

## CHAPTER «INNOVATIVE ECONOMY AND SUSTAINABLE DEVELOPMENT»

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DOI: <https://doi.org/10.30525/978-9934-26-634-8-7>

### REGULATING THE ECONOMIC VALUE OF NATURE: DIGITAL ECONOMIC CALCULATION

#### ***Summary***

*The emergence of economic relations based on the new approach creates conditions that have a significant impact on the way of social life, the function of public institutions and the role of the state in general. The correct conceptualisation of these conditions allows for the realisation of appropriate policies, regulations and strategies. The paper analyses the regime of accumulation and regulatory alternatives that may emerge in the process of the rise of the green economy. The regulatory approach allows to understand the causes of the current crisis associated with accumulation at the stage of economic development and to prepare appropriate policy-making proposals for the provision of new economic relations. The research evaluated the green economy in terms of its regulatory approach and theoretically analysed the results in comparison with Fordist and post Fordist forms of economic organisation. As a result, it is concluded that there is a new economic organisation, which we can define as "cyber Fordist", in which smart and green economy coexist. The need to consider the invisible hand of nature in the new economic organisation and the inadequacy of the unidirectional development of the political economy of the environment have been identified as important issues.*

#### **Introduction**

In recent years, the political and social institutionalisation of the green economy, which aims to reduce carbon emissions, use resources efficiently, reduce the loss of biodiversity and natural products, and reduce pollution, has accelerated. The green economy proposes a range of restrictions, public spending, reforms and tax regimes to achieve environmental objectives. Starting in 1992 with the Rio Convention on Climate Change and the

Environment, which covered almost all the countries of the world, the new economic organisation process has become more evident in economic relations and social life with the Paris Agreement in 2015 [1]. Thus, the Global Carbon Market Mechanism (GCMM) was established for the emission reduction markets that realise the green economy. The Clean Development Mechanism (CDM), the Emissions Trading System (ETS) and the Voluntary Carbon Market (VCM) are the entities of the green economy, where increasingly large amounts of capital are accumulated to address environmental problems [2]. Despite the widespread recognition of these trends, there is a lack of rigorous theoretical research on the conceptualisation of different aspects of environmental economic regulation and the determination of the political economy of these regulations. The main task of the research is to determine the theoretical basis of the mode of regulation and the accumulation regime of the new economic formation. The theory of regulation used in the article is defined as the research approach and the limit of the study.

The literature history of previous studies on the green economy from the perspective of regulation theory spans the last 20 years. For example, Chester Lynne has used regulatory theory to examine the relationship between the economy and the environment, Böhm Steffen, Maria Ceci Misoczky and Sandra Moog on carbon markets, Harvey David on the space of global capitalism, Lipietz Alain on political ecology and environmental economics [3; 4; 5; 6; 7]. In contrast to these authors, in our article we provide an economic model of the possibilities offered by the organisation of the current new economy, which we define as cyber Fordism, for the realisation of the green economy and its functioning.

The study first emphasises economic calculation, which we have identified as the basic element that enables the green economy to function. In particular, the new conditions in which the digital transformation has been realised have created opportunities that can be concluded in discussions on economic calculation. These opportunities play a key role in solving problems such as the determination of ecological value, carrying capacity of the environment, carbon emissions in the green economy. As examples of studies on the relationship between economic calculation and green economy, Ling Yang, Fan-Long Kong, Min Xi, Yue Li and Sen Wang provide the calculation of environmental economic value, Peng Minjing and Jiajia Fan provide the statistical evaluation of green economy, We can mention the natural calculation of Otto Neurath by Cockshott Paul, the techno-economic calculation by Arne Burdack, Luis Duarte-Herrera, Gabriel Lopez-Jimenez, Thomas Polklas and Oscar Vasco-Echeverri. All studies are dominated by the view that economic calculation plays a key role in the viability of the green economy [8; 9; 10; 11]. Unlike these studies, in this article, economic calculation is evaluated in terms of digital and cybernetic conditions and used as a fundamental element in the

conceptualisation of the green economy, smart economy, accumulation regime and mode of regulation.

The study of economic calculation also helped in the conceptualisation of the new model of regulation of economic organisation and in the identification of plan and market preferences. From the point of view of "Digital Cybernetic Regulation", the digitalisation of economic calculation has increased the possibilities of plan economy and made it possible to regulate the balance between market and plan. The main feature of the "Smart Accumulation Regime" proposed in the paper is the co-regulation of plan and market economy through the "Green Cybernetic Regulatory Scale" model. The main thesis of the paper is also that nature is not a passive player in the green economy and should be considered in economic regulation, such as carbon pricing. Lipietz Alain argues that the main reason for the lack of interest in environmental economics on the part of regulators is that environmentalists act politically rather than ecologically [6]. Therefore, the article recognises that regulatory theory, which recognises the immature aspects of the green economy, has the potential to provide fruitful solutions.

The use of abstract logical and hypothetical deductive methodology in the research makes it possible to apply empirical data after conceptual conclusions. The study makes a retrospective evaluation of the formalism of economic organisation through the green economy. The results show that the green economy can be realised in a new form of economic organisation, which can be defined as "cyber Fordism". As a result, the "Green Cybernetic Scale" model is developed, which characterises the dualism of plan and market in the evaluation of the mode of regulation that enables green accumulation.

### **Chapter 1. Fundamental element of the green economy: economic calculation**

The green economy differs from the conventional economy in that the value of goods and services is determined not only by their production and marketing costs, but also by their impact on the environment. In the green economy, all economic relations are monitored by means of digital technologies, and the damage to the environment in the production and consumption processes is calculated. Concepts such as ecological footprint or carbon footprint are measures created to calculate the impact of economic activity on the environment [12; 13]. These eco-economic criteria enable new accumulation and the determination of forms of regulation. The practical history of the idea of subjecting the economy to quantitative calculation is not new. It dates back to the "debate on socialist calculations" in the 1920s.

The debate on socialist calculations started with the problem of how economic calculation (regulation) would be realised for the implementation of planning in a socialist economy where capital and the market do not drive

regulation and there is no private ownership of the means of production. Ludwig Mises argued that the planned economy has the problem of rational allocation of resources, citing the market economy as an example where demand and offer have a regulating and determining role. In a market economy, the price of the product provides information about the demand for the product. Deprived of this information, it is not possible for the planned economy to properly utilise the means of production [14]. The efforts of the planners (managers) of the socialist economy, who do not have precise information about the value, to eliminate the inaccuracies in the value-price determination cause economic costs, redetermination of resources and social injustice.

According to Friedrich Hayek, the economics of centralised planning, carrying out the allocation of resources, gives rise to managers who often confiscate resources and impose penalties in order to ensure the effectiveness of the plan [15]. Bryan Caplan argues that the source of the economic defects of socialism is not related to the lack of economic calculation, as the Austrian school suggests, it is related to the weak incentives arising from the system of party rule [16]. In fact, by denying economic calculation in this way Bryan is on the other hand defending Hayek's view. In fact, unsuccessful economic planning of the party power is at the same time a failure of the Soviet rulers.

Otto Neurath claims that it is possible to realise economic calculations on the basis of natural products instead of financial calculations, giving the example that the military economy in wartime is based on natural products. According to him, it is insufficient to use only one currency or energy unit in economic evaluation. All information of social life, such as population groups, consumption preferences, education, illness, mortality, family life and workplace, enables economic calculation [17]. This approach plays the role of a central idea for the viability of the green economy. It was thought that by using information on available resources and consumer preferences it would be possible to determine the required production quantity and price. Of course, the information processes and technological state of the art at that time did not allow for the processing of the large volumes of information that we now recognise as big data.

The rise of cybernetic science, reflected in all areas of social life, has led to the idea that if the economy is evaluated as a management system, the problem of economic calculation will be solved. The use of today's digital technologies and powerful computers as important tools in the cybernetic planning and calculation of the economy offers new solution alternatives in the economy. In 1972-1973 in Chile practiced computerised planning and control of the economy. Normally, the statistics for the economic policy making of the government is delayed for 4-5 months due to the traditional methods. The decentralised interactive social economy regulation system of the SYBERSEN project, led by Stafford Beer, eliminated the problem of delays

and provided immediate information for government policy-making [18]. The computer network established within the framework of the project enabled the mobilisation of transport resources for the transport of products in the Allende government of the time [19].

The information age, which became more widespread in the early 2000s with the third industrial revolution, made it possible for economic activities to be fully integrated into digital systems. The transformation of economic activities has given rise to trends such as the knowledge economy or the digital economy, in which information and digital products are valued. This is an era in which the value of economic products is determined by completely different social preferences and dynamics, in which performance and marketing have become important in social economic relations. It has been a matter of debate to consider this era as a new stage of capitalism or as a post-capitalist (informationalism) formation in which society is undergoing new class stratification. This has made it possible to look at the problem of economic calculation through a new prism [20]. Oskar Lange, in his 1967 study "The computer and the market", equates the market with a computer by likening it to a computing device [21]. With the integration of social life into internet networks, which enables the accumulation of production and consumption information in large volumes, we can conclude that the market has been replaced by digital networks and the function of the market by computers (algorithms).

The recent development of the economy, followed by digital social transformation, has brought about changes in the class structure of society, new forms of organisation of production and new behaviour of consumption, new functions of social institutions and new areas of responsibility. Digitalisation has had the effect of increasing the possibilities of accumulation and processing of economically meaningful information, solving the problem of calculation [8; 11; 22; 23; 24; 25; 26; 27]. This situation has affected the supporters of the socialist plan economy and the supporters of the green economy the most. We can say that the attempt to regulate the economy on the basis of calculation has been one of the main problems of the development of economic thought until today. Economic calculation has always been of interest to socialists and neoclassicists for the feasibility of intervention, restriction and complete control in economic life to ensure accumulation. But why is economic calculation important for the green economy? How is it related to the accumulation regime? The answer to this question will be discussed in the following part of the research within the framework of the evaluation of the green economy in terms of regulation theory.

## **Chapter 2. Digital cybernetic regulation of the green accumulation**

The reason for the emergence of the regulation approach is related to the French economists' search for answers to the questions related to the economic crisis after 1973. "How to ensure long-term economic order?", "How to ensure a new economic order?", "What are the main causes of economic crises?" – questions similar to those addressed by the regulatory approach. Certainly, from the perspective of political economy, the regulative approach, which takes into account different answers to these questions, has been attempted to be analysed by embracing a variety of theories. These include the neoclassical approach to economic equilibrium without an institutional framework, the imbalance theory which argues that there is no balance of supply and demand, the world system theory and the monopolistic investment (monopoly capital) approach, flexible specialisation [28], and the techno-economic approach which includes many theories such as creative destruction.

The formation of industrial society led to changes in the labour sphere based mainly on capital accumulation. For this reason, one of the main concepts of the regulation school is the "accumulation regime" [29]. An accumulation regime is the type of production and consumption of goods and services that are bought and sold. The accumulation regime includes the norms of production and labour, principles of income distribution, types of demand and consumption norms in the market, rules of joint management of industry and trade, forms and relations of change between industries. According to the regulation school, industrial economy is based on capital accumulation. The analysis of capital accumulation led to the analysis of the dynamics of capitalist economy.

According to the regulatory approach, the state, at different stages of economic development, chooses a form of market or interventionist regulation to ensure capital accumulation. These regulations adopted by the state at different stages led to further growth and global scale of investment. For example, in the early stages of industrialisation, the state separated serfs from land and encouraged them to work in factories. From a public administration perspective, a mode of regulation is a set of institutional practices, norms and policies that provide a new regime of accumulation induced by economic crises and lead to social reproduction. Lipietz Alain views mode of regulation in the context of reproduction. He defines the mode of accumulation as "long-term stability in the allocation of social production between consumption and accumulation". At the same time, he defines the mode of regulation as the rules and norms of behaviour that affect accumulation [30]. The existence of a crisis indicates that the mode of regulation is not appropriate to the regime of accumulation. Over time, regulatory theory has been transformed into a more complex framework by analysing it through different concepts in different fields. Bob Jessop cites the fields of growth

regime, international strategy, regional advantage and hegemonic blocs as examples. Thus, the regulation school has divided into different currents [31].

Classification of public service in terms of accumulation regime and mode of regulation in the process of historical development is presented in the work of Aslan O. E. "The regime of public personnel: from status law to flexibility" [32]. Aslan O. E. characterises 1914-1945 and 1973-1980 as periods of transition and restructuring. He argues that in the post Fordist period, which characterises the regime of flexible accumulation, the rise of globalisation and the global scale of accumulation led to global monopolists taking a place above the state in the hierarchical order. In the regulation of global monopolists, the main determinant actor is these global monopolists, not the state. In my view, this approach questions not only the role of the state in the post Fordist period, but also its anthropological nature.

Accumulation as a process of adding productive capital to invested capital is closely related to capitalism and its dynamics. Over the last three centuries we have seen different types of capital accumulation. There are three main modes in this set: extensive, intensive and flexible. Since in the extensive accumulation regime, technology had not yet been fully worked out, excess costs were increased by lengthening working hours. The state regulated the legal basis of economic activity, interfering minimally in economic and social life. The living conditions of the working class were determined by the market. In general, in the extensive accumulation regime, capital was extended to new spheres of activity. However, in the intensive accumulation regime, existing capitalist activities are reorganised and accumulated to increase the relative share of surplus value [31]. The Fordist form of production organisation remained stable until the 1970s under monopolistic regulation and the intensive accumulation regime.

In contrast to the extensive accumulation regime, the intensive accumulation regime actively used technology. The mode of regulation of the intensive accumulation regime, relevant for the Fordist organisation of production, included mass marketing, monopolistic competition and active intervention of the state. The management of working conditions was organised in accordance with mass marketing. For example, staff wages were adjusted according to price changes in order to remain stable [30]. Capitalism was organised in a regime of intensive accumulation in accordance with the idiom 'job and employment security for all' and 'consumption opportunity for all'. The regime of intensive accumulation, considered as the Fordist era, is based on a special labour process and production on a semi-automatic assembly line.

Fordism perfected the mechanisation of the labour process and reinforced the distinction between intellectual and manual labour. The control over the speed of workers in the Fordist production system was completely taken over by managers. The main reason why Fordism failed to increase productivity

since the 1960s was the excessive division of labour that hindered productivity growth and that the production system gradually lost its flexibility [33]. Thus, the low growth of the economic system and crises such as high unemployment, inflation, market inactivity led to a new regime of accumulation and mode of regulation.

Changes in the organisation of post Fordist production in the flexible accumulation mode can be noted as follows:

1. Widespread use of information and communication technologies in the organisation of labour and production.
2. Industrialisation of the service sector on the basis of new information and communication technologies.
3. Industrialisation of agriculture and reduction of its contribution to national income.
4. The impact of growth in labour productivity and income on consumption.
5. Based on the rupture of labour relations with wages; it is the pluralisation and individualisation of lifestyles [34].

The mode of regulation restructures social relations with institutional structures in accordance with the existing regime of accumulation. Here the state, being the most important form of regulation, fulfils the function of resolving conflicts arising in various spheres. Post Fordist form of global-monopolistic regulation, explaining the role of the state at the new stage, its changes are expressed in the following:

- New links of sectoral and industrial integration on the basis of advanced production technologies; intensification of international processes in the relationship between industrial and financial capital.
- Institutional fragmentation and decline of the social security system.
- Heterogeneity of labour relations and weakening of trade unions under the influence of mass unemployment.
- The emergence of new forms of companies, especially in the technology sector [34].

In post Fordism, neoliberal policies provide the basis for the normative form of the flexible accumulation regime that replaced the intensive accumulation regime. The neoliberal and market-oriented mode of regulation is manifested in the concept of the welfare state and the retreat of the state in social policy. Thus, in the form of global monopolistic (flexible) regulation prevalent in post-Fordism, liberalisation policies began to provide new investment opportunities. The concept of “laissez-faire” and “laissez-passer” once again came to dominate the market [35]. Neoliberal policies were pursued in parallel with globalisation, flexible accumulation limited state intervention in economic and social life and began the process of state retrenchment [36].

Thus, in the post Fordist period, mass production was replaced by diverse production based on consumer preferences, production became more flexible

through the use of new information technologies, the organisation of labour and labour processes became freer, and the automation and robotisation of production became freer. Industrial production was ensured. Under the post Fordist regime of flexible accumulation, production and employment developed in opposition to neoliberal labour. Public policies that ensured the freedom of capital were strengthened. Consequences of post Fordism on the role of the state: reduction in the size of the state, privatisation, reduction of the public sector's share in production, limitation of new jobs in public institutions, decentralisation and governance [37].

Table 1

**Modes of regulation and accumulation regimes  
in different forms of economic organization**

	1850-1945	1946-1973	1974-2018	2019-...
Economic organisation	Liberal	Fordist	Post Fordist	Cyber Fordist (green)
Accumulation regime	Extensive	Intensive	Flexible	Smart
Mode of regulation Monopolistic	Competitive	Monopolistic (Fordism)	Global Monopolistic (Post Fordism)	Digital Cybernetics (Cyber Fordism)
State	Liberal state	Social state	Entrepreneurial state	Environmental state
Industry	Industry 1.0	Industry 2.0	Industry 3.0	Industry 4.0, 5.0
Production	Craft	Mass	Flexible	Smart
Variety of accumulation	Singular	Replaceable	Binary	Multi accumulation

*Source: created by the author*

Although the beginning of discussions on sustainable development and green economy coincides with post Fordism, the history of its social institutionalisation, implementation and manifestation in regulations can be dated to the covid-19 processes. The main reason why the beginning of the new digital cybernetic era is associated with covid-19 is that the regulation model is realised by cybernetic methods on the basis of given data. For example, according to the data on the number of patients, the realisation of social restrictive and health care policies was made possible through cybernetic methods and digital calculations. This type of regulation can play the role of a tool for many types of accumulation and alternatives of reproduction that may emerge after the post Fordist period. The aspects characterising the new form of organisation of the economy, which we can call “cyber Fordist”, are shown

in table 1. In cyber Fordism it is possible to realise economic regulation by incorporating a large number of non-economic indicators such as health, environment, disasters and social tensions. This feature is characterised by the concept of smart economy.

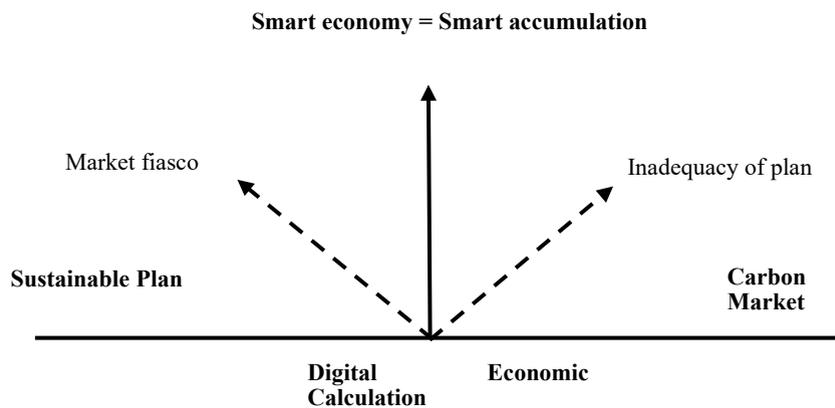
The wide spectrum of economic regulation factors is associated with the multi-accumulation diversity of today's global economy. Therefore, along with the green economy, such concepts as environmental economy, smart economy, knowledge economy, digital economy, behavioural economy, industry 4.0 and industry 5.0 are topical. Suntsova Olesia notes that the scientific basis of these economic concepts is not sufficiently analysed and they are just general ideas [38]. Nevertheless, the common feature of all of them is that they are based on a technological infrastructure that enables the accumulation and processing of information, such as big data, cloud technology, artificial intelligence, the Internet of things. This technological infrastructure also enables the realisation of digital economic computing to enable a smart economy where smart production takes place.

### **Chapter 3. Cybernetic regulation scale model**

If in the Fordist and post Fordist economic organisation the role of the state is clearly delineated, the activation of sustainability has led to the need for a complex regulation playing between the plan and the market [37]. The sustainability of the economy depends on the realisation of regulations that are imposed on the planned economy when intervention is required and on the market economy when freedom is required. A smart economy is a regulatory situation in which a balance is achieved between the plan and the market.

The planned economy and the market economy differ in terms of accumulation regime, but not in terms of substance. If the planned economy has the possibility to increase accumulation by restricting consumption, the market economy has the possibility to increase accumulation by expanding consumer expenditures (allowances). The historical development process has led to the practical conclusion that the market economy is more effective in terms of accumulation regime. Nevertheless, the conclusion of the previous part of the study is that the possibilities provided by information technologies today increase the potential of the planned economy. For this reason, it is aimed to learn about the "green accumulation regime" by not dwelling on the planned or marketised antagonism of the green economy. In order not to dwell on this antagonism, the study proposes to make an evaluation within the framework of the "Digital Cybernetic Regulation Scale Model" which envisages the regulation of both planned and market economy at the same time. The main argument for proposing this model is that the new form of economic organisation that is emerging today has a specific and complex political economic structure. On the one hand, while decarbonisation of the economy is

proposed, a planned regulation comes to mind, on the other hand, the realisation of carbon markets is aimed [39; 40]. The outcome of the Rio+20 United Nations Conference on Sustainable Development envisaged the achievement of the objectives through market instruments. The market-based objectives and articles include: food security, nutrition and sustainable agriculture (Articles 117, 118), full and productive employment, decent work and social protection for all (Articles 148, 152), oceans and seas (Article 174), sustainable production and consumption (Article 225) [41]. Therefore, the modelling of the green economy under the current cyber Fordist economic organisation can be modelled as follows.

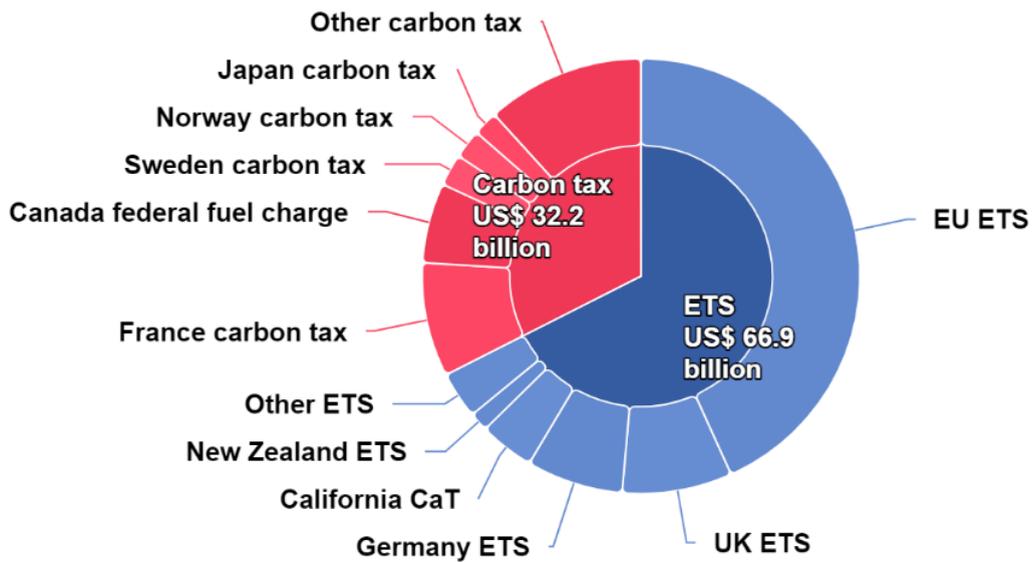


**Figure 1. Cybernetic regulation scale model**

*Source: [42] Bagirzade, M. (2025) The Regulation Model of Data-Driven Economic Policy Making, Journal of Baku Engineering University- Economics And Administration, Volume 9, Number 2*

The fact that the smart economy is considered as industry 4.0 in many sources causes concept confusion and its true nature remains unclear [38; 43]. The important feature of the smart economy is the way it is organised. In this respect, we can define the smart economy as a form of economy in which digital cybernetic regulation is provided on the basis of information processes by means of digital technologies. The functionality of digital cybernetic regulation, which is also valid in the green economy, is realised through new tools of "digital economic calculation". The importance of economic calculation for the green economy can be illustrated by the following topics:

- Determination of ecology-based value.
- Determination of entropy of economic activity.
- Market failure – resources are not allocated efficiently.
- Creation of green economic value.
- Determination of carrying capacity.
- Providing the basic argument in economic regulation.
- Determination of the functional infrastructure of the accumulation regime.



**Figure 2. Government Revenue from Carbon Pricing (2022)**

Source: The World Bank, IBRD-IDA, *State and Trends of Carbon Pricing Dashboard* <https://carbonpricingdashboard.worldbank.org/compliance/revenue> (2024.04.13)

For the above reasons, the smart economy based on digital computing plays an important role for the realisation of sustainable development and green accumulation. From the perspective of regulation theory, sustainable development strengthens the integrity and position of the emerging global economic order [3]. Digital cybernetic regulation utilises the smart economy to ensure that carbon markets and decarbonisation plans are balanced. At the same time, it is criticised that digital cybernetic regulation, which functions to ensure green accumulation, serves to monetise and capture environmental goods and to create a new colonial dimension [44; 45; 46]. Harvey associates green accumulation with processes of unequal development and expropriation. Examples of expropriation policies such as commodification, privatisation, deportation of the population, confiscation of assets, taxation, use of migrant labour, financialisation and expansion of the credit system are given [5; 47]. Its use of the understanding of "space" in the evaluation of capital accumulation, together with the explanation of the Fordist and post Fordist organisation of production, has shown its importance in sustainable organisation. The possibility of inequitable development of green accumulation, its different reflection on the economic situation of countries and the unequal development of the global economy, such as North and South, cannot be ignored.

Despite the uncertainty of empirical data that maintains scientific objectivity showing the positive impact of the green economy on the environment, data showing the functionality of green accumulation generates wide debate.

For example, the volume of the global carbon market by 2021 was \$851 billion [48]. According to the World Bank's Carbon Pricing Dashboard Status and Trends, the volume of government revenues from carbon pricing worldwide in 2022 reached \$97 billion. Of this, \$32 billion comes from carbon taxes (Figure 2) [49]. The price range in carbon trading varies from \$0.7 to \$155.8 [50]. Green savings through carbon markets involve the purchase of carbon credits to comply with mandatory compliance schemes for emitters. According to the report of the London Stock Exchange Group for 2023, the global carbon market increased by 2%, reaching 948.75 billion dollars [51; 52]. All of these results of the carbon reduction regime can be considered as a digital cybernetic regulation of green accumulation.

### **Conclusions**

The study covers the evaluation of green economic practices from the perspective of regulation theory. Therefore, the main elements that ensure the functionality of the accumulation regime of the green economy and their conceptualisation are emphasised. The problem of economic calculation is the main obstacle for the social organisation of the green economy. Because the failure to correctly assess the economic value of environmental goods and services leads to the uncertainty of the carrying capacity of the environment, the value-price relationship, the allocation of resources, economic regulation, and the functionality of the accumulation regime. In this framework, on the basis of the regulation approach, the sustainable aspect of the reflection of economic calculation on the accumulation regime and the mode of regulation is discussed. Especially in recent periods, the beginning of the new era in the informational processes of society has led to the emergence of new solutions and approaches to the problem of economic calculation. Taking into account the new conditions that can be considered as the era of informationalism, the digital and cybernetic aspects of the problem of economic calculation have been evaluated. As a result of the evaluation, the "Green Cybernetic Regulation Scale" model is proposed by modelling the interaction of the elements of the green economy.

Green economy is evaluated within the framework of regulation theory and a cyber Fordist mode of regulation is proposed in addition to Fordist, post Fordist economic organisation. It is argued that the green economy is more likely to be realised under the cyber Fordist form of economic organisation, and it is concluded that green accumulation is the cybernetic digital regulation of the carbon reduction regime. In this model, the function of the smart economy for green accumulation is emphasised. Thus, the article argues that the green economy is a part of the cyber Fordist economic organisation and that green accumulation, which can be considered as smart accumulation, is achieved through digital cybernetic regulation. The basis of digital cybernetic

organisation is digital cybernetic economic calculation. Examples of measures of green economic calculations include green accounting, carbon footprint, ecological footprint and consumption-related footprints. Digital cybernetic regulation takes into account the factors that ensure the flexibility of production in economic policy-making, as well as the provision of diversified accumulation through environmental, health or other issues. For a more precise specification and conceptualisation of the digital cybernetic regulation of green accumulation, issues such as money and credit relations, the wage of labour, the form of competition, international relations and the new role of the state should be further investigated. These topics cover the institutional aspects of the mode of regulation described by Boyer Robert and determine the institutionalisation of green accumulation [6]. Thus, it is suggested a deeper analysis and conceptualisation of the theoretical basis of cyber Fordism as a new form of economic organisation.

Despite the growing trend in the volume and capitalisation of carbon taxes and Emission Trading Systems, no definite conclusions have been reached on the carrying capacity of the ecosystem, the limits of growth, the transformation of the environment into commercial goods and services, and the determination of its net value in currency. The scientific methodology and the results of the studies on these issues are subject to numerous criticisms. For example, in 1997, in a study involving many researchers, the economic value of the world was priced. In this study, the economic value allocated to 17 ecosystem services was determined as 16-54 trillion US dollars (33 trillion per year) [53]. I would like to remind that this figure is twice the world's gross world product in the year under consideration.

Developed countries focusing on post-industrial economic activity encourage the industrialisation of developing countries. Developing countries with industrialised economic structure have to buy certified emission reduction (CER) in order to continue their economic activity [40]. This project, called the Clean Development Mechanism (CDM), is one of the mechanisms for green accumulation by selling the right to harm the environment if CERs are purchased. The green economy, which provides a new form of accumulation on the basis of carbon markets, can hardly be said to focus on sustainable development and effective solution of environmental problems. The analysis of the study in terms of industrial-post-industrial and developed-developing countries shows that green accumulation, on the contrary, causes unequal development of states. The green economy approach, which focuses on the idea of protecting nature by transforming it into economic value, is at the same time the provision of large global capital based on restrictions, pricing and control of consumption. Therefore, the green accumulation regime can be explained by the following equation.

## Accumulation of carbon = Accumulation of capital

When we look at the historical development period from a retrospective perspective, it is questionable that the environmental issue was not considered in the regulations that would provide new accumulation regimes due to economic crises [4; 6]. The fact that the regulatory approach did not focus on the environment at first can be explained by two reasons:

Firstly, since the formation of the green economy started from the political sphere, its social institutionalisation has not taken place. For this reason, the regulatory approach, which focused on certain economic assets, did not see environmental problems as an element of social dynamics.

Secondly, the green economy's focus on nature reminds us of the agricultural society, feudal accumulation and deregulation model. Whereas the regulation approach focuses on the trend of industrial economy development.

The conclusion of the article is that sustainable development tends to enable the green economy to create a new form of accumulation rather than challenging capital accumulation. In this case, smart and green accumulation regimes secure the global monopoly accumulation regime. Where is the invisible hand of nature? This is exactly where the question reveals itself. It would be appropriate to answer the question with the example of forests. Carbon deficiency in forests increases the risk of fire by increasing the oxygene ratio. Thus, the invisible hand of nature meets the need for carbon by enabling forest fires. The abundance of carbon, on the other hand, ensures that the burning forest spontaneously extinguishes. Just as the invisible hand of the market, the invisible hand of nature cannot be denied. Therefore, the formation of the political economy of the new form of economic organisation will not be easy. The evaluation of the study from the perspective of regulation theory has emphasised the inadequacy of a single perspective on the green economy. Thus, it has revealed the need to analyse it from a wider range of perspectives.

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