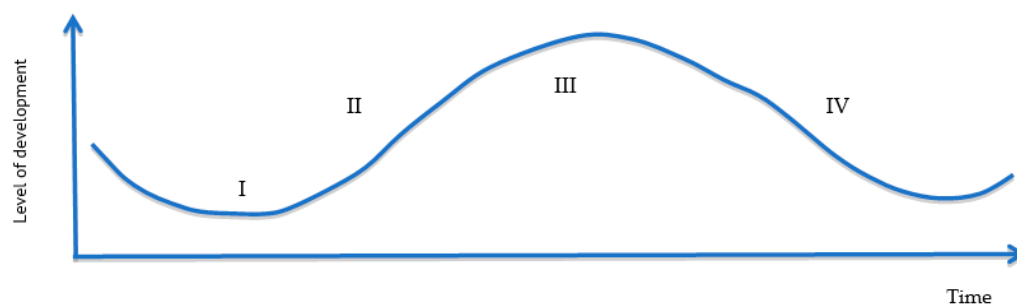
I. Aggregation and accumulation of capital reach such a tension that it becomes possible to profitably invest capital to create the basic productive forces and radically re-equip technology;

II. An increase in the pace of economic life, which is complicated by medium-term industrial and capitalist cycles, causes aggravation of the social struggle and the struggle for the market and external conflicts;



III. The rate of capital accumulation weakens, and the process of dispersion of free capital intensifies. Strengthening of these factors causes a change in the pace of economic development and its slowdown;

IV. A slowdown in the pace of economic life causes, on the one hand, an intensification of searches in the field of improving technology and, on the other hand, the restoration of the process of capital accumulation in the hands of industrial, financial, and other groups, largely due to agriculture.



**Figure 5.** Stages of the Kondratiev cycle.

Kondratiev argued that the causes of cyclical dynamics are endogenous. In other words, the prerequisites for cyclic changes are within the system. Therefore, in fact, cyclical-ity is inevitable, just like deviations from the equilibrium dynamics according to neoclassical postulates (Akaev 2022, p. 14).

There are some inherent questions that arise. What will be the reaction of the cyclic development trajectory when sudden factors appear? Will it change? How will this change affect the duration and direction of the cycle? We have not found answers within the framework of the existing theories of cycles. Nevertheless, the fact of the occurrence of such an influence is probable both at the upward stage and at the downward cycle stage.

### 3.2. The Second Group of Theories: Transformation as Part of Socio-Economic Dynamics

#### 3.2.1. Evolutionary Theory

The key contributors to the evolutionary theory are Schumpeter (2008), Nelson and Winter (1982), Veblen (2007), Mayevsky (2020), Grechko (2015), etc.

Unlike a number of theories, in which the process of changes in the development of society is indicated by a rather sharp transition, the evolutionary theory considers socio-economic dynamics as a gradual successive process, similar to that of biological evolution.

This statement has been updated with the level of development of society. Thus, the modern knowledge-based world, which has entered the stage of the “information economy”, evaluates the economy according to biological and natural laws, rather than technological ones. The provisions of the evolutionary theory are premised on the spontaneity and irreversibility of changes arising under the influence of the external and internal environment; on the mechanism of changes based on variability, inheritance, and selection; on recognizing the significant influence of institutional and other non-market factors on the activities of firms; and on causal relationships as regulators of the direction and pace of economic evolution (Akerman 2011). At the present stage of development of economic reality, the features of evolution manifest themselves in the high speed of economic processes, with dynamism being the factor of stability (Lebedev and Lebedeva 2019).

According to Grechko (2015, pp. 13–14), the evolutionary process has specific features. First, the process of system development is of a cumulative character. Accordingly, the reaction to a certain limit of savings is a qualitative transition of the system to a new level at a certain point in time. Second, the evolution of systems occurs on the basis of continuity. In other words, the new system is based on the capital of the old system, and it absorbs the most effective development mechanisms and institutions.

The author argued that, in the process of evolution, there is a change in the main parameters of the system due to the activation of the mechanism of adaptation to new challenges from external factors (Grechko 2015, p. 16). He developed a list of adaptive reactions of the economic system to the external environment challenges at the stage of post-industrial development (Table 5).

**Table 5.** Adaptive reactions of the economic system to the external environment challenges characteristic of the post-industrial stage of development Source: (Grechko 2015, p. 20).

External Challenge	Adaptive Reaction
Development of management and strengthening of global competition	Orientation of production and economy to the individual consumer. Customer relationship management (CRM) strategies, service quality (ServQual) management models, decision support systems, and virtual enterprises are created.
Change of the dominant development factor—from industry to knowledge, innovation, and information	Development is determined by novel advances and technologies; organizational knowledge forms the basis for effective work; intangible assets dominate over material ones. There is widespread application of innovative technologies and advanced training of workers; the economy is adapted to changing needs.
Transformation of the role of science	Science becomes the sphere of “knowledge generation” and the key productive force. There is growing use of high technologies; highly qualified employees are the basis for the development of the economy. Smart technologies and learning and adaptive systems become the basis for the progress of the economy and society
Transformation of the role of education	The sphere of education becomes the main sphere for the reproduction of intellectual capital, which is in demand to ensure the process of post-industrial transformation. Education is focused on the process of extracting new knowledge; there is an integration of research and training.
Synchronous flow of several technological revolutions: energy, silicon, and information revolutions	Development of new technologies enabling the extraction of shale hydrocarbons. Decrease in the exchange rate of oil by 2 times. Development of technologies that allow for transforming sand into glass greenhouses and further development of deserts. Sharp increase in data-processing speed. The inability of the human brain to rapidly assimilate increasing volumes of information.
Limitations of cognitive capacities of human intellect	Development of the concept of technological singularity by Ray Kurzweil, combining the capabilities of natural and artificial intelligence. The use of nanorobots for military and medical purposes.
Transformation of the nature of economic growth	The main driver of growth will be technological change. The pace of change will be faster. The economic growth driver will be human imagination and innovation.
Increase in the rate of adaptation of economic agents	Demand for the concept of predicting change. Transition to management based on forecasting.

Table 5 provides vivid examples of movement within the evolutionary theory. The system gradually responds to external challenges with internal changes, which in most cases are considered positive dynamics that allow for raising the level of development.

It should be noted that the evolutionary theory considers not only economic but also a number of other factors crucial for the evolution of economic systems. In particular, these factors are technologies and institutions and specific sources of economic growth (Akeliev 2013). This fact inevitably confuses the understanding of the laws of evolution in general. However, numerous elements do not always lead to an increase in unpredictability, but the role of their interaction is important (Kozhevina and Tsvetkov 2005).

At the same time, the recognition of the probability of occurrence of unexpected challenges, including pandemic challenges, by the evolutionary theory is still an unresolved issue. It should be remembered that there are random genetic anomalies and mutations that are vital for biological evolution. The emergence of sudden pandemic factors that change the course of gradual evolution can be considered an analog to the socio-economic system.

The evolutionary principles in the development of socio-economic systems can justify the progressive movement in their advancement. It should be expected that the system development path can be predicted under stable and favorable conditions created by the external environment.

At the same time, the evolutionary theory cannot explain the restoration of the old forms of social order, which is possible in the process of social dynamics. However, the most serious limitation, in our opinion, is that social evolution can be replaced by the evolution of the private interests of the ruling elite, which often contradict the criteria for the development of the socio-economic system.

### 3.2.2. Institutional Theory

The key contributors to the institutional theory are [Veblen \(2022\)](#), [Hobson \(1927\)](#), [Commons \(2004\)](#), and [Galbraith \(2018\)](#).

This theory is based on the functioning of various institutions, expressed in norms and rules, both formal and informal. The effectiveness of the development of the socio-economic system largely depends on the nature of the existing institutions, their adequacy in the perception of society, and the discipline of their implementation.

Despite economic theory and institutional approaches not having a close relationship and attempts to analyze institutions using neoclassical science showing serious limitations ([Pasinetti 2021](#)), the institutional theory is not isolated from other theories of economic dynamics. Moreover, the nature of institutions can be a factor explaining the cyclical dynamics of the development of society. This relationship was shown quite clearly by [Yerznkyan \(2020, p. 121\)](#) in comparing “institutional structures” with wave dynamics (by analogy with technological structures that traditionally determine the Kondratiev cycles). The institutional structures change simultaneously and in combination with technological structures, and these processes are inseparable from each other; rather, they are complementary. It is in this coupling that they more reliably explain the presence of long waves.

Following the vectors established in the institutions of society allows the subject to move without any obstacles, ensuring higher economic efficiency than with the violation of accepted or recognized rules. The latter may incur economic losses of various kinds ([Barkovskaya 2012](#)). Hence, there is the manageable nature of building institutional societies and the possibility of preparing an institutional cushion for strategic and tactical plans. At the same time, unexpected factors can disrupt the established institutional structure, and the more threatening that such factors are, the greater that the discrepancy between the reaction of society and established institutions can be.

In comparison with neoclassical theory, in which price and quantity indicators were mainly used, neo-institutionalism considers a much wider range of parameters: quality, a system of penalties, conditions and consequences of deviations from the schedule of deliveries and payments, etc. Such variety makes it difficult to predict the dynamics of some influence and changes in any parameter ([Shpaltakov 2018](#)).

The key issue in neo-institutional theory is to consider the costs of interaction—transaction costs ([Yerznkyan 2020, p. 122](#)).

### 3.2.3. Synergetic Approach

The key contributors to the synergetic approach are [Prigogine \(1985\)](#), [Haken \(1985\)](#), and [Zhang \(1999\)](#).

The approach focuses on structural changes in the development of systems, bifurcations, and chaos, i.e., nonlinear phenomena in the evolution of socio-economic systems. According to [Zhang \(1999\)](#), economists use simplified approaches that take the stationary state as the main assumption, which is practically never found in the real economy. The economy most frequently faces economic cycles, irregular fluctuations, and chaos.

According to this approach, the main properties of economic systems are instability, disequilibrium, changing chaos, and self-organization. In contrast to traditional approaches within the neoclassical synthesis, synergetic economics allows for explaining and even

predicting some dynamic processes, despite the primary attention paid to instability (Zhang 1999; Surkova 2019).

The synergetic approach is characterized by the following postulates (Chernyshova 2008):

- Systems have different levels of organization; there is chaos in the transitions between levels;
- Formation of new systems is accompanied by the spontaneous formation of new qualities;
- Combination of system elements and subsystems into a single whole does not mean that a new formation (new system) will be equal to the sum of all the combined parts;
- System disequilibrium is the source of the formation of a new organization;
- Organizations of different levels are open systems;
- Bifurcation points operate in systems under non-equilibrium conditions, etc.

Arguing over the postulates of synergetics, we can conclude that unexpected factors of influence include both unpredictable ones and those that could have been foreseen. In fact, the behavior of the regulator will be similar in both cases. Moreover, the readiness of the system for unexpected impacts will be positive in the event of such unpredictable factors. Let us assume that the system has been in equilibrium for a long time, and the regulators do not consider any possibility of failure of the usual order. Provided that such an impact happens, the system goes beyond the scope of controlled regulation and falls into a state of chaos. The speed of the system self-organization will depend on its readiness to “turn on” adaptive elements to reduce negative impacts on its own elements and connections. The adaptive elements can both reject the impact and transform under its influence, if necessary.

Zhang (1999, p. 309) considered the possibility of the impact of external random factors, associating the reaction thereto with human competence. He regarded the emergence of random events as inevitable, even if we could find “deterministic mechanisms that govern the course of human life”. Discussing a specific person, the author believed that there is always a chance to successfully cope with a random impact due to our ability to learn. In other words, the learning function increases the resistance of a particular individual to the influences of the external environment.

The undeniable statements present in the framework of the synergetic methodology still have shortcomings regarding the absence of or weak argumentation of measures to exit the state of structurelessness. The approach fails to resolve the following questions. Where are the beginning and the end of the transformation process? How does the depth of transformation depend on the initial conditions?

Moreover, the insidiousness of synergetics lies in its uncertainty, in which the measure of responsibility for the decisions made and the formed strategy is reduced. As a result, subjective arbitrariness in actions aimed at solving objective problems is not excluded (Evstigneeva and Evstigneev 2007, p. 55).

In addition, in practice, this approach is sometimes used as a panacea, instinctively hoping that the system will find the most favorable state (the state of maximum entropy) by itself, but this feeling is deeply misleading because of the openness of the socio-economic system. External influences will constantly reduce its entropy. In addition, a favorable position for the system does not mean a positive state for all its components. Since we are talking about humans, it is unacceptable to assign their fate under “blind regulation” (Vasin 2007).

### 3.2.4. Civilizational Approach

The key contributors to the civilizational approach are Danilevsky (1991), Spengler (1998), and Toynbee (2010).

The concept of civilization is most often considered as opposed to the formational approach, the dynamics of which are based on a system of contradictions in production relations. The latter are gradually growing and, ultimately, lead to a change in formations through a revolution or peacefully. A characteristic feature that distinguishes the dynamics of the civilizational approach consists of the changes in the system of civilizational and spiritual values.

At the beginning of the 20th century, attention was paid to the civilizational concept of social development as a “theory of several researchers”. Thus, Danilevsky identified 20 cultural–historical types, Spengler recognized eight cultures that had reached maturity, and Toynbee introduced the concept of local civilization and development stages (Dibirov 2019, p. 455).

Modern researchers have dwelled on the specifics of current civilizational development and have predicted future civilizational changes. The concept of a post-industrial civilization has been introduced, and a search for solutions to global problems on the path of the development of a planetary civilization is under way (Sabden 2016, pp. 23–24). The level of current challenges highlights the issues of human survival, degradation, and the destruction of civilization. Natural anomalies, climate change, uncontrolled growth of the global population, ongoing armed conflicts, the struggle for access to limited resources, and the consumption of non-renewable resources that destroy vital ecosystems of the planet are accompanied by a fundamental crisis of ideas and principles of social organization (Arutyunov 2012).

Let us consider the issue of the classification of civilizations. According to Chetvernin (2014, p. 187) and Zaostrovtssev (2019, p. 160), it is expedient to divide the whole world into potestiar and legal civilizations. The first civilization considers a person as an element of a single whole—the people, the state, etc.; the second one is characterized by the freedom and autonomy of individuals. Table 6 presents the designated types of civilizations, along with the intermediate ones with a bias toward potestiar or legal civilization.

**Table 6.** Typology of industrial civilizations. Source: Chetvernin (2014, p. 187).

Legal Civilizations	Mixed Civilizations		Potestiar Civilizations
Capitalism	Western social capitalism	Eastern social capitalism	Communism
Developed legal order	Mixed type based on the developed legal order	Mixed type based on the undeveloped legal order	Totality of potestiar (power) order

The researchers of this approach have noted that global changes, such as earthquakes, happen everywhere. They are very difficult to predict since the place of their appearance is often unpredictable. As a result, unforeseen factors enforce taking measures in advance to smooth out potential excesses. These measures are of particular importance for influential and power structures, as they can prevent people from being distrusted in the future (Sabden 2016, p. 26).

Based on a global and planetary character, the civilizational approach poses a special challenge in resolving the problems of sudden impacts. In terms of developing the conditions for a society’s readiness for a sudden impact of unforeseen factors, the simplified classification makes it easier for us to present the reaction of the systems of various civilizations and simplifies the development of conditions for their perception of such an impact.

At the same time, the civilizational theory reveals special limitations of the process of fundamental transformations. The fact is that transformation, as a stage in the development of society, can be accompanied by rapid economic and legal changes and a change in the socio-economic structure. However, the delayed transformation of socio-cultural values, as a rule, causes a major protest of society in response to many, even most, progressive transformations. A comprehensive study of the systemic unity of the relationship of various factors in each specific territory, according to the methodology of the civilizational approach, will allow for developing strategic guidelines for the functioning and development of both global civilization and the subjects of a particular state. Meanwhile, these features limit the rapid response to the impact of sudden shocks, provided that the decisions are made on the basis of the civilizational theory. There is a high probability of failure of individual components of the social system, which most painfully react to unpredictable influences.



At the same time, we note that the hypothesis suggested with the assumption that there are no certain rules in the existing transformation theories that show some patterns of actions under the unexpected impact of shock factors, as well as the rules for predicting the behavior of the system, was confirmed. In fact, there is a problem that needs to be solved at a theoretical level to subsequently develop practical actions to mitigate such an impact and generate the system readiness for the occurrence of such factors.

Evidently, there are many indicators of the performance of industries, regions, and the state as a whole, which signify the depth of transformational changes and, accordingly, are indicators of global transformations. However, this variety is the prerogative of empirical research, and we present review material that serves as the basis for such studies. For example, we have presented a comparative analysis of industry transformation during periods of crisis and stable growth (Vasin 2022a) and have studied socio-economic dynamics during the pandemic compared to the pre-pandemic year, evidenced in changes in the socio-economic models of various states (Vasin 2022b).

#### **4. Prospects for the Development of Theories to Define Unpredictable Processes Causing Global Crises and Transformations**

Any society can be exposed to unexpected shock factors. The consequences of such an impact depend on the readiness for it. In other words, we are discussing the level and nature of society's stability. As seen above, the existing theories of transformation most often bypass the problem of the system response to sudden shock factors. However, much attention has been paid to the problem of resilience in the literature.

According to one of the concepts of resilience, it should be considered by dividing it into three components: onsite capacity, instantaneous survivability, and the recovery potentiality of an area. Each component of the framework depends on two or three factors that can be measured using different indicators. For example, onsite capacity is the ability of a given place to withstand a disaster before it arrives, and it has been considered indispensable for the prevention of devastating events. Instantaneous survivability is the power to be alive at the point of a disaster climax. Returning speed to normal daily routines once a catastrophe is over is called recovery potentiality. The level of development of these components determines the level of resilience, and different societies are strong in different components: either at the level of resistance to shocks or at the pace of recovery, resulting in similar consequences (Pushpalal et al. 2023). This framework can form the basis of various unexpected shocks, including pandemics. At the same time, it is vital to understand the specifics of stability in each virtually typical situation.

For example, if a pandemic is expected as an unexpected shock, the areas of appropriate preparation and response should be identified to create an image of a predictable event. These measures can be infrastructural, institutional, and socio-economic. It is necessary to emphasize the criteria and indicators of evaluation and to determine the normative and maximum permissible values in each group.

The measures can be decomposed into pandemic phases. These phases can be based either on the three-phase framework (Pushpalal et al. 2023) or on more detailed options, such as the five phases of the resilience cycle: normalcy, deterioration, adaptation, recovery, and growth (Patterson et al. 2009); or a six-phase sequence (Vasin 2022b). An important criterion is the nature of knowledge transfer at different phases of the shock factor. There have been special studies of knowledge transfer processes in cases of various kinds of critical situations, including natural disasters (Ahangama and Prasanna 2021).

Due to the specificity of various theories of transformation, we are planning in the future to specify the solution to the problems of socio-economic dynamics in the event of sudden shock factors.

#### **5. Conclusions**

To perceive the transformation of socio-economic systems is urgent for society. Deep transformations change both the rules and the approaches to solving various issues and



problems, as well as the very thinking of a person. Scientists have been trying to unravel the patterns of behavior of socio-economic systems for centuries.

In accordance with the goal, we have made an attempt to review the patterns of socio-economic dynamics presented in the studies and, accordingly, the best-known theories and to compare the approaches to explaining the variability of society. Some theories dwell on socio-economic development as a whole (cycle theory, the evolutionary theory, the institutional theory, and synergetic and civilizational approaches); others focus on the transformation of society (catastrophe theory, the theory of pathoeconomics (economic pathology), and the theory of the transition economy). The latter characterizes a specific social transition in the development of the system (from socialism to capitalism in the countries of the former socialist bloc), while other theories specify different periods of development. Finally, catastrophe theory, the theory of pathoeconomics, the theory of the transition economy, and cycle theory are characterized by a limited number of factors, while the evolutionary theory, the institutional theory, and synergetic and civilizational approaches possess a wide range of criteria.

A promising research area is the advancement of transformation theories in terms of finding specific explanations for the appearance of unpredictable catastrophic impacts, as well as managing global failures with the least losses. Any society can be exposed to unexpected shock factors. The consequences of such an impact depend on the readiness for it. In other words, we are talking about the level and nature of society's stability. At the same time, it is vital to understand the specifics of stability in each virtually typical situation. For example, if a pandemic is expected as an unexpected shock, the areas of appropriate preparation and response (infrastructural, institutional, and socio-economic measures) should be identified to create an image of a predictable event. It is also necessary to single out evaluation criteria and indicators and to determine the normative and maximum permissible values in each group.

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