

World-System and Industrial Policy in Health Sector in Indonesia

Dr MB Nani Ariani

Faculty of Economics and Business, Universitas Pembangunan Nasional Veteran

Jakarta. Email : nani.ariani@upnvj.ac.id

Dr Mahendro Sumardjo

Faculty of Economics and Business, Universitas Pembangunan Nasional Veteran

Jakarta Email : mahendro@upnvj.ac.id

Dr Faisal Marzuki

Faculty of Economics and Business, Universitas Pembangunan Nasional Veteran

Jakarta. Email : faisal@upnvj.ac.id

Abstract

This study examines the importance of the health sector in Indonesia's economy and the Indonesian government's role in the country's economic development. This paper investigates the political economy of Indonesia's industrial strategy, which was particularly marked by a movement from sector-based to market-based industrial policy as the world system evolved. This study also concludes that industrial policy is a major issue that cannot be divorced from the present evolution of the global system. Our study aligns with the strategies adopted to address health sector development in the country, most notably when the government introduced a new national health system in 2014, which aims to increase health access from limited to guaranteed, according to the State convention. The analysis is extended to 2008 and can be interpolated to 1945, following the country's proclamation, to characterize the industrial policies. The empirical evidence demonstrates that Indonesia saw a considerable import increase from 2008 to 2019, although the value created has dropped, as demonstrated by a decline in capital productivity.

Keywords: World system, Industrial Policy, Health Sector, Economic Development, Indonesia

Introduction

World-System and Industrial Policy in Health Sector in Indonesia

This paper seeks to explain the economic implementation of Indonesia's health sector, where industrial policy plays a significant role. As stipulated by the State convention, policies were established to address health sector development in the country, most notably in 2014 when the government implemented a new national health system designed to improve health access from limited to guaranteed. Thus, a dramatic rise in the demand for healthcare access is apparent. While this is good news for people's health because they now have easier access to health care, the development of the health sector faces problems, particularly in macro management (Mahendradhata et al., 2017). These obstacles must be addressed to ensure sustainable health sector development that can satisfy people's anticipated requirements. As acknowledged, the greatest difficulty is stimulating production in a sector that has been neglected for a long time and supplanted by imports. This work follows the concept that production is the source of profit in institutions that matter and explains the differences between countries' features. Important lessons have been learned from the arrival of the covid-19 pandemic regarding the development of the health sector. However, it should be noted that the decline in the sector's performance began long before the pandemic and is primarily attributable to the development of the industry in that sector (Shang, Li, & Zhang, 2021). This paper intends to elucidate the institutional characteristics of industrial policy in the development of the health sector in Indonesia over a longer period so that they may be used to explain the country's sluggish output and utilized as a plan to improve performance.

The government's efforts in industrial policy to combat the slow production in the health business date back to 1958, when NV Chemicalien Handle Rathkamp & Co. was nationalized and amalgamated with various pharmaceutical companies to become Bhinneka Kimia Farma, the pharmaceutical state entity. Since then, there has been an increase in the number of state-owned and private firms. The government also published the Presidential Instruction, which is essentially a strategic plan to accelerate the growth of the pharmacy business, including pharmaceutical machines

and equipment, to improve the industrialization process (Wartono et al., 2021). These policies were enacted to reform upstream and intermediate industries, recognizable entities in a typical supply chain.

This study examines several forms of industrial policy, such as the strategy to strengthen an industry to serve as a source of growth. With this approach, industrial policy can be viewed as sectoral changes in GDP. It is often referred to as state involvement to develop industries the economy needs. Consequently, it refers to one or more sectors, including the steel, maritime, and digital industries (Bruhn, Calegario, & da Silva Borges, 2022). In this view, industries can be classed as key industries, strategic industries, and a variety of other classifications based on the model of industrial policy, which varies from country to country to demonstrate the significance of industrial policy. Moreover, industrial policy can be defined as the economic structure encompassing the nature of commerce and achieving economic expansion (Higuchi & Shimada, 2019).

This study is aware of what Vrolijk (2021) stated in his research regarding the embeddedness issues of industrial policy adoption, particularly in developing countries, despite its crucial role in explaining the failure of the market, as is frequently described by development economists. The argument can be extended to include the significance of macroeconomic factors provided by Keynesian economics, such as demand uncertainty, production-based learning, and management. In this view, industrial policy is linked to state intervention, such as regulated competition, government spending, and tax incentives to encourage investment, which can be implemented to ensure effective demand and, consequently, the development of the industry to meet that demand (Aghion et al., 2015).

By considering what occurs in Indonesia, this research would advance. Firstly, according to Landesmann and Stöllinger (2019), industrial policy refers to industrialization in addition to the industry. Even while state intervention is necessary, industrial policy should be geared toward advancing technological progress and not just investment, even though the latter can be used as a proxy for the latter. In addition, industrial policy should also consider the prospect of accumulation through local or internal decisions, as described in the world-system concept, which

is frequently disregarded by the state. As in the case of Indonesia, market failure has resulted in numerous economic paradoxes that industrial policy should address. Otherwise, the paradoxes of [Figueroa Helland and Lindgren \(2016\)](#) will misdirect the industrial strategy, ultimately leading to the failure of developing a sector such as the health sector in Indonesia.

According to health sector studies conducted by [Purnamasari \(2019\)](#), the incidence of diseases such as tuberculosis and malaria has decreased in Indonesia over the past several years. Other health problems, such as traffic accidents, degenerative diseases, non-contagious diseases, and infectious diseases, do not exhibit a similar pattern. These issues affect the lives of ordinary Indonesians. Hence, Indonesia has one of the worst health conditions among ASEAN nations. It is due to the uneven distribution of health resources in Indonesia ([Aunguroch, Juanamasta, & Gunawan, 2020](#)).

To meet the high demand increase, Indonesia had a large increase in pharmaceutical firms, investments, and imports from 2008 to 2019. The government's health care system reform is the primary cause of these rises ([Pharmaceutical Industry in Indonesia, 2020](#)). According to the data, the prevalence of diseases is rising, but the output is limited, placing a strain on state budgets and raw material requirements. In Section 1: Introduction, this study begins by providing context. Following that, Section 2 examines data and techniques. An analysis of industrial strategy in Section 3 then follows this topic. Finally, Section 4 addresses the long- and short-term empirical evidence, followed by Section 5's conclusion.

Literature Review

1. World-System in Indonesia

Global system theory is a macro-perspective that explains the viewpoint of the "whole social system" and "capitalism world economy" According to the global system, if a nation is prosperous, it will have a favorable effect on other nations, as these nations and their population will benefit from the wealthy nation. According to this approach, countries with a low standing receive minimal resources ([Thirakulwanich & Khalid, 2022](#)).

According to experts, the global economic system has three distinct sorts. These categories consist of peripheral, semi-peripheral, and core nations. The key countries are Germany, Japan, and the United States. These countries are prominent in the capitalist sector and have a high urbanization and industrialization level. These core nations are founded on a capitalist framework with coercion, low labor exploitation, high technology-based production, high pay, and high capital intensity.

In contrast, peripheral countries include low-income South American nations and most African nations. Their economies are capital-dependent on the industrialized nations. These economies are urbanized and industrialized to a lesser degree. Most peripheral nations are predominantly agricultural, lack dependable internet access, and have low literacy levels. South Africa, Nigeria, India, Brazil, Mexico, Taiwan, and South Korea are examples of semi-peripheral countries. These nations are less developed than the core nations. Compared to periphery nations, these nations are more developed (Smith, 2017). The Core countries of the world control the majority of the world's technology and capital. These states have greater power over global economic activities and commerce. These nations are also the cultural centers that attract intellectuals and artists from around the globe. On the other hand, peripheral nations typically offer goods and labor to core nations. In the end, semi-peripheral nations exploit core nations the majority of the time (Coccia, 2018).

2. Industrial Policy in Health Sector in Indonesia

Throughout the last three decades, policymakers' primary focus has been the growth of the health industry. When creating different laws, institutional regulations, standards, practices, and norms must include the industry's dynamics. The policies of any industry are a strategic mixture that plays a significant function in enhancing the organizations operating inside that industry. These physical and soft organizations have evolved to generate health-related dangers. This procedure is regarded as costly and noisy. The most effective tool for creating industrial policies can offer businesses instructions for the type of technology they require (Rodrik, 2019).

Concurrently, [Carvalho et al. \(2018\)](#) claim that industrialization enables the creation of higher-valued items, the advancement of technology, the enhancement of the organization's reputation at the worldwide level, and the trade of industrial and primary goods. As a result, it will reduce countries' dependence on wealthy nations and the growth of the domestic industry. Industrialization is the primary battle of these nations.

After its independence in 1945, Indonesia's economy has more closely resembled an older economy. Until the middle of the 1960s, Indonesia's industrialization had barely touched the Indonesian industry. By 1965, the Indonesian economy was regarded as being in shambles. Industry-related modern technology was introduced when the government began focusing on the country's economic development in the early 1960s. Throughout the three decades leading up to 1997, Indonesia's industrial sector, particularly the manufacturing sector, grew rapidly ([Febriansyah & Hartanto, 2019](#)).

Over the next two and a half decades, the Indonesian economy grew by 9.0% yearly. This growth noted in the research is not linear development over this time period. Eventually, Indonesia must rely solely on its resources for industrial development for various reasons. To achieve industrialization, the Indonesian government had to implement more industrial-friendly policies. Some critics interpreted this government action as an election-winning strategy. Nonetheless, structural ramifications were required for Indonesia's economic progress. The Indonesian government's primary difficulty is maintaining balance in improving the country's balance and balance of payments ([Tijaja & Faisal, 2014](#)).

3. Political Economy of Industrial Policy

a. Industrial Policy Changes Analysis

From 1945 to 2021, as shown in Table 1 below, [Defourny and Nyssens \(2017\)](#) assert that Indonesia's economic development has undergone important transformations: guided democracy from 1945 to 1967, a new order regime from 1968 to 1997, and reformation after crises in 1998. This political regime transition

has profoundly affected Indonesia's social and economic structure, from the social structure within the society to its foreign relations. This is bad news for the development progress since, in the end, when a regime changes, the system also substitutes policies with a new direction and discontinuity from the previous policies. As is evident, a political regime can be represented by groups of individuals who embody its vision, mission, and strategies for achieving them, including its attitude toward international integration (Fitriani, 2015). Throughout the era between 1945 to 1967, the government had tight ties to European society. However, it favored ties with Japan and the United States during the subsequent period. As for the post-crisis time, there is a tendency to return to Europe and China, making it more diverse (Sluyterman, 2020). Since the Asia-Africa Conference in 1955, the Non-Alignment Movement in 1961, and the New Order era, to the current G20 time, relations with diverse countries and regions have highlighted the significance of the world system and how international dynamics are tied to national changes. Similarly, industrial policy has also undergone considerable changes.

Throughout the years 1945-1967, as shown in Table 01 below, Sluyterman (2020) wanted to equip Indonesia with a solid economic basis that could be utilized over the long term. In doing so, the government established its industrial policy by directly addressing sector dynamics. Thus, the categorization utilized is stood for diverse industries that cannot be listed individually here. The government categorized industries into many categories based mostly on their significance. As a result, certain businesses were classified as state-only (public), private-only (private), essential industries, and free-entry industries. Based on its effect on long-term stability, this classification was chosen. To accomplish this, industries were classified based on their size, and the government had previously considered the significance of corporations as unit businesses within the sector (Fahmi, Koster, & Van Dijk, 2016). Hence, enterprises were also categorized based on their value to the economic foundation. Finally, industries can be classified as basic, heavy, and high.

Table 1. Characteristics of Industrial Policy in Indonesia, 1945 - 2021

	1945-1967	1968-1997	1998-2021
Type of Industrial Policy	Sector-based industrial policy	Market-based industrial policy	Infrastructure-based industrial policy
Classification based on strategic effect.	Closed industries, Open key industries and free industries	Export industries, Competitive industries	Pledge industries, Priority industries, Upstream industries, Basic inputs industries, Infrastructure
Classification based on size	Large, medium, and small industries	Large, medium, and small industries	Large, medium, and small industries
Classification based on the type of firms	Very essential (important) industries, Essential industries, and semi-essential industries		
Classification based on project	Basic needs project, reserves project, minimalist foreign currency project, labor-intensive project, tepat-guna technology Pioneer industries	Basic needs project, Labor-intensive project, Tepat-guna technology	
Classification based on the degree of complexity	Basic industries, Light industries, Heavy industries,	Basic industries, Light industries, Heavy industries,	

Source: Author

The industrial policy followed during the succeeding period differed from that of the preceding period (Pangestu, Rahardja, & Ing, 2015). The primary distinction can be identified as follows. Although sectors and categories of basic, heavy, and high industry were still regarded, the industrial strategy was conceptualized within the framework of the market rather than sectors. Consequently, export-friendly and competitive industries were favored above others. This is consistent with the growth in export value brought about by natural resources such as oil and gas.

The subsequent period can be separated into two parts: before 2014 and after. While the first period does not exhibit significant changes, the subsequent period displays significant infrastructural growth (McCawley, 2015). Thus, infrastructure is

the foundation of industrial strategy. This is good news for infrastructure but not necessarily good news for other sectors, such as upstream industries, that can be detrimental to basic inputs businesses.

b. Industrial Policy in Health Sector

In general, the development of the pharmacy industry in Indonesia follows the political economy trajectory. Throughout the period from 1945 and 1967, the government plan encompassed the pharmacy industry. It is classified as a vitally important light industry. The word extremely vital relates to the amount of reserve the sector utilized and generated. Also, the industry was confined to private companies. In this period, only four companies existed. The situation changed in the subsequent decades when market globalization and deregulation in the pharmacy sector were implemented (Pezzola & Sweet, 2016).

As shown in Table 01, the period is characterized by a market-based industrial strategy that can be extended to export and import. The pharmacy industry's greatest issues are the high cost of products and health care and their limited accessibility. It is expected that by importing pharmaceutical products, such as medications, prices will decrease. However, the price remains high despite the market being open since the beginning. The government has adopted a social protection strategy that provides universal healthcare access. Hence, pharmacy product demand increases dramatically. Regrettably, the industrial policy remains constrained since the government and several stakeholders continue to believe that Indonesia's scale economy is insufficient for profit (Kartika et al., 2020). Yet, the covid-19 pandemic has substantially altered industrial policy. In summary, the government recognizes the significance of pharmacy sector development and initiates a reduction in the number of imports straining the budget.

In 2016, the government issued Presidential Instruction no. 6/2016, a strategic plan to expedite the growth of the pharmacy business, including pharmaceutical machines and equipment. This regulation was followed by Regulation No. 17/2017 of the Ministry of Health, which was an action plan. These restrictions were enacted to restructure the upstream or intermediate industry, consisting of raw materials, intermediate, marketing, distributors, and retailers. Health access is ensured through

the JKN and Kartu Indonesia Sehat (KIS; Card of Indonesian Health) policies (Gaol, Rahayu, & Matsuo, 2020).

As an example of the implementation of industrial policy, in 1958, the government nationalized NV Chemicalien Handle Rathkamp & Co. It merged several pharmaceutical companies to form Bhinneka Kimia Farma, a pharmaceutical state enterprise, before renaming it Perusahaan Terbatas or a private enterprise. It began to operate differently than a state enterprise. In addition, in 2001, it became a public enterprise whose shares could be purchased on the stock market. In 2014, the company modified its profile and became a healthcare provider. It created a retail subsidiary in Saudi Arabia named Kimia Dawaa in 2018 and went global. In 2019, it will become a subsidiary of PT. Bio Farma after the government acquires its ownership. All of these actions were consistent with the national political economy's trend. The company developed from sodium and Fe Sulphate in the Dutch era before 1945 to paracetamol, Kina and its derivatives, amoxicillin and ampicillin, rifampin, and pharmacy salt in 2016 of items over time. In South Korea, it was amalgamated with Sungwun Pharmacoepia. Bio Farma is currently producing the Covid-19 vaccine for distribution in 2022.

Methodology

Data collection

The National Statistical Agency, Badan Pusat Statistik Indonesia, the Ministry of the Industry Republic of Indonesia, and the Social Security Administrator for the Health Republic of Indonesia provided most of the data used in this study (BPJS). They range from 2008 to 2019. Hence the data are out of date. But, according to this study, the data have not altered significantly. Because the economy during this time period has not altered significantly, they can still be utilized. The data largely consists of statistics from medium and large industries and includes value-added, output, input, use of raw materials, import content, stock capital, number of laborers, and number of companies. The data are separated into two categories: pharmacy products and raw materials, expressed in millions of rupiah (Rp) and other units. To enable comparisons, additional data are extracted from the literature.

Concept Operationalization

This study integrates the argument that industrial policy has a significant role in emerging economies, including the pharmaceutical business, which is part of the ecosystem of the health industry. If an industrial policy is adopted, it will initiate an industrialization process that will address productivity challenges in the health sector, such as those Indonesia is experiencing. Sadly, industrial policy tends to be disregarded and substituted by a market that has crystallized into financialization on a global scale ([Anshari & Almunawar, 2022](#)). To prove our hypothesis, which is primarily about the absence of industrial policy and the failure of local industrialization in the health sector, this paper employs the concept of the world system and its framework to recognize market globalization and the accumulation of the world economy. This work shares the logic of Keynesian economists, who emphasize the significance of the state's role.

Nevertheless, unlike them, governmental involvement and the market are insufficient to promote industry and production, as technological advancement is the primary concern. This article studies the relationship between industrial policy and technological advancement and demonstrates that market failure implementation in developing economies has caused paradoxes that industrial policy should foresee. The dichotomy between accumulation represented by value-added and capital productivity, investment, and foreign commerce in Indonesia's health industry demonstrates this point ([Tanjung & Windiarto, 2021](#)).

This study describes the world system as a social system utilized globally in social analysis, including political economy, to describe and explain social changes. By employing this concept, the paper intends to expand the effect of the world system beyond social changes to economic trends and fluctuations. Social scientists and economists have demonstrated that capitalism is a worldwide institution that plays a significant role in social change, yet other studies have demonstrated the viability of alternative systems. With this perspective, industrial policy cannot be limited to state action alone, as the state itself is part of the global system, social changes, and capitalism ([Agnew, 2021](#)). The social system comprises multiple components that can be classified into at least the economic, social, political, and cultural categories.

In addition, this study distinguishes between capitalism and market economy, with the latter word referring to simply the economic dimension. Therefore, competition between capitalism and the market economy is inevitable, even though the market economy itself can be considered a component of the capitalist world system. However, within this work, there are periods when social changes have been largely replaced by an economic system based on the market (Streeck, 2018). Hence, it must be differentiated to highlight distinctions. The industrial strategy was avoided in this type of organization, particularly after 1980. Although changes are evident, the dominant world system still exists, necessitating a new social and economic narrative. The international market has seen globalization in supply and demand throughout this period, and this sort of market is extensively embraced in Indonesia. As a result, short-term efficiency is rewarded, which hinders the development of industries such as the pharmaceutical business.

To demonstrate the paradox of policy execution, this paper employs primarily the investment rate, capital productivity, and international integration as measured by import quantities in the health sector as indicators. If capital productivity rises, then the implementation of industrial policy is successful. As with other directions, the failure of industrial strategy is evident. Second, the growth in capital productivity is a positive indicator for investment, which will thus increase. Even though the market supports openness in a free market, imports are anticipated to decline. Investment has been increasing, but capital productivity has been declining, followed by increased imports (Nofrian, 2019).

Empirical Analysis

Long-term Analysis (the Period of 2008 - 2018)

As shown in Figure 1, the import value of the pharmaceutical business in Indonesia rose sharply between 2008 and 2021, from a low of USD 32.27 million in 2008 to a high of USD 241 million in 2021. Observably, huge changes occur after 2020, when covid-19 arrives on the planet. However, the pandemic cannot be blamed for many imports because imports were already greater than exports for the same

period before the crisis in 2020. The graph demonstrates that the export value is less than the import value and fluctuates moderately. Before the pandemic, the lowest value was 11.19 million in 2008; the greatest was 28.91 million in 2019. As stated, the disparity between imports and exports is very large and has grown since the beginning of 2017. The import trend can be divided into at least three distinct periods: between 2012 and 2014, before implementing a new social security system. The period between 2015 and 2017, during which the new system was implemented, and between 2018 and 2020, before a sharp increase in 2021, is due to the pandemic. The disparity between imports and exports widened between 2013, 2017, and 2020.

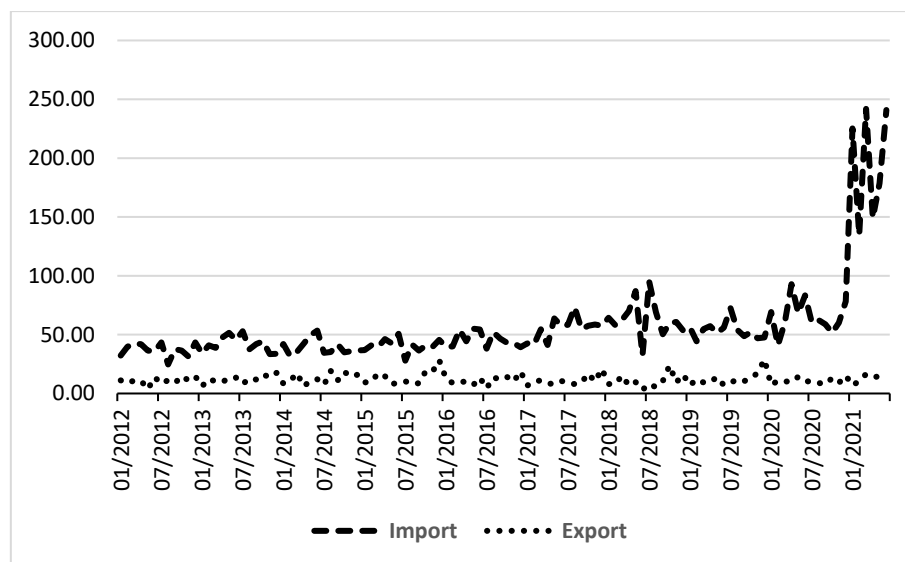


Figure 1: International Trade, US mn

Source: BPS

As shown in Figure 2, the investigation can be extended to the investment area. Investment has greatly increased from 794 billion IDR in 2008 to 5.8 billion IDR in 2018. Investment is a source of growth. Thus this should be excellent news for the development of the health industry in Indonesia. Figure 1 demonstrates that the growing trend of investment is following the one that is most significant between 2012 and 2021. This evidence contradicts the theory that explains the relationship between investment and export, which is typically phrased as follows: an increase in investment should lead to an increase in export. On the contrary, the numbers indicate an increase in investment alongside an increase in imports.

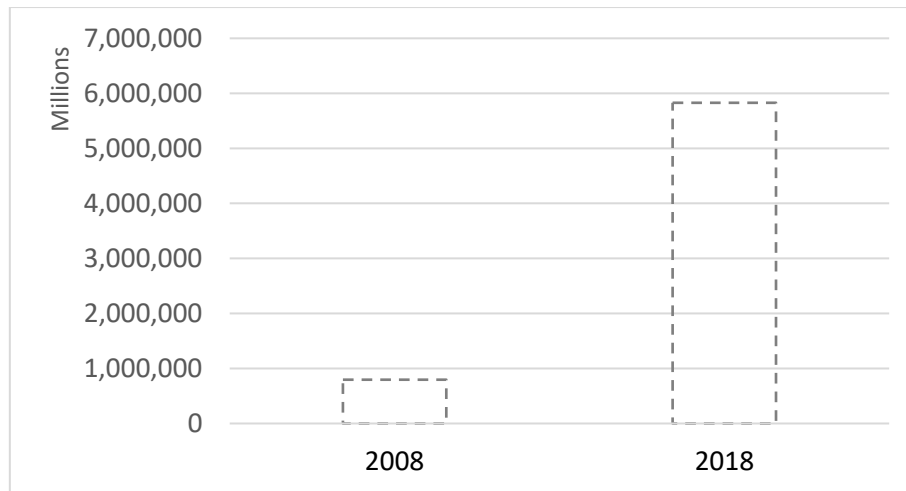


Figure 2: Investment Total, IDR mn

Source: BKPM, Indonesia Investment Coordinating Board

The investment comprised domestic and foreign investments, as seen in Figures 3 and 4. As can be seen, both types of investment enjoy large growth, but the domestic investment is particularly robust. The increase in domestic investment from IDR 134,845 million to IDR 3,326,547 million is depicted in Figure 3. According to data from the Ministry of Industry, domestic investment is given to assist the development of upstream pharmaceutical goods, such as cephalosporin manufacture in Cikarang, West Java. It is also possible to watch the manufacture of paracetamol and its raw materials in Bogor, West Java, as well as the production of erythropoietin, granulocyte, efepoieting, and monoclonal antibodies in Cikarang, West Java.

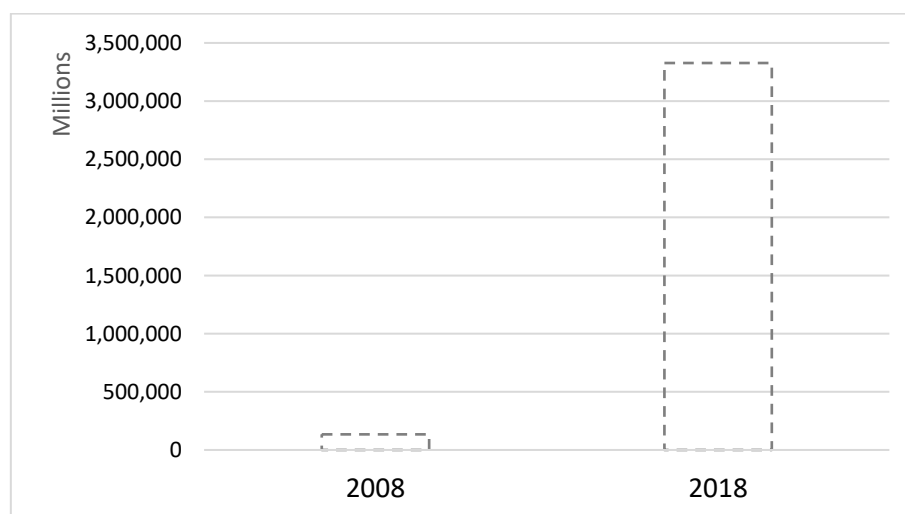


Figure 3: Domestic Investment, IDR mn, 2008, 2018

Source: BKPM, Indonesia Investment Coordinating Board

Similarly to domestic investment, foreign investment has increased significantly from IDR 659,537 million in 2008 to IDR 2,503 billion in 2018. Investments from other nations, including China, Spain, Germany, South Korea, and India, are present. They have cooperated with local companies such as PT Inna Pharmaceutical Industries, PT Nufarindo, PT Kimia Farma, and PT Kalbe Farma to create various pharmaceutical products, including Statin, pyrazole, and anti-viral medication. Hence, Indonesia can generate approximately eleven pharmacy raw materials despite its high import amounts. This is fantastic news for the development of the health industry, but it is insufficient to stimulate the sector. The health industry is directly tied to the need for health access. Failure to address the demand will substantially influence various macro variables, including the highest government spending, resulting in a larger budget deficit and less fiscal headroom. Indonesia is among the countries with the highest population.

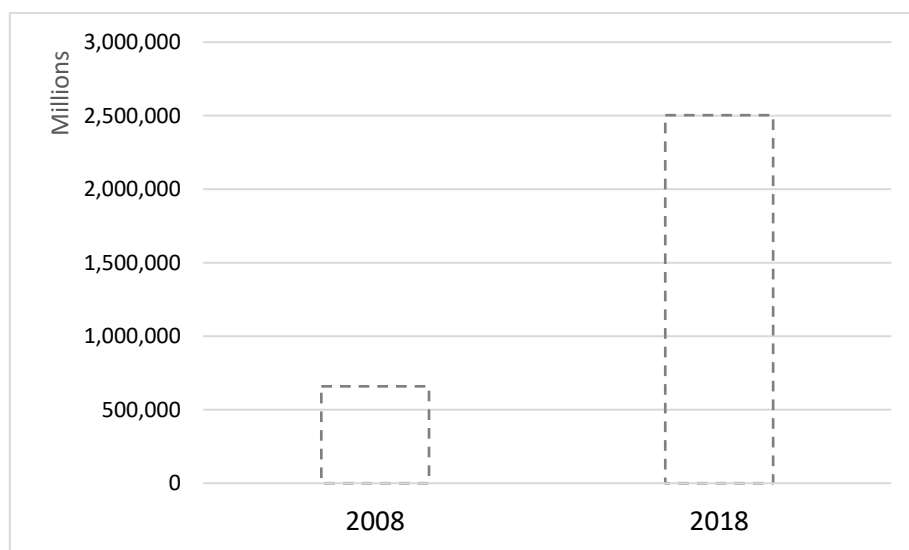


Figure 4: Foreign Investment, IDR mn, 2008, 2018

Source: BKPM, Indonesia Investment Coordinating Board

Figure 5 depicts the increase in the number of firms from 260 units in 2008 to 352 units in 2018, which parallels the increased trend of import and investment. As is evident, the number of businesses can be divided into two categories: public and private businesses. According to the data, the number of private institutions is more than that of state institutions. Indonesia has three state-owned companies: PT Kimia Farma, PT Bio Farma, and PT Indo Farma. Before 2000, PT Phapros was still classified

as a public enterprise. Hence the number has been lowered. Although the number is less, the market share is greater due to the larger size of its vertical integrations from upstream to downstream to distributors, retailers, and agents nationally. This is unlike commercial firms, especially international corporations, typically witnessed exclusively in large areas, such as the Java islands.

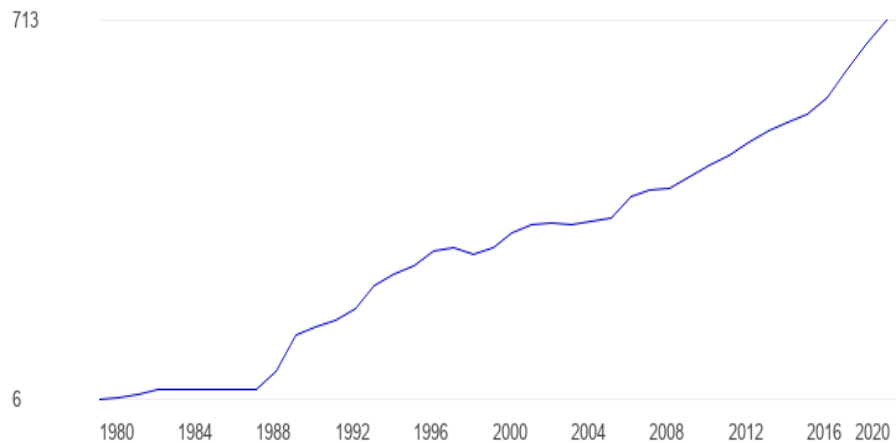


Figure 5: Number of Enterprises, unit

Source: BPS

Our investigation has revealed the character of import, investment development, and the number of businesses. The analysis can be extended to capital productivity, as depicted in Figure 6, which declined with time. It indicates that although the number of investments and businesses has increased, the productivity in the health sector has not improved. So the devil remains within the industry. Who is primarily accountable for this circumstance, and why does it occur? The series can be extended backward, and a similar pattern will be observed. It indicates that policies are implemented with a long-term perspective so that no substantial changes are detected. It is also possible for policy changes to occur without having a significant effect on the sector. In addition to industrial policy, the policies profiled include macroeconomic policies such as budget spending, interest rate, credit lending, and working organization. The profile can be expanded to include other areas, but the fundamental question remains: can it bridge the gap between investment and capital productivity? The implementation of international benchmarking does not necessarily address the bridging problem.

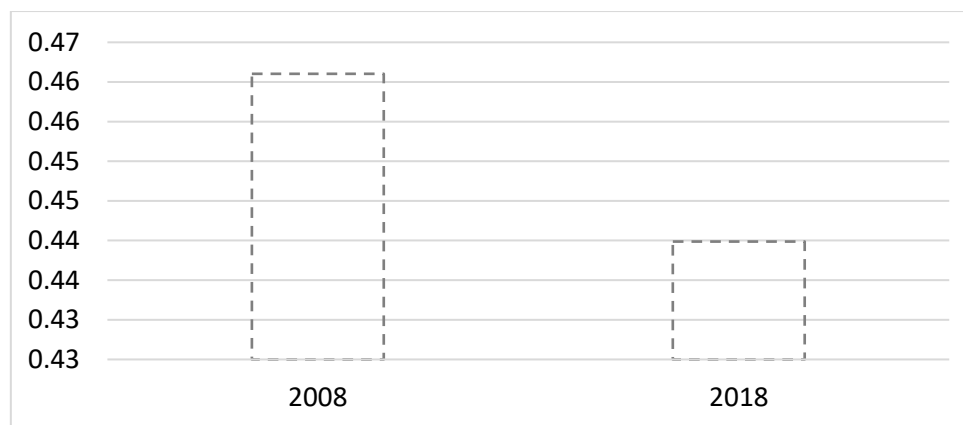


Figure 6: Capital Productivity

Source: Author. It is obtained by dividing value-added and stock capital in the health sector.

Short-term Analysis (the Period After 2014)

The preceding study is long-term, but it may be expanded to a short-term one, particularly after 2014, when new social protection was introduced and substantial changes were made to improve the health situation, which would ultimately affect the economy. Generally, a similar profile demonstrating the necessity for an industrial policy with a non-mainstream world system at the local level to bridge investment and capital productivity is acknowledged. In contrast, achieving harmony between the economy and the health sector will be difficult due to the resulting budget deficit and numerous other challenges in economic health.

Figure 7 demonstrates that despite efforts to increase exports, the pharmacy industry is now dominated by imports rather than exports, resulting in an overall trade deficit. According to the mainstream argument, the nation's pharmaceutical industry has been unable to compete internationally. Although this argument is disputed, the fundamental reason for import dominance has nothing to do with competition because the industry has not yet been established; hence, it does not exist. The graph shows that when exports decrease, imports increase, demonstrating a substantial disparity between exports and imports.

The United States accounts for 16% of Indonesia's exports, followed by Germany (11%), France (7%), India (7%), and the United Kingdom (6%). Singapore (21%), China (21%), Malaysia (10%), India (8%), and Thailand (7%) are the leading

suppliers of imports. Consequently, despite some asserting that Indonesia dominates the Asian market, its exports to Asian markets are insignificant compared to its imports from predominantly Asian countries.



Figure 7. Exports and imports.

Source: obtained from BPS.

As shown in Figure 7, Indonesia's exports have decreased from 586 million USD in 2015 to 556.2 million USD in 2019. This decline is not a positive indicator of the country's industrialization development. Indonesia has lost its worldwide market, as demonstrated by the roughly USD 30 million difference between exports in 2015 and 2019. Not only has Indonesia witnessed a fall in the export market, but its imports have also increased dramatically, from USD 739 million to USD 912.2 million, as shown in Figure 1, during the same period after hitting its peak in 2018 with USD 990.5 million. In addition to the period's upward trend, the discrepancy between exports and imports is large, increasing from USD 152.5 million in 2015 to a peak of USD 444.3 million in 2018 before decreasing to USD 356 million in 2019. This disparity explains the sector's twin loss resulting from a decline in exports and a deficit in the gap between exports and imports. This double setback has harmed the nation. As a result, and as reported by national media outlets, the president has criticized the excessive volume of imports and urged sector-related ministries to address the problems. Even though the number of imports decreased in 2019 compared to 2018,

the level is still large, proving its impact on the nation's market formation and deindustrialization. The import analysis can be compared to the value-added analysis to illustrate when industrial policy implementation is successful. This study contains the concept that market formation comprises demand and supply, with value-added playing a crucial part in the market's evolution. The increase in value-added will expand market formation, and its trajectory will be opposite to that of imports. Figure 8 depicts the rise in value added for the Indonesian pharmacy sector, comprising the pharmacy product (PP) and pharmacy raw (PR) industries. As can be observed, the total value added of the pharmacy industry (VA, Total), which is the sum of the value added by the pharmacy product (VA, PP) and pharmacy raw (VA, PR) industries, increases by Rp 3.6 trillion between 2013 and 2014 before decreasing to Rp 19.3 billion the following year. From 2015 to 2016, the figure increases to Rp 9.6 trillion before declining to Rp 3.1 trillion in the subsequent period. The steep fall in 2017 resulted from a decline in the value added to pharmacy products. The reduction in 2015 was attributed to the decline in the value added by the pharmacy raw materials business.

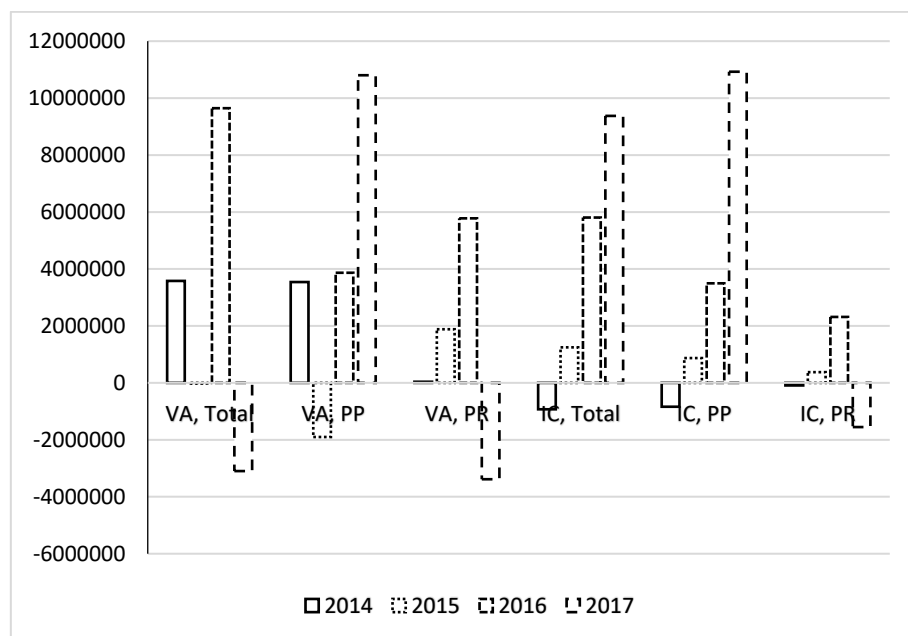


Figure 8. Changes of value added and imports.

Source: BPS, VA is for value-added, IC is for import content, PP is for Pharmacy Products, and PR is for Pharmacy Raw Materials. Total indicates the summation of PP and PR.

The chart also displays the number of import changes in the pharmacy industry (IC, Total), the sum of the pharmacy product, and raw imports (IC, PP, and PR, respectively). As seen in Figure 8, the large gain in total imports during the previous period was primarily attributable to imports of pharmaceutical products, as imports of pharmacy raw materials were negative. This comparison of imports and value-added examines industrial policy that adds to the study of industrialization. It varies from the examination of the global value chain, which only compares the global value in domestic production to the domestic value in international production. Hence, it has less impact on industrialization. Hence, industrial policy is initiated by the examination of the industrialization process. This deviates from the conventional analysis.

The volume of imports reflects the scenario in Indonesia, where neither an intermediary sector nor a pharmaceutical raw materials manufacturing industry has formed. Even though several factories are producing medicinal raw materials, the development of this industry is still hampered by several hurdles; as a result, these raw material medication manufacturers cannot produce efficiently. In general, the intermediation business possesses the following characteristics: high technology, knowledge-intensive research and development (R&D) spending, stringent regulations, and a reputation for impacting long-term investment demands with a low return on investment. Thus, few investors are interested in investing in the health sector of raw materials.

Figure 9 depicts the analysis of the intensity of industrial policy in the pharmacy industry along the trajectory of import content and value-added and their interaction as lines. First, the value added is represented by the up arrow, and import content is represented by the same arrow, resulting in box 1. Figure 9 demonstrates that the increase in value-added has reached a higher level, whereas imports have decreased and moved downward. As a result, the box increases by 2. This result is favorable for the industrialization process. Likewise, for the subsequent era, value-added decreases somewhat while imports increase, thereby explaining the deindustrialization process seen in box 3. The process continues through box 4, where an increase in value-added and a rise in imports indicates a moderate degree of

deindustrialization. Box 5, in which value-added decreases while imports increase dramatically, modifies the curve. This detrimental impact on industrialization reveals the country's absence of an industrial policy.

Figure 9. Industrial Policy Intensity and Industrialization in Pharmacy Sector, Indonesia.

		Value Added (up direction)			
		4			
		3	2		
		1			
Import Content (Up direction)		5		Import Content (Down direction)	
		Value Added (down direction)			

The author's calculations are the source. Box 1 represents the period between 2013 and 2014 when value added and import content increased. Box 2 displays the period between 2014 and 2015 when value added increased while import content decreased. The movement continued to box 3 when the value was added, and import content resumed ascent. Moreover, box 4 indicates a similar direction. Lastly, box 5 illustrates a declining value-added and import content trend.

Productivity gains can explain the difference between value-added and imports: figure 10 displays capital and labor productivity curves. According to the graph, capital productivity in 2013 was 0.27, while labor productivity was 5. Both capital and labor suffered a reduction after four years, although the capital growth was more pronounced. As labor continued to expand in 2017, capital decreased to its lowest level (0.14). Likewise, for labor, the rising trend continued through 2016 (8.25) before declining in 2017 (6.90). The two descending graphs illustrate the contrast in investment growth during the time.

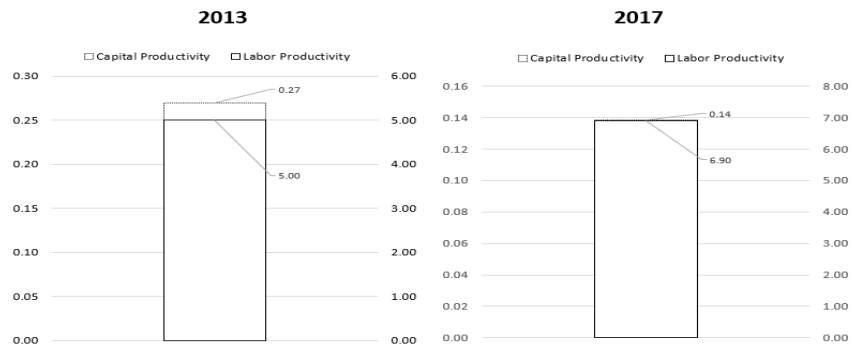


Figure 10. Productivity of Capital and Labor.

Source: author. Capital productivity is obtained as output per capita, and labor productivity is calculated as output per labor.

Implementing JKN has significantly improved the health system in Indonesia, as more individuals are now utilizing medical facilities. Moreover, the demand for health products and services increased. This is fantastic news for citizens, as they will no longer fall into poverty if they become ill.

Examining capital and labor productivity can include an analysis of capital intensity derived from the sector's unit of stock capital per unit of labor. As demonstrated in Figure 11, capital productivity decreased in 2014 following a small increase in 2013 when JKN was introduced. This output direction explains why this sector saw reduced production per capital despite a greater investment or capital per labor. As seen by the capital intensity curve depicted by a dashed line in Figure 11 below, there has been significant growth in capital from 784.6 in 2013 to 2160.8 in 2017.

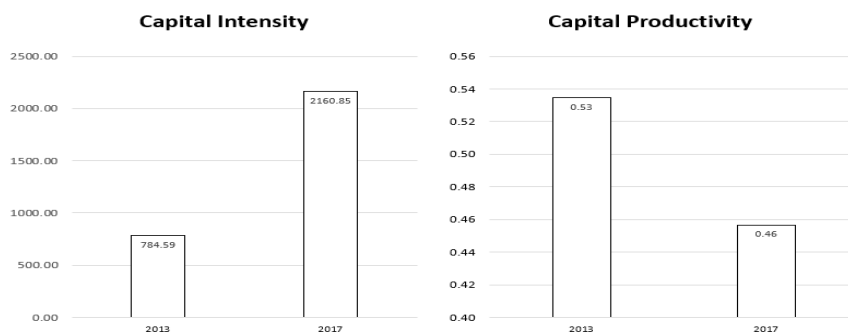


Figure 11. Capital per worker.

Source: author. Capital intensity is defined as capital per worker that is obtained from the number of investments per labor

When more capital is used to a point where capital productivity drops, this typically implies capital obsolescence. Hence, the cost of capital increases due to decreased output and increased capital. Thus, technology must be modified. In the case of the pharmacy industry in Indonesia, a distinct picture appears to emerge. The fall is not due to a decrease in capital intensity but rather to the fact that the abnormal growth in investment in the pharmaceutical business has not led to an increase in domestic pharmaceutical production.

Conclusion

The development of the health sector in Indonesia has played a vital role in the country's growth, and its development has seen significant long-term shifts, including one from 2008 to 2018 and before and after 2014. The long-term period (2008-2018) experienced two distinct health economic policies. It was a new health policy in 2013, which continued into 2014 with the adoption of e-catalog and JKN, which were geared at price transparency and universal health access so that everyone in the nation has access to health care and can meet their health needs. Before the legislation, most of the population had extremely limited access to health care, and the cost was exorbitant. Notwithstanding its limits, the demand for health access has expanded dramatically, necessitating the introduction of demand management in a pharmaceutical sector that has long disregarded industrialization concerns.

The loss of industrial policy necessary to promote industrialization in the country is an explicable phenomenon. The long-term analysis demonstrates the transition from a sector-based industrial policy to a market-based policy, indicating a rupture with real economies and, consequently, the emergence of new modes of accumulation in the world system, from the production of commodities by commodities to supply and demand. As a result, developing nations frequently disregard local preferences by benchmarking new modes, as is typical in Indonesia. This analysis uses the instance of the pharmaceutical sector in Indonesia from 2008 to 2018 as an illustration. It demonstrates a reduction in capital productivity.

From 2013 to 2019, the country's imports in the pharmaceutical sector increased significantly while its exports decreased. This harms health access in Indonesia

because the country imports its raw materials and pharmaceutical items, resulting in limited product availability and increased pricing. It is claimed that imports are more advantageous than indigenous production for giving access. Most pharmaceutical imports are pharmaceutical products, followed by pharmacy raw materials, according to the data. These are the pharmacy items for consumers.

Nonetheless, these imports increased between 2013 and 2019. At the same time frame, imports of pharmaceutical raw materials also increased. In contrast, value-added decreased over time. This study studied the differences across periods and discovered industrialization and deindustrialization, despite the diminishing tendency. In 2013, as imports increased, so did value-added, signifying deindustrialization. Imports decreased in 2014, while value-added increased, showing an improvement in the industrialization procedure. Unfortunately, it was not sustained, as imports rose again in 2015 despite increased value added. In 2016, the process continued in the same manner. Lastly, deindustrialization intensified in 2017 due to an increase in imports and a decrease in value added.

Using capital productivity and capital intensity to represent the industrialization process, this study extended its research of the causes of deindustrialization. Capital and labor productivity increased from 27% to 29% for the first term of 2013 to 2014 and from 5% to 7.3% for the second term. However, capital productivity fell from 29% in 2014 to 14% in 2017; the fall occurred between 2014 and 2017. Even though labor productivity increased from 7.3% to 8.25% between 2014 and 2016, it decreased to 6.9% in 2017. This pattern extended to capital intensity or the ratio of capital to labor. In contrast to the downward trend in capital productivity, the data imply that more capital is being utilized per worker, as evidenced by the rise in investment. This investment paradox is a positive indicator of the industrialization of the pharmaceutical industry.

The government's efforts to enhance the health sector so that every Indonesian has greater access to health care are commendable and should be maintained. It stresses directly the demand side in the health sector that must be addressed by an industrial policy that promotes new accumulation methods and an objective industrialization process.

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