




THE FUTURE OF DIGITAL PLATFORM ECONOMY FROM A PERSPECTIVE OF GDP, TAX POLICIES, FDI AND REGULATORY FRAMEWORK IN EU COUNTRIES

Vito Bobek¹ 
Shuporna Ghosh² 
Tatjana Horvat³ 

DOI: <https://doi.org/10.31410/EMAN.S.P.2021.55>

Abstract: *Digital data are core to all fast-emerging digital technologies, such as data analytics, artificial intelligence (AI), blockchain, the internet of things (IoT), cloud computing, and all internet-based services. The dominance of global digital platforms, their control of data, and their capacity to create and capture the ensuing value further accentuate concentration and consolidation rather than reduce inequalities between and within countries. This paper will analyze the digital platform economy in the European Union (EU) in the backdrop of the US and Asia Pacific digital platform economy and throw some light on critical factors for developing the conducive and globally competitive digital industry in the EU. This will be studied through some of the influences such as share of GDP, tax policies, FDI, and regulatory framework in the EU countries, contributing to creating a framework for a competitive global landscape of the EU.*

Keywords: *Tax policy, European Union, FDI, ICT, GDP, Digital platform economy.*

1. INTRODUCTION

How often have you come across the saying that “*data is the new oil*” (Hyrynsalmi, 2018)? Digital platforms are increasingly important in the world economy. The platform companies’ combined value with a market capitalization of more than \$100 billion was estimated at more than \$7 trillion in 2017 – 67 percent higher than in 2015. Some global digital platforms have achieved powerful market positions in certain areas. For example, Google has 90 percent of the market for internet searches. Facebook accounts for two-thirds of the global social media market and is the top social media platform in more than 90 percent of its economies. Amazon boasts an almost 40 percent share of the world’s online retail activity, and its Amazon Web Services accounts for a similar share of the global cloud infrastructure services market. (UNCTAD, 2019)

In China, WeChat (owned by Tencent) has more than one billion active users and, together with Alipay (Alibaba), its payment solution has captured virtually the entire Chinese market for mobile payments. Meanwhile, Alibaba has been estimated to have close to 60 percent of the Chinese e-commerce market (UNCTAD, 2019).

In the paper, we assume the following:

- The revolution in information and communication technology (ICT) is rapidly moving the world from a resource-based economy to a knowledge-based economy. In the global knowledge economy, information and communication are the primary determinates

¹ DOBA Busienss School, Prešernova ulica 1, 2000 Maribor, Slovenia

² University of Applied Sciences FH Joanneum Graz, Austria, Eggenberger Allee 11, 8020 Graz, Austria

³ University of Primorska, Faculty of Management, Cankarjeva 5, 6000 Koper, Slovenia

of competitiveness for firms and countries rather than traditional determinates (Husain, 2000); Changing dynamics of Gross Domestic Product (GDP) – Information and Communication Technology (ICT) grabs larger pie in Foreign Development Investment (FDI);

- Taxes on digital platforms in EU countries are an essential factor of EU (un)competitiveness;
- Regulatory framework in the European Union (EU) countries is an essential factor of EU (un)competitiveness.

In this paper, we shall study the research gap:

- Testing Hypothesis to find the Impact of FDI (in ICT sector) affecting the countries' growth dynamics, i.e., the GDP of EU countries.
- Gaps in digital Regulatory framework of the European Union (EU)

Following contemporary literature, the effect of FDI from the ICT sector on each EU country's GDP dynamics is computed. These net effects constitute the effects of FDI on economic growth dynamics (i.e., GDP) on ICT variables' interaction. The research assesses how information and communication technology (ICT) modulates the effect of foreign direct investment (FDI) on economic growth.

2. THEORETICAL BACKGROUND

2.1. Digital Platforms Economy - Global Map

Let us have a glance into the global landscape of digital platforms. At present, the world is characterized by a yawning gap between the under-connected and hyper-digitalized countries. It is consistently being led by one developed and one emerging country: The United States and China. The two countries account for 75 percent of all patents related to blockchain technologies, 50 percent of global spending on IoT, and more than 75 percent of the world market for public cloud computing. Furthermore, perhaps most strikingly, they account for 90 percent of the world's 70 largest digital platforms' market capitalization value. Europe's share is 3 percent, and Africa and Latin America's together is only 2 percent. Seven "super platforms" – Microsoft, followed by Apple, Amazon, Google, Facebook, Tencent, and Alibaba – account for two-thirds of the total market value. Thus, in many digital technological developments, the rest of the world, especially Africa and Latin America, are trailing considerably far behind the United States and China (UNCTAD, 2019).

2.2. The European Union in the Digital platform Economy

According to the winner-takes-it-all, market-tipping effect, the first moving platforms are likely to end-up, attracting most users and dominating the market (Rysman, 2006). All the big and famous digital platforms have probably got the message by now: European policymakers do not like them very much. Several antitrust cases have been filed against Amazon, Apple, Facebook, Google, and others.

The European Commission and several EU-member states governments have advocated a special platform regulation to slow down the competitive effect of both larger and smaller platform firms. Indeed, the Commission proposed a new 'special tax' on services of digital platforms. Around Europe, Uber and Airbnb have been restricted by national or local governments. Fur-

thermore, there have been repeated calls for breaking up platforms and companies like Google and Facebook (Bauer, 2018).

The EU and American authorities differ in their doctrine of competition policy and their anti-trust practices, notably regarding the exercise of market power and the behavior of dominant market players. The EU competition authorities have referred to a traditional static model of competition, whereas a more innovation-oriented, dynamic competition model prevails at the level of US antitrust agencies. The competition authorities in the EU consider that the exercise of market power is a source of inefficiency and that it should be removed because it harms effective competition (Lebourges, n.d.).

Due to different regulatory regimes, low competition levels and rigid market structures are a common feature of many industries in many Member States of the EU. As a consequence, national legal borders still exert much more negative effects on commerce within the EU than sub-federal policies do in the US (The European Parliament, 2017)

For the EU authorities, key policy questions include:

- how to assign ownership and control over data;
- how to build consumer trust and protect data privacy;
- how to regulate cross-border data flows.

The answer to these questions is the European Union's General Data Protection Regulation (GDPR), which took effect in May 2018, is currently the most comprehensive approach to data protection, with global implications (UNCTAD, 2019).

2.3. GDPR

EU lawmakers have taken broad action to protect data privacy and have restated in the new General Data Protection Regulation (GDPR) that companies are generally prohibited from processing any personal data unless there is a statutory exception.

Nevertheless, GDPR stops short of recognizing ownership or property rights for data subjects and refers to "ownership" and "property" only to recognize the conflicting rights that may outweigh privacy interests. Even the novel right to data portability is quite limited: it applies only to personal data provided (not created or acquired by an "owner"), by the data subject (not any "owner"), based on consent or contract (not legitimate interests, law or other bases), and does not confer any exclusion, usage or alienation rights. Besides, EU data protection laws confer exclusion rights against governments and businesses, but not against individuals acting for personal or household purposes (Determann 2018).

However, it leads to a question – Is GDPR enough for the growth of the digital platform economy of the EU. Does it answer all the relevant doubts? For example:

- How to assign ownership and control over data?
- How to build consumer trust and protect data privacy?
- How to regulate cross-border data flows?
- How to make a tax-friendly ecosystem for enhanced digital investment platforms?
- How to make the regulations and laws more investor-friendly to be able to compete with the digital superpowers?

2.4. Effect of ICT on FDI and GDP of the economy

Measuring the digital economy and related value creation and capture is fraught with difficulties. Although several initiatives are underway to improve the situation, they remain insufficient and struggle to cope with the rapid pace of evolution of the digital economy. Depending on the definition, estimates of several initiatives are underway to improve the situation. They remain insufficient and are struggling to cope with the rapid pace of evolution of the digital economy.

The value-added in the ICT sector, the share of the ICT sector as a percentage of the GDP is an essential growth indicator. In the absence of any in-depth measure of the EU's digital economy, we have considered ICT in this paper. Globally, ICT now is the crucial driver of growth, which is significant in FDI (Foreign Direct Investments), which contributes heavily to the GDP (Gross Domestic Product) of the economy (Table 1). The effect of ICT on FDI is either considered a location determinant for promoting investment or indirectly within the impact of ICT on other determinants that impact investments.

Table 1. Percentage of FDI in GDP of 28 EU nations

Country	2013	2014	2015	2016	2017
Belgium	102.2	114.5	123	115.6	111.1
Bulgaria	87.5	87.6	88.3	84.7	82
Czechia	61.7	64.2	61	63.1	65.1
Denmark	29	38.7	38.4	44.9	43.8
Germany	24.8	24.1	23.6	23.2	24.2
Estonia	84.6	86.1	84.3	86.4	84.4
Ireland	167.1	181.3	311.5	291.9	253.1
Greece	10.4	9.9	12.5	13.4	15.3
Spain	45	46.6	45.7	47	45.3
France	26.1	26.8	28.7	30	31.8
Croatia	50.5	55.1	53.4	56.1	57.4
Italy	16.5	17.9	18.9	19.5	20.3
Cyprus	851	841.3	1,041.6	1,058	989.8
Latvia	50.7	52.6	55.7	53.9	54
Lithuania	36.4	34.9	36.1	35.8	35.1
Luxembourg	4,638.7	5,353.3	6,554	6,783.3	6,004.5
Hungary	176.9	174	161	198.4	165.9
Malta	1,750.9	1,686.2	1,594.5	1,585.2	1,523.6
Netherlands	483	512.6	542.6	553.5	566.3
Austria	65.7	67.6	65.2	53.6	55.5
Poland	42.6	42.6	39.8	42.2	42.9
Portugal	53.3	57.2	60.3	59.3	61.5
Romania	41.8	40	40.2	41	40.4
Slovenia	24.6	27.1	29.9	32.1	31.8
Slovakia	56.7	53.8	53.4	55.6	54.9
Finland	31.7	36.9	35.8	35.4	32.8
Sweden	65.2	61	63.8	61.6	62.3
United Kingdom	52.6	58	53.9	58.3	57.5

Source: (Eurostat, n.d.)

ICT does not just increase firm productivity; it enables firms to be more competitive and innovative. Around two-thirds of US total factor productivity growth between 1995 and 2004 was due to ICT, and ICT has contributed roughly one-third of growth since then. Compared to the United States, Europe has had far smaller productivity gains from ICT. Although the contribution of ICT varies between European countries (Table 2) - some countries have gained roughly as much from ICT as the United States while many others, including France and the Mediterranean countries, have benefited significantly less -overall Europe trails significantly behind (Atkinson, 2014).

Table 2. Percentage of the ICT sector in the GDP of 28 EU nations

Country	2011	2012	2013	2014	2015	2016	2017	2018
Belgium	4.13	4.13	4.03	3.82	3.79	3.78	3.75	3.96
Bulgaria	4.64	4.57	4.72	4.89	5.05	5.38	5.72	6.10
Czechia	4.34	4.35	4.34	4.27	4.24	4.27	4.36	4.56
Denmark	4.62	4.61	4.60	4.60	4.59	4.58	4.57	4.56
Germany	4.04	4.00	4.08	4.17	4.23	4.13	4.19	4.40
Estonia	4.98	4.66	4.57	4.79	4.7	4.85	5.11	5.38
Ireland	17.10	17.20	14.40	11.50	11.50	12.10	13.20	14.40
Greece	2.11	2.08	1.99	1.96	2.18	2.17	1.95	2.49
Spain	3.40	3.37	3.31	3.20				3.28
France	4.06	4.01		3.83	3.89	4.00	4.33	4.31
Croatia	4.04	3.90	4.11	4.08	4.20	4.23	4.38	4.45
Italy	3.41	3.47	3.24	3.21	3.22	3.27	3.33	3.29
Cyprus								
Latvia	3.28	3.44	3.71	3.74	4.15	4.53	4.69	4.92
Lithuania	2.41	2.47	16.1			2.95	3.01	3.13
Luxembourg		8.30	2.38	21.30	15.20	10.30	7.00	6.90
Hungary	5.91	5.71	5.80	5.60	5.72	5.63	5.97	5.95
Malta	8.89	8.44	6.55	6.9	6.86	6.62	8.44	8.05
Netherlands			4.90					
Austria	3.25	3.15	3.23		3.37	3.46	3.49	3.58
Poland	3.27	3.14	3.03	3.07	3.14	3.21	3.33	3.59
Portugal								
Romania	3.10	3.19	3.14	3.31	3.36	3.56	3.53	3.74
Slovenia	3.47	3.55	3.56	3.59	3.60	3.59	3.67	3.59
Slovakia	4.45	4.68		4.16	4.35	4.01	4.30	4.12
Finland	4.33	3.62	4.32		4.54		5.43	4.85
Sweden	:	:	:	6.28	:	:	:	5.94
United Kingdom	:	:	:	5.67	5.81	5.87	5.97	6.15

Source: (Eurostat, n.d.)

3. REGRESSION ANALYSIS - FDI IN ICT VS. GDP

The research assesses how information and communication technology (ICT) modulates the effect of foreign direct investment (FDI) on economic growth, i.e., GDP dynamics in 28 countries in the European Union in the period 2011 - 2018.

Globally, ICT now is the crucial driver of growth, the impact of which is significant in FDI (Foreign Direct Investments), in return, which contributes heavily to the GDP of the economy.

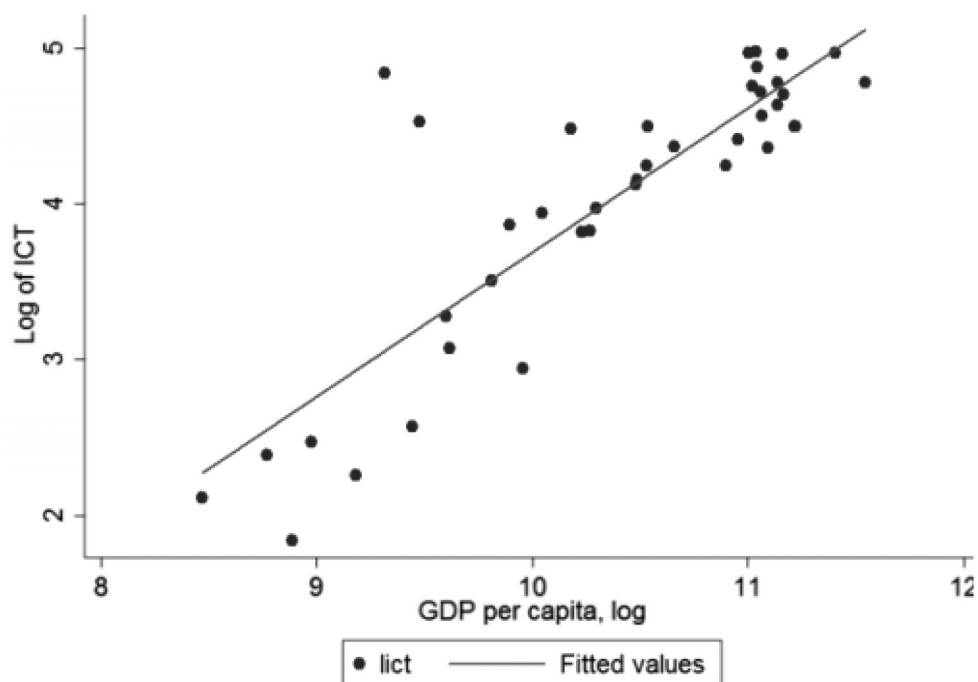


Figure 1. Regression analysis - FDI in ICT vs. GDP

Source: Calculation of the authors.

Our key findings are as follows:

- There is a causal relationship between ICT and FDI inflows of the countries in the EU;
- The empirical studies show the positive and significant impact of ICT on FDI. This has also been highlighted in the theoretical part of the study.
- There is a positive relationship between the GDP and the FDI of the countries in the EU.
- However, given ICT now globally is the key driver for growth, Europe has had far smaller productivity gains from ICT compared to the United States.
- Privacy regulations of digital platforms in the EU, stringent and heavy tax policy and continued fragmentation, making it difficult to achieve economies of scale.

4. WHY EU IS LAGGING

The primary proximate cause is simply the lack of investment in ICT capital: both as a percent of total investment and as a percent of GDP. ICT-using sectors, which indirectly also affect the digital platform economy and primarily the service sector, have been large drivers of growth in the United States have been relatively untouched by ICT in Europe (Atkinson, 2014).

In Europe, layers upon layers of laws and regulations in non-digital sectors significantly hamper digital businesses in their efforts to gain scale and economic clout within and beyond the EU.

The political decisions whose real-world implications effectively erode online platforms' beneficial network effects send strong warning signals to investors and innovators.

Given the significance of legal fragmentation in the EU, Europe does not have the same gravity of market size compared to the US and China, which renders platform-friendly policies even more important to encourage innovators – from inside and outside the EU – to set up shop in the EU (Bauer, 2018)

4.1. Challenges For Digital Platforms in EU

Regulation within product, labor, and land markets limits possible business models, raises the cost of ICT investment, and slows down market forces that can push firms to adopt more effective practices. For example, privacy regulations reduce the effectiveness of online advertising. The “right to be forgotten” legal provision can significantly raise the cost of doing business for a wide range of data providers, and restrictions on cloud provider locations and nationality can slow access and increase costs. Labor regulations also limit firms from using ICT to reengineer production processes.

Europe’s ICT tax policy. EU consumption taxes on ICT products are high, which lowers consumer adoption and can slow business adoption of consumer-facing ICT. More regulatory constraints on modern platform businesses, e.g., special taxes on digital services or narrow and discriminatory interpretations of EU competition law, would further disincentive innovative companies to invest, grow and expand within and beyond the EU (Bauer, 2018). The continued fragmentation of European markets limits the potential size of demand for European goods and services, making it harder to achieve economies of scale from ICT investments. Besides, regulatory heterogeneity is a subsidy to big businesses. It generally reduces the willingness of smaller firms to engage in cross-border commerce. Both the scope and restrictiveness of sectoral regulations in the EU indicate there is enduring resistance of Member State governments to control many legislative and regulatory powers (Bauer, 2018). Regulation has provided a significant bottleneck to firm growth by favoring small firms at large ones’ expense.

4.2. Steps Are Taken Towards Digital Tax in The European Union. Are They Sufficient?

Unfortunately, recent policy proposals and legislation have not been promising. The “right to be forgotten” and other privacy and data collection rules threaten to add high costs for internet companies and hold back both ICT adoption and digital innovation in Europe. Europe needs to find ways to address legitimate concerns around digital issues like privacy and security without harming ICT adoption.

Europe should focus primarily on ICT-using sectors because ICT-producing sectors alone are unlikely to provide significant productivity increases to the economy without adopting ICT in other sectors. Besides, actions to encourage the ICT-producing sector may sometimes hurt ICT-using sectors if protective tariffs or other actions to bias the market toward local ICT producers raise ICT prices for ICT-using industries.

By minimizing taxes on ICT investments, policymakers encourage the productivity effects of ICT use. These tax incentives are significant because while ICT investment provides immense benefits for the broader economy, the nature of these benefits makes them hard for any single firm to capture; therefore, firms tend to underinvest in ICT. Trade policy can play a role, mainly through an expanded Information Technology Agreement.

European firms would be better able to take advantage of ICT if they could achieve larger economies of scale, particularly in ICT-using industries. Recent EU reports have shown that the EU is far from a single market in many service industries due to national barriers to entry.

The European Parliamentary Research Service (European Parliament 2017, p. 12) highlights the “urgent need to bring EU single market rules up to date, in particular as regards online payments,

e-invoicing, the protection of intellectual property rights, data protection and privacy, as well as value-added tax (VAT). Measures in these areas would generate trust in e-commerce and provide adequate protection for EU consumers, who are still more inclined to shop online at domestic shops rather than with a seller in another country.” The authors of this study indicate that the potential gain in Gross Domestic Product (GDP) from a complete Digital Single Market could amount to up to 500bn EUR per year, which corresponds to 3.6 percent of EU GDP (Bauer, 2018).

5. RECOMMENDATION AND FUTURE RESEARCH DIRECTIONS

In China and the US, traditional businesses and start-ups have immediate access to hundreds of millions of potential customers. Not so in the EU, where digital and non-digital industries’ regulations still differ substantially across individual countries and often even within the EU Member States. It is the need of the hour to encourage the strategic cross-border collaboration of capabilities amidst EU countries. This will, in turn, enable and encourage platforms for data harvesting. In the past, the EU has indulged in Airbus cases in the EU to compete with Boeing from the US.

It is essential to transform government funds’ structural utilization to enable the start-ups to work towards a shared vision, instead of competing with each other and working in silos. Converge to provide end-to-end processes and services from a customer perspective.

It would also be beneficial to call for collaborative R&D from universities to research and build common platforms and strategies where many faculties could contribute (Law, IT, Marketing, Business) instead of bringing individual capabilities. Establishing an EU centric digital cross data-collecting platform where other platforms and products such as e-commerce and payment platform can be based on. Ideally regulated by the EU government, to achieve economies of scale and overcome fragmentation.

Another crucial step would be making an investor and startup-friendly tax environment to help these platforms flourish and trickle their benefits to the related businesses and industries. The EU should also frame and introduce relevant regulations for FDIs acquiring the EU companies, which are primarily established through EU funds and experts from the EU.

6. CONCLUSION

Despite many – and growing – frictions in the world economy, it is notable that platforms like Amazon, Alibaba, or Facebook continue to create manifest change in market behavior and lead the world economy towards more integration. Even if most observers welcome that outcome, it has also provoked fears and reactions among those that have lost their previous market power and their ability to control how patterns of economic exchange should develop (Bauer, 2018).

Therefore, data is universal and is to be distributed and used freely on the grounds of public interest. It is essential to take measures to ensure that the data generated wealth is distributed legally. Given the high economic value of personal data, it is little surprise that currently not distributed equally. As data becomes commoditized, it is all the more critical to regulating the legal claim of the digital property than its transaction regulation (Fernández, 2019).

REFERENCES

- Bauer, M. (2018). *Online Platforms, Economic Integration, and Europe's Recent seeking society*. European Center for International Political economy (ECIPE). <https://ecipe.org/publications/online-platforms-economic-integration-europes-rent-seeking-society/>
- Ciriani, Stephane and Lebourges, Marc, The Market Dominance of US Digital Platforms: Antitrust Implications for the European Union (April 20, 2018). <http://dx.doi.org/10.2139/ssrn.2977933>
- Determann, L. (2018). No One Owns Data. *Hastings Law Journal*, No. 265. <https://ssrn.com/abstract=3123957> or <http://dx.doi.org/10.2139/ssrn.3123957>
- Eisenhardt, K.M & Graebner, M. E. (2007). Theory Building from Cases: Opportunities and Challenges. *Academy of Management Journal*, 50(1), <https://doi.org/10.5465/amj.2007.24160888>
- Eurostat. (n.d.). <https://ec.europa.eu/eurostat/web/products-datasets/-/tec00105>
- Eurostat. (n.d.). <https://ec.europa.eu/eurostat/databrowser/view/tin00074/default/table?lang=en>
- Fernández, C. T. (2019, April 3). When GDPR is not enough: Who owns the data? <https://www.scrypt.media/2019/04/03/when-gdpr-is-not-enough-who-owns-the-data/>
- Hyrnsalmi, S. (2014). *Letters from the War of Ecosystems—An Analysis of Independent Software Vendors in Mobile Application Marketplaces*. [Thesis for Doctoral dissertation, Lappeenranta – Lahti University of Technology LUT]. <https://doi.org/10.13140/2.1.4076.4484>
- Kumar, R. M. (2019). Impact of Digitalization on Economy in India. *International Journal of Innovative Science and Research Technology*, 4(5), 8-10.
- Lebourges, S. C. (n.d.). The Market Dominance of US Digital Platforms: Antitrust Implications for the European Union.
- Miller, Ben and Atkinson, Robert D.. (2014). Raising European Productivity Growth Through ICT. Raising European Productivity Growth Through ICT. *Information Technology and Innovation Foundation* (June 2, 2014), June 2014. <http://dx.doi.org/10.2139/ssrn.3079844>
- Myovellaa, G., Karacuka, M., & Haucap, J. (2020, March). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies, 44(2). <https://doi.org/10.1016/j.telpol.2019.101856>.
- OECD. (2016). *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis*. https://www.oecd-ilibrary.org/social-issues-migration-health/the-risk-of-automation-for-jobs-in-oecd-countries_5jlz9h56dvq7-en
- Oshikoya, T. W. & Hussain, M. N. (2000). *Economic Research Papers: Information technology and the challenge of economic development in Africa*. African Development Bank. <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/00157606-FR-ERP-36.PDF>
- Rysman, M. (2006). The Economics of Two-Sided Markets. *The Journal of Economic Perspectives*. 23(3), 125-143. <https://doi.org/10.1257/jep.23.3.125>
- Schmidt, H. (2020). *Plattform-Ökonomie*. <https://www.netzoekonom.de/plattform-oekonomie/>
- Sinha Vikram. (2019). The problems of regulating digital markets, *Hindustan Times*, 12th of June 2019. <https://www.hindustantimes.com/analysis/the-problems-of-regulating-digital-markets/story-cZdM4dCmdFOzHnKouq3oM.html>
- The European Parliament. (2017). *Mapping the Cost of Non-Europe, 2014-2019, Fourth Edition*. Brussels, Belgium: European Parliamentary Research Service.
- UNCTAD. (2019). *Digital Economy Report 2019*, Geneva: United Nations.