# THE DIGITAL TRANSFORMATION OF CHINESE AND U.S. ECONOMIES: A COMPARATIVE ANALYSIS

***V. Ostapkevich***

*Student of Belarusian State University, vasilinaost@gmail.com*
*Supervisor – E. Botenovskaya, Ph.D. in Economics, Associate Professor*

***Abstract***. As the digital economy increases its importance worldwide, the research on the economic strategies of China and the United States, the two leaders in this area, is of critical scientific importance. This study compares and contrasts the digital economies of these two countries, identifying future trends in their development that may have an impact on economic processes around the world. In particular, the influence of the COVID-19 and its consequences for the digital economy have been considered, the role of the government and "unicorn" startups as some of the most influential factors has been analyzed.

***Keywords***: Digitalization processes; China; USA; unicorn startups; COVID-19 consequences

Throughout the history of world civilization and social development, humanity has experienced the agricultural revolution, the industrial revolution, and the information revolution successively. Every scientific and technological revolution or industrial transformation brings a great leap in productivity. In recent years, the Internet, Big Data, cloud computing, artificial intelligence, blockchain and other technologies have accelerated their innovation and have increasingly integrated into the entire process of economic and social development.

We are still living in the era of the third industrial (or digital) revolution, which began in the second half of the last century with the creation of computers and the further evolution of information technology. Today it is slowly transforming into the fourth industrial revolution, which is characterized by the fusion of technology and the blurring of boundaries between the physical, digital and biological spheres.

The rapid development of the digital economy and the depth of its influence have never been unprecedented. It is becoming a main force in reorganizing global factor resources, reshaping the global economic structure, and changing the global competitive landscape. Human society is entering a new historical stage marked by digital productivity.

Though in international practice there is still no harmonized definition of the digital economy, in most sources its description focuses on technology and the changes in the way economic agents interact with each other. Digital economy can also be defined as the economic activity that results from billions of everyday online connections among people, businesses, devices, data, and processes. The digital economy is taking shape and undermining conventional notions about how businesses are structured; how firms interact; and how consumers obtain services, information, and goods [1].

Despite the strong positions of other developed countries, in terms of capacity to engage in and benefit from the data-driven digital economy, two countries stand out: the United States and China.

The proportion of the digital economy in the GDP of China and the United States is rising. In 2021, the share of digital economy in GDP of US was around 9%, while the same share in China – around 3.7% and still growing [2; 3]. The competition in the economic field is bound to focus on digital economy. With its advantages in technology, talents and finance, the United States has promoted data as a main factor in driving economic development. The "ecosystem" composed of many platforms has continued to evolve, vigorously develop e-commerce, digital trade and digital finance, and seize the commanding heights of global competition.

In terms of scale, the US digital economy continues to rank first in the world, with a scale close to USD 13.6 trillion in 2020, and China ranks second in the world with a scale approaching USD 5.4 trillion. In terms of growth rate, China's digital economy grew by 9.6% year-on-year, ranking first in the world while the United States is off the top. The share of the digital economy in China's GDP is also steadily growing, and by 2027 it is planned that it will reach almost 50%. In that case, the digital economy will become the main driver of economic growth in the country [4].

From the perspective of the strategic orientation and development path of the digital economy, the countries have also shown significant differences. China has a huge market and a complete industrial system, and has vibrant digital innovation scenarios, such as 5G, artificial intelligence and mobile payments. The United States pays more attention to cutting-edge technology fields, and has a dominant advantage in advanced manufacturing, high-tech service industries, and digital trade.

Focusing on digital economy of China and the United States, the role of unicorn startups or so called «unicorns» should definitely be mentioned. Unicorns are the companies or startups whose value is more than 1 billion USD. There around 800 such companies around the world and both US and China occupy first places in the rate of «unicorns» possession. However, the gap between two countries is quite big: US possesses 400 unicorn companies with the value of 95 billion, China – 158 with the value 9.28 billion [5].

Special mention should be made of Internet markets or e-commerce, which is one of most important aspects in the context of the problem under study. And here the position of the United States and China can be described as a de facto duopoly.

Based on up-to-date data we can see that China-US e-commerce share in the worldwide amount far surpasses other countries [6]. It is quite evident that Chinese e-market headed by Alibaba Group, placed first in the world rate. With 52.1% of total worldwide retail commerce, it overcomes the 19% of the United States. So-called world's «super platforms» also belong mostly to China and the US only. In America they are FAMGA (known by everyone Facebook (now Meta), Amazon, Microsoft, Google and Apple), in China – Tencent, WeChat, JD and already mentioned above members of Alibaba group.

Another point that should be highlighted for the full comparison between the Chinese and U.S. digital economies is the IT sector.

Although the U.S. initially had an advantage over China in information technology, partly due to the earlier emergence of the Internet in the country, today the gap between

the countries has narrowed considerably. In some areas, such as telecommunications and telecom equipment, China has already managed to take the lead. Thanks to the country's successful foreign and domestic policies in the 2000s, China not only protected its digital companies from the severe foreign competition, but also brought them to a leading position by absorbing several American giant companies of the time [7].

In 2019, China's information technology exports accounted for 26.5 percent of the country's total exports [8]. At the same time, the same figure for the U.S. economy was only 8.74%, which is almost three times less [9]. In addition, considering the dynamics of information technology exports of both countries, one can observe a significant decline in the U.S. figure since the year 2000; while China's figure is relatively stable (Figure 1, 2).

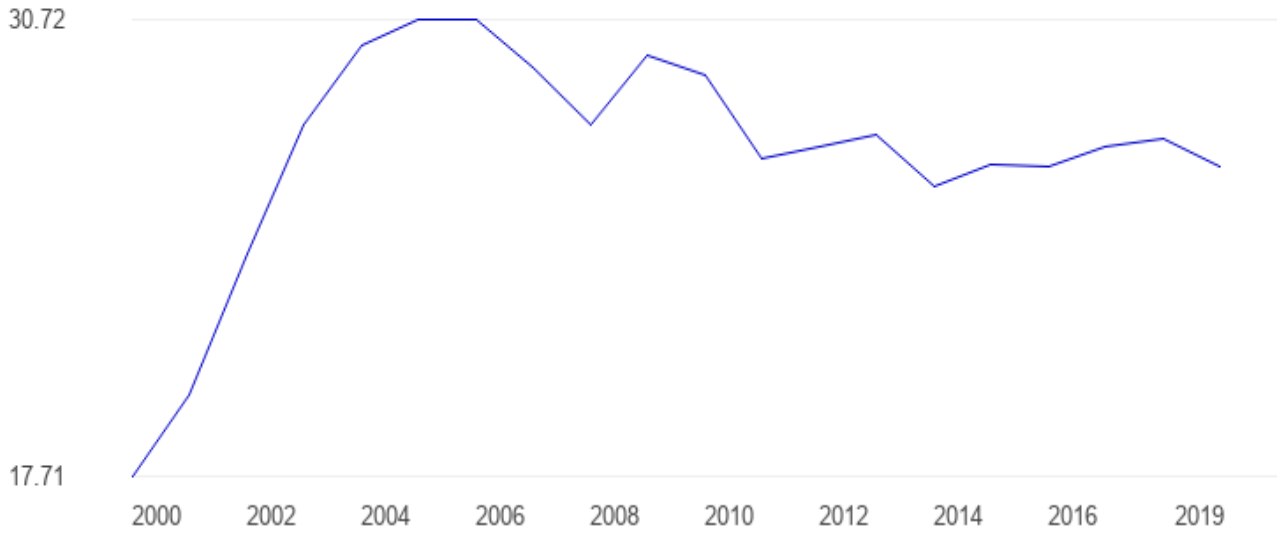


**Figure 1 – Information technology exports, percent of total goods exports, China, 2000-2019, [6]**

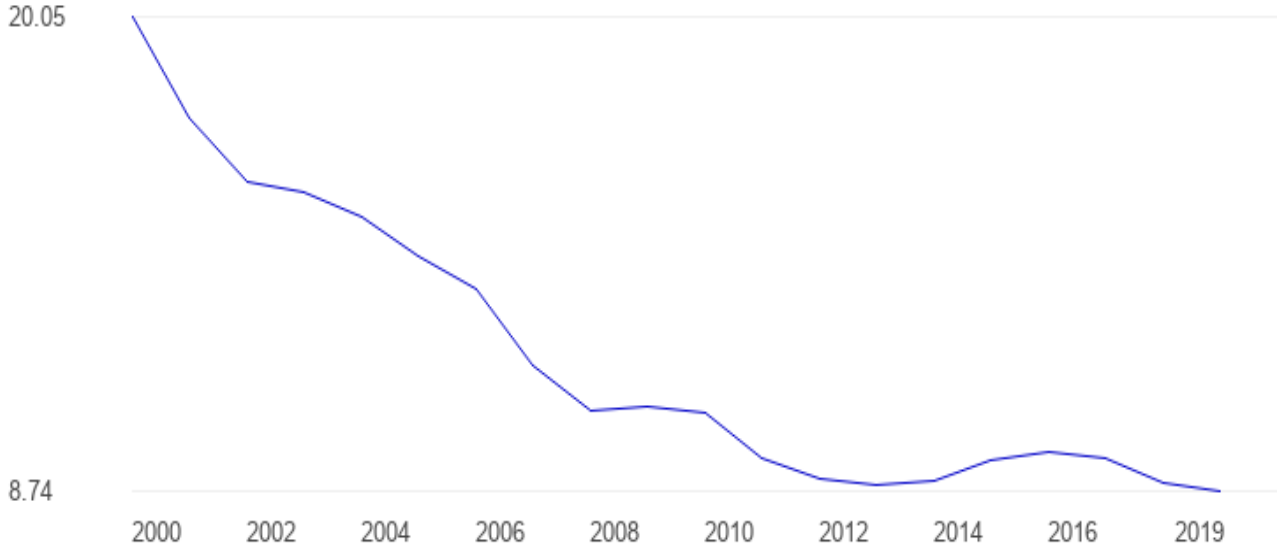


**Figure 2 – Information technology exports, percent of total goods exports, USA, 2000-2019, [7]**

In the post-COVID-19 period, digitalization has become one of the main ways and engines for the economic recovery of countries around the world. And even though

digitalization itself and services like online shopping and mobile banking appeared long before the global pandemic of 2020, the demand for them has never reached the scale that it does today. The pandemic served as a huge push both for their development and for the application of new technological innovations. One of the industries that received the biggest surplus was e-commerce.

E-commerce is another area where China's leadership is undeniable. This sphere has also undergone one of the most significant changes due to the Covid-19 pandemic. For example, global e-commerce revenues have been increasing by an average of 12% per year since the start of the pandemic and the lockdowns, reaching an unprecedented $4.28 trillion in 2020.

Both China and the U.S. are the world's largest e-commerce markets, accounting for about 60% of all global revenues in the industry.

“Without destruction there is no creation”, and as it can be noticed this statement can quite precisely characterize the impact of COVID-19 on such an industry as tourism.

Since the pandemic began and almost all communication between countries has been halted, tourism has become one of the most affected industries, not only in the economies of China and the United States, but also all over the world. And it is the process of digitalization that can be a great stimulus for the recovery of the industry and for building new capacity.

In recent years, digital tourism has developed in a variety of shapes and forms. These include online booking services for tickets and accommodations, various Internet platforms that allow to calculate the itinerary taking into account all the consumers' preferences, and much more. The ubiquitous processes of digitalization are affecting even the popularity of individual destinations among tourists. According to statistics, more than 85% of people express a desire to visit a particular location after they see pictures of other people (from friends or popular bloggers) vacationing in this place.

Today, the most popular platforms to research travel in China are C-Trip, Qunar and Tripadvisor. One of the peculiarities of the Chinese travel market is a very strong dependence of consumers on the opinion of famous bloggers and Key Opinion Leaders. This has especially intensified during the pandemic, due to the increasing demand for social media in society. For example, Douyin has become the most popular platform in COVID-19 time, and consequently one of the most influential.

In the U.S., the leading position when it comes to research travel is taken by aggregate web-sites like Tripadvisor. Also the role of traditional advertising in the country is gradually fading, as it has been observed that an increasing number of American consumers prefer words and reviews to a pretty picture.

Turning back to differences between Chinese and the US digital development, the role of governmental interference should be mentioned. In the United States, the main goal of the government was mostly to establish a regulatory framework for the digital economy and investing in its research. While in China, the state interference is far more active and tackles a lot development of new economy sectors and markets. People who are talking about those problems are in two minds. One think that Chinese methods are

partly out of date while they are banning some operations on the West market; others praise the role of state and consider state policy to be almost crucial for the development of the Chinese digital economy.

What is more, China and the US have different models of digital economy development and each has its own strengths. The digital economy of the United States is technological innovation and capital-friendly digital economy based on Internet hegemony. China's digital economy is labor-friendly and based on technological application and business model innovation.

By analyzing the digital economies of China and the U.S., it can be concluded that the United States leads the world in technological innovation, has strong basic scientific research and development capabilities, and has a large number of high-end scientific research talents. China has a large population, a vast market, and a large amount of data. The absolute superiority of the United States in the digital economy will not change in the short term, but the gap in its competitiveness is shrinking. The size of the data, the variety of data, and the complexity of the data structure make China the most important incubation and application place for technological innovation today. The peculiarities of today's digital era mean that the strategic competition between China and the United States needs to reduce the resources invested in the ideological field and focus more on science and technology innovation. This competition in the digital economy is like sailing against the current: if you do not advance, you will fall back.

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