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THE IMPACT OF ICT INTERNATIONAL AGREEMENTS ON THE LOCAL INDONESIAN ICT INDUSTRY: A POLICY RESEARCH

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Abstract

Globalization is inevitable. The development of information and communication technology (ICT) has enabled local player to compete in global level. Nevertheless the global level regulations on ICT have impacted severely to the local ICT industry. This research is a policy study which aims to clarify to what extent the global regulations has impacted the local industry. The study urges the Indonesian government to review its participation on the WTO's Information Technology Agreement in order to enhance the local ICT industry's production and competitiveness. Also, it is suggested that e-Commerce, one of the main drivers of Indonesian digital economy, has weakened the local product competitiveness due to current competition system between local and foreign businesses. Hence, related local regulations and international agreements have to be reviewed too.

Keywords: ICT, International Agreements, Local Industry, Policy Research.

1. Introduction

The development of information and communication technology (ICT) has enabled local player to compete in the global level especially in the digital economy as today. In South East Asian region, there are prominent sectors that dominate the internet economy growth in the region which are online transportation, e-commerce, and online media. It is predicted that the region's internet economy growth would reach 200 billion USD by 2025 (Google and Temasek, 2017). Indonesia's digital economy is under the global spotlight where four Indonesian start-ups, recently, are namely seven *unicorns* –start-up with 1 billion USD valuations - in the region. They are *Traveloka*, *GO-JEK*, *Tokopedia*, and *Bukalapak* (Ommundsen, 2018). *GO-JEK* has potential to dominate the region along with *Grab*, the regional player and *Uber*, the global player (page 7).

The Indonesian ICT market is expected to be increased in the future. In the Frost & Sullivan 2018 White Paper, two key industries in the ICT market forecast shows steady increase within the period 2017-2022 which are: cyber security increases from 321.7 USD in 2017 to 487.9 USD in 2022; and, digital services increase from 1,811.5 USD in 2017 to 9,528.4 USD in 2022. However, the telecommunication industry shows peak trend which value 22,850.1 USD in 2019, then decrease steadily in the following years which reach 22,537 USD in 2022 (Frost & Sullivan, 2018). This telecommunication industry forecast contrast to the current administration efforts to increase the telecommunication infrastructure development through *Palapa Ring* which is the national fibre optic/ backbone development project. In the Indonesia Broadband Plan 2014-2019, the target of fibre optic development should reach 100 per cent which covers 497 cities and/or regencies (Bappenas, 2014). Since, there has been regional expansion in several provinces, the number of cities and/or regencies has been increased to 514 cities and/or regencies. According to the 2017 annual report of the MCI, the fibre optic developmental target reached 86.38 % or 444 out of 514 cities and/or regencies in 2017 (Afidah, Doom and Putri, 2018).

The Indonesian digital service industry, particularly e-commerce, has shown tremendous leap at least in the last two decades in spite of the on-going logistic and internet infrastructure development. Based on McKinsey's report, Indonesia's ecommerce industry value up to 8 million USD in 2017, which covers 5 million USD of *e-tailing* (buying and selling physical products through online commerce platforms) and 3 million USD of informal commerce (buying and selling physical products through social media platforms) (Das *et al.*, 2018). Even so, the on-going polemic in regulating ecommerce in Indonesia may lead to weaken the local platforms providers to compete with the global ones. The existing regulations do not create a same level of playing field between the local and global. In addition, most of the global ecommerce players which operates in Indonesia does not comply to The circular letter of the Minister of Communication and Informatics (the MCI) number 3 year 2016 and the Ministerial decree number 36 year 2014 particularly the Permanent Establishment status in Indonesia (Rumata and Sastrosubroto, 2017).

The potential growth of ICT industry needs effective regulations in order to protect the local industry. In the global level, Indonesia obliges to the Information Technology Agreement (ITA) and the World Trade Organization (WTO) Ministerial Meetings in regulating the local ICT industry. The ITA mandates the elimination of ICT products custom duties and other charges (World Trade Organization, 2017a). It has to be noted that ICT products can be in the form of hardware and software. While, one of the Ministerial decisions in the 2017 WTO Ministerial Meetings was to halt any custom duties towards any electronic based transmission products (document WT/L/1032, World Trade Organization, 2017b). The decision implies that any member countries must not impose any charges to digital products (i.e. computer programs, software, texts, videos, images, sound recordings, and others) that being sent through internet. This decision applies until the next Ministerial Meeting that should be held in Kazakhstan, June 2020. These regulations have liberated the local ICT regulations for the last two decades. In consequences, it has brought some challenges whether this liberation may be followed with the local ICT market both hardware and software.

Given to the above description, this study reviews the existing international agreements – ITA and WTO ministerial meetings – which may give impacts on local ICT product industries. This is a policy research which aims to give better understanding both practitioners (policy makers) and academic regarding to that issue. This is a qualitative study which relies on interpretation. There are four characteristics of qualitative study which are: 1) focus on process, understanding, and meaning; 2) inductive, instead of deductive, process; 3) basically is a descriptive study; 4) the researcher is the main instrument of data collection and analysis (Merriam, 2014). The primary data is based on secondary search. The analysis of related literatures will be concentrated in what way that the international agreements may weaken the local ICT product industries. Lastly, related recommendations to review Indonesia's involvement towards current global regulations will be proposed and discussed.

2. The ICT Global Governance and Liberalization

There is an empirical finding that the use of ICT would be able to open a wide opportunity for the local producers to compete in the global trade which impact to the national and global economy at the end. If a country is able to reduce its internet usage gap to the global one, then it will have opportunity to integrate itself to the global trade in commercial services (Gnangnon and Iyer, 2018). By analysing information technology (IT) investment and productivity both developed and developing countries during 1994-2007, Dedrick, Kraemer and Shih (2013) find that there is positive relationship between IT investment and productivity in developing countries which moderated by three factors: 1) level of education; 2) foreign investment, and 3) telecommunications services cost. The last study also suggests that policies to support IT use also determine the level of IT impacts on productivity.

To frame the analysis, reviews on literature, particularly the impact of globalization and liberation on local development. The globalization, as a process, is questioned whether it brings the prosperity to each country or just to create polarization.

> "*The current globalization processes are dominated by the neoliberalism of the [D]ecalogue of the Washington Consensus, which generates inequality in trade competition and rapid acceleration of knowledge and technological development*" (Noruzi and Vargas-Hernandez, 2010)

In December 1996, the 29 WTO country members signed the ITA agreement which basically a commitment for IT liberalization in order to enhance the IT industry. Indonesia was the only one upper middle income country and also was the first country of Southeast Asia region which joined this agreement. In a decade, 68 countries had joined ITA which including Malaysia, The Philippines and Thailand in 1997 (Anderson and Mohs, 2010). Nowadays, there are 81 WTO members joined the agreement. There has been proposal from the ITA members to expand the agreements to other ICT components in the following years. In the 2015 meetings, the members agreed to expand the agreements to include 201 high-tech products (i.e. GPS navigation equipment) (Exell and Wu, 2017). There are 25 members (European Union as one member) has become the ITA expansion members (Nolte, 2016).

The ITA mandates the members to remove their import duties towards ICT products. In the beginning, it was only eight ICT products which were: semiconductors, semiconductors equipment, computers, telecommunications equipment and software and electronic consumer goods. The ITA's agreement had entry into force in Indonesia, March 1997. Initially, Indonesia committed to free its custom duties gradually to 99 post tariffs. But then, the zero custom duties applied to 216 post tariffs by 2005 (Ningsih, 2013).

This ICT liberalization is expected to be an incentive to drive the local ICT industry. Based on the Ministerial decree of Finance number 176 year 2009, the zero custom duty was applied to machine, goods and materials for importers or companies which produce goods and services in seven sectors where telecommunication industry one of it. In the same year, the Ministry of Industry issued 35 Roadmap the development of priority industry clusters within 2010-2014. The electronics and telematics industries cluster and the creative industry cluster were included as these priority industries. In the Ministerial decree of Industry number 128 year 2009, the government targeted an increase in the telecommunication industry with the investment value up to 3.12 billion IDR (up to 220 thousand USD) and the export value up to 19.5 billion USD by 2025.

Many studies have shown the tremendous positive impacts of ITA implementation to the local industry. Even so, the Indonesian IT product balance showed deficit 4.85 billion USD within 1996-2011 (Ningsih, 2013). The biggest deficit value in 2011 was "portable digital automatic data processing machines, weighing <10 kg, consisting of at least a central processing unit, a keyboard and a display" (HS 847130) which the total trade value was 1.24 billion USD with the deficit 1.21 billion USD (page 31). This increasing was due to the high domestic demand on ICT access. The import value trend of HS 847130 within 2013-2017 was 207.53 per cent, where the 2018 import value was 2.13 billion USD or increased twofold in previous year 1.026 billion USD (Kementerian Perdagangan, 2019).

3. ITA and WTO Agreements' impacts on ICT industry

ICT industry in Indonesia has showed and will show significant progress as the growing of internet access demand and digital disruptive services. Indonesia's ICT profile can be summarized based on the ICT development index (IP-TIK). The IP-TIK is issued by the Indonesian Statistic Bureau which composed of three sub-indexes: ICT access and infrastructure; ICT usage; and ICT skill. In the range 0-10 scale, the IP-TIK score in 2016 was 4.43 or increased from 3.88 in 2015 (Badan Pusat Statistik, 2017). At the provincial level, only 10 provinces which score above 4.34, they are: Jakarta, Jogjakarta, East Kalimantan, Bali, Riau islands, North Kalimantan, Banten, Noth Sulawesi, West Java and South Kalimantan. The rest 24 provinces are below the average (page 4). While the number of internet users in Indonesia reaches 143.26 million or 54.68% of the population in 2017 (APJII, 2017). The number of prepaid subscribers based on the MCI's re-registration program in 2018 is 254.8 million (Kominfo, 2018). Meanwhile to decrease digital divide, the government keep to providing backbone infrastructure through *Palapa Ring* project. Until 2017, the development has covered 86.38% of 514 cities and regencies in Indonesia (Afidah, Doom and Putri, 2018).

Digital services, particularly e-commerce, are emerging keys of national economy driver for today and in the future as well. Today, Indonesian ecommerce generates at least USD 2.5 billion which the largest in the Southeast Asia region (Das *et al.*, 2018). The number is predicted continue to grow in the range of USD 55-65 billion by 2022 which encompass USD 40 billion in ecommerce platform and USD 25 billion in socio-commerce platform. The current administration has issued e-commerce roadmap 2017-2019 in order to accelerate e-commerce implementation and growth both of local and national that including Ease tax regulations for local and global e-commerce providers.

Even so, the existing regulation has insufficiently protected the local e-commerce platform providers (Rumata and Sastrosubroto, 2017). The Article 65 and 66 of the Law number 7 year 2014 on Trade mandate the ecommerce platform providers to enclose information details about the product, merchant as well as the payment and delivery procedures. The ecommerce regulatory challenge is more than just that. In fact, the existing regulations create unfair competition between local and global ecommerce platform providers (Rumata and Sastrosubroto, 2017). Last year, the Ministry of Finance issued a ministerial decree number 210 year 2018 on the ecommerce taxation which enact the value-added tax, sales tax on luxurious goods, and import duty for marketplace platform providers, online retail, classified ads, daily deals and/or social media. As a result, the need of specific Government Regulation on E-commerce is inevitable, particularly the regulation on local and import goods that being sold. The Ministry of Trade of the Republic of Indonesia is drafting the Government Regulation bill on E-commerce which one of the mandates would be the local product requirement that being sold and bought in the platforms, beside other technical regulations (Setyowati, 2018). This decree is entry into force on 1st April 2019. This taxation will burden the local ecommerce platform providers to compete the global ones in Indonesian market. Another issue in ecommerce industry is the numbers of import products that traded in online marketplaces are dominating which may reach 90 per cent than local ones (Pebrianto, 2018). In contrast, the 'offline' modern retailer has obligation to sell at least 80 per cent of local products (the article 22 the Ministerial of Trade decree number 70 year 2013).

There is significant growth in Indonesian telecommunication industry. High mobile and internet penetration mainly drive the growth. This high demand and penetration should be able to drive the supplies in the local market. Even so, the question is whether these supplies may create local production or instead consumption. The CIF value of import telecommunication equipment in 2017 was 7.426 billion USD or increased twofold from previous year which was 3.224 billion USD (Badan Pusat Statistik, 2019). In addition, the number of import in telecommunication industry can be seen through the number of telecommunication tools and devices that has been certified by the MCI. In 2017, the MCI has certified around 7,308 telecommunication tools and devices, which increased from 5422 certificates in 2016. Based on the origin country, China dominates with the total 4,053 certificates and then followed by Indonesia and United States which is 549 and 409 certificates accordingly (Ditjen SDPPI Kominfo, 2017:136). In mobile telecommunication market, the local competition remains saturated. The growing of data consumption has caused the operators failed to increase their average revenue per users (ARPU) (Rumata, 2015).

The local ICT producers were used to be the biggest players. For instance, *PT. LEN Industri* used to be the largest producers of television transmitters, earth station and other professional electronic products during 1980s to early 1990s. Also, *PT. INTI* used to be the largest producers of telecommunication switching in Indonesia but there is recent changing of the company business orientation to system based solution including network management system, subscriber line maintenance system (Detikfinance, 2014). Both companies are state enterprises. Today, Indonesia is the importer of these products. Before Exel and Wu's utopian goal would come true in the upcoming years, the Indonesian ICT industries would have died as the local ICT players were highly depended on import goods.

In the meantime, the international level regulations have potential negative impacts toward Indonesian ICT product industries. Under the 2017 WTO Ministerial agreement, any digital product purchased and transmitted online should be free from any tax or custom duties, with no exception it is applied in Indonesia. Under the ITA agreements, Indonesia has liberalized its ICT custom duties as described on previous section. Yet, it has not joined the ITA expansion under the 2015 agreement. Arguably, this ITA expansion will add US$1.3 trillion of annual ICT global trade which equivalent to approximately 10 per cent of world trade in goods (Exell and Wu, 2017). If Indonesia joined ITA expansion membership, then it is predicted that Indonesia's "tax revenue gained as % tariff revenue forgone" would be 31 per cent in year one, then increased up to 264 per cent in year 10 post-ITA accession (page 2).

> *"However, governments should recognize that the short-term costs in terms of tariff revenue forgone are much exceeded by the longer-term economic growth ITA accession can engender by bolstering a country's ICT capital stock, thus unleashing greater levels of productivity and innovation across all sectors of their economies. Countries should view tariff revenue forgone as an investment in their ICT economy just as much as broadband deployment would be, and further recognize that tariff revenues 'forgone' really aren't; in fact' those 'revenues' flow through directly to a country's citizens and business, who can now purchase ICT goods at lower cost"* (Exell and Wu, 2017:3)

Analogically speaking, tariff revenue loss is a 'small' sacrifice for greater good in the future. Is it so? Whether the ICT market liberalization may give significant contribution to the ICT capital, productivity as well as economic growth in the national level, particularly in developing country such Indonesia remains vague and should be assessed critically. RS (2017) compares between the economic and the ICT sector growth at the provincial level in Indonesia. By using Klasen Typology, She finds that most of the provinces – 19 out of 34 provinces – are low in ICT sector growth, but high economic growth. Only few – 8 out of 34 provinces – has high ICT sector and economic growth, which are: four provinces in Java islands (Jakarta, Banten, West Java, and Central Java); Central Sulawesi; North Maluku; Central and West Kalimantan (RS, 2017). The finding also confirms that Gross Capital Formation, Internet Users, Population productive would be able to drive the economic growth. If so, then, it could be argued that most of economic growth at the provincial level is not driven by the usage of ICT for productivity, based on that study. It may contrast to other study done particularly in the firm level. There is empirical evidence to correlate between ICT capital and ICT usage with the productivity in Indonesia (Nuryakin *et al.*, 2017). The productivity here does not merely mean that the firm produces IT products. In other words, the firm's productivity depends on to what extent that the company use ICT i.e. computer and internet for its production no matter what the product is.

In supporting this study, the Indonesian Statistic Bureau conducted survey towards at least 4,500 companies of five sectoral industries (processing, trades; accommodation; food and beverages;

Information and Communication) in 2017 (Utoyo and Siswayu, 2018). Based on the survey, the proportion of ICT labour in overall industries is 4.53 per cent where the information and communication sector contributes the highest proportion which 24.27 per cent. The computer usage for daily work is relatively low which 24.19 per cent; where the information and communication sector may contribute high percentage which is 71.18 per cent. In term of ICT spending, there is 68.49 per cent companies spend less than 1 million IDR (less than 70 USD) each month. There is 41.27 per cent companies which spends less than 5 million IDR (less than 350 USD) each month to purchase ICT devices (hardware, software, and other communication services). This study shows that ICT dominantly used in the information and communication sector in Indonesia.

The ICT market liberalization in present day may burden the local players to compete with the global ones in the future. As illustration, a single mobile device needs several electronic components such as screen and printed circuit board. However, these electronic components are not subject to zero tariff custom duties based on the Ministerial of Finance decree number 12 year 2018 on Custom Duty(ies) on certain industries which covered by the 2018 national budget. Logically, it is more lucrative to import than to produce.

A hardware product cannot be operated without software. This is another issue. Under the 2017 WTO ministerial meetings, the ICT product which transmitted electronically should be exempt by the custom duties. As a result, it may advantage the foreign producers and local importers. In order to avoid the custom duty, the ICT producers from abroad may reduce its hardware selling price with condition no software or operation system. But, the price for the software might be increased and sent through internet with no obligation to pay the tax. The selling price of import product (hardware plus software) may be the same with the price of import hardware and software sent separately through internet. But, the obligation to pay custom duty may different obviously. The later one may be cheaper than the first one.

Nevertheless, the free flow software or any digital content through electronic based transmission may lead to cyber security matter. The insufficient monitoring from the government may harm Indonesia cyber sovereignty. There is no guarantee or whatsoever that the digital products purchased by Indonesian consumers and sent through internet may free from virus or any forms of cyber-attack. Although, the MCI is authorized to issue the certificate all telecommunication tools and devices which are being traded, build, or imported in Indonesian territory. The existing regulations – the Law number 36 year 1999, the Government Regulation number 82 year 2002, and the Government Regulation number 52 and 53 year 2000 - mandate the ICT product's cyber security test. In the light of security tension between US and China's telecommunication brand *Huawei* and ZTE, it is time for Indonesian government should review the 2017 WTO ministerial agreements and also review local regulations to include the cyber security matter.

It is important to note that intensive development in the ICT sector above, logically should cause high increasing of ICT product industries, both hardware and software. However, it seems that it is not the case. The high demand on mobile phone, for example, does not necessarily followed by the increasing of local mobile phone production. Similarly, the vast development of ICT infrastructure does not show significant development of local brand ICT products (i.e. server, base transmitter station, earth station, and others electronic components). While internet users continue to increase annually, it does not mean to drive the local content usage (i.e. applications, operation systems and others). This is certainly a paradox that should be studied thoroughly particularly to identify the existing problems that cause local product difficult to compete with imported ones.

4. Conclusion and Recommendations

ITA and WTO ministerial agreements potentially impact the local ICT market, particularly the ICT products (software and hardware). The ITA expansion mandates zero tariffs to 201 telecommunication products. Although Indonesian has not become the ITA expansion member, but the country has liberalized its telecommunication import since 1996. The WTO Ministerial meeting, particularly in 2017, mandates the custom duty exemption towards any digital products that electronically transmitted. It may potentially create tax revenue loss and threat Indonesian cyber sovereignty.

The Indonesian ICT industry growth is in its early steps of the stage. It shows remarkable growth and contribution to the national economy particularly the digital service. Even so, the existing regulation both local and international may not create same level of playing field between the local and global ones in the market. Hence, we propose several recommendations:

First, the Indonesian government should review the local regulations that may weaken the local ICT producers to compete with the global ones. In the ecommerce industry case, the Government Regulation on E-commerce bill should be able to create the same level of playing field between local and global. In order to do so, the government should also review the existing regulation including the Ministerial decree of Finance number 210 year 2018 on Ecommerce taxation. Beside the competition issue, the government should review the existing regulations to protect the digital sovereignty. the

Secondly, the Indonesian government should review the ITA and WTO Ministerial agreements. The government should be able to bring awareness about the potential threat of these agreements towards the local ICT product market (hardware and software); and also the digital sovereignty. Particularly the digital sovereignty, there should be prior discussion in the Ministerial level heading to the upcoming WTO Ministerial meeting in 2020.

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