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Analysis of the Impact of Fiscal Decentralization on Per Capita GDRP Across Provinces in Indonesia

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ABSTRACT

This study aims to investigate and analyze the impact of fiscal decentralization on per capita GRDP across provinces in Indonesia. Additionally, the research examines the influence of Regional Own-Source Revenue (PAD) on per capita GRDP across provinces in Indonesia, the effect of the General Allocation Fund (DAU) on per capita GRDP, the effect of Revenue Sharing Fund (DBH) on per capita GRDP, and the overall impact of the Specific Allocation Fund (DAK) on per capita GRDP, and the overall impact of fiscal decentralization on per capita GRDP. The study also seeks to analyze to combined effects of PAD, DAU, DBH and DAK on per capita GRDP across provinces in Indonesia. The data analysis technique employed in this research is panel data analysis. The data used are secondary data, which have been collected by data collection institutions and made available to the public. The data for this study were sourced from the Central Bureau of Statistics, the Directorate General of Fiscal Balance, Ministry of Finance of the Republic of Indonesia (DJPK Kemenkeu), as well as books, journals, and website relevant to this research. The variables include per capita GRDP, Regional Own-Source Revenue (PAD), the General Allocation Fund (DAU), the Revenue Sharing Fund (DBH), and the Spesific Allocation Fund (DAK). The result of the study indicates that during the administration of Susilo Bambang Yudhoyono (SBY), the variable PAD had no effect on per capita GRDP, the variable DBH had no effect on per capita GRDP, and the variable DAK also had no effect on per capita GRDP. Meanwhile, during the administration of Joko Widodo (Jokowi), DBH had no effect, and DAK similarly had no effect on per capita GRDP. Furthemore, the R-square value during SBY's administration was 11,12%, which is higher compared to the 8,7% during Jokowi's administration. This indicates that the role of PAD, DAU, DBH and DAK in influencing per capita GRDP was more pronounced during SBY's administration.

Keywords: *GRDP, PAD DAU, DBH, DAK*

INTRODUCTION

Indonesia experienced a fairly good economic growth in the last decade is evident from the continued rise in the level of gross domestic income (GRDP), GRDP per capita is often used as a benchmark in determining the prosperity and level of development of a country. In the next two decades, Indonesia is preparing to improve welfare, avoid the trap of middle-income country zones, and is determined to leave nothing behind in its pursuit of high-income

countries with sustainable economic growth (World Bank, 2014).

In the last two years of Susilo Bambang Yudhoyono's (SBY) transition period, 2012 was a challenging year for the Indonesian economy. Indonesia's economy in 2012 to 2015 experienced moderate growth. This is the impact of global economic dynamics that do not match forecasts and stabilization policies implemented by Bank Indonesia and the government. Although moderated, Indonesia's economic growth of 5.0 percent in 2014 was still higher than ASEAN 5's average economic growth of 4.7 percent. In line with the moderating economic growth, the unemployment rate increased slightly. However, poverty conditions can improve as a result of controlled inflation.

After that there was a change of government for the umpteenth time from SBY to Joko Widodo (Jokowi) precisely on October 20, 2014. President Jokowi inherited the Indonesian economy from SBY in not very good condition, including the state budget for 2015 which is a deficit with a narrow fiscal space which means the national economy in Jokowi, especially in the first year of his government will be weakened (Tambunan, 2015 :44).

In the era of the Jokowi-Jusuf Kala government, 2014 was characterized by unstable global economic growth, which was not only experienced by developed countries such as the United States, Britain and Japan but also by developing countries such as Brazil, as well as several ASEAN member countries such as Indonesia.

Conditions like this can not be denied also affect the condition of the Indonesian economy. Throughout 2014, Indonesia's economic growth weakened to 5.1 percent far below the economic growth in the previous year of 5.8 percent. Indonesia's export value until November 2014 with a value of US$ 161.67 billion decreased by 2.36 percent when viewed from the same period in 2013. The decline in export value was also influenced by falling demand and global commodity prices as well as restrictions on the export of raw minerals (Tambunan, 2015 :50).

Economic growth in the era of President Susilo Bambang Yudhoyono (SBY) is higher than the period of Joko Widodo (Jokowi). This condition marks the ability of higher purchasing power. However, the inflation rate in the SBY era was also very high compared to the Jokowi era. The rate of inflation also largely determines people's purchasing power.

Data from the Central Statistics Agency (BPS) showed that the average economic growth in the SBY era reached 5.74% and household consumption touched 4.75%. This average is taken from the third quarter of 2004 to the third quarter of 2014 in which President Yudhoyono took office. The average economic growth in the Jokowi era reached 4.09% while household consumption grew 3.75%. The average is taken from the third quarter of 2014 or the beginning of Jokowi's government until the latest data in the first quarter of 2023.

GRDP per capita in a region reflects the average ability of people's income to meet their needs, especially basic needs. Fulfilment of basic needs of the community is one indication of welfare derived from the aspect of income distribution in the region. (Todaro and Smith Stephen C. 2015) BPS, explained that by dividing the GRDP by the number of mid-year residents living in a region, the GRDP per capita figure will be obtained.

According to the World Bank (2016) the rapid economic growth of developing countries in the Asian region began in the 1960s or after the beginning of independence, then reached the highest growth in the 1990s. In nearly three decades, countries that were originally classified as low-income countries and had low economic growth have been able to increase their economic growth so that they can increase their income into the middle income category.

Table 1 Classification Of Per Capita Income

Low Income	**< = US$ 1,005**
Midle Income (Low Middle)	US$ 1,006- US$ 3,955
Midle Income (Upper Middle)	US$ 3,956 - US$ 12,235
High Income	> US$ 12,235

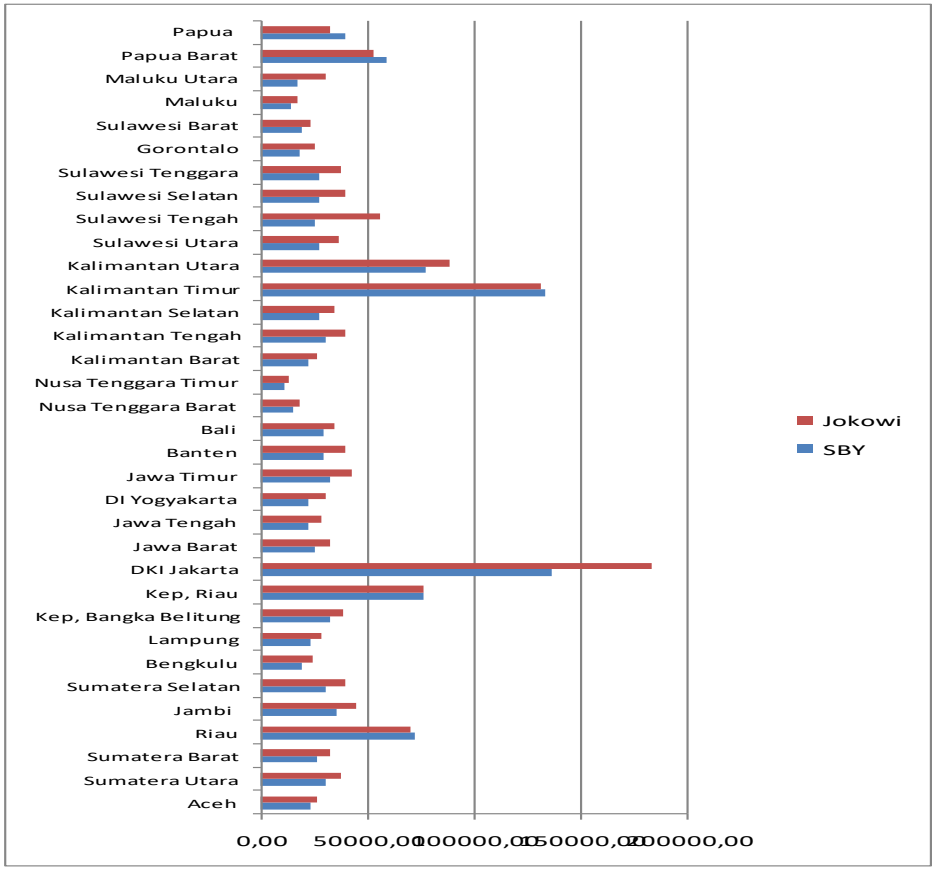
Source: World Bank (2016)

The World Bank in 2016 issued an updated classification of the per capita income of the countries of the world, it can be seen in Table 1.1. From the list issued by the world bank, we can identify countries that are classified as low income are countries with income < = US$ 1,005, countries that are classified as lower-middle income countries, namely US$ 1,006 - US$ 3,955. Upper-middle income US$ 3,956-US$ 12,235 and high income are those who earn above US$ 12,235 and currently Indonesia is in an upper-middle income condition with an income of US$ 4,349.171 in 2021.

The level of economic activity will increase the income of the community and is directly able to increase regional per capita income. Per capita income is a measure used to describe the standard of living. Countries that have high per capita incomes generally have high standards of living as well. Differences in income reflect differences in quality of life. Regional economic growth is an important factor that needs to be considered in achieving per capita income levels.

In addition to the increase in per capita income of the community can be an indicator of the progress of a country, also with the income per capita is evenly distributed it will reflect the equitable distribution of development with a fair development approach. However, based on data from BPS (2019) it is known that GRDP (Gross Regional Domestic Product) per capita in several provinces in Indonesia is still dominated by only a few regions that have the largest GRDP, this can be seen from the following data:

Figure 1GRDP per capita between provinces in Indonesia Year 2004-2022 (Thousand Rupiah)



Source: BPS Indonesia (processed data)

From Figure 1 Data in each province in Indonesia, per capita income from 2004-2022 increased significantly, but in 2020 it decreased due to covid-19 cases, but increased in 2021 due to economic recovery. This raises the question of whether Indonesia is experiencing a trap in a country classified as middle income per capita. However, the achievements obtained by Indonesia through impressive achievements in the past, does not necessarily make Indonesia immune to the current global economic slowdown. Instead, Indonesia is faced with challenges and risks that are increasingly dynamic and require a different approach.

The level of welfare in a region can be seen from the average income of people in the area or can be interpreted as the sum of the average value of goods and services available to each community of a country in a certain period. According to (Sukirno, 2015) per capita income is the average income of the population of a country at a given time per capita income described by GRDP per capita is the value of the division of GRDP by the number of population. GRDP per capita is often used as an indicator of economic development that shows the higher the per capita income of a region, the more prosperous the population in the region. The relationship between fiscal decentralization and economic growth with per capita income also affects very large because if per capita income is greater, the greater the influence of fiscal decentralization and economic growth.

The purpose of the implementation of fiscal desantralization is as a financial system between regions that must be achieved, so that every province in Indonesia has the same relative ability to build and empower communities as a province. Since regional autonomy was implemented by the regions regarding the financial balance of the central and regional governments, various policies regarding regional finances in Indonesia have changed. Regional development that was previously carried out by the central government has been transformed into regional authority and implemented by autonomous regions. Currently, one of the prominent issues is discussing the economy of a region is the implementation of fiscal decentralization and its effect on per capita income is uneven in each province in Indonesia. The implementation of regional autonomy itself provides opportunities for each province to explore economic potential and improve its financial performance in the framework of regional independence.

Per capita income is also a measure used to describe the standard of living (standard of living). Countries that have a high per capita income generally have a high standard of living (standard of living). The difference in income reflects the difference in quality of life, rich countries (reflected by high per capita income) have a better quality of life.

Local government with fiscal decentralization should further increase the prosperity of the community by increasing economic capacity and economic welfare through local revenue. However, the increase in prosperity is not always followed by an increase in local revenue, which is a component of regional financial independence. Prosperity, which in this study is proxied by GRDP per capita where the added value of GRDP per capita is one of which is from a combination of production factors (Central Bureau of Statistics of DKI Jakarta province, 2019).Differences in production factors owned by each province can also affect the receipt of revenue from different regions. In addition, provinces that have a high regional economic growth rate does not necessarily have a high GRDP per capita as well, because in calculating the GRDP per capita in addition to being determined by the high and low GRDP of a region is also determined by the population of the region (Prasasti, 2006).This has the potential that there are factors outside that can increase prosperity in the community, thus increasing prosperity does not necessarily increase local revenue where local revenue is a component of regional financial independence.

One of the main points of concern in economics is the redistribution of income. This is due to the fact that the redistribution of income is the key to creating well-being in the economy. Failure to redistribute income will result in a high level of income inequality that will ultimately hinder economic growth. Among the government policies directly related to income redistribution is fiscal decentralization. Fiscal decentralization is the delegation of authority over public finance and government services from the central government to local governments (Tanzi 1995).

One of the goals of decentralization according to Campo and Sundaram (2001) suggests that decentralization is important for poverty reduction. One way to reduce poverty is by increasing prosperity in the region. The prosperity of one of them can be seen through per capita GRDP, the higher the income received by the community, the higher the ability to pay various levies set by the government to finance routine expenditures and development expenditures. Thus, it will show the chances that the level of financial independence of the region increases.

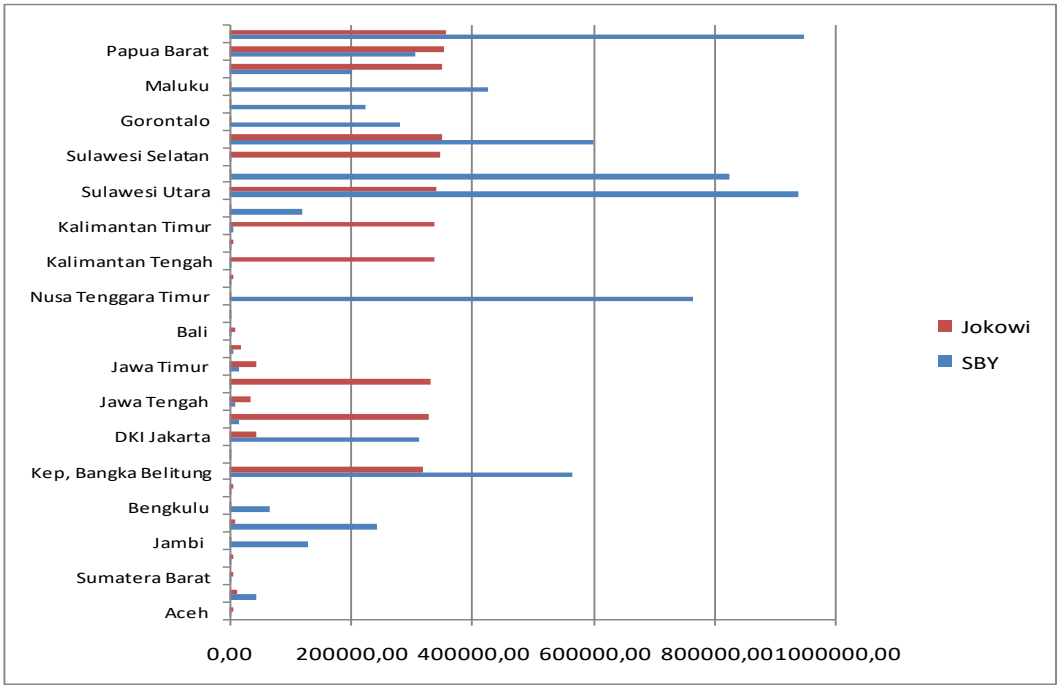
The average income of a country's population is called per capita income. Per capita income is determined by the distribution of a country's national income to its total population and also reflects GRDP per capita. The level of wealth and development of a country is often measured in per capita income, the higher the per capita income, the more prosperous the country. Per capita income is a measure of people's standard of living. People with high per capita income have a higher standard of living. In this study examines 4 factors in fiscal and macroeconomic decentralization, namely local revenue, special allocation funds, general allocation funds, and revenue sharing funds.

Listening to various positive views on the benefits of decentralization, it can be said that the elaboration of the implementation of fiscal decentralization can make the economy of a region more developed, which is indicated by the increase in regional revenue, GRDP growth, per capita income. In the end, efforts to improve income equality, and reduce poverty levels, improve the quality of society are reflected through the Human Development Index and the reduction in unemployment in the national economy can be better realized through the implementation of fiscal decentralization (Vazques and Robert, 2001: 186)

The big bang decentralization phenomenon in Indonesia is fully implemented at the lowest level of government, namely Regency and city governments. Between the city and district governments have some characteristic differences, namely from a) the economic structure in the city is mostly supported by the industrial and service sectors while in the district it is more likely to be supported by the agricultural, fishing, and mining sectors; b) the level of population density in the city tends to be higher than in the district; c) the area in the city tends to be relatively narrower than in the District; d) access to social infrastructure, facilities, and quality of education, and health in the city is better than in the District; e) for the government structure in the city is leaner up to the village level while in the district there is village and hamlet level government; f) the burden; (g) the Gross Regional Domestic Income (GRDP) of the city tends to be higher than that of the district, which implies high revenues from local taxes and levies at the city level so that the fiscal dependence at the city level on funds transferred from the center tends to be lower than at the district level.

Table 2 annual regional revenues increase when viewed from the nominal. But if you look at the budget and its realization through the percentage of total state revenue, the total regional revenue issued by the state is always increasing every year and the percentage is not much different.

Figure 2 Total posture of the national budget by revenue (PAD) provinces in Indonesia in 2004-2022(in Billion)



Seen from 2004-2022 there was an increase in terms of regional revenue, the local government will take the initiative to further explore the potential of the region which ultimately increases economic growth. In the province of DKI Jakarta local revenue is quite high from other provinces because it is the center of the state capital and economic center is certainly quite high. PAD growth in a sustainable manner will lead to increased economic growth of the area (Tambunan, 2006). However, some studies found that the independence of these regions after regional autonomy did not increase and could even be said to have decreased because although the absolute amount increased, the percentage increase in PAD was not greater than the percentage increase from the transfer of balance funds (Adi, 2006)

Although many countries have implemented fiscal decentralization systems, the effect of fiscal decentralization on per capita income is still debated. As explained above, fiscal decentralization, or the devolution of fiscal authority from the central government to local governments is seen as part of reforms to improve public sector efficiency, so that this policy can be carried out to increase competition between local governments in the provision of public goods and services and to promote economic growth (Bird and Wallich, 1993; Oates, 1993).

Local governments will take the initiative to further explore the potential of the region which ultimately increase economic growth. PAD growth in a sustainable manner will lead to increased economic growth of the area (Tambunan, 2006). However, some studies found that the independence of these regions after regional autonomy did not increase and could even be said to have decreased because although the absolute amount increased, the percentage increase in PAD was not greater than the percentage increase from the transfer of balance funds (Adi, 2006). The Transfer of funds between governments is a common phenomenon that occurs in all countries of the world regardless of the system of government (Fisher, 1996) and has even become the most prominent feature of financial relations between the center and the regions (Nemec and Wright, 1997). As a result, from year to year local governments have always demanded even greater transfers from the center (Shah, 1994), instead of exploring the local tax base more optimally (Oates, 1999). This situation is also found in the case of

city and district governments in Indonesia (Mardiasmo, 2002).

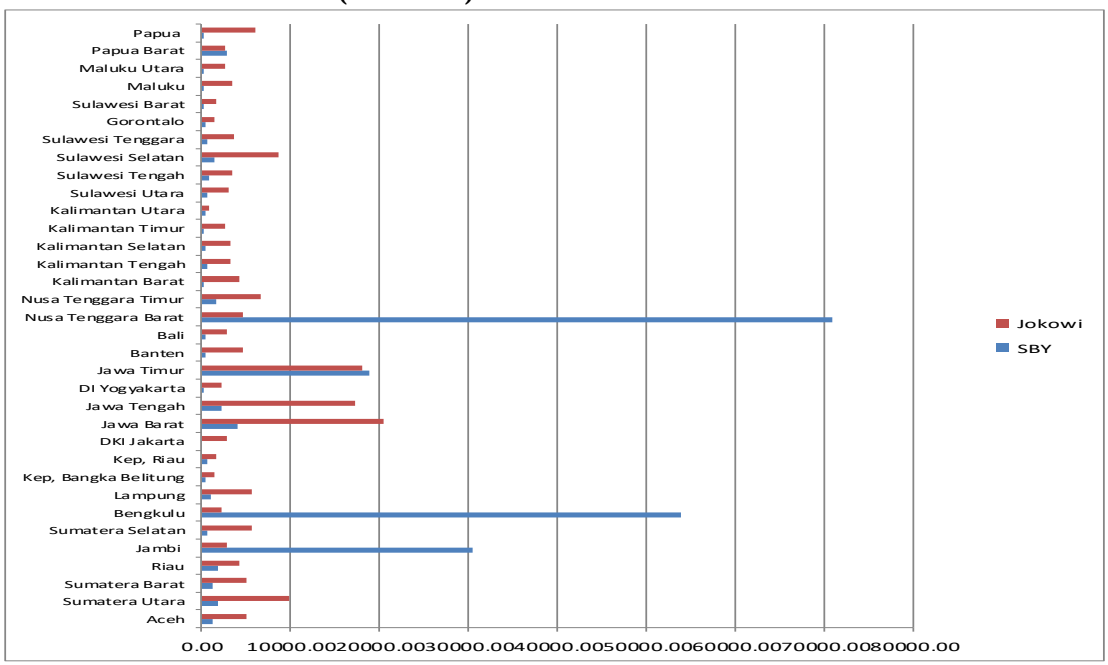
Areas with positive PAD acceptance rates are likely to have better per capita income levels. PAD is a source of regional spending, if PAD increases, regional independence will also increase, so that local governments will take the initiative to further explore regional potentials and increase economic growth. PAD growth on an ongoing basis will lead to increased economic pertmbuhan area. Therefore, the region will not succeed if the region does not experience significant economic growth despite the increase in PAD receipts. If the opposite happens, it can be indicated that there is excessive exploitation of PAD to the community without paying attention to increasing the productivity of the community itself.

Indonesia, which has implemented a decentralized system since the issuance of Law Number 22 of 1999, is expected to be able to increase economic growth in the region in accordance with the characteristics inherent in the region. To determine whether the delegation of authority given by the central government to local governments can run in accordance with the objectives, namely to increase economic growth in the region, it takes more observations about the proportion of regional spending, the ability of the transfer of the region in the creation of economic growth, as well as the ability of local revenue in its contribution to economic growth.

The financial balance fund between Central and local governments consisting of the General Allocation Fund (DAU), special Allocation Fund (Dak) and Revenue Sharing Fund (DBH) is a unified source of regional funding that generally has the aim to encourage regional economic growth and at the same time overcome vertical inequality between the center and the regions and overcome horizontal inequality between regions (Simanjuntak and Hidayanto, 2002). According to Simanjuntak in Sidik, et al (2002) the transfer of the center to the regions in addition to addressing horizontal disparities due to fiscal gaps is also intended to ensure the achievement of public service standards.

DAK is a fund allocated to certain regions to fund specific activities that are local Affairs (Law 33 of 2004). DAK consists of physical DAK and Non-physical DAK (Badrudin, 2017).

Figure 3 Total posture of the national budget according to the General Allocation Fund (DAK) between provinces in Indonesia 2004-2022 (In Billions)



Source: Directorate General of financial balance (data processed)

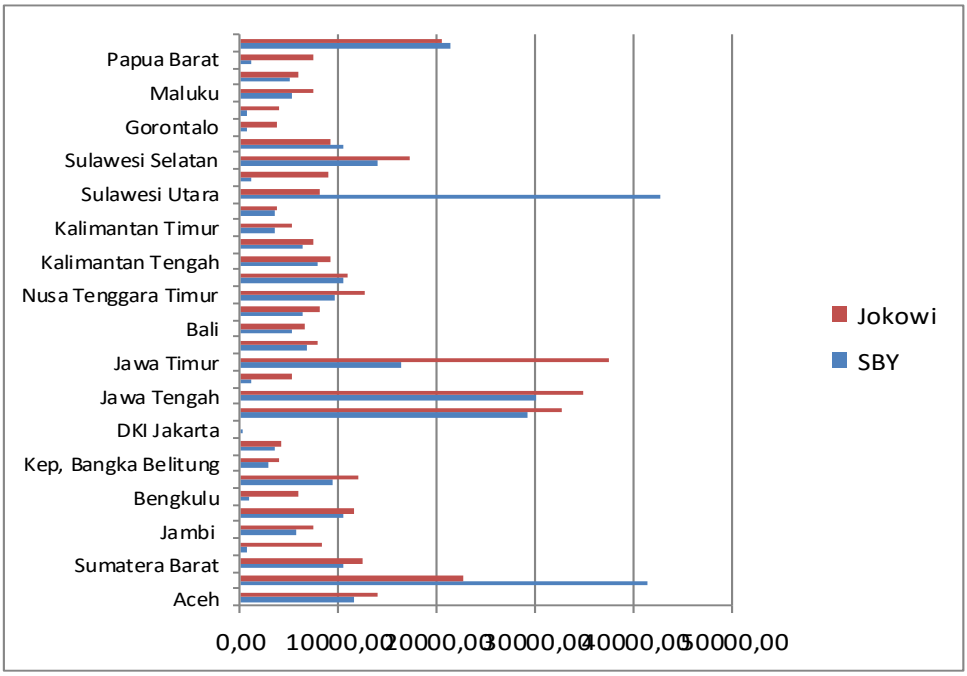
The improvement of the special Allocation Fund (Dak) has continued in the last 20 years with the stability that this development was influenced by the central government also channeling balance funds, especially the special Allocation Fund (Dak), which is increasing every year as presented.

Per capita income shows the average level of income in an area. The central government in order to decentralize its authority provides transfer funds to local governments (PEMDA). One of the uses of per capita income is to help determine how much of the balance of funds that will be given by the Central Government to local governments. The balance fund value uses per capita income as one of the components of the Central Government to local governments. The value of the Balance Fund uses per capita income as one of the components of its calculation. The balance funds are the General Allocation Fund (DAU) and the Revenue Sharing Fund (DBH).

General allocation funds are funds derived from the state budget allocated with the aim of equitable financial distribution between regions to finance their expenditure needs in the framework of the implementation of decentralization. In relation to the financial balance between Central and local governments, it is a consequence of the transfer of central government authority to local governments. In another sense, DAU is used to close the gap that occurs because the needs of the region exceed the existing regional acceptance potential.

The role of local government in realizing public welfare by providing various public services for the community is inseparable from the central government. As Simanjuntak (2002: 23) states that the transfer from central to local government plays a role to ensure the achievement of minimum public service standards throughout the country and to reduce disparities between regions. The per capita income of the region is important in determining how much of the General Allocation Fund (DAU) that will be received by the region from the center, as contained in the explanation of the Government of the Republic of Indonesia Regulation No. 55 of 2005 on balance funds.

Figure 4 Total posture of the national budget according to the General Allocation Fund (DAU) between provinces in Indonesia (in Billion)



Source: Directorate General of financial balance (data processed)

Based on the data on the realization of the General Allocation Fund (DAU) published by BPS, it can be seen that the General Allocation Fund (DAU) for all provinces in Indonesia for the period 2013-2022 presented in table 4 is fluctuating. Specifically, DKI Jakarta province does not have a DAU, because DKI Jakarta province has a large fiscal capacity. But for Bangka Belitung province and Gorontalo DAU province are quite small.

Furthermore, with the optimal utilization of General Allocation Fund (DAU) financing sources, local governments are expected to improve public services that will encourage investors to carry out activities that help regional economic development. Such conditions will directly increase the per capita income of the community. As research Walidi (2008) shows that the General Allocation Fund has a significant effect on per capita income.

Revenue Sharing funds (DBH) are funds derived from state budget revenues allocated to regions with regard to the potential of producing regions based on a certain percentage. To fund the needs of the region in order to implement decentralization for equity due to inequality and uneven income distribution, according to Todaro and Smith (2008), the unevenness that occurs as a result of the interaction of low national income levels, and slow economic growth rate this is due to the uneven distribution of income. The increase in regional income through DBH and other sources is actually an access to economic growth. Districts whose economic growth is positive have the possibility of getting an increase in regional income. The amount of revenue sharing (DBH) allocated to the regional budget can effectively spur economic growth through fiscal policies that will further create higher economic development. Allocation of Revenue Sharing funds (DBH) to regions in Indonesia with the aim of equitable distribution of financial capacity between regions. It aims to reduce financial inequality between regions. It is expected that the allocation of Revenue Sharing funds (DBH) will encourage economic growth in each region. Economic growth will have an impact on income distribution which has an effect on Poverty Alleviation.

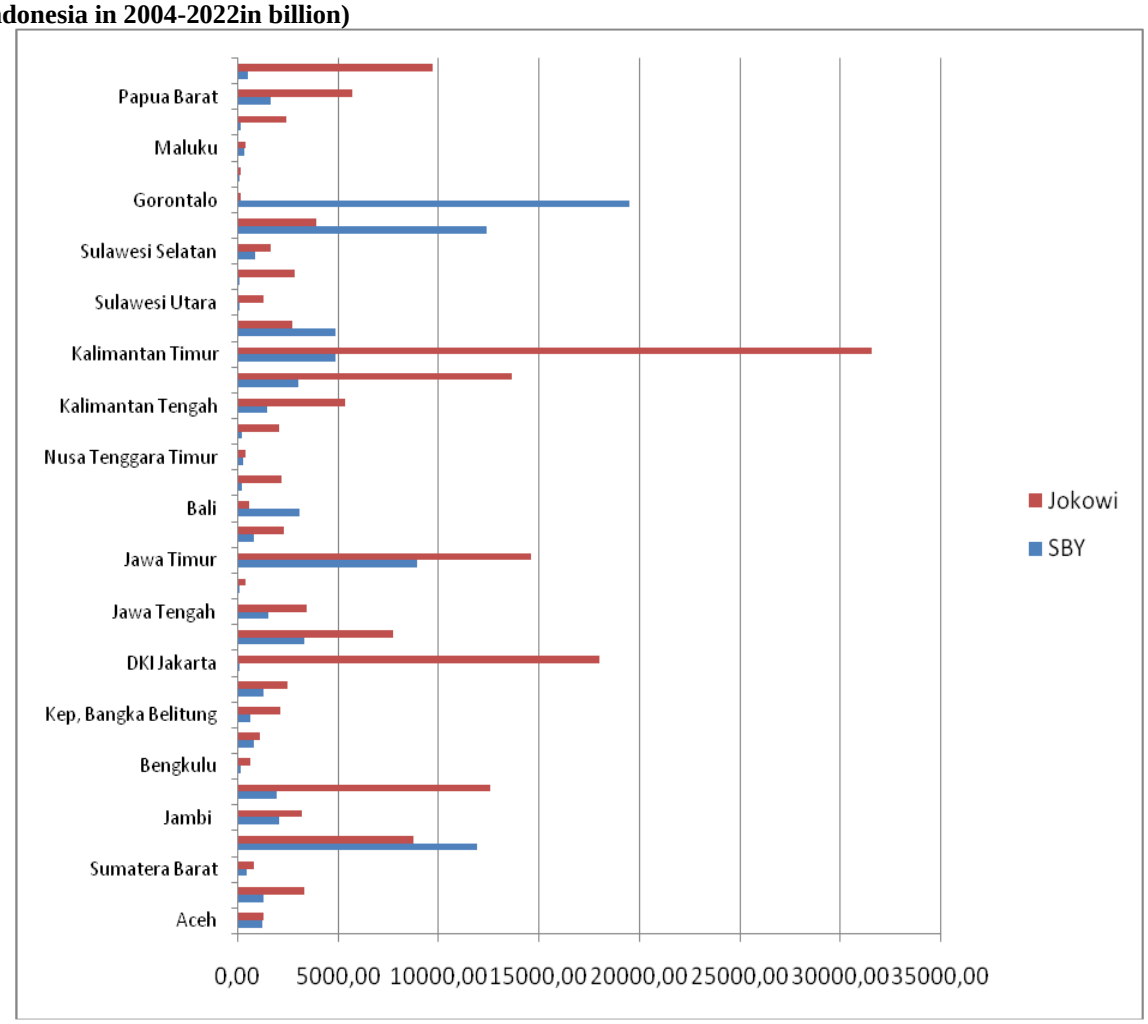
According to Todaro and Smith (2008), income inequality occurs in developing countries due to the interaction of low national income levels, and the rate of economic growth is slow this is due to uneven income distribution. That's where the role of the Revenue Sharing Fund (DBH) as an equity fund. Revenue Sharing Fund (DBH) is part of the region in the form of revenue sharing. These funds are intended to reduce vertical inequality between the center and the regions. This pattern of revenue sharing is done with a certain percentage based on the producing region (by origin). Wahyuni and Priyo (2009), mentioned that the Revenue Sharing Fund (DBH) is a source of regional income that is quite potential and is one of the authorized capital of local governments in obtaining development funds and meet local spending.

Furthermore, in terms of fiscal decentralization, the amount of all provinces in Indonesia, namely DBH, throughout the observation period showed very diverse fluctuations. The DBH Data, which is based on Indonesian Statistics and provincial financial statistics published by BPS.

The existence of DBH can also be associated with the theory of the vicious circle of poverty (the vicious circle of poverty) is seen from the purpose of DBH which is to reduce vertical inequality between the center and the regions. So that the Revenue Sharing Fund (DBH) is a source of regional income that is quite potential and is one of the authorized capital of local governments in obtaining development funds to meet regional spending. With the allocation of Revenue Sharing funds (DBH) by local governments for activities and programs related to development in all fields, it is expected to

break the poverty chain so that it affects per capita income.

Figure 5 Total posture of the national budget according to revenue sharing (DBH) between provinces in Indonesia in 2004-2022in billion)



Source: Directorate General of financial balance (data processed)

Various studies have been conducted to measure the success of fiscal decentralization policies in Indonesia, especially in reducing the income gap between regions/provinces (horizontal imbalances). However, a conclusive final result has yet to be formulated (Dyah 2012). Research Aritenang (2010), for example, shows that fiscal decentralization policies do not have a significant role in reducing inequality. In contrast, other studies have shown a significant effect. However, the direction of the influence is still divided into two, namely negative influence and positive influence. Research Lewis (2001), Suwanan and Sulistiani (2009), and Sudhipongpracha and Wongpredee (2016) showed that fiscal decentralization policies negatively affect income disparities. Meanwhile, Dyah (2012) stated that fiscal decentralization policy has a positive effect on income inequality.

Some of these studies essentially make unconditional transfer funds (unconditional grants) as a proxy of fiscal decentralization. This is based on the consideration that unconditional transfer funds provide the highest flexibility to provincial governments to formulate policies that are in accordance with their priorities. In the fiscal decentralization policy implemented in Indonesia, the unconditional transfer fund is known as the general Transfer fund (DTU). DTU consists of General Allocation Fund (DAU) and Profit Sharing Fund (DBH). Previous research only used DAU or DBH as a proxy of fiscal decentralization.

The use of DAU alone as a proxy for fiscal decentralization among others was carried out by Lewis (2001) and Sudhipongpracha and Wongpredee (2016). The use of DBH alone as a proxy for fiscal decentralization, among others, was carried out by Dyah (2012). The selection of the DBH is based on the fact that most of the DAU value received by the provincial government has been allocated to finance the expenditure of the provincial employees concerned. Thus, the provincial government can no longer use the DAU flexibly in accordance with its priorities (Dyah 2012). However, this is not entirely true because with the salary expenditure financed by the DAU, the provincial government can use other sources of income such as local revenue (PAD) and other legitimate income more flexibly in accordance with its priorities. Therefore, this study uses together, both DAU and DBH, as a proxy of fiscal decentralization. Furthermore, DAU and DBH are expressed in per capita size to capture the influence of population on DAU and DBH.

From some empirical evidence, it can be seen that there is still a debate on the effectiveness of fiscal decentralization on per capita income between provinces in Indonesia. This uneven development strategy promotes accelerated expansion of financial resources and rapid economic development in the eastern, central and western regions, while it further increases the trend of polarization of expendable financial resources among local governments. However, large-scale development strategies intended to reverse this solid pattern of regional growth have been encouraged. Meanwhile, the central government began to pay attention to the transfer payment system to achieve the goal of Equalization (Meili, 2013).

Table 2 Fiscal Decentralization Gap Research On GRDP Per Capita

Dependent Variable	**Independent Variable**	**Influence**	**Previous Researchers**
GRDP Per capita	Local Revenue	Significant Effect	Ika Suryatiningrum, Iin Indarti, Wenny Ana Adnanti (2020)
		Positive Influence	Ginanjar Agung Rahmadi (2020)
	Special Allocation Fund	No Effect	Ika Suryatiningrum, Iin Indarti, Wenny Ana Adnanti (2020
	General Allocation Fund	Significant Effect	Ika Suryatiningrum, Iin Indarti, Wenny Ana Adnanti (2020)
			Muhamad Nur Salim (2019)
	Profit Sharing Fund	Significant Influence	Muhamad Nur Salim (2019)
			Danar Sutopo Sidig (2018)
			Dian Yustriawan (2021)

Source: Review Of Past Research

With the research gap from previous studies of the study, it is necessary to conduct further research on the analysis of the effect of fiscal decentralization on GRDP per capita between provinces in Indonesia using the latest research object from 2004-2022.For the selection of research variables, researchers refer to some of the results of previous research.

In this thesis, there is an important thing that underlies the desire to explore further about the effect of fiscal decentralization on GRDP per capita between provinces in Indonesia from 2004-2022.Because there is still no equitable distribution of the influence of fiscal decentralization on GRDP per capita between provinces in Indonesia, research gap that occurs in various previous studies on the effect of fiscal decentralization on per capita income. The results of studies conducted in various countries still reveal different conclusions and leave enough space to present further studies to enrich the understanding of the concept of fiscal decentralization itself.

Furthermore, the research of Ika Suryatiningrum, Iin Indarti, Wenny Ana Adnanti (2020), based on the results of the hypothesis test, it can be seen that per capita income as a moderating variable is not able to affect the DAK relationship, while in this study, researchers used the moderating variable, namely per capita GRDP. GRDP per capita is a measurement tool that better reflects the state of the average population and the standard of living of its people (Mankiw: 2006).

The increase in PAD shows the participation of the community in the running of local government. The higher the PAD will increase local government funds which will then be used to build facilities and infrastructure in the area. Local governments, one of whose tasks is to improve the welfare of the community, need PAD as a form of independence in the era of regional autonomy as a measure of economic growth seen from the growth of GRDP per capita from year to year. The above research is in line with research Najiah (2013). Hasbi, Dahri and snow (2019) and Jayanti (2013) who stated that the increase in PAD then the GRDP per capita also increased. The above research is also in line with the research of Suryono (2011), Utami (2013), and prativi (2020) which states that the increase in PAD will increase GRDP per capita.

Furthermore, according to Indonesian Law No. 23 of 2014, general allocation funds are funds sourced from the state budget allocated with the aim of equitable distribution of financial capacity between regions to fund regional needs in the context of the implementation of decentralization. This is supported by research conducted by Ida mentayani (2015) that DAU has a positive effect on per capita income. Thus the General Allocation Fund has a positive effect on per capita income.

While the research of Ristriardani (2011) the effect of balance funds on per capita income and income disparity between regions in South Kalimantan province. The results of the analysis of general allocation funds and revenue sharing funds have a significant influence on the growth of per capita income of districts / cities in South Kalimantan. Special allocation funds and local revenue did not significantly affect the per capita income of districts / cities in South Kalimantan province.

LITERATURE REVIEW

Fiscal Decentralization

Decentralization as the transfer of planning, decision-making and or administrative authority from the central government to the central organization in the region, local administrative units, semi-autonomous and parastatal organizations (companies), local governments or non-governmental organizations (Rondinelli et al 1983). According to Campo and Sundaram (2001) decentralization aims to political stability (political stability), the effectiveness of public service delivery (effective service delivery), Poverty Reduction (poverty reduction), and create justice or equality (equity). There are four dimensions in decentralization, namely geographic decentralization, decentralization, functional decentralization, political decentralization and fiscal decentralization.

Regional Decentralization

According to Law No. 23 of 2014 on local government, decentralization in local government is divided into provincial government and Regency/city government. The classification of government affairs is divided into absolute Government Affairs, concurrent government affairs and general government affairs. The basic principles in the division between Central and local governments are the principles of efficiency, accountability, and externality as well as national strategic interests.

GRDP Per capita

Regional economic growth will stimulate the increasing income of the population in the area concerned, along with the increasing income of the population will have an impact on increasing per capita

income (Harianto and Adi, 2007). The increasing economic growth of a region has an impact on increasing the per capita income of the population, so that the level of consumption and productivity of the population is increasing (Adyatama and Oktaviani, 2015).

Local Revenue

One of the main objectives of fiscal decentralization is the creation of regional independence. Local governments are expected to be able to multiply local financial resources, especially through local revenue (Sidik, 2002).Regions that have positive PAD growth rates are likely to have better per capita income levels. PAD positive effect on economic growth in the region (Brata, 2004). PAD is one of the sources of regional spending, if the PAD increases, the funds owned by the local government will be higher and the level of regional independence will increase as well, so that the local government will take the initiative to further explore the potential of the region and increase economic growth. PAD growth in a sustainable manner will lead to increased economic growth of the area (Tambunan, 2006).

General Allocation Fund

According to (Kusuma, 2016) fiscal decentralization has become an important reference to make economic growth in the region for the better. With the transfer of some policies and financial management of the local government is expected to public policies that have been made to be better and more efficient, in addition, servants and the provision of public needs to be in harmony with the needs of the community and local government. Fiscal decentralization is a policy related to the delegation of authority from the central government to local governments to regulate local resources in the form of local revenues and expenditures. Decentralization is a policy that encourages institutions to compete globally. Sources of regional revenue other than local revenue there are receipts for the region in the form of balance funds consisting of three components, namely DBH, DAU, and DAK.

Profit Sharing Fund

The development of an area is inseparable from the source of funding, one of which is the Revenue Sharing Fund. Profit-Sharing Fund is a potential source of income and is one of the authorized capital of local governments in obtaining development funds and meeting regional expenditures. Revenue Sharing Fund is a component of the budget, will play a role in the development process of a region. The existence of development will directly or indirectly affect the income of the community. The greater the community involved in development will have economic implications, meaning that the greater the opportunity to be involved, the greater the opportunity to obtain additional income.

Special Allocation Fund

Based on Law No. 33 of 2004, special allocation funds, hereinafter referred to as DAK, are funds derived from state budget revenues allocated to certain regions with the aim of helping to fund special activities that are regional affairs and in accordance with national priorities. The amount of DAK is set annually in the state budget. The government sets Dak criteria which include general criteria, specific criteria, and technical criteria. According to Minister of Finance Regulation No. 50 / PMK.70/2017 on the management of transfers to regions and village funds, special transfer funds are funds allocated in the state budget to regions with the aim of helping to fund special activities, both physical and non-physical, which are local affairs. Physical DAK is utilized in the form of regular Dak, Regional Public Infrastructure Dak, and affirmation Dak. Non-physical DAK is more intended for BOS funding, early childhood education, additional PNSD teacher salaries, teacher allowances and regional development (Badrudin, 2017).

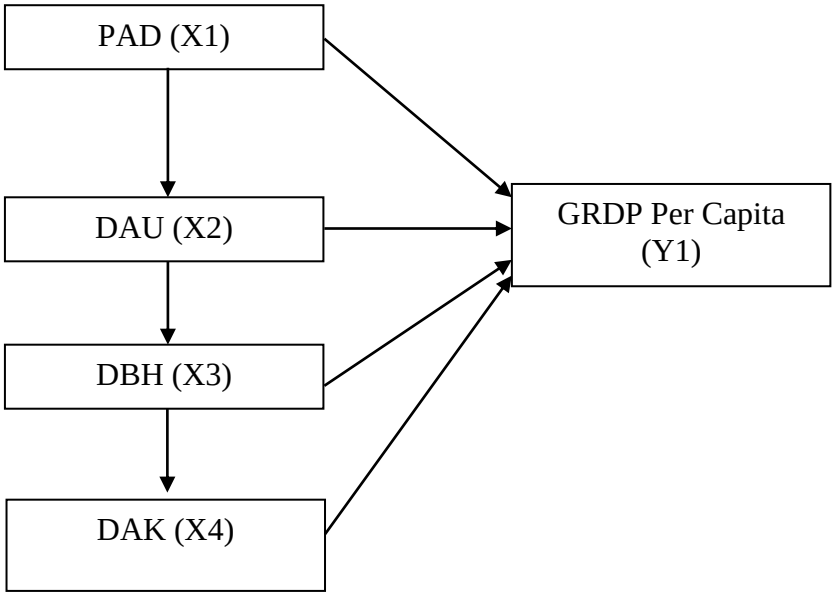


Figure 6. Conceptual Framework

Hypothesis

Based on the background of research and the relationship between variables, the research hypothesis:

1. Local revenue (PAD) has a positive effect on GRDP per capita between provinces in Indonesia.
2. The General Allocation Fund (DAU) has a positive effect on GRDP per capita between provinces in Indonesia.
3. The Revenue Sharing Fund (DBH) has a positive effect on GRDP per capita between provinces in Indonesia.
4. Special allocation funds do not have a positive effect on GRDP per capita between provinces in Indonesia.
5. Local revenue (PAD), General Allocation Fund (DAU), Revenue Sharing Fund (DBH), and special Allocation Fund (DAK) partially and simultaneously have a positive effect on GRDP per capita

MATERIAL AND METHODS

This study is included in quantitative research because in this study a lot of use of numbers and analysis conducted using statistics. The Data is secondary data that is data obtained indirectly. This research is also included in the expost facto research which is research conducted to pass through events that have occurred and then backward through the data to find factors that precede or find possible causes for events that have been studied by (Alhamda, 2016). The Data in this study is sourced from the Ministry of Finance and the Central Bureau of Statistics Indonesia datadjpkantar provinces in Indonesia fiscal year 2004-2022 in the annual downloaded from the website of the Directorate General of financial balance yaitu www.djpk.go.id.and the Central Bureau of Statistics (BPS) Indonesia. The Data used in this study is secondary data, namely data that is not collected directly, but obtained from the second party. The data taken is the data of GRDP per capita, local revenue, general allocation funds, revenue sharing funds, and special allocation funds. The scope of this research is all provinces in Indonesia, which is as many as 34 provinces. The research period starts from 2013 to 2022.

The type of data used in this study is secondary data. Secondary Data is data that has been collected by data collection agencies and published to the data user community. This study was taken from the Central Bureau of Statistics, Directorate General of financial balance, Ministry of Finance of the Republic of Indonesia (DJPK

Ministry of Finance) as well as books, journals and websites related to the title of this study. In this study the data used are GRDP per capita, local revenue (PAD), General Allocation Fund, Revenue Sharing Fund (DBH), and special Allocation Fund. This study uses time series data which is a sequence of time data collected over time against a single individual/object. The Data taken in this study is Indonesian data starting from 2013 to 2022.

Based on the type of data used in this study is secondary data, then the method of data collection is the method of documentation. The documentation method is a method of collecting data by viewing or analyzing documents created by the subject himself or by others. The Data needed in this study were collected, recorded, and processed directly from secondary data sources, namely the Central Statistics Agency, the Directorate General of financial balance, the Ministry of Finance of the Republic of Indonesia (DGT Ministry of Finance) and various other supporting websites. Data analysis techniques used in this study is the analysis of panel data model. Panel Data is a combination of time series data and cross-section data. The time series Data in this study is 2004-2022, while the cross-section data in this study is 34 provinces in Indonesia. Calculation of data using Eviews.

RESULTS AND DISCUSSION

RESULTS

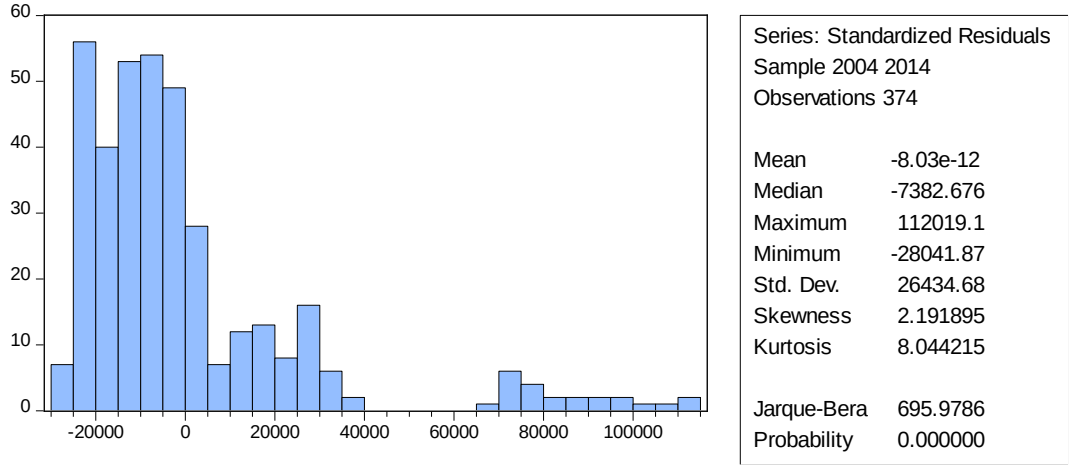
Classical Assumption Test

The classical assumption test is performed to detect whether there is normality, multicollinearity, autocorrelation and heteroscedasticity. This classic assumption test is performed as a parameter to measure whether the data used is blue or not.

Normality Test

The normality test aims to test whether in the regression model the disruptive or residual variables have a normal distribution. In this study, the normality test using Jarque Bera to test whether the dependent variable regression model, independent or both normally distributed. If the probability value is > 0.05 then the data is said to be normal distribution but vice versa if < 0.05 then the data is not normal distribution. Here are the results of the normality test in the picture below:

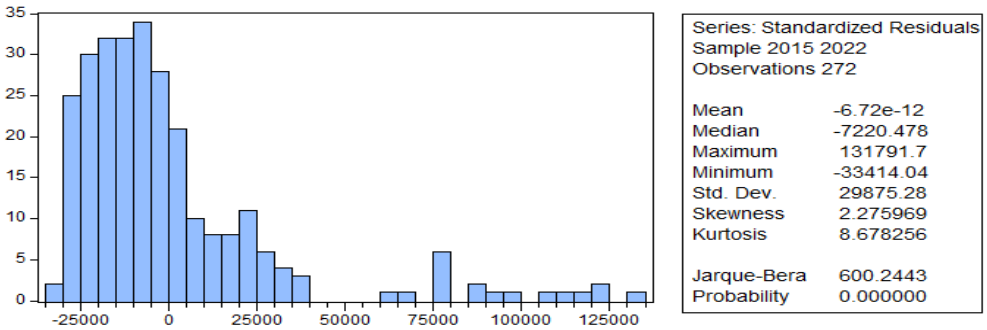
Figure 7 Results of Normality Test Period 2004-2014



Source: data processed with Eviews 10, 2024

Based on the results of the normality test in the histogram image above, shows that the probability value of jarque-berasebesar 0.000 which value is smaller than the degree of error is equal to 0.05 so it can be concluded that the data from the model is not normally distributed.

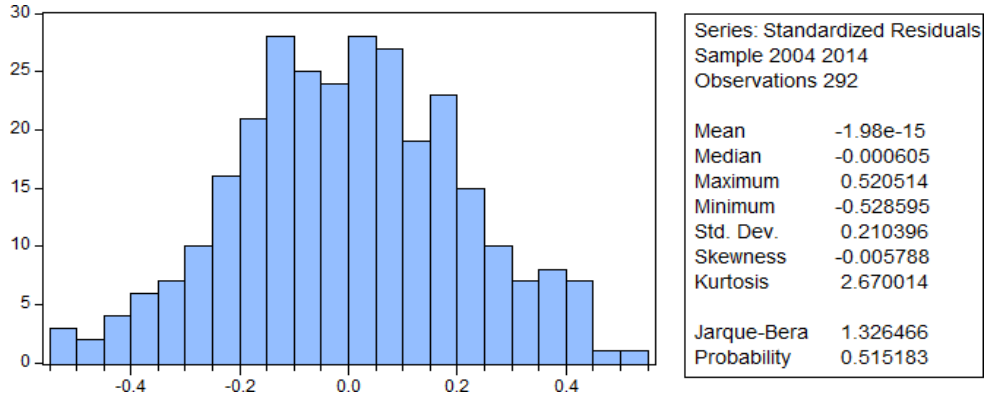
Figure 8 Normality Test Results For The Period 2015-2022



Source: data processed with Eviews 10, 2024

Based on the results of the normality test in the histogram above, shows that the probability value of jarque-berasebesar 0.000 which value is smaller than the degree of error that is equal to 0.05 so it can be concluded that the data from the model is not normally distributed. Thus, the elimination of outlier data must be done.

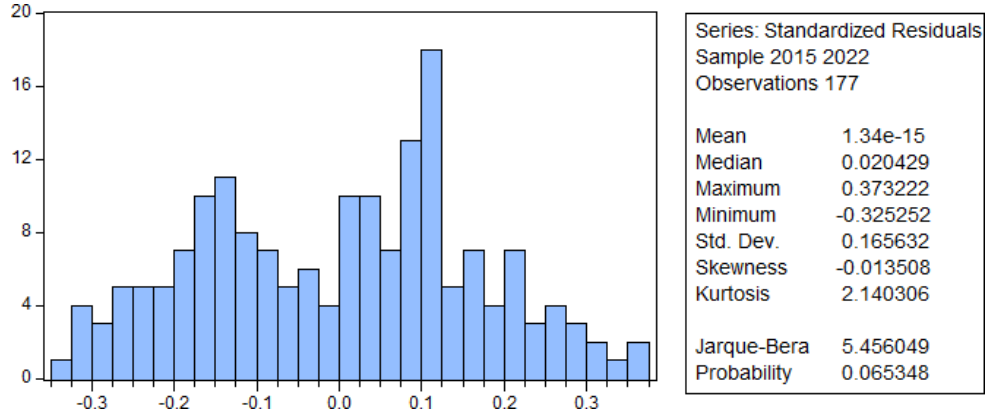
Figure 9 Results Of Normality Test Period 2004-2014 After Outlier Elimination



Source: data processed with Eviews 10, 2024

Based on the results of the normality test on the histogram above, shows that the probability value of jarque-bera is 0.515 which is greater than the degree of error of 0.05 so it can be concluded that the data from the model is normally distributed.

Figure 10 Normality Test Results For The Period 2015-2022 After Outlier Elimination



Source: data processed with Eviews 10, 2024

Based on the results of the normality test on the histogram image above, shows that the probability value of jarque-bera is 0.065 which value is greater than the degree of error is 0.05 so it can be concluded that the data from the model is normally distributed.

Heteroscedasticity Test

Heteroskedasticity test to test the regression model variance inequality occurs from the residual of one observation to another observation (Ghozali, 2013). A good regression Model is one in which heterocedasticity does not occur.In the event of heteroscedasticity, the variance of the regression coefficient becomes minimal and the confidence interval widens, so that the results of the statistical significance test are invalid. The method that can be used to detect heteroscedasticity in this study is to use the method of testing Breush Pagan Godfrey (BPG). Here are the results of the heteroscedasticity test in the table below:

Table 3 Heteroscedasticity Test Results For The Period 2004-2014

Panel Cross-section Heteroskedasticity LR Test				
Null hypothesis: Residuals are homoscedastic				
Equation: UNTITLED				
Specification: LN_PDRB C LN_PAD LN_DAK LN_DAU LN_DBH				
	Value	df	Probability	
Likelihood ratio	21.54812	27	0.7600	
LR test summary:				
	Value	df		
Restricted LogL	41.33042	287		
Unrestricted LogL	52.10448	287		

Source: data processed with Eviews 10, 2024

Based on the results of the heteroscedasticity test in the table above, showing the value of the probe for the glacier test is 0.7600 or > 0.05, it can be said that it does not occur heteroscedasticity.

Table 4 Heteroscedasticity Test Results For The Period 2015-2022

Panel Cross-section Heteroskedasticity LR Test				
Null hypothesis: Residuals are homoscedastic				
Equation: UNTITLED				
Specification: LN_PDRB C LN_DAU LN_DBH LN_DAK				
	Value	df	Probability	
Likelihood ratio	16.86402	23	0.8159	
LR test summary:				
	Value	df		
Restricted LogL	67.59256	173		
Unrestricted LogL	76.02457	173		

Source: data processed with Eviews 10, 2024

Based on the results of the heteroscedasticity test in the table above, indicating the value of the probe for the glacier test is 0.8159 or > 0.05, it can be said that it does not occur heteroscedasticity

Panel Data Regression Model Selection

Panel data regression model selection can be done with three approaches, namely common effect, fixed effect and random effect. Each of the models has its own advantages and disadvantages. To choose the most appropriate model there are tests namely the chow test, Hausman test and LaGrange multiplier. After testing it will be obtained the best regression model is whether to use common effect, fixed effect or random effect. So, the first step is to choose a model from the three available model approaches.

Panel Data Regression Model Selection Period 2004-2014

a. Common Effect Model

Common effect model is the simplest technique to estimate panel data by simply combining time series and cross data section.ni can use OLS method to estimate panel data. Here is the common effect table:

Table 5 CEM regression results

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:28				
Sample: 2004 2014				
Periods included: 11				
Cross-sections included: 27				
Total panel (unbalanced) observations: 292				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.692851	0.123011	78.79655	0.0000
LN_PAD	0.061913	0.005721	10.82256	0.0000
LN_DAU	-0.137713	0.012791	-10.76620	0.0000
LN_DBH	0.209738	0.007811	26.85314	0.0000
LN_DAK	-0.031857	0.006738	-4.728061	0.0000
R-squared	0.793162	Mean dependent var		10.25223
Adjusted R-squared	0.790280	S.D. dependent var		0.462617
S.E. of regression	0.211857	Akaike info criterion		-0.248838
Sum squared resid	12.88149	Schwarz criterion		-0.185880
Log likelihood	41.33042	Hannan-Quinn criter.		-0.223620
F-statistic	275.1406	Durbin-Watson stat		1.764681
Prob(F-statistic)	0.000000			

Source: data processed with Eviews 10, 2024

Based on the estimation results for the panel data regression model common effect GDP per capita = 9.692 + 0.061 PAD-0.137 DAU + 0.209 DBH - 0.031 DAK

b. Fixed Effect Model

Fixed effect model is a technique of estimating panel data by using dummy variables to capture intercept differences.

Table 6 FEM regression results

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:28				
Sample: 2004 2014				
Periods included: 11				
Cross-sections included: 27				
Total panel (unbalanced) observations: 292				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.695045	0.132569	73.13213	0.0000
LN_PAD	0.058979	0.005957	9.900798	0.0000
LN_DAU	-0.140544	0.013331	-10.54260	0.0000
LN_DBH	0.214811	0.008077	26.59538	0.0000
LN_DAK	-0.029821	0.007243	-4.117030	0.0001
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.813044	Mean dependent var		10.25223
Adjusted R-squared	0.791555	S.D. dependent var		0.462617
S.E. of regression	0.211212	Akaike info criterion		-0.171815
Sum squared resid	11.64332	Schwarz criterion		0.218525

Log likelihood	56.08502	Hannan-Quinn criter.	-0.015461
F-statistic	37.83495	Durbin-Watson stat	1.937366
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 10, 2024

Based on the estimation results for the regression model data panel fixed effect model is statistically variable, then persanaam is as follows.

GDP per capita = 9.695 + 0.058 PAD - 0.140 DAU + 0.214 DBH - 0.029 DAK

c. Random Effect

Random effect is a technique to overcome the uncertainty of the model used by the fixed effect. In this technique, several samples are randomly selected and are representative of the population.

Table 7 REM regression results

Dependent Variable: LN_PDRB				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/25/24 Time: 04:30				
Sample: 2004 2014				
Periods included: 11				
Cross-sections included: 27				
Total panel (unbalanced) observations: 292				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.692851	0.122637	79.03714	0.0000
LN_PAD	0.061913	0.005703	10.85560	0.0000
LN_DAU	-0.137713	0.012752	-10.79907	0.0000
LN_DBH	0.209738	0.007787	26.93512	0.0000
LN_DAK	-0.031857	0.006717	-4.742497	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.211212	1.0000
Weighted Statistics				
R-squared	0.793162	Mean dependent var		10.25223
Adjusted R-squared	0.790280	S.D. dependent var		0.462617
S.E. of regression	0.211857	Sum squared resid		12.88149
F-statistic	275.1406	Durbin-Watson stat		1.764681
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.793162	Mean dependent var		10.25223
Sum squared resid	12.88149	Durbin-Watson stat		1.764681

Based on the estimation results for the panel data regression model random effect model statistically variable, then persanaam is as follows.

GDP per capita = 9.692 + 0.061 PAD - 0.137 DAU + 0.209 DBH - 0.031 DAK

After choosing the right model used in managing panel data, three tests can be carried out, namely:

Uji Chow

Chow test is a test to determine the most accurate fixed effect or common effect model used in estimating panel data. The hypothesis in the chow Test is:

H0: Common Effect Model

H1: Fixed Effect Model

Table 8 Chow Test Results

Redundant Fixed Effects	**Tests**		
Equation: Untitled			
Test cross-section fixed e	ffects		
Effects Test	Statistic	d.f.	Prob.
Cross-section F	21.067508	(26,261)	0.0004
Cross-section Chi-square	29.509196	26	0.0003

Source: data processed with Eviews 10, 2024

Based on the results of the chow Test in the table above shows that the probability value of cross-section F is 0.0003 > 0.05 then H0 is rejected and H1 is accepted which means that the temporary conclusion that the fixed effect model is more appropriate to use. LaGrange multiplier test will be conducted to test the best model between common effect model and random effect model. The test results showed that the LaGrange multiplier could not be performed due to unbalanced data. The common effect model is the best model.

Selection Of Panel Data Regression Model Period 2015-2022

a. Common Effect Model

Common effect model is the simplest technique to estimate panel data by simply combining time series and cross data section.ni can use OLS method to estimate panel data. Here is the common effect table:

Table 9 CEM regression results

Dependent Variable: PDRB_PERKAPITA				
Method: Panel Least Squares				
Date: 03/27/24 Time: 03:27				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 28				
Total panel (unbalanced) observations: 218				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27842.71	885.1405	31.45569	0.0000
PAD	-0.004375	0.002200	-1.988364	0.0481
DAU	0.178046	0.049910	3.567328	0.0004
DBH	-7.96E-05	0.000136	-0.584848	0.5593
DAK	0.008941	0.007878	1.134964	0.2577
R-squared	0.087165	Mean dependent var		29739.08
Adjusted R-squared	0.070022	S.D. dependent var		7496.445
S.E. of regression	7229.222	Akaike info criterion		20.63232
Sum squared resid	1.11E+10	Schwarz criterion		20.70995
Log likelihood	-2243.923	Hannan-Quinn criter.		20.66367
F-statistic	5.084740	Durbin-Watson stat		1.483238
Prob(F-statistic)	0.000622			

Based on the estimates for the regression model data panel common effect GDP per capita = 27842-0.0043 PAD + 0.178 DAU-0.000007 DBH + 0.0089 DAK

b. Fixed Effect Model

Fixed effect model is a technique of estimating panel data by using dummy variables to capture intercept differences.

Table 10 FEM regression results

Dependent Variable: PDRB_PERKAPITA		
Method: Panel Least Squares		
Date: 03/27/24 Time: 03:27		
Sample: 2015 2022		
Periods included: 8		

Cross-sections included: 28				
Total panel (unbalanced) observations: 218				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27112.04	922.6669	29.38443	0.0000
PAD	-0.003278	0.002442	-1.342328	0.1811
DAU	0.211780	0.052770	4.013248	0.0001
DBH	3.66E-05	0.000143	0.255878	0.7983
DAK	0.015917	0.009060	1.756748	0.0806
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.200095	Mean dependent var		29739.08
Adjusted R-squared	0.066778	S.D. dependent var		7496.445
S.E. of regression	7241.821	Akaike info criterion		20.74796
Sum squared resid	9.75E+09	Schwarz criterion		21.24477
Log likelihood	-2229.528	Hannan-Quinn criter.		20.94863
F-statistic	1.500895	Durbin-Watson stat		1.667211
Prob(F-statistic)	0.053434			

Source: data processed with Eviews 10, 2024

Based on the estimation results for the regression model data panel fixed effect model is statistically variable, then persanaam is as follows.

GDP per capita = 27112-0.0032 PAD + 0.211 DAU - 0.000003 DBH + 0.015 DAK

c. Random Effect

Random effect is a technique to overcome the uncertainty of the model used by the fixed effect. In this technique, several samples are randomly selected and are representative of the population.

Table 11 REM regression results

Dependent Variable: PDRB_PERKAPITA				
Method: Panel EGLS (Cross-section random effects)				
Date: 03/27/24 Time: 03:28				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 28				
Total panel (unbalanced) observations: 218				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27842.71	886.6832	31.40097	0.0000
PAD	-0.004375	0.002204	-1.984904	0.0484
DAU	0.178046	0.049997	3.561122	0.0005
DBH	-7.96E-05	0.000136	-0.583830	0.5600
DAK	0.008941	0.007891	1.132989	0.2585
	Weighted Statistics			
R-squared	0.087165	Mean dependent var		29739.08
Adjusted R-squared	0.070022	S.D. dependent var		7496.445
S.E. of regression	7229.222	Sum squared resid		1.11E+10
F-statistic	5.084740	Durbin-Watson stat		1.483238
Prob(F-statistic)	0.000622			

Based on the estimation results for the panel data regression model random effect model statistically variable, then persanaam is as follows.

GDP per capita = 27842-0.0043 PAD + 0.178 DAU - 0.000007 DBH + 0.089 DAK

After choosing the right model used in managing panel data, three tests can be carried out, namely:

Uji Chow

Chow test is a test to determine the most accurate fixed effect or common effect

model used in estimating panel data. The hypothesis in the chow Test is:

H0: Common Effect Model
H1: Fixed Effect Model

Table 12 Chow Test Results

Redundant Fixed Effects	**Tests**		
Equation: Untitled			
Test cross-section fixed	effects		
Effects Test	Statistic	d.f.	Prob.
Cross-section F	21.067508	(26,261)	0.0004
Cross-section Chi-square	29.509196	26	0.0003

Source: data processed with Eviews 10, 2024

Based on the results of the chow Test in the table above shows that the probability value of cross-section F is 0.0003 > 0.05 then H0 is rejected and H1 is accepted which means that the temporary conclusion that the fixed effect model is more appropriate to use. LaGrange multiplier test will be conducted to test the best model between common effect model and random effect model. The test results showed that the LaGrange multiplier could not be performed due to unbalanced data. The common effect model is the best model.

The Hausmann Test

Chow test is a test to determine the fixed effect or random effect model that is more appropriate to be used in estimating panel data.

The Hypothesis in the chow Test is:
H0: Random Effect Model
H1: Fixed Effect Model

Table 13 Hausmann Test Results

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq.Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	18.445911	4	0.0065

Source: data processed with Eviews 10, 2024

Based on the results of the chow Test in the table above shows that the probability value of the cross-section F is 0.0065 < 0.05 then H0 rejected and H1 accepted which means that the temporary conclusion that the fixed effect model is more appropriate to use. Because the results of the Chow Test and the Hausmann Test choose the fixed effect model, there is no need to test the Lagrange Multiplier. So that the model used in this study is a fixed effect model.

Panel Data Regression Model Selection Period 2015-2022

Common Effect Model

The Common effect model is the simplest technique for estimating panel data by simply combining time series and cross section data. ni can use the OLS method to estimate panel data. Here is the common effect table:

Table 14 CEM regression results

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:24				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 23				
Total panel (unbalanced) observations: 177				

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.34130	0.156167	66.21937	0.0000
LN_PAD	-0.002559	0.005970	-0.428678	0.6687
LN_DAU	-0.128875	0.017470	-7.377018	0.0000
LN_DBH	0.179094	0.011954	14.98137	0.0000
LN_DAK	-0.006667	0.009352	-0.712863	0.4769
R-squared	0.609752	Mean dependent var		10.32923
Adjusted R-squared	0.600676	S.D. dependent var		0.264998
S.E. of regression	0.167458	Akaike info criterion		-0.708328
Sum squared resid	4.823246	Schwarz criterion		-0.618607
Log likelihood	67.68706	Hannan-Quinn criter.		-0.671941
F-statistic	67.18627	Durbin-Watson stat		1.926868
Prob(F-statistic)	0.000000			

Based on the estimation results for the panel data regression model common effect GDP per capita = 10,341-0,002 PAD-0,128 DAU + 0,179 DBH - 0,006 DAK

Fixed Effect Model

Fixed effect model is a technique of estimating panel data by using dummy variables to capture intercept differences.

Table 15 FEM regression results

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:24				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 23				
Total panel (unbalanced) observations: 177				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.40224	0.163633	63.57065	0.0000
LN_PAD	-0.002293	0.006496	-0.352910	0.7247
LN_DAU	-0.134860	0.018073	-7.462174	0.0000
LN_DBH	0.181361	0.012689	14.29314	0.0000
LN_DAK	-0.009669	0.010401	-0.929556	0.3541
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.663040	Mean dependent var		10.32923
Adjusted R-squared	0.604633	S.D. dependent var		0.264998
S.E. of regression	0.166626	Akaike info criterion		-0.606558
Sum squared resid	4.164639	Schwarz criterion		-0.122061
Log likelihood	80.68042	Hannan-Quinn criter.		-0.410065
F-statistic	11.35216	Durbin-Watson stat		2.225008
Prob(F-statistic)	0.000000			

Source: data processed with Eviews 10, 2024

Based on the estimation results for the regression model data panel fixed effect model is statistically variable, then persanaam is as follows. GDP per capita = 10.402-0.002 PAD-0.134 DAU + 0.181 DBH - 0.009 DAK

Random Effect

Random effect is a technique to overcome the uncertainty of the model used by the fixed effect. In this technique, several samples are randomly selected and are representative of the population.

Table 16 REM regression results

Dependent Variable: LN_PDRB				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/25/24 Time: 04:25				
Sample: 2015 2022				

Periods included: 8				
Cross-sections included: 23				
Total panel (unbalanced) observations: 177				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.35334	0.156662	66.08696	0.0000
LN_PAD	-0.002676	0.006015	-0.444846	0.6570
LN_DAU	-0.129885	0.017490	-7.426281	0.0000
LN_DBH	0.179192	0.012004	14.92729	0.0000
LN_DAK	-0.006985	0.009460	-0.738377	0.4613
Effects Specification				
			S.D.	Rho
Cross-section random			0.026174	0.0241
Idiosyncratic random			0.166626	0.9759
Weighted Statistics				
R-squared	0.609921	Mean dependent var		9.443821
Adjusted R-squared	0.600849	S.D. dependent var		0.269282
S.E. of regression	0.165717	Sum squared resid		4.723459
F-statistic	67.23406	Durbin-Watson stat		1.966186
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.609736	Mean dependent var		10.32923
Sum squared resid	4.823446	Durbin-Watson stat		1.925428

Based on the estimation results for the panel data regression model random effect model statistically variable, then persanaam is as follows.

GDP per capita = 10.353-0.002 PAD-0.129 DAU + 0.179 DBH - 0.006 DAK

After choosing the right model used in managing panel data, three tests can be carried out, namely:

Uji Chow

Chow test is a test to determine the most accurate fixed effect or common effect model used in estimating panel data. The hypothesis in the chow Test is:

H0: Common Effect Model

H1: Fixed Effect Model

Table 17 Chow Test Results

Redundant Fixed Effects	Tests		
Equation: Untitled			
Test cross-section fixed e	ffects		
Effects Test	Statistic	d.f.	Prob.
Cross-section F	21.078245	(22,150)	0.0005
Cross-section Chi-square	25.986710	22	0.0003

Source: data processed with Eviews 10, 2024

Based on the results of the chow Test in the table above shows that the cross-section probability value of 0.0003 < 0.05 then H0 rejected and H1 accepted which means the temporary conclusion that the fixed effect model is more appropriate to use.

The Hausmann Test

Chow test is a test to determine the fixed effect or random effect model that is more accurately used in estimating panel data.

The hypothesis in the chow Test is:

H0: Random Effect Model

H1: Fixed Effect Model

Table 18 Hausmann Test Results

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			

Test Summary	Chi-Sq.Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.940985	4	00006

Source: data processed with Eviews 10, 2024

Based on the results of the chow Test in the table above shows that the probability value of cross-section F is 0.0006 < 0.05 then H0 is rejected and H1 is accepted which means that the temporary conclusion that the fixed effect model is more appropriate to use. Because the results of the Chow Test and the Hausmann Test choose the fixed effect model, there is no need to test the Lagrange Multiplier. So that the model used in this study is a fixed effect model.

Panel Data Regression Analysis

Regression Analysis Of Panel Data For The Period 2004-2014

Regression analysis used in this study is panel data regression, which is a combination of time series and cross section. The following are the results of the panel data regression analysis to prove the significance of the hypothesis formulation that has been made the following:

Table 19 Results of Regression Analysis For The Period 2004-2014

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:28				
Sample: 2004 2014				
Periods included: 11				
Cross-sections included: 27				
Total panel (unbalanced) observations: 292				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.695045	0.132569	73.13213	0.0000
LN_PAD	0.058979	0.005957	9.900798	0.0000
LN_DAU	-0.140544	0.013331	-10.54260	0.0000
LN_DBH	0.214811	0.008077	26.59538	0.0000
LN_DAK	-0.029821	0.007243	-4.117030	0.0001
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.813044	Mean dependent var		10.25223
Adjusted R-squared	0.791555	S.D. dependent var		0.462617
S.E. of regression	0.211212	Akaike info criterion		-0.171815
Sum squared resid	11.64332	Schwarz criterion		0.218525
Log likelihood	56.08502	Hannan-Quinn criter.		-0.015461
F-statistic	37.83495	Durbin-Watson stat		1.937366
Prob(F-statistic)	0.000000			

Source: data processed with Eviews 10, 2024

Partial Test (t-test)

T test shows how far the influence of one independent variable individually in explaining the variation of the dependent variable. The t-test can be performed by comparing the t-count against the t-table with a significance level of 0.05. It can be concluded by the following criteria:

a) If t-count > t-table, then H0 is rejected and H1 is accepted which shows that there is a significant influence of the independent variable on the partially dependent variable
b) If t-count < t-table, then H0 is accepted and H1 is rejected which indicates that there is no significant influence of the independent variable on the partially dependent variable

Table 20 Partial test results (t test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.695045	0.132569	73.13213	0.0000
LN_PAD	0.058979	0.005957	9.900798	0.0000
LN_DAU	-0.140544	0.013331	-10.54260	0.0000
LN_DBH	0.214811	0.008077	26.59538	0.0000
LN_DAK	-0.029821	0.007243	-4.117030	0.0001

Source: data processed with Eviews 10, 2024

Based on Table 20 Partial Test (t test) above, the regression results can be seen as follows:

1) on the variable local revenue has a probability value of 0.000 < 0.05. Thus, local revenue affects the GDP per capita. This is motivated by the optimal performance of local governments in managing the potential of local taxes and levies, because the greater the value of local revenue received, the greater the authority for local governments in conducting a policy. This positive relationship can be motivated if the region is too offensive in an effort to increase its regional acceptance.
2) in the variable General Allocation Fund has a probability value of 0.000 < 0.05. Thus the general allocation of funds affect the GDP per capita. Optimal utilization of General Allocation Fund (DAU) financing sources, local governments are expected to improve public services that will encourage investors to carry out activities that help regional economic development. Such conditions will directly increase the per capita income of the community. As research Walidi (2008) shows that the General Allocation Fund has a significant effect on per capita income.
3) on the variable Profit-Sharing Fund has a probability value of 0.000 < 0.05. Thus the revenue-sharing funds affect the GDP per capita. This indicates that the Revenue Sharing Fund (DBH) allocated by the central government to the regions already has a significant contribution in increasing the level of GDP per capita. It can be concluded that the size of the Revenue Sharing Fund (DBH) is consistently correlated or not always gives a direct impact on the economic growth of a region, but rather depends on the potential of resources and tax revenues owned by the region.
4) the variable special Allocation Fund has a probability value of 0.0000 < 0.05. Thus the special Allocation Fund has no effect on GDP per capita. This special allocation fund is maximized in financing regional expenditures. The realization of special allocation funds in each region is relatively the same compared to the amount of aid funds and this aid fund does not affect regional growth. The absorption of this special Allocation Fund is balanced by the amount of financial assistance provided by the central government. So that the special Allocation Fund has no effect on economic growth.

Simultaneous Test (F Test)

The F test basically shows whether all independent or free variables included in the model have an influence together on the dependent variable (Mispiyanti & Kristanti, 2018). The hypothesis in the F test is:

H0: if the probability value of F-statistics > 0.05 then the independent variable does not have effect on the dependent variable.

Ha: if the probability value of F-statistics < 0.05 then the independent variable has influence on variables

Table 21 Simultaneous Test Results (F Test)

R-squared	0.813044	Mean dependent var	10.25223
Adjusted R-squared	0.791555	S.D. dependent var	0.462617

S.E. of regression	0.211212	Akaike info criterion	-0.171815
Sum squared resid	11.64332	Schwarz criterion	0.218525
Log likelihood	56.08502	Hannan-Quinn criter.	-0.015461
F-statistic	37.83495	Durbin-Watson stat	1.937366
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 10, 2024

Based on the table 21 simultaneous Test (Test f) above, it can be seen that the calculated F value of 37,834 with f-statistical probability of 0,000 < 0.05 then H0 is accepted so that it can be concluded that local revenue, General Allocation Fund, Revenue Sharing Fund and special Allocation Fund simultaneously have a significant effect on GDP per capita.

Coefficient Of Determination (R2)

The coefficient of determination (R2) essentially measures how far the ability of the model to explain the variation of the dependent variable. A small value of R2 means that the ability of independent variables to explain the variation of the dependent variable is limited. If the value of the coefficient of determination R2 is closer to one, it means that the independent variables provide almost all the information needed to predict the variation of the dependent variable and it can be said that the relationship tends to be strong (Ghozali, 2018:55). Here are the coefficients of determination that can be seen in the table below:

Table 22 Simultaneous Test Results (F Test)

R-squared	0.813044	Mean dependent var	10.25223
Adjusted R-squared	0.791555	S.D. dependent var	0.462617
S.E. of regression	0.211212	Akaike info criterion	-0.171815
Sum squared resid	11.64332	Schwarz criterion	0.218525
Log likelihood	56.08502	Hannan-Quinn criter.	-0.015461
F-statistic	37.83495	Durbin-Watson stat	1.937366
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 10, 2024

Based on Table 22 above can be seen Adjusted R-squared value of 0.8130. This shows that the independent variable of 81.30% and the rest is explained by other variables that are not explained in this study.

Panel Data Regression Analysis Period 2015-2022

Regression analysis used in this study is panel data regression, which is a combination of time series and cross section. The following are the results of the panel data regression analysis to prove the significance of the hypothesis formulation that has been made the following:

Table 23 Results Of Regression Analysis For The Period 2015-2022

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:24				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 23				
Total panel (unbalanced) observations: 177				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.40224	0.163633	63.57065	0.0000
LN_PAD	-0.002293	0.006496	-0.352910	0.7247
LN_DAU	-0.134860	0.018073	-7.462174	0.0000

LN_DBH	0.181361	0.012689	14.29314	0.0000
LN_DAK	-0.009669	0.010401	-0.929556	0.3541
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.663040	Mean dependent var		10.32923
Adjusted R-squared	0.604633	S.D. dependent var		0.264998
S.E. of regression	0.166626	Akaike info criterion		-0.606558
Sum squared resid	4.164639	Schwarz criterion		-0.122061
Log likelihood	80.68042	Hannan-Quinn criter.		-0.410065
F-statistic	11.35216	Durbin-Watson stat		2.225008
Prob(F-statistic)	0.000000			

Partial Test (t-test)

T test shows how far the influence of one independent variable individually in explaining the variation of the dependent variable. The t-test can be performed by comparing the t-count against the t-table with a significance level of 0.05. It can be concluded by the following criteria:

a) If t-count > t-table, then H0 is rejected and H1 is accepted which shows that there is a significant influence of the independent variable on the partially dependent variable
b) If t-count < t-table, then H0 is accepted and H1 is rejected which indicates that there is no significant influence of the independent variable on the partially dependent variable

Table 24 Partial test results (t test)

Dependent Variable: LN_PDRB				
Method: Panel Least Squares				
Date: 06/25/24 Time: 04:24				
Sample: 2015 2022				
Periods included: 8				
Cross-sections included: 23				
Total panel (unbalanced) observations: 177				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.40224	0.163633	63.57065	0.0000
LN_PAD	-0.002293	0.006496	-0.352910	0.7247
LN_DAU	-0.134860	0.018073	-7.462174	0.0000
LN_DBH	0.181361	0.012689	14.29314	0.0000
LN_DAK	-0.009669	0.010401	-0.929556	0.3541
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.663040	Mean dependent var		10.32923
Adjusted R-squared	0.604633	S.D. dependent var		0.264998
S.E. of regression	0.166626	Akaike info criterion		-0.606558
Sum squared resid	4.164639	Schwarz criterion		-0.122061
Log likelihood	80.68042	Hannan-Quinn criter.		-0.410065
F-statistic	11.35216	Durbin-Watson stat		2.225008
Prob(F-statistic)	0.000000			

Source: data processed with Eviews 10, 2024

Based on Table 24 Partial Test (t test) above, the regression results can be seen as follows:

1) the variable Regional original income has a probability value of 0.0724 < 0.05. Thus, local revenue has no effect on GDP per capita. With the increasing productivity of the community and investors in the region will have an impact on increasing local revenue (PAD), this means that the financial independence of the region is increasing. The financial independence of this region will accelerate the growth of the

economic and public sectors and thus will increase GDP and GDP per capita.

2) in the variable General Allocation Fund has a probability value of 0.000 < 0.05. Thus the General Allocation Fund affects the GDP per capita. Increased economic growth is expected to go hand in hand with increased public satisfaction with public services performed by local governments through the use of general allocation funds (DAU). Development in the public service sector will stimulate people to be more active and passionate in work because it is supported by adequate facilities. In addition, investors will also be attracted to the region because of the facilities provided by the local government so that it will trigger an increase in economic growth in the region which is reflected in the regional GRDP.
3) in the variable Profit-Sharing Fund has a probability value of 0.000 < 0.05. Thus the revenue-sharing funds affect the GDP per capita. The revenue sharing funds received by the regions were not able to strengthen economic growth. This is because the Profit Sharing Fund theorized relatively small.
4) the variable special Allocation Fund has a probability value of 0.3541 > 0.05. Thus the special Allocation Fund has no effect on GDP per capita. Special allocation funds in each region is very small compared to the amount of aid funds and this aid fund does not affect the growth of the region. The absorption of special allocation funds is not balanced by the amount of financial assistance provided by the central government. So that the special Allocation Fund has no effect on economic growth.

Simultaneous Test (F Test)

The F test basically shows whether all independent or free variables included in the model have an influence together on the dependent variable (Mispiyanti & Kristanti, 2018). The hypothesis in the F test is:

H0: if the probability value of F-statistics > 0.05 then the independent variable does not have influence on the dependent variable.

Ha: when viewed F-statistical probability value < 0.05, the independent variable has influence on variables

Table 25 Simultaneous Test Results (F Test)

R-squared	0.663040	Mean dependent var	10.32923
Adjusted R-squared	0.604633	S.D. dependent var	0.264998
S.E. of regression	0.166626	Akaike info criterion	-0.606558
Sum squared resid	4.164639	Schwarz criterion	-0.122061
Log likelihood	80.68042	Hannan-Quinn criter.	-0.410065
F-statistic	11.35216	Durbin-Watson stat	2.225008
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 10, 2024

Based on the table 25 simultaneous Test (Test f) above, it can be seen that the calculated F value of 11,352 with f-statistical probability of 0,000 < 0.05 then H0 is accepted so that it can be concluded that local revenue, General Allocation Fund, Revenue Sharing Fund, and special Allocation Fund simultaneously affect the GDP per capita.

Coefficient Of Determination (R2)

The coefficient of determination (R2) essentially measures how far the ability of the model to explain the variation of the dependent variable. A small value of R2 means that the ability of independent variables to explain the variation of the dependent variable is limited. If the value of the coefficient of determination R2 is closer to one, it means that the independent variables provide almost all the information

needed to predict the variation of the dependent variable and it can be said that the relationship tends to be strong (Ghozali, 2018:55). Here are the coefficients of determination that can be seen in the table below:

Table 26 Coefficient Of Determination Results

R-squared	0.663040	Mean dependent var	10.32923
Adjusted R-squared	0.604633	S.D. dependent var	0.264998
S.E. of regression	0.166626	Akaike info criterion	-0.606558
Sum squared resid	4.164639	Schwarz criterion	-0.122061
Log likelihood	80.68042	Hannan-Quinn criter.	-0.410065
F-statistic	11.35216	Durbin-Watson stat	2.225008
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 10, 2024

Based on Table 26 above can be seen Adjusted R-squared value of 0.6630. This shows that the independent variable of 66.30% and the rest is explained by other variables that are not explained in this study.

DISCUSSION

Influence Of Local Revenue On GDP Per Capita

The results showed that during the period of SBY's government, the variable Regional original income had an effect on GDP per capita, while in the Jokowi government regional original income had no effect on GDP per capita.

It can be said that although the fiscal decentralization infrastructure is not yet adequate, this policy has been enough to stimulate the local government towards regional independence both in government administration and local finance. Thus, it can be said that, in the context of finance, the implementation of fiscal decentralization can be proxied with the local revenue (PAD) of districts/cities, which with fiscal decentralization is expected to increase from year to year.

With the increasing productivity of the community and investors in the region will have an impact on increasing local revenue (PAD), this means that the financial independence of the region is increasing. The financial independence of this region will accelerate the growth of the economic and public sectors and thus will increase GDP and GDP per capita.

Effect Of General Allocation Fund On GDP Per Capita

The results showed that during the period of SBY's government, the General Allocation Fund variables had an effect on GDP per capita. The same thing is also obtained in the Jokowi government where the General Allocation Fund affects the GDP per capita.

As Simanjuntak (2002: 23) states that the transfer from central to local government plays a role to ensure the achievement of minimum public service standards throughout the country and to reduce disparities between regions. The per capita income of the region is important in determining how much of the General Allocation Fund (DAU) that will be received by the region from the center, as contained in the explanation of the Government of the Republic of Indonesia Regulation No. 55 of 2005 on balance funds.

The purpose of the equalization fund is to reduce the fiscal gap between the central government and local governments and also to assist the regions in financing their authority. Furthermore, with the optimal utilization of General Allocation Fund (DAU) financing sources, local governments are expected to improve public services that will encourage investors to carry out activities that help regional economic development. Such conditions will directly increase the per capita income of the community. As research Walidi (2008) shows that the General Allocation

Fund has a significant effect on per capita income.

Effect Of Revenue Sharing Funds On GDP Per Capita

The results showed that during the period of SBY's government, the variable revenue sharing funds affect the GDP per capita. The same thing is also obtained in the Jokowi government where the Revenue Sharing Fund affects the GDP per capita.

The use of DBH alone as a proxy for fiscal decentralization, among others, was carried out by Dyah (2012). The selection of the DBH is based on the existing fact that a large part of the DAU value received by the provincial government has been allocated to finance the expenditure of the provincial employees concerned. Thus, revenue sharing funds as a measure of fiscal decentralization also have a positive effect on increasing GDP per capita. Revenue sharing funds are actually sourced from the regions through tax payments and ownership of Natural Resources and then put into the balance fund as a form of fiscal decentralization. If the Revenue Sharing Fund is further enhanced, regional economic growth in a province will also increase as a proxy of fiscal decentralization.

Effect Of Special Allocation Fund On GDP Per Capita

The results showed that during the period of SBY's government, the special allocation fund variable had an effect on GDP per capita. Meanwhile, in the Jokowi government where special allocation funds have no effect on GDP per capita.

DAK is a special transfer fund consisting of physical special allocation funds and non-physical special allocation funds. Physical special allocation fund is a fund allocated to certain regions to help fund physical special activities that are local affairs and in accordance with national priorities. Physical DAK includes regular Dak, regional public infrastructure Dak, and affirmation Dak. Nonphysical special allocation fund is a fund allocated to regions to help fund special nonphysical activities that are local affairs, such as school operational assistance funds, early childhood education operational assistance funds, regional civil servant teacher professional allowance funds, and health and family planning operational assistance funds. This study cannot prove that per capita income growth affects the Dak relationship derived from central government APBN funds this is the contingency factor used is per capita income, so the relationship between Dak and capital expenditure allocation cannot be strengthened by per capita income as measured by GDP per capita in each region because Dak allocation itself is only determined based on general criteria such as regional financial capacity.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Based on the results of the study, it can be concluded as follows:

The results showed that during the period of SBY's government, the variable Regional original income had an effect on GDP per capita, while in the Jokowi government regional original income had no effect on GDP per capita.

The results showed that during the period of SBY's government, the General Allocation Fund variables had an effect on GDP per capita. The same thing is also obtained in the Jokowi government where the General Allocation Fund affects the GDP per capita.

The results showed that during the period of SBY's government, the variable revenue sharing funds affect the GDP per capita. The same thing is also obtained in the Jokowi government where the Revenue Sharing Fund affects the GDP per capita.

The results showed that during the period of SBY's government, the special allocation fund variable had an effect on GDP per capita. Meanwhile, in the Jokowi government where special allocation funds have no effect on GDP per capita.

The results obtained that simultaneously variables PAD, DAU, DBH and DAK affect

the GDP per capita both in the government of SBY and Jokowi

RECOMMENDATIONS

Suggestions researchers from research that has been done are as follows:

For further research is expected to add other variables that can affect GDP per capita.

Further research needs to consider a wider number of samples and other variables that are considered to have an effect on GRDP. It is intended that the resulting research results have a wider scope and a stronger correlation.

Declaration by Authors

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