The Changes of Employment and Labor Productivity in South Sulawesi Province, Indonesia During The Covid-19 Pandemic

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Abstract. The Covid-19 pandemic has had a huge impact on various sectors, one of which is the employment sector in Indonesia. Through employment studies, it is hoped that it will be able to overcome employment problems which include labor absorption and labor productivity during the pandemic. This study is intended to determine labor absorption and labor productivity in South Sulawesi Province, especially during the Covid-19 pandemic by analyzing several indicators. Analysis of labor absorption is carried out based on main employment, employment by type, and employment status. This study uses a quantitative descriptive method by explaining changes in the dynamics of employment through absorption and labor productivity in South Sulawesi Province through BPS secondary data related to the state of the workforce in South Sulawesi Province. Quantitative analysis is used to measure labor productivity which is assessed through the elasticity of employment opportunities based on the type of business field. Through this study, a description of the absorption of labor in South Sulawesi Province showed that the Covid-19 pandemic had affected variations in the value of elasticity and absorption of labor in South Sulawesi Province.

Keywords: Labor Absorption, Productivity, Elasticity, Covid-19

1 Introduction

Residents of a region who are in the productive age are considered as labor force. Based on the law in Indonesia, the productive age is between 15 and 64 years old [1]. This definition means that labor consisted of every residents, whether male or female who are in the age between 15 and 64 years old. The number of labor in an economy in a specific time is defined as workforce [2]. Workforce consisted of residents who are active in the economy in a region in a specific time. Active in the economy can be indicated by the role in the economy by working, earn income, productive, or having a job.

The number of jobs that have been filled is referred to as employment absorption. This is indicated by the number of people working. This condition is caused by the demand for labor. In other words, labor absorption can also be said to be labor demand [3]. Analysis of labor absorption can be done with the help of indicators of the Level of Labor Absorption. According to Rakhmawati & Boedirochminarni (2018), the labor absorption rate is calculated by comparing the total demand for labor (absorbed labor) with the number of workers (population aged 15-64 years) [4]. The level of labor absorption is highly dependent on the availability of employment opportunities.

Employment is very influential on the level of the economy in a region. The economic activities of the population can be described through production activities which are reflected in the Gross Domestic Product (GDP) which can reflect the level of public welfare. Public welfare can be obtained through participation in job opportunities. The intensity of employment opportunities on economic growth can be known through the value of the elasticity of employment opportunities. This is because the elasticity value can help to understand the level of labor absorption capacity of each sector in the economy [5]. According to Parmadi, et al (2020), the ideal elasticity of employment can mean that the elasticity value is able to provide additional employment opportunities in the future and is able to increase productivity in each sector of employment [6].

Workers have different abilities in producing goods or services. The amount of goods or services that can be produced by labor in a certain period of time is referred to as labor productivity. According to Kurniasih & Tampubolon (2021), labor productivity is a measure of the capacity of the economy that produces volume of output in the form of goods and services, from certain inputs, such as labor, capital, resources, and others [5]. The level of productivity can be calculated using two indicators, which are fiscal indicators and price indicators. The price indicator can be said to have a bias because the price does not always describe the true value of an item/service. However, fiscal indicators also have their own drawbacks, which are difficult to measure and...
can also lead to bias because they are not absolute and tend to be qualitative [5].

Based on the things that has been described previously, the level of employment and labor productivity has a major influence on the economy of a region, especially for workers in Indonesia which as a developing country is dominated by informal workers. However, the trend of labor absorption and labor productivity in 2019 has decreased in Indonesia. This is due to the outbreak of the coronavirus (Covid-19) which infects almost all countries in the world, including Indonesia. Where Covid-19 was initially detected in Wuhan, China in December 2019, then spread to various countries. Globally, as of May 3, 2020, positive cases of COVID-19 reached 3,480,452 cases with a death rate of 244,609 people, while 1,108,065 people had recovered from COVID-19. Meanwhile, in Indonesia, the total number of positive COVID-19 cases has reached 10,843 cases, as of May 3, 2020 [7].

The increasing number of patients affected by Covid-19 has caused the Indonesian government to make and establish various policies to resolve Covid-19 cases. One of these policies is to issue PP No. 21 of 2020 regarding the PSBB (Large-Scale Social Restrictions) policy, which aims to prevent the Covid-19 virus from spreading. The existence of this policy resulted in a significant economic impact because it caused the closure of financial markets, corporate offices, businesses, shops, and events. This has an impact on the economy from market changes, such as demand (consumption and investment), the production of goods and services, and the labor market [8]. The decrease in consumption causes a decrease in operating income and a decrease in the demand for labor which is an input in production. The decrease in demand for labor has caused many companies to cut off their number of employees and close their businesses [9].

Therefore, it is important to analyze the absorption and productivity of labor in conducting an economic analysis of a region. Therefore, this study aims to analyze the absorption and productivity of labor during the Covid-19 pandemic in South Sulawesi Province. As can be seen in Figure 1, a map of South Sulawesi Province which is the study area in this research. Analysis of labor absorption is carried out by sector, spatial, and also temporal. The sectoral analysis is carried out by looking at the absorption of labor in different sectors, from the main sector, formal/informal, skill level, to rural/urban. Temporal analysis was carried out by looking at the trend of employment in South Sulawesi during the Covid-19 pandemic. Meanwhile, spatial analysis is carried out by mapping the absorption of labor in areas in South Sulawesi. An analysis of labor productivity in South Sulawesi is carried out by assessing the elasticity and productivity of various employment sectors.

![Fig. 1. South Sulawesi Province Map](source: badan informasi geospasial)

**2 Method**

This study uses secondary data obtained from the publication of the Badan Pusat Statistik (BPS) regarding the state of the workforce in South Sulawesi Province in 2018-2020. The unit of analysis of this research is labor absorption and labor productivity in the province of South Sulawesi, in the range of 2018-2020. The analysis was carried out using descriptive quantitative methods to explain changes in the dynamics of absorption and labor productivity in South Sulawesi province from year to year. Analysis of data on labor absorption is assessed through employment based on main employment sectors (primary, secondary, and tertiary sectors), employment by type (formal and informal sectors), and employment status (skilled, semi-skilled, and unskilled) in the years of 2018, 2019, and 2020. Furthermore, to analyze labor productivity, it is assessed through the elasticity of employment opportunities based on the type of business field.

\[ E_i = \frac{R_i}{R_j} \]

Where:
- \( E_i \) = Elasticity of employment opportunities in \( i \) sector
- \( R_i \) = Growth rate of the population working in \( i \) sector per year
- \( R_j \) = Economic growth rate (measured in GDP) of \( j \) sector per year

**Fig. 2. Equation to calculate the elasticity of employment opportunities**

Source: Keputusan Menteri Tenaga Kerja dan Transmigrasi Republik Indonesia

To calculate the elasticity of employment opportunities, data is needed regarding the number of workers in the employment sector and a constant GRDP growth rate based on the type of business field. Based on the law contained in Keputusan Menteri Tenaga Kerja dan Transmigrasi Republik Indonesia Number 309 of 2013 [10], the calculation of the elasticity of
employment opportunities is carried out by comparing the growth rate of the population working in a sector per year (%) with the economic growth rate (GRDP) in the sector per year (%). The equation is shown by Figure 1. Literature studies were also carried out in order to obtain several relevant theories and relate them to phenomena or problems related to the absorption and productivity of labor in South Sulawesi Province.

3 Results and Discussion

3.1 Labor Absorption

Geographically, the province of South Sulawesi has a strategic location from an economic perspective, with Makassar City being designated as the gateway to the Eastern Indonesia Region (Kawasan Timur Indonesia), and the Makassar Strait considered one of the international shipping lanes. This strategic condition has further made this province a center for the production and distribution of goods and services to Eastern Indonesia. This determination is of course in line with the vision of this province as stated in the Peraturan Daerah Provinsi Sulawesi Selatan Number 10 of 2013 concerning the Regional Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah) of the Province for the years 2013-2018, which is to make South Sulawesi the main pillar of national development and the node of the welfare acceleration network. This strategic potential has supported the development of various economic sectors in the province of South Sulawesi, especially in the service sector for the distribution of goods and services, not only for other regions in Indonesia but also for the global trade, especially in South-East Asia and East Asia region.

Based on these conditions, the service sector is one of the sectors that is being developed and has great potential and contribution to the economic development of South Sulawesi. This is in line with the average percentage of employment by employment in 2018 - 2020, which is presented in Figure 3. During these three years, the Tertiary sector, which generally operates in the service sector, has become the sector that absorbs the most labor with 45.74% of labor absorption came from this sector. Then, it is followed by the primary sector with a percentage of 37.87%. The high level of the tertiary sector is certainly in line with the development of the distribution service sector by taking advantage of strategic location. Meanwhile, the primary sector remains one of the sectors with a high percentage of absorption considering the high potential of the agricultural sector, especially agro-industry in this region. Meanwhile, the secondary sector shows the smallest percentage which indicates the low development of the industrial or manufacturing sector which may not be suitable for this location.

Fig. 3. Average of Labor Absorption Based of Job Sector in South Sulawesi from 2018 to 2020
Data Source: Badan Pusat Statistik

The trends in 2018 - 2020 in Figure 4 shows that there are a number of changes in the number of workers in a number of employment sectors. In 2019, it can be seen that the primary sector experienced a decline which resulted in an increase in the tertiary and secondary sectors. Meanwhile, in 2020, the increase occurred in the primary sector which resulted in a decrease in the other two sectors. However, in those three years, the tertiary sector is still the sector with the highest number of workers, which makes the absorption of this sector also high. This condition further indicates that South Sulawesi is undergoing various economic changes or also known as economic transformation. The shift in the economic sector has indicated that the province has entered the post-industrial stage, which also shows the existence of economic development in this region. In line with Arthur Lewis in explaining that economic transformation is a change in the economic structure from a traditional subsistence farming pattern to a modern pattern oriented towards urban life [11].

Fig. 4. Trend of Population based on Job Sector in South Sulawesi in 2018 to 2020
Data Source: Badan Pusat Statistik

A further review was carried out in 2020, reflecting on the increase in the primary sector workforce in that year which was identified as one of the impacts of the COVID-19 pandemic. The Covid-19 pandemic that has hit the world has resulted in various changes and losses particularly in the economic sector, which further has an impact on social conditions including employment. The increase in the primary sector indicates a decline in a number of other sectors which may be caused by the reduction in the workforce that is rampant due to the pandemic. The sectors most vulnerable and affected by the COVID-19 pandemic are manufacturing, trade (both wholesale and retail), as well as transportation,
accommodation, restaurants and hotels [12]. These vulnerabilities have an impact on large-scale layoffs of workers in these two sectors, so that many people end up returning to work in the primary sector in the form of agriculture or forestry, which tend to be able to survive and not experience a significant decline. This pandemic also brought the trend of economic growth that occurred in the previous year to a pause and actually showed a significant decline.

Spatially, the number can be identified based on the main economic sector which can then be seen with the aspect of the location of the area. Based on Figure 4, it can also be seen how the dynamics or changes in labor absorption based on the main sector specifically in 2018 - 2020. In 2019, Wajo and Takalar Regencies became two regencies that experienced a shift in the main economic sector, namely from primary to tertiary, although in 2020, the primary sector dominates for Wajo Regency.

The tertiary sector is in the area of three cities in South Sulawesi, namely Makassar City, Pare - Pare City and Palopo City. these places are also present at certain events in the city of Makassar and the City of Pare - Pare which have the largest absorption of tertiary workers. This can be observed in the map where a number of districts in the two cities also have a high level of employment. This pattern can also be temporarily absorbed by the changes that occurred in 2019, considering that Takalar Regency is indeed close to Makassar City, Wajo Regency still has a high-level workforce. The changes in those years were also an indication that economic progress in the tertiary sector had spread to a number of areas outside urban areas. However, the Covid-19 pandemic in 2020 made the tertiary sector weak again in Wajo Regency so that this area returned to making the primary sector the main sector, which was in line with the increase in the primary sector workforce of South Sulawesi Province that year.

Fig. 5. Map of Main Employment Sector by Regencies in South Sulawesi in (a) 2018, (b) 2019, and (c) 2020
Data Source: Badan pusat Statistik

Badan Pusat Statistik (BPS) divides the status of workers into 7 categories, namely; (1) self-employed, (2) assisted by temporary/family workers/unpaid workers, (3) assisted by permanent/paid workers, (4) laborers/employees/employees, (5) freelance workers in agriculture, (6) casual non-agricultural workers and (7) family/unpaid workers. Furthermore, the seven categories are grouped into two employment sectors, namely the formal and informal sectors. The formal sector is labor that is included in categories 3 and 4, and the rest is included in the informal sector [13].

Fig. 6. Percentage of Labor Absorption for Each Type of Job in South Sulawesi
Data Source: Badan Pusat Statistik

The classification of the type of job sector is closely related to the income or salary obtained by the workforce. Based on research conducted by Kahyalar et al (2018), concluded that there is an income inequality received by workers in the formal and informal sectors, where the formal sector provides greater income than the informal sector [14]. Through the level of wages or salaries, it will have an impact on the welfare of the community. Based the data can be seen in Figure 6, the percentage of types of employment in South Sulawesi Province is dominated by the informal sector. Higher income in the informal sector is of course followed by an increase in the quality of human resources which can be seen from the level of education. The formal sector tends to choose workers with a higher educational level.
than the informal sector. Figure 7 shows that in the formal sector based on education level, most of the workforce that is absorbed are university graduates, while the informal sector is dominated by workers with no education level and have not/haven't graduated from elementary school.

![Figure 7. Percentage of Labor Absorption in Formal and Informal Job based on Education in South Sulawesi in 2018-2020](image)

Data Source: Badan pusat Statistik

The percentage of employment in the formal and informal sector in South Sulawesi Province during 2018-2020 has a fluctuating trend. In 2020 the number of people working in the informal sector increased significantly from previous years. The increase was 4% from 60.13% in 2019 to 64.22%, and vice versa in that year the percentage of workers working in the formal sector decreased. In the transition from 2019 to 2020, there was a shift in the work of workers in the formal sector to the informal sector caused by the Covid-19 pandemic. The COVID-19 pandemic has had an impact on the formal and informal sectors. The Large-Scale Social Restriction Policy (Pembatasan Sosial Berskala Besar) during the Covid-19 pandemic in Indonesia caused an economic impact by closing a number of markets, offices, businesses, and even canceling events that could potentially create crowds. According to the ILO, the direct economic impact of Covid-19 can be seen from changes in the market (consumption and investment), the supply of goods and services, and the labor market [15]. The PSBB policy resulted in a decrease in household consumption, the decrease in consumption led to a decrease in income for business actors which at the same time led to a decrease in demand for labor. The decline in the demand for labor has then triggered many companies to reduce employee (through Pemutusan Hak Kerja) in the formal sector [9]. In line with the opinion of Dewi et al (2020), one of the socio-economic impact of the PSBB is an increase of layoffs and workers being laid off as a response from companies that stop operating because they are unable to bear operational costs. The layoffs led to an increase in the workforce in the informal sector [9].

According to law consisted in Undang-Undang No. 13 of 2003 concerning employment, it is explained that the labor force is anyone who is able to fulfill work in order to produce goods and services, both to meet their own needs and for the community [16]. Absorption of labor is carried out in the form of the number of workers absorbed in certain businesses. However, the absorption capacity of each business unit is different [17]. This is caused by the variety of ability of each business unit depending on the skill level of the workforce required. The higher the skill level of the workforce absorbed, the quality of the work sector will increase so as to increase the absorption of labor. This can affect the level of the economy in a region.

The skill level of the absorbed workforce can be classified into three based on the type of work/position, which are skilled, semi-skilled, and unskilled workers. Skilled workers are residents who work with very adequate skills in their fields [1]. The main types of work included in the skilled workforce, such as professionals, technician, etc; leadership and management personnel; as well as administrative staff and the like. Semi-skilled workers are residents who work and have skills, but are not specific in their field of expertise. The workforce includes the main types of work in the form of sales administration staff and service business personnel. Meanwhile, the main types of work included in the unskilled workforce are agricultural, forestry, hunting, and fishery business workers; as well as production workers, operators of transportation equipment, and manual workers. The main types of work can include unskilled workers because they do not have specific skills, but these workers are still needed in an area [1].

Based on Figure 8, the data shows that the percentage value of the working population by type of work/status in South Sulawesi province as of August 2018 to 2020 has changed. This can be seen in the percentage of semi-skilled and unskilled workers as of August 2018 of 38.23% and 32.49%, respectively. Then in August 2019, the percentage of semi-skilled and unskilled workers decreased to 30.56% and 32.41%, respectively. However, as of August 2020, the percentage of the workforce has increased to 31.21% and 35.10%. Meanwhile, the percentage of skilled workers in South Sulawesi from August 2018 to August 2019 increased from 25.89% to 38.06%. However, as of August 2020 there was a decline to 36.05%.

![Figure 8. Percentage of Residents who Work based on Type of Job in South Sulawesi in 2018-2020](image)

Data Source: Badan pusat Statistik

Based on Figure 8, the data shows that the percentage level of semi-skilled and unskilled workers in South Sulawesi before the Covid-19 pandemic experienced a downward trend, which was quite significant. Meanwhile, the percentage of the workforce has increased in line with the Covid-19 outbreak. The coronavirus (Covid-19) pandemic has caused a decline...
in employment in South Sulawesi Province. The decline in labor absorption was influenced by the Large-Scale Social Restriction Policy (PSBB) during the Covid-19 pandemic in Indonesia. This has an economic impact with the closure of a number of markets, offices, businesses, and even the cancellation of events that have the potential to create crowds. The policy of closing Micro, Small and Medium Enterprises (MSMEs) causes employees who work in these places to be reduced or limited [18]. Not only MSMEs are affected, but daily workers are also disadvantaged, such as hawkers, online motorcycle taxis, street vendors, and other workers. Therefore, the employment sector that requires skilled workers in 2020 will decline, such as employees in offices, shops, industries, and others.

Fig. 9. Percentage of Workers Based on Their Skills in South Sulawesi (a) Urban and (b) Rural Areas, 2020
Data Source: Badan Pusat Statistik

Based on the data shown Figure 9, there is a significant difference in the labor absorption based on their skill level between urban and rural areas in South Sulawesi as of August 2020. Labor absorption in urban areas in South Sulawesi in 2020 is dominated by skilled workers with a percentage of 62%. Meanwhile, rural areas in South Sulawesi are dominated unskilled workers, with a percentage of 72%. The percentage value of the number of skilled workers in urban areas of South Sulawesi province is higher than that of semi-skilled and unskilled workers. This is because in urban areas, such as Makassar City, the level of education is higher, so the mastery of science and technology is also high [19]. Makassar City has a high level of education compared to other regions because the educational facilities and infrastructure are quite good.

In addition, because Makassar is the capital city of South Sulawesi province, there are many jobs in the formal sector, such as office workers and MSMEs. This condition causes the absorption of skilled labor in Makassar City to be more dominant. However, in 2020 the percentage of skilled labor absorption in Makassar City decreased, as well as other areas in Indonesia. This happened because in Makassar City there were quite a number of MSMEs and offices which during the Covid-19 pandemic had to reduce employees due to the Large-Scale Social Restriction (PSBB) policy.

Rural areas, such as those in Bone district, South Sulawesi province, are more dominated by residents who work with unskilled labor. This is because in rural areas the majority of the available employment sector is the type of work in agriculture. Therefore, the absorption of labor in rural areas is dominated by workers who do not have specific skills. This situation is influenced by the level of education of the workforce. Education in its various programs has an important role in the process of obtaining and improving the quality of individual professional abilities [20].

3.2 Labor Productivity

Economic growth is the development of the economy from one period to another in a region or country and measures the achievement of the development of the ability of the country or region to increase the production of goods and services [21]. Economic growth requires qualified human resources who can compete in the world of work to be able to achieve national development. In addition to the quality of human resources, the quantity of human resources also determines the growth and employment opportunities for the population of the labor force. Employment elasticity can be used to show the relationship between employment opportunities and the rate of economic growth. This variable states the percentage of additional employment opportunities for every 1% of economic growth [22]. Economic growth in a region or country can increase job opportunities so that employment also increases.

There are 21 types of business fields such as agriculture, construction, education services, and other business fields. In South Sulawesi, the elasticity of employment opportunities in the agricultural sector has decreased drastically from 2018-2020. In 2018 the elasticity of employment opportunities was 0.48 and then decreased to -1.24 in 2019 and -18.93 in 2020. The government administration, defense, and mandatory social security sectors experienced a drastic increase from 0.01 in 2018 to 1.50 in 2019, and 210.12 in 2020. Another sector that experienced changes in the increase and decrease in elasticity was corporate services. The company's service sector in 2018 had an elasticity number of 1.09 then increased in 2019 to 1.66, but experienced a considerable decline to -2.64 in 2020. In terms of the elasticity of employment opportunities, in 2018 there were 4 the business sector with a negative value, in 2019 there were 5 sectors, and in 2020 there were 12 sectors with a negative employment opportunity elasticity.

The agriculture, forestry and fisheries sectors experienced an increase in the number of workers and a high rate of labor growth from 2018 to 2020. The surge in labor growth from 2019 to 2020 reached 12.93%, but its elasticity decreased by 17.69%. The increase in labor that is contrary to its elasticity indicates a high absorption of labor but economic growth that does not occur at all and maybe even decreases. One of the reasons is the competition that occurs due to the increase in large numbers of workers in a short time. This is related to the Covid-19 pandemic which has hit the country's economy massively since the beginning of 2020 and has an impact on all sectors. There were many layoffs in that year so that many productive people changed professions, one of which was by cultivating
agricultural land for those who have land assets for production.

A large population becomes potential if the quality of human resources is good and can determine the amount of existing productivity [23]. The productivity of the workforce in a region or country can be maximized in order to increase national development. According to Keputusan Menteri Tenaga Kerja dan Transmigrasi Republik Indonesia Number 309 of 2013 there are provisions for elasticity and its relation to labor productivity, namely as follows [24].

- Elasticity < 0 means that the growth of employment opportunities is decreasing and labor productivity is increasing sharply (large).
- Elasticity between 0-1 means that the growth of employment opportunities increases and labor productivity increases.
- Elasticity > 1 means the growth of employment opportunities is very large and labor productivity is decreasing (minus).

The government administration, defense, and social security sectors are required to experience a drastic increase in the elasticity number to 210.12. This figure shows that there is a very large growth in employment opportunities, but labor productivity is decreasing. Government administration, defense, and compulsory social security, one of its subcategories is civil servants. Many residents want to become civil servants because their income is stable and residents have the perception that civil service is a stable job. Job opportunities are very large, meaning that large quantities of labor can be absorbed, but the more workers are absorbed, the productivity of the workforce will decrease. The income provided by the state for this sector has a limit, so that even though more and more workers are absorbed, their productivity will decrease.

The agricultural sector experienced a decrease in elasticity from a positive value to a negative value, namely -18.93% in 2020. Elasticity of less than 0 means that employment growth is decreasing but labor productivity is increasing sharply. This is also closely related to the condition of the Covid-19 pandemic which has caused many residents to try to find business fields that can meet their daily needs in limited conditions due to several regulations to deal with the Covid-19 pandemic. Processing of agricultural land is one of the chosen business fields because every day the population needs food to survive. The needs of this population increase labor productivity in the primary sector, one of which is agriculture. The growth of employment opportunities is reduced because the availability of land is reduced due to the increasing number of people who use agricultural land.

4 Conclusion

During 2018-2020 the tertiary sector, which is generally engaged in the service sector, became the sector that absorbed the most labor in South Sulawesi Province at 45.74%, which was then followed by the primary sector. The high level of the tertiary sector is influenced by the development of the distribution service sector by taking advantage of location advantages. While the primary sector remains one of the sectors with a high percentage of absorption considering the high potential of the agricultural sector, especially agro-industry in this region. The percentage of employment in the formal and informal sectors in South Sulawesi Province during 2018-2020 has a fluctuating trend. In 2020 the number of people working in the informal sector increased significantly from previous years and vice versa in that year the percentage of workers working in the formal sector decreased. In the 2019 to 2020 transition period, there was a shift in the work of workers in the formal sector to the informal sector, one of which was caused by the Covid-19 pandemic. The percentage of absorption of semi-skilled and unskilled workers as of August 2018-2019 in South Sulawesi experienced a downward trend, while in August 2020 the trend is increasing. The opposite situation occurs in the percentage of skilled workers in South Sulawesi in 2018-2019 increasing. However, in 2020 there was a decline. Based on the elasticity of labor in 2019-2020 the largest decline in elasticity occurred in the primary sector. Furthermore, the largest increase in elasticity occurred in the sectors of government administration, defense, and mandatory social security. Through this, it can be concluded that the highest increase in labor productivity occurred in the primary sector (agriculture, forestry, and fisheries), while the decline in labor productivity occurred in the governance, defense, and social security sectors.

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