Foreign Direct Investment as a Determinant of Digital Economy Growth

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Abstract: The world economy crashed in 2020 due to pandemic crisis with a consequent collapse of global trade and foreign direct investment (FDI). Digital economy links the society and the business environment, creates qualified human capital and promotes innovation. Foreign direct investment in the digital economy powers the digital economy and the digital economy increases the appetite for more foreign direct investment. Foreign direct investment is key to supporting social and economic recovery and boosting the digital economy, and conversely, the digital economy is key to increase foreign direct investment flows. The article analyses the impact of foreign direct investment on digital economy and consequently on economic growth.

1 INTRODUCTION

The digital economy is defined as «the application of Internet-based digital technologies to the production and trade of goods and services» (UNCTAD, 2017, p. 156) or as «the economic activity that results from billions of everyday online connections among people, businesses, devices, data, and processes. Digital economy is hyperconnectivity which means connect people, organizations, and machines through the Internet, mobile technology and the internet of things (IoT)» (Deloitte, 2021).

The digital economy accelerates the economic growth, links citizens to jobs and services, increases the competitiveness of enterprises, generate new opportunities for business and entry in new markets and new e-value chains. The pervasiveness of the digital economy brings new challenges related with regulatory laws, social and developments impacts (UNCTAD, 2017; WB, 2020).

The digital economy and investment are linked, greater investment promotes more digital economy and for a great digital economy, more investment is needed. The digital economy has consequences on the market activity of multinational enterprises (MNEs) market activity due to the creation of new forms of access to international markets and may have impacts arising from the expansion of the physical network or the opposite effect resulting in the expansion of digital markets (UNCTAD, 2017).

FDI is defined as «an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)» (UNCTAD, 1997, p. 245). FDI is fundamental to the rapid development of the digital economy and this investment has impact on economic growth (OECD, 2008).

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Table 1: Overview of the World Economic Outlook Projections.

<table>
<thead>
<tr>
<th>Regions/Countries</th>
<th>%</th>
<th>Projections (%)</th>
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<tbody>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
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<tr>
<td>Advanced Economies</td>
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<tr>
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<tr>
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<tr>
<td>Germany</td>
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<td>Italy</td>
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<td>Japan</td>
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<tr>
<td>Canada</td>
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<tr>
<td>Other Advanced Economies [1]</td>
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<td>Emerging Market and Developing Economies</td>
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<td>China</td>
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<tr>
<td>India [2]</td>
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<td>ASEAN-5 [3]</td>
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<td>Russia</td>
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<td>Brazil</td>
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<td>Mexico</td>
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**Memorandum**

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<tr>
<th>Regions/Countries</th>
<th>%</th>
<th>Projections (%)</th>
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<tbody>
<tr>
<td>World Growth Based on Market Exchange Rates</td>
<td>2.5</td>
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<td>European Union</td>
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<td>-5.9</td>
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<tr>
<td>Middle East and North Africa</td>
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<tr>
<td>Emerging Market and Middle-Income Economies</td>
<td>3.5</td>
<td>-2.3</td>
</tr>
<tr>
<td>Low-Income Developing Countries</td>
<td>5.3</td>
<td>0.1</td>
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</tbody>
</table>

[1] Excludes the Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

[2] For India, data and forecasts are presented on a fiscal year basis, and GDP from 2011 onward is based on GDP at market prices with fiscal year 2011/12 as a base year.

The coronavirus crisis had a major impact on economic growth, dragging economies into recession in 2020. Despite negative growth in almost countries, China grew by 2.3% due to the state financial support (table 1).

The growth of the world economy dropped significantly -3.1% in 2020, but projections for 2021 and 2022 are positive, 5.9% and 4.9%, respectively. The economic growth projections by regions in 2021 and 2022 are:

Advanced economies fell -4.5% in 2020 and are expected to grow 5.2% and 4.5% in 2021 and 2022, respectively. The United States will lead the recovery with economic growth projections of 6% and 5.2% in 2021 and 2022, respectively. The Euro Zone, with a drop of -6.3% in 2020, will grow 5% and 4.3% in 2021 and 2022, respectively. Emphasis on growth projections for 2021 and 2022 in the Eurozone for Germany, France, Italy and Spain, with 3.1%, 4.6%, 6.3%, 3.9%; 5.8%, 4.2%; 5.7%, 6.4%, respectively. Other advanced economies, such as Japan, United Kingdom and Canada, will grow based on projections, 2.4%, 3.2%; 6.8%, 5%; 5.7%, 4.9%, respectively, in 2021 and 2022.

Emerging Market and Developing Economies fell -2.1% in 2020 and are expected to grow 6.4% and 5.1% in 2021 and 2022, respectively. China is one of the few countries in the world that did not have negative growth in 2020 (+ 2.3%) and therefore China will lead the recovery in emerging markets and developing economies, along with India, with economic growth projections 8% and 5.6% in 2021 and 2022, respectively, and India with economic growth projections of 9.5% and 8.5% in 2021 and 2022, respectively.

ASEAN-5 (Indonesia, Malaysia, Philippines, Thailand, Vietnam) fell -3.4% in 2020 and is expected to grow 2.9% and 5.8%, according to economic projections for 2021 and 2022, respectively.

In Emerging and Developing Europe, the most representative country is Russia which fell -3% and is expected to grow 4.7% and 2.9% in 2021 and 2022, respectively. 

In Latin America and the Caribbean, the most representative countries are Brazil and Mexico, which fell -4.1% and -8.3% in 2020, respectively, and the economic growth projections for 2021 and 2022, for Brazil are 5.2% and 1.5%, respectively, and for Mexico 6.2% and 4%, respectively.

In the Middle East and Central Asia, the most representative country is Saudi Arabia that fell -4.1% in 2020 and the economic growth projections for 2021 and 2022 are 2.8% and 4.8%, respectively.

In Sub-Saharan Africa, the most representative countries are Nigeria, South Africa which fell -1.8% and -6.4% in 2020, respectively, and the economic growth projections for 2021 and 2022, for Nigeria are 2.6% and 2.7%, respectively, and for South Africa 5% and 2.2%, respectively.

2 RESEARCH OBJECTIVE AND METHODOLOGY

The pandemic crisis has changed the world and the digital economy is one of the challenges of the global economy that can contribute to disrupt the way of working and doing business. It is important to learn from the new reality and discover new opportunities in the post-pandemic economy, related with the technology and digitization. Foreign direct investment can help the digital economy development to create new opportunities and contribute to economic growth, removing obstacles and creating new markets.

The objective of this study is to determine whether FDI has an impact on the digital economy and, consequently, on economic growth.

Based on several empirical review studies, this study aims to understand the injection of foreign direct investment into the economy and its consequences on economic growth. The literature review research method is adopted in this investigation. The research includes a systematization of several articles that are related to the theme of the impact of FDI on the digital economy and, consequently, on economic growth.

The study has a qualitative approach depending on the context and objectives of the current research. For this type of research, it is convenient to follow qualitative research in order to better understand and interpret the context, given the established objectives (Ritchie, Nicholls & Ormston, 2013). Sources of information come from various academic works, books and publications.

3 LITERATURE REVIEW

The digital economy is disseminated by the internet and associated technologies such as artificial intelligence, blockchain, data analysis, cloud computing and the internet of things (UNIDO, 2020). The combination of these digital technologies created a technological capability that experts called the Fourth Industrial Revolution (4IR). The 4IR will
disrupt the way the global economy is structured (UNCTAD, 2019). The Fourth Industrial Revolution has immense potential to achieve inclusive and sustainable industrial development and contribute to create opportunities for developing and middle-income countries with digitalization and industrialization.

The structure of the digital economy comprises three dimensions (Figure 1). The narrow scope is made up of the physical telecommunications and internet infrastructure that includes cell phones, laptops, fiber optic cables, telecommunications towers, and the software that brings the infrastructure to life. Associated with the narrow scope is the core sector (IT / ICT) which has digital devices to connect software applications to the broader economy, which represents the delivery of the structured system. The broader scope comprises businesses, governments, institutions and consumers around the world who use connectivity and products and services (UNCTAD, 2019).

The value of the digital economy and its potential impact on the development of growth can lead to the creation of new opportunities. Impacts can be measured by indicators (gross domestic product (GDP), employment, value added, income, trade) and for each of the dimensions of the digital economy (digitalized economy, digital economy and IT/ICT sector).

Information and Communication Technologies (ICTs) are considered one of the main engines of economic growth, whose positive effects are confirmed by different studies (Stanley, Doucouliagos and Steel, 2018).

From a business perspective, digitalization and infrastructure complemented by platforms and the network can take the production of goods and services to a higher level of quality. Its use will allow for a better understanding of the customer and it will
be possible to offer personalized products and services. As the main platforms belong to multinational companies (MNEs) or digital (Evans & Gawer, 2016), the digital economy does not lead developing countries to have more opportunities for national companies (Foster et al., 2018).

To overcome this weakness, digital ecosystems are the solution to support online platforms that allow connecting companies, data and processes. Digital ecosystems in developing countries are national startups, such as service and payment providers (Bukht & Heeks, 2017).

Digital platforms, which are called «digital business ecosystems» (Sussan & Acs, 2017), can promote lower transaction costs, create more opportunities, open new markets, reduce barriers to entrepreneurship and increase funding for startups (Lehdonvirta et al., 2018).

For society, through digital platforms, individuals have a choice with a greater diversity of goods and services, eventually customized, delivered faster and at lower costs. The digital economy, in developing economies, can create new highly skilled jobs, particularly in the digital sector and associated areas that require technical and analytical skills (WB, 2018).

The government will benefit from greater digitalization through increased tax collection due to increased productivity that will lead to increased economic activity. Furthermore, new benefits for the government may be the use of data for the development of society and for the solution of society's problems. The management of data can help in solving global matters related with human health, natural environment, improve efficiency of resources and with businesses and civil society. In addition, the United Nations 2030 Agenda for Sustainable Development could benefit from digital data as this can help to compile indicators that support the agenda (MacFeely, 2019).

Platforms may be a marketplace for businesses where companies can access to foreign markets through e-commerce. More broadly, the digitalization of the economy can lead to a new level of efficiency and, in the future, to changes in established sectors in developing countries. With greater efficiency and automation of production, work in developing countries can disappear or, alternatively, be «relocated» back to more advanced economies (Banga and Willem, 2018; Hallward-Driemeier and Nayyar, 2018).

The digital economy has its drawbacks for small businesses and the brick-and-mortar industries, who find it hard to fight big online stores like amazon.com. Digitalization can have negative consequences in terms of job losses and increasing inequality. In addition, digital platform owners can apply tax optimization, which will negatively impact government tax collection. Finally, there are new concerns related to privacy, security, democracy and ethical issues (Couliday & Mejias, 2018; Mayer-Schönberger & Ramge, 2018).

From an international point of view, the impacts on trade may be insufficient and will depend on the country's degree of development, its commercial structure and its level of digitization. Developing countries may not fully enjoy the benefits of digitalization and become dependent on global digital platforms.

Investing in certain sectors of the digital economy of developing countries providing digital platforms for transacting can have consequences on the nature of transactions and in the ability of companies to expand rapidly, affecting sector structure model. Analysing the nature of transactions the trend is to change from a «pipeline» models to models where platforms are being used (Van Alstyne et al. 2016). In pipeline models, goods and services are produced and «pushed» to the customer through several phases which add value while in platform models companies and individuals can enter easily and provide various products and services to customers (Cusumano & Gawer, 2002). Therefore, in the platform economy, traditional supply and demand (and production and consumption) no longer apply. The structure of the new economic model assumes a circular shape as a simultaneous sending and receiving cycle in which data and interactions constitute the main resource and source of value. In fact, in the digital economy, what dominates is an omni-channel approach and as the digital transition takes place, production and transaction processes can be established in different contexts between the physical and virtual world and can be purely physical or digital or a combination of both.

The platform economic models allow companies to achieve economies of scale faster. The platform offers to the different parties the possibility of carrying out transactions as a «marketplace» and, in this sense, is a «physical asset light». The global expansion and dominance of so-called ride-sharing platforms demonstrate this fact. The platforms have a very low investment due to the lack of goods (taxis) and no employees (drivers are hired) and, therefore, scale up is faster with lower costs (Parker et al., 2016).

There is a risk of expansion of the «physical light asset», as the platform's competitors can offer lower
costs and, consequently, users can easily change supplier. To avoid this practice, platform owners can restrict some activities, adopting non-competitive procedures (Parker et al., 2016). Platforms represent a major shift in the digital economy, where platforms are the foundation of the value sharing framework.

Platform owners are interested in boosting the market by allowing the entry of large small companies and end users to create more opportunities in developing countries and, at the same time, digital companies can appear to support platform models.

Platform owners are interested in driving the market, allowing the entry of large small businesses and end users to create more opportunities in developing countries, and at the same time, digital companies can appear to support platform models. However, there is a real risk that the platform will be closed and the platforms will reinforce their power creating unfavourable conditions for companies and individuals. This is primarily an issue for small businesses or individuals who may feel that they are dependent on a particular platform that offers few alternatives under unfavourable conditions.

Thus, it seems that the best strategy for developing countries is for digital companies to adopt platform models and drive local businesses, competing with global digital platforms. However, the distribution of results can be uneven between owners and users and large platforms can charge large costs and provide few market opportunities and, therefore, companies must analyse the costs and market opportunities and decide to maintain or move to another platform. Several studies suggest that digital platforms can support small businesses in developing countries to conquer new markets (eBay, 2013). However, researchers can help identify the trajectories of these companies on digital platforms. At the same time, it is very important to identify the value creation that is being done by these digital companies in developing countries so that it is possible for policy makers to understand and conclude about the economic consequences of digital platforms.

In the modern economy, value is shared between companies operating through networks and supply chains. The value is measured by analysing prices, incomes, profits, gender balance. Developing countries must analyse and decide to outsource core activities and focus on their competencies (Prahalad and Hamel, 1990). Activities in developing countries of lesser value, such as goods or services produced and less labour intensive, should be disregarded (Gereffi, 1994). In addition, a study of workforce outcomes shows that employees who are in the process of creating value often have low wages and occupy unstable positions (Berg et al., 2018). If low-value activities grow, this will lead to negative outcomes across the economy and hence value distribution can be considered to review policy options.

Governments are key in the process of defining strategies to attract FDI into digital economy. They must encourage the attraction of FDI to the digital economy by three ways. First, they have to build the policy and regulatory archetype to protect stakeholders and national interests. Second, the rules for foreign participation must be clearly defined in to maximize the investors involvement. Third, they must have an active involvement that allows governments to find investors with digital economy projects (UNCTAD, 2019). Foreign direct investment in the digital economy contributes to economic growth and economic growth benefits from the development of the digital economy (UNCTAD, 2019). The question that arises is whether FDI has an impact on economic growth.

Several studies concluded that there is a positive relationship between FDI and economic growth (Muse, 2021). Muse (2021) analysed the impact of FDI on Ethiopia's economic growth. Muse finds that FDI has a positive impact on Ethiopia's economic growth in the short and long term, and that human capital and a stable macroeconomic environment converge on FDI economic growth. To attract more FDI, Ethiopia has to invest in human capital and needs to restructure the financial sector.

Ayamba (2020) investigated the impact of FDI on sustainable development in China and concludes that FDI helps financial deficits. Low financial deficit will contribute to a stable macroeconomic environment and, therefore, to economic growth.

Florina (2020) concluded that FDI is a strategic factor that contributes to a country's economic development and that there is a correlation between the volume of FDI flows and a country's development potential.

Alzaidy (2017) investigated the impact of FDI on Malaysia's economic growth during the period 1975-2014 and concludes that FDI plays a key role in Malaysia's economic growth. The financial sectors are well developed and must lead and facilitate FDI overflows to boost economic growth.

Lessmann (2013), based on a panel data set of 55 countries, concluded that FDI is an important determinant of economic growth.
Table 2: Studies over FDI Impact on Economic Growth.

<table>
<thead>
<tr>
<th>Researchers</th>
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<tr>
<td>Muse</td>
<td>2021</td>
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<td>Iwona</td>
<td>2010</td>
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<td>Al-Iriani &amp; Al-Shamsi</td>
<td>2009</td>
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<td>Mengistu &amp; Adams</td>
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<td>Andreas</td>
<td>2006</td>
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<td>Lumbila, K.</td>
<td>2005</td>
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<td>Sylvester</td>
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<tr>
<td>Bengoa &amp; Sanchez-Robles</td>
<td>2003</td>
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<tr>
<td>Hermes &amp; Lensink</td>
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</table>

Kentor & Jorgenson (2010) explored the impact of FDI from foreign subsidiaries on economic growth in less developed countries between 1970 and 2000. They concluded that foreign subsidiaries had a positive effect on economic growth in less developed countries.

Iwona (2010) investigated the influence of FDI on countries’ economies and concluded that FDI brings capital, new technologies, know-how and management skills. Poland is an excellent example of a FDI host country with a coherent policy for foreign investment and a favorable environment for investors.

Al-Iriani & Al-Shamsi (2009) studied the association between FDI and economic growth in the six countries of the Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates). FDI was identified as a determinant of economic growth through its role in technological diffusion.

Mengistu & Adams (2007) examined the influence of FDI on economic growth in 88 developing countries and concluded that FDI is positively correlated with economic growth. The study also found that a country’s institutional infrastructure is positively correlated with economic growth.

Andreas (2006) analysed the potential of FDI inflows to affect host country economic growth. The paper carried out a cross-sectional and panel data analysis of a dataset of 90 countries in the period 1980-2002 and concluded that FDI inflows impact in developing economies but not developed economies.

Lumbila (2005) conducted an analysis of the impact of FDI on economic growth using data from 47 African countries and concluded that FDI has a positive impact on economic growth in Africa. The study also concluded that qualified human capital, a favourable investment environment, lower country risk and a stable macroeconomic environment are factors that contribute to the impact of FDI on economic growth.

Sylveste (2005) examined the impact of FDI on economic growth in less developed countries and concluded that FDI is positively associated with economic growth in this sample of countries.

The study by Bengoa & Sanchez-Robles (2003) concluded that it is a positive relationship, but only if the host country has several dimensions fulfilled (level of education, technology, human capital, political stability).

The study of Hermes & Lensink (2003) suggests that FDI has a positive impact on economic growth when the host country has a financial system sufficiently developed.

4 CONCLUSIONS

After the 2020 crash, the post-pandemic crisis presents challenges. Even with the pandemic escalating again and its duration unknown, there may be a need for ongoing health care costs. At the same time, in several countries, public finances will face high levels of debt and, to be sustainable, they need strong policies to facilitate growth and address opportunities related to green technology and digitalization.

Investment in digital economies is needed and governments have a fundamental role in the process of institutionalizing the policy and regulatory framework in order to protect national and foreign interests. Furthermore, governments must invest in broadband to bring internet access to everyone and close the gap between those who have access and those who don’t.

Foreign direct investment is a key financial instrument to improve the digital economy and therefore increase economic growth.

Analysing several studies carried out in different countries and times, it is possible to conclude that there is a positive influence of FDI on economic growth and, therefore, on the digital economy. To attract FDI into the digital economy and bring economic growth, these studies suggested that
governments should create a FDI framework that contains attractive factors for investors, such as a stable macroeconomic environment, a high level of education, a skilled workforce, procedures to make doing business easier, political stability and a strong financial sector.

REFERENCES


