

Analysis of Aspects of the Regional Economy in the Digital Economy, Using the Example of Financial Services

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Abstract. The relevance of the study is that, in the aspects of the development and offer of financial products are not manifested outside the digital world, then from the point of the need for analysis, the question of the possibility and necessity of applying the existing approaches of the regional economy. Traditional regional economic theories of the 20th century can be summarized as made-here-sold-there goods. The aim of the study is to analyse the offer of electronic financial services, as part of the Digital Economy, from the point of view of the regional economy. Research methodology includes analysis and synthesis of financial market knowledge. Financial services as an example were chosen by the authors since such services are completely provided in the digital field and thus will exclude the influence of aspects of the product or service that are provided outside the digital world on the final judgments and analysis. The paper discusses models for individual cases in the regional economy, when all regions are equally distant from each other. It is determined that a modern financial product can be based on local industries located in different regions, but united by one production - the so-called ecosystem, which has been studied at the international level.

Keywords: Digitalisation; Economy; Entrepreneurship; Financial Services; Regionalism.

JEL Codes: O30, R11.

1. INTRODUCTION

“The digital economy includes all economic activities that depend on digital resources or are significantly improved through their use, including digital technologies, digital infrastructure, digital services, and data. It applies to all producers and consumers, including the government, who use these digital resources in their economic activities” (Pilat et al., 2020). Within the framework of the same report, he admitted that only firms providing financial and insurance services operate completely in the digital field. This means that production, distribution, and communication with customers take place entirely in the digital space (Baldwin, 2014).

L. Williams (2021) in his article “Concepts of Digital Economy and Industry 4.0 in Intelligent and information systems” analysed the multiple definitions of the digital economy. Based on this article, the authors have identified the following important characteristics of the digital economy: digitalization of goods and services; using technologies that combine creativity, knowledge, and intelligence by users. Thus, goods and services, the environment for their delivery from physical space are transferred to cyberspace. H. Shibusawa (2000) in her work “Cyberspace and physical space in urban economics, as the main difference between these two spaces”, identified the following: in cyberspace, labour, goods,

and services are transformed into electronic information and traded through a telecommunications network; in the physical world, these goods are transported utilizing the transport system.

Modern trends in trade assign great importance to exports in regional development and determine the importance of the benefits in the world economy obtained from trade relations between countries, including those at different stages of development. Accordingly, the basis of the regional economy in the modern world is the specialization of various regions in resources (represented by production factors), which they export to other regions. Respectively, the signs of regional factors in the economy trade, both in finished products and services and in resources, between regions.

Financial services, which undoubtedly include transactions with digital assets, are fully digital. Financial services are the processes by which consumers and businesses purchase financial products. As pointed out in their report D. Pilat et al. (2020), financial services operate entirely in the digital field, so they were chosen to consider aspects of the digital economy. The digital economy affects various aspects of economic interaction in society, in particular the procedure for the exchange of labour, which is carried out on digital platforms (Drahokoupil & Jepsen, 2017). The use of digital platforms and remote work has blurred the concept of labour export. The International Labour Organization (2022) sees digital platforms as a significant change in the modern economy, considering both the ability to work remotely within the framework of freelancing at special remote workplaces

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and the use of regional applications that anyone can join (for example, Uber). Considering the above, the authors draw attention to the absence of a migration factor or manifested regional interaction in the use of labour resources in the digital economy.

K. Ruan (2019) believes that the current theories on value determination are no longer applicable to products and services within the digital economy. The reason for this is the very nature of digital products and services. Digital goods are goods that can be fully expressed in bits so that a complete business cycle can be done on an electronic infrastructure such as the Internet (Loebbecke, 2003). Suitably, here also the regional component in the production of these goods is not manifested, since the regions themselves participating in its production are also not manifested.

All of the above makes a look at the traditional factors of production in the digital economy:

Business as the authors have already described above, the regional component in this factor of production is not expressed. Since access to the digital platform is unlimited, there is no clear regional preference or choice. At the same time, work resources from different regions can take part in the creation of a product or service, as well as in their sale. Moreover, some goods or services can be created and implemented without human intervention at all, but only with the help of artificial intelligence, represented by cloud solutions (Wagner, 2020). Thus, this factor may not be involved in production at all, or its role may be very limited.

1. Land as a factor of production – these are the resources necessary for the creation and sale of goods and services. Within fully digital products and services, there are also no explicit raw materials. And accordingly, its regional component.

2. Capital as a factor of production during the pre-digital economy, it has always had regional affiliation. Because usually, regions with more developed economies served as sources of this capital. But crowdfunding has changed this situation since a lot of small investors can serve as a source of capital for production without a clear belonging to one or another region (Mollick, 2014).

Entrepreneurship: this factor of production in the digital economy has acquired one of the key values. Since entrepreneurship as a category of the economic theory refers more to active, risky, and profitable activities and less to activities that provide a sustainable competitive advantage, while M. Makarov et al. (2020), indicate the development of the entrepreneurial function and the related implementation of new opportunities to increase the competitiveness of entrepreneurial structures. Namely, the manifestation of entrepreneurship through the use of the entrepreneur's potential in the planning and selection of resources to ensure the production and sale of digital goods and services. In other words, when choosing a development strategy, an entrepreneur chooses technologies for the production and sale of goods and services. This factor also has no regional features.

Information is a key factor in the digital economy. It displays the information itself, used for production and sale, as well as the aforementioned solutions based on artificial intelligence. Information in the digital economy is usually located in telecommunication networks and therefore also does not have a pronounced regional component.

Thus, the purpose of the article is to analyze electronic financial services, as part of the digital economy, from the point of view of the regional economy. To realize the goal, the following tasks were completed:

1. Analyze the role of regional business as a production factor in the digital economy.
2. Establish the role of land in the production process.
3. To determine the place of capital in regional production.
4. Characterize the information component and its possibilities in the digital economy.

The authors believe that the main problem in applying the current theories of regional economics is the lack of physical/geographical distances between the subjects of economic relations.

2. REGIONAL CHARACTERISTICS OF THE DIGITAL ECONOMY

The globalization of the economy is one of the most important factors that must be considered when speaking of the digital economy. Globalization has led to international integration into a single system of labour, information, technology, goods, and assets (Khizbullin et al., 2017). Theories of regional development of the late 19th and early 20th centuries identified the increase in GDP and GDP per capita as the main indicator of the development of the region. At the same time, it was believed that economic growth, measured in GDP, must necessarily lead to an increase in production and in the welfare of the inhabitants of this region.

Theories of regional development in the 21st century develop the theory of regional development in (Schumpeter & Opie, 1934), which has undoubtedly become much more complex. According to J. A. Schumpeter, progress is driven by the use of innovation/knowledge by entrepreneurs, the very factor of the neo-economic factor of production – information. It is this, in his opinion, that disturbs the equilibrium described in the works (Walras, 1890). This creates new opportunities for economic entities and increases their income. Simultaneously, A. Schumpeter was not limited only to technical improvements, talking about innovations, but also proposed to revise and create new markets, new needs, and forms of doing business.

In parallel with the development of the theory of regional development, a regional economy appeared. Regional economics is a sub-discipline of regional science that focuses on those economic aspects that are related to territorial space, and by its nature, it is the economics of territorial development (Zeibote et al., 2019). Based on Schumpeter's theory, it can be pointed out that not only the distance between economic entities is involved in the formation of equilibrium between regions, as L. Walras pointed out, but competence, the potential for innovation, and the ability to do business in a new way are factors of equilibrium.

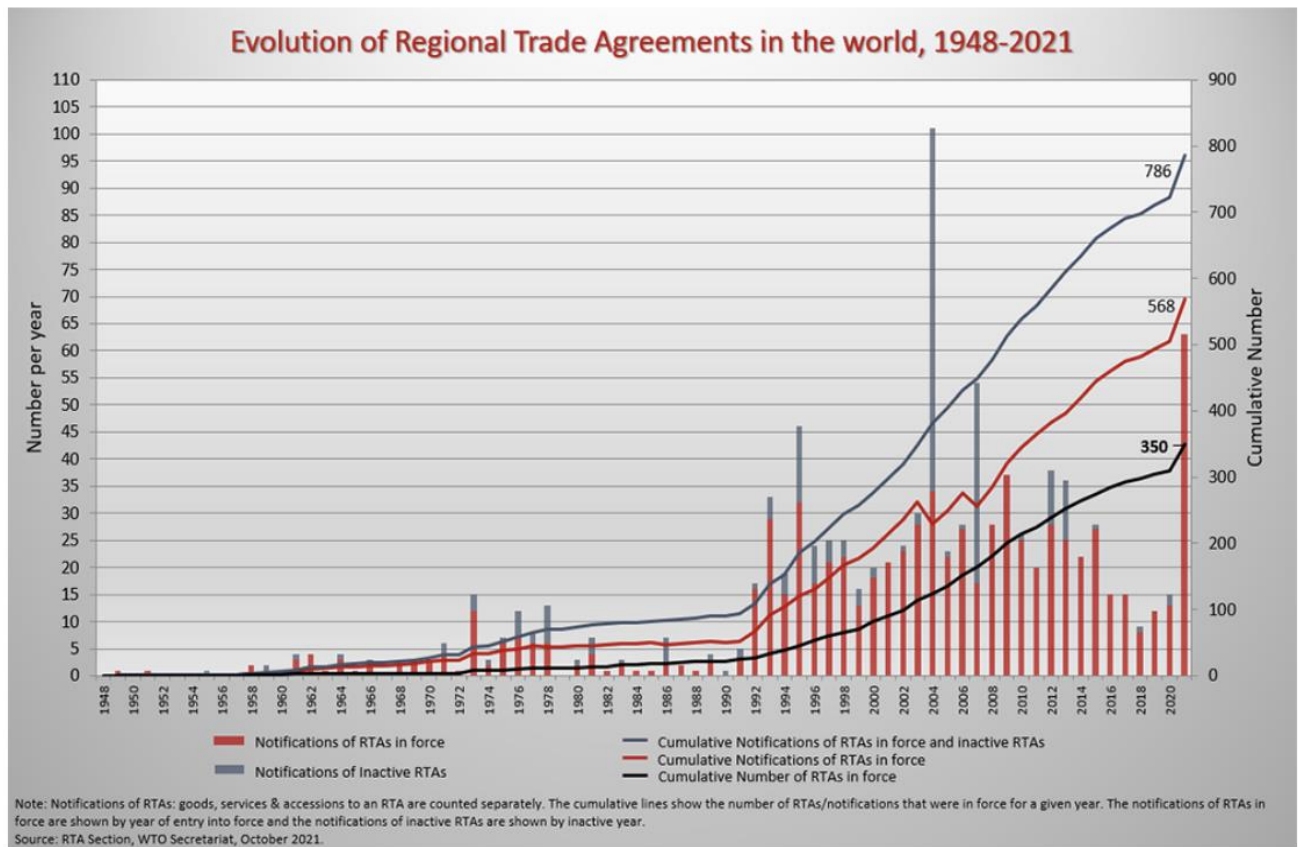


Fig. (1). Regional trade agreements 1948-2021.

Globalization has largely changed the regional division, which was more fragmented in the middle and late 20th century and mostly coincided with the borders of countries. Moreover, globalization is the final stage of economic integration. B. Balassa (1961) in his work, he described the stages of integration, the introduction of which could be observed throughout the entire end of the 20th century. These include such events as the development and ratification of free trade agreements by countries, which removed tariff barriers between regions – then the creation of customs unions and common markets. These processes can still be observed. The World Trade Organization monitors the conclusion of regional trade agreements and their dynamics can be observed in Fig. (1).

Thus, on the one hand, the existence of regional trade agreements has facilitated the movement of goods, services, and resources between regions, and innovations of the 21st century have completely shaped the economy in the context of globalization.

The authors believe that the innovations of the 21st century have shaped the digital economy, further enhancing the globalization of the economy. Traditionally, the factors that have shaped the digital economy include the development of telecommunication networks, as well as the Internet (Khizbullin et al., 2017). It is impossible not to agree with this, but individual services, including public ones, were the drivers of the movement towards the digital economy:

1. The development of communication as such – the emergence of emails, Skype, and then communica-

tors, first on stationary computers and on mobile phones – significantly increased the density of communication between representatives of economic entities and, as a result, elevated economic ties between regions.

2. The development of automatic translators (free and publicly available) made it possible to establish communication and economic ties between regions, communication between which was limited by language barriers.
3. The ability to receive services, including legal services, in other regions remotely opened up new opportunities for doing business in other regions

All this led to the fact that entrepreneurs within the digital economy were able to conduct business and organize business processes simultaneously in several regions.

3. THE IMPORTANCE OF THE DIGITAL ECONOMY IN THE CONTEXT OF THE NEW THEORY OF REGIONAL ECONOMICS

Even though the early theories of regional development were associated with the physical characteristics of the location of regions and their interaction, taking into account these characteristics, developing Schumpeter's theory for the digital economy, we can say that without taking into account the above characteristics, the interaction of regions comes to the fore on the principle of the presence of innovations in them. or unique characteristics related to the production factor in-

formation. Just as in the physical world a raw material and distribution network is formed based on the interaction of industries in different regions, in cyberspace, interactions are organized with regions that have the best, from the point of view of the factor of information production, proposals (Shibusawa, 2000). Taking into account the above, the authors compare the structures of the theories of the regional economy for their use in the digital economy, using the example of the provision of financial services. For this, preliminary, the authors consider it necessary to identify the main characteristics of the provision of financial services in the digital economy.

The main difference between the provision of digital services within the digital economy and the classical one is the order of interaction with customers. Since the end of the 20th century, the financial services industry has migrated to cyberspace, as all stages of their production have moved to digital format. At the same time, the only element that required work in the physical world was customer service, when clients came to financial institutions to receive these services. The last 10 years have seen a revolution in the provision of financial services called Fintech – a synergy of financial services and technologies. Fintech, by optimizing internal processes for the provision of financial services, allowed clients to receive these services, including complex and complex ones directly, without physical interaction with a financial institution,

Thus, financial services became available cross-regionally. Moreover, if, for example, in the EU and the common market for financial services based on their passporting (Polasik et al., 2020) they are provided based on developed legislative rules, then clients not located in the EU can also receive these services if their local legislation does not prohibit it.

Assessing the need for a new theory of the regional economy for the digital economy, the author took into account both the need to create and maintain these services and customer service through Fintech solutions. For customers, in most cases, there is no difference in regions. Because financial services are mostly the same in all regions and are equally available. It is necessary to make only one digression – this theory may be relevant – this is in all types of collateralized lending. At the moment, there is still no effective cross-territorial control over collaterals and therefore services in which collateralized lending are tied will obey all theories for the management of

Thus, the authors believe that there is no need to develop a new theory to describe processes in the digital economy. But it is necessary, within the framework of existing theories, to reduce the number of factors taken into account, by factors that are relevant for the economy in physical space.

4. ECOSYSTEMS AS AN IMPLEMENTATION OF THE THEORY OF PRODUCTION LOCALIZATION

J. Moore (1999) described the ecosystem business as “Companies jointly develop opportunities around an innovation: they work collaboratively and competitively to support new products, meet customer needs, and ultimately drive the next round of innovation”. From the point of view of the regional economy, the ecosystem in the financial services industry is

the implementation of the theory of production localization. When, within the framework of one solution or application, a client receives related services from different entities or the capacities of two or more companies from different regions were used to create a particular service and product. And even though, for example K. Still et al. (2019), consider ecosystems from the point of view of innovative interaction, ecosystems have a more pragmatic goal – as efficiently as possible, in terms of achieving the goal, managing taxes, providing the highest possible level of services, and organizing a business. At the same time, the provision of services is divided into chains, which can be located in different regions, which allows each of the production chains and the entire process to be more efficient. This takes into account the characteristics of the regions indicated by the author above.

The digital economy has allowed new methods of organizing business. For example, entrepreneurs who plan to provide financial services have the opportunity to choose the most suitable jurisdiction (a region based on a country or a separate zone in a country) to provide a service and register a financial institution there. The selection criteria are:

1. Financial Services Regulations. Even on the territory of the EU countries, where legislative acts are mostly harmonized, by the regulations of the European Parliament – the methodology for their regional implementation may contain differences that are not critical for the implementation of regulations of the European Parliament but are essential for the provision of services and give entrepreneurs additional advantages on the market.
2. Regional tax legislation – the tax component is significant both in the structure of the cost of financial services and an emotional component for clients if these taxes directly affect the financial services received by the client (for example, capital gains tax).
3. AML legislation of the region – in particular, this applies to a part of the onboarding of new customers. For the digital economy, a remote onboard of clients is important and, accordingly, the requirements for such an onboard (their completeness of description in the legislation, the practice of the regulator to control the onboard) are essential when choosing a region for registering a financial institution.
4. Regulatory requirements for personnel.

Financial services provided by several companies located in different regions are the ecosystem. At the same time, for each element of a product or service, its analysis is performed. For example, within the framework of one Fintech application, the client receives services for the execution of bank transfers and works with crypto assets. Then, these services are provided by a financial institution registered in one region and a crypto exchange institution registered in another region. Moreover, within the framework of the theory of production localization, each element of the production is located in the most efficient place.

If we separately refer to the work with crypto assets on the example of the European Union, then they most clearly char-

acterize the theory of production localization. When planning the provision of combined services, taking into account the absence of an approved normative document of the European Parliament on organizing the work of crypto exchange companies, the difference in the regulatory framework in the EU countries is enormous. Accordingly, when planning to work with crypto assets, it is necessary to carry out the same analysis as for a financial institution.

5. CONCLUSIONS

Having removed the need to take into account the space between regions for the digital economy, its regional component has not disappeared, but it has become easier for modeling. At the same time, the resources that began to characterize the regions can be attributed to non-mobile resources as in the Richardson model, but their presence and change are determined by the views of Schumpeter, who referred innovation to this resource. All this has led to the fact that the development of regions in the digital economy is associated with ineffective or balanced use of resources or production. And with conscious planning and creation of these resources as innovations. Moreover, after their creation and implementation, they (these resources) behave within the framework of the regional economy in the same way as classical resources.

The model has been simplified to a particular case in the regional economy when all regions are equally distant from each other. Thus, forming not crystal lattices, along the boundaries of which interaction takes place, but the shape of a ball, in the centre, is the production itself, while this product is outside any region, and around it, at the same distance, there are resources located in regions at a distance – 0. At the same time, even though the distance between resources and production is 0 – anyway there are their delivery costs to the production point. These costs are the tax characteristics of the region. For example, if you buy or sell a product outside the common market (as within the EU or the EU with external partners), additional taxes and duties may arise – such as excise taxes and VAT – which, will become those costs that classical theories consider as transport.

As in the classical theory, the regions are characterized by specialization – typical specializations in the provision of financial services can be called – Crypto Valley in Switzerland, Lithuania's specialization in financial institutions, Estonia's specialization in crypto exchange institutions. Thus, a modern financial product can be based on local industries located in different regions but united by one production – called an eco-system.

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