

## **ANALYSIS OF HORIZONTAL FISCAL IMBALANCE IN SOUTH SULAWESI PROVINCE: WILLIAMSON INDEX AND KLASSEN TYPOLOGY APPROACH**

**Ahmad Romadhon**

Ministry of Finance, Directorate General of Treasury, Regional Office of The Directorate  
General of Treasury South Sulawesi Province, Makassar  
E-mail: [ahmad.romadhon@kemenkeu.go.id](mailto:ahmad.romadhon@kemenkeu.go.id)

### ***Abstract***

*This study aims to investigate horizontal fiscal imbalance in South Sulawesi Province using the Williamson Index and Klassen Typology analysis approach. The province has abundant natural resources. However, it faces complex economic dynamics, leading to disparities in the distribution of economic benefits between regions. The results of the Williamson Index analysis show significant fluctuations in the level of fiscal imbalance over the 2018-2022 period, emphasizing the need for effective policy interventions. Meanwhile, the Klassen Typology illustrates the economic diversity of different regions in South Sulawesi, with Makassar City being a prominent center of economic growth. This research makes an important contribution to the understanding of fiscal imbalance at the regional level and provides a basis for more focused and data-driven policy formulation. Taking into account economic, social, and policy aspects, this study proposes a differentiated and inclusive policy approach to address fiscal imbalance, promote equitable economic growth, and achieve sustainable development in South Sulawesi.*

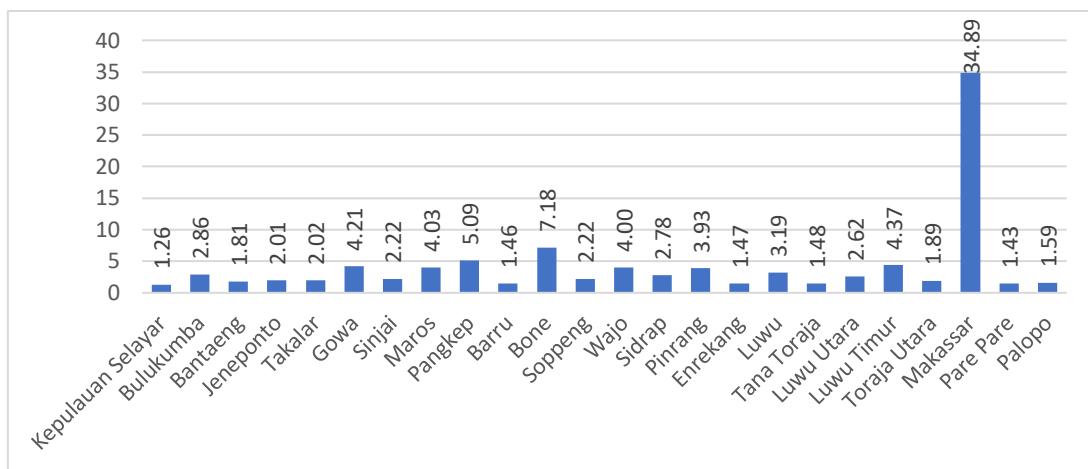
**Keywords:** Horizontal Fiscal Imbalance, South Sulawesi, Williamson Index, Klassen Typology

### **1. INTRODUCTION**

Horizontal fiscal imbalance refers to differences in fiscal capacity/potential and fiscal needs between regions (Hamid, 2005, as cited in Suyanto, 2014). Horizontal fiscal imbalance refers to differences in fiscal capacity and needs between one region and another within a region. This phenomenon signifies differences in potential financial revenues and expenditures between regions, stemming from variations in the levels of economic development, industrial structures, and natural resources among different regions. This phenomenon signifies differences in potential financial revenues and expenditures between regions, stemming from variations in the levels of economic development, industrial structures, and natural resources among different regions.

South Sulawesi Province, as one of the regional entities in Indonesia, faces complex economic and fiscal dynamics. Fiscal imbalance, which reflects the unequal distribution of wealth and economic resources between regions, is a focus of attention in the context of regional development. South Sulawesi, with its diverse economic and geographical characteristics, provides an interesting landscape for conducting a holistic fiscal imbalance analysis.

South Sulawesi has significant natural resources, including agriculture, fisheries and mining sectors. However, economic growth concentrated in a few regions can create disparities in the distribution of economic benefits. Factors such as infrastructure, accessibility, and regional fiscal policy can be drivers of imbalance that need to be carefully understood.



**Figure 1. Regional Contribution to South Sulawesi's Total GRDP by Business Field (% (Percent))**

Based on data on the average contribution of districts/cities in South Sulawesi Province to the provincial GRDP, there is a significant fiscal imbalance between regions. Makassar city stands out as the main contributor with an average contribution from 2018-2022 of 34.89 percent, showing its dominance in generating revenue for the province. On the other hand, several regions such as Selayar Islands, Bantaeng, Barru, and Pare Pare city show relatively low contributions, with an average below 2 percent, indicating imbalance in economic distribution between districts/cities.

In addition, this data also illustrates the disparity in economic growth between regions in South Sulawesi. Makassar city with a high contribution can also be interpreted as a center of faster economic growth, while regions with low contributions may experience challenges in increasing their economic growth rates.

The Williamson Index, as a recognized measurement tool in fiscal imbalance analysis, provides a framework to assess the extent to which regions in South Sulawesi participate in the economic development process equally. The use of this index can provide an in-depth understanding of the key aspects that contribute to fiscal imbalance, including income, investment, and access to public services.

The use of Klassen's typology in the study of fiscal imbalance in South Sulawesi Province provides a strong rationale for a holistic understanding of economic conditions and regional growth. The Klassen typology provides a more in-depth classification framework, helping to identify the unique characteristics of each region based on economic growth rate and per capita income. By dividing regions into quadrants that include Rapid Growth Region, Growth Region, Retarded Region, and Relatively Backward Region, Klassen's typology allows for a more detailed analysis of patterns of distribution and imbalance in South Sulawesi Province. This approach facilitates a deeper understanding of regional economic development challenges and opportunities, helping to formulate more targeted policies to reduce fiscal imbalance and promote sustainable growth across the province.

This study aims to provide an accurate and in-depth picture of the level of fiscal imbalance in South Sulawesi using the Williamson Index and Klassen typology. By

identifying the dimensions of imbalance and the factors that influence it. It is expected that the results of this study can provide valuable insights for policy makers in their efforts to reduce economic and social imbalance at the regional level.

With a better understanding of fiscal imbalance in South Sulawesi, it is expected that policy solutions will emerge that can lead to more equitable, sustainable and inclusive development across the province.

## 2. LITERATURE REVIEW

### 2.1. Concept of Fiscal Imbalance: Williamson Index.

According to Syafrizal (2012, as cited in Raja Guk Guk & Fatmawati, 2023), one method that can be used to measure the level of development imbalance between regions is the Williamson Index, which can be calculated using the following formula:

$$IW = \frac{\sqrt{\sum[(Y_i - Y)^2 \cdot (n_i/n)]}}{Y}$$

where:

$IW$  : Williamson Index  
 $Y_i$  : GRDP per capita in Regency/City i  
 $Y$ : GRDP per capita in the province  
 $n_i$  : Total population in District/city i  
 $n$ : Total population of the Province

The Williamson Index has a value between 0 and 1. An index value close to 0 reflects a very equal condition, while an index close to 1 reflects a very unequal condition.

### 2.2. Concept of Fiscal Imbalance: Klassen Typology

According to Rahayu (2010, as cited in Nur Hidayah & Jong Tallo, 2020), Klassen typology is a classification to determine the typology of sectoral and regional economies using secondary data, namely regional GRDP with its growth rate. According to Widodo Tri (2006, as cited in Ermalina et al. 2015), the economic growth of a region is analyzed using Klassen Typology based on the following classification:

**Table 1. Klassen Typology**

$r \backslash Y$	$y_i > y$	$y_i < y$
$r_i > r$	<i>rapid growth region</i>	<i>growth region</i>
$r_i < r$	<i>retarded region</i>	<i>relatively backward region</i>

Description:

$r_i$  = Economic growth rate of GRDP region i  
 $r$  = Growth rate of the reference region  
 $y_i$  = GRDP per capita of region i  
 $y$  = GRDP per capita of the reference region

### 3. RESEARCH METHODS

The data for this study will be collected from various official sources, including the Central Bureau of Statistics (BPS), regional government reports, and other relevant databases. The primary variables include Gross Regional Domestic Product (GRDP) per capita, total population, economic growth rates, and other indicators necessary for the calculation of the Williamson Index and Klassen Typology.

The calculated Williamson Index and Klassen Typology results will be analyzed to understand the level of fiscal imbalance and the economic typologies present in South Sulawesi. The focus will be on identifying patterns, trends, and factors contributing to fiscal imbalance. Additionally, regional disparities and the role of economic growth will be explored.

### 4. RESULTS AND DISCUSSION

#### 4.1. Total Population of South Sulawesi

**Table 2. Total Population in South Sulawesi  
by Regency/City (Population) 2018-2022**

Region	Total Population by District/City (Population)				
	2018	2019	2020	2021	2022
Selayar Islands	133315	134286	137071	137974	139145
Bulukumba	416773	418627	437607	440090	443292
Bantaeng	186525	187472	196716	197886	199399
Jeneponto	361892	363755	401610	405508	410639
Takalar	293136	295078	300853	302695	305077
Gowa	751981	761491	765836	773315	783167
Sinjai	242127	243323	259478	261366	263827
Maros	348682	351649	391774	396924	403774
Pangkajene and Islands	331979	334597	345775	348230	351426
Baru	173357	173965	184452	185525	186910
Bone	751323	753694	801775	806750	813188
Soppeng	228153	228686	235167	235574	236049
Wajo	400262	402323	379079	379396	379706
Sindereng Rappang	296684	298842	319990	323194	327416
Pinrang	374460	376784	403994	407371	411795
Enrekang	205254	206881	225172	227520	230622
Luwu	360537	363754	365608	367454	369820
Tana Toraja	234529	236255	280794	285179	291046
North Luwu	310744	313264	322919	325052	327820
East Luwu	289661	294288	296741	300511	305521
North Toraja	231686	233603	261086	264145	268198

<b>Region</b>	<b>Total Population by District/City (Population)</b>				
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Makassar	1503664	1521091	1423877	1427619	1432189
Parepare	143075	144446	151454	152922	154854
Palopo	178253	181395	184681	187331	190867
South Sulawesi	8748052	8819549	9073509	9139531	9225747

Source: BPS of South Sulawesi Province

Based on South Sulawesi population data from 2018 to 2022 obtained from the Central Bureau of Statistics (BPS) of South Sulawesi Province, there is a trend of population growth in various districts and cities in the region. Overall, the population of South Sulawesi has increased from 8,748,052 people in 2018 to 9,225,747 people in 2022. Some regions show a significant increase in population, such as Bulukumba Regency which experienced growth from 416,773 people in 2018 to 443,292 people in 2022. Likewise, Bone Regency showed an increase from 751,323 people to 813,188 people during the same period. On the other hand, some districts such as Wajo and Enrekang experienced fluctuations in population during this period.

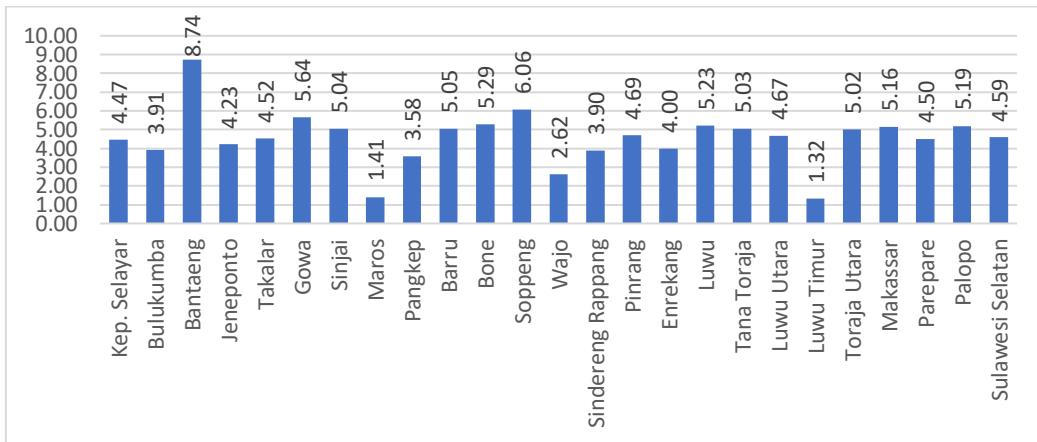
#### **4.2. Growth Rate**

According to Wijono (2005, as cited in Soleh A., 2015) economic growth is briefly a process of increasing output per capita in the long term, this understanding emphasizes three things, namely process, output per capita and long term. The process describes the development of the economy over time which is more dynamic, output per capita relates aspects of total output (Gross Domestic Product) and aspects of population, so that the long term shows the tendency of economic change in a certain period driven by internal economic processes (self generating). Economic growth is also defined simply as an increase in total output (Gross Domestic Growth) in the long term regardless of whether the increase is smaller or larger than the rate of population growth and whether it is followed by growth in the structure of the economy or not.

Regional growth rate is an important indicator in measuring the dynamics of a region's development. According to Sukirno (1994, as cited in Daniel, P. A., 2018). Economic growth is the development of activities in the economy that causes the goods and services produced in society to increase and the prosperity of society to increase. The problem of economic growth can be seen as a macroeconomic problem in the long term. The development of the ability to produce goods and services as a result of the increase in factors of production is generally not always followed by an equally large increase in the production of goods and services. The increase in production potential is often greater than the actual increase in production. Thus, economic development is slower than its potential.

The regional growth rate is a statistical parameter that describes proportional changes in various aspects, such as the economy, population, and other sectors in a region over a certain period of time. The results of the regional growth rate calculation are presented in the form of percentage growth relative to the previous period. Interpretation

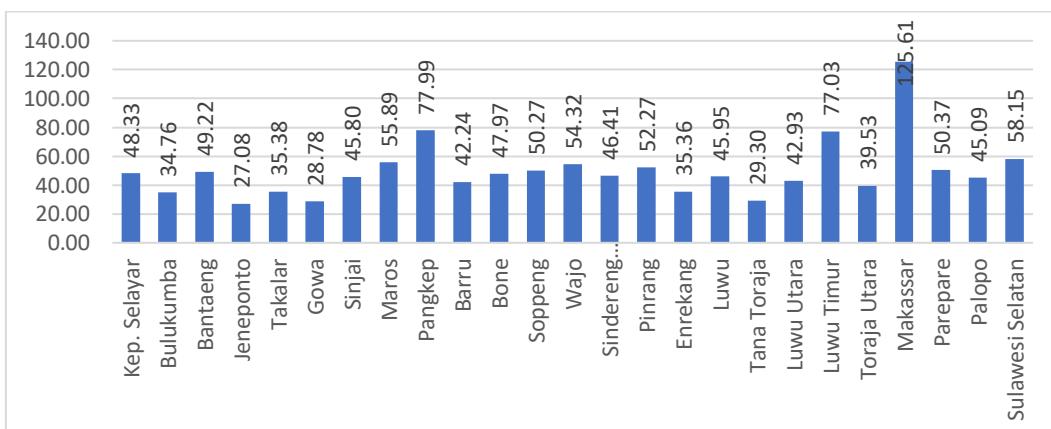
of these results provides an overview of the dynamics of a region's development and can be used as a basis for development planning and government policy.



**Figure 2. Average Growth Rate in South Sulawesi 2018-2022 (percent)**  
Source: BPS of South Sulawesi Province, processed

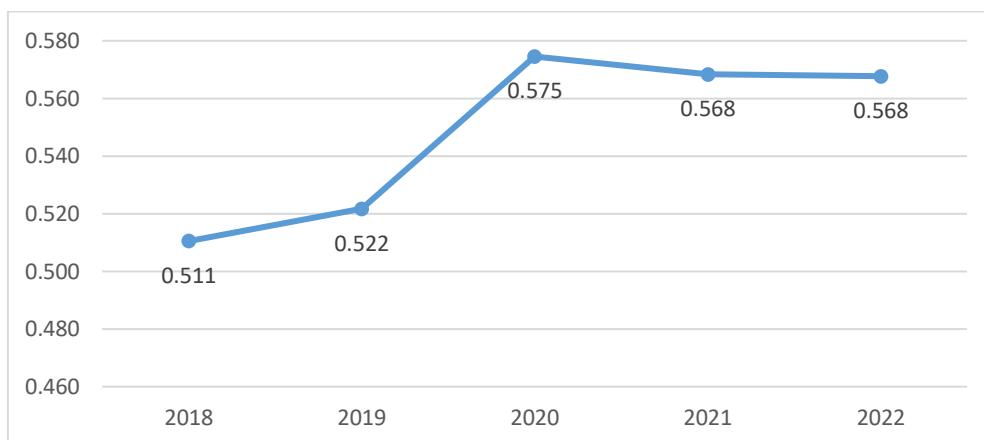
#### 4.3. GRDP Per Capita

Gross Regional Domestic Product (GRDP) per capita is an economic indicator that measures the total value of production in a region divided by its population. By looking at GRDP per capita, we can get an idea of the level of prosperity or economic imbalance in a region. GRDP itself can be divided into two, namely GRDP at current prices (ADHB) and GRDP at constant prices (ADHK). ADHB GRDP measures the value of a region's production using current market prices. It reflects the actual economic situation in the present. An increase in ADHB GDP may reflect strong economic growth or higher economic activity in a given period. However, keep in mind that fluctuations in market prices can also affect this figure. In this study the author uses an analysis based on ADHB GRDP.



**Figure 3. GRDP Per Capita based on ADHB (Million Rupiah)**  
Source: BPS of South Sulawesi Province, processed

#### 4.4. Williamson Index



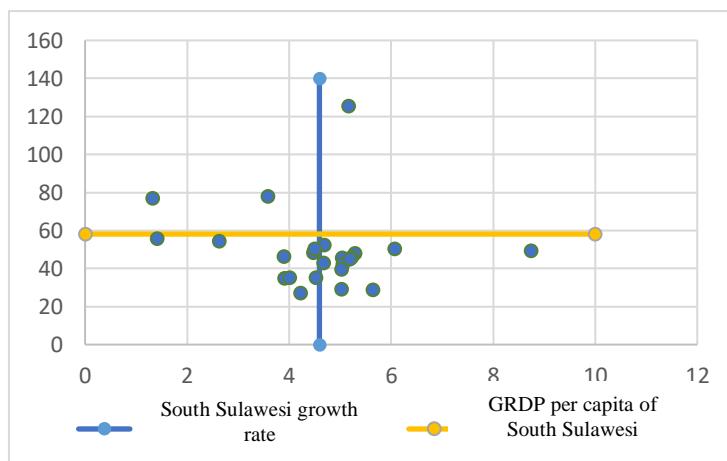
**Figure 4. Williamson Index Calculation Results South Sulawesi 2018-2022**

The Williamson Index, which reflects the level of economic imbalance of a region, can be interpreted as a measure of the imbalance of income distribution among its population. In the context of South Sulawesi, the results of this index calculation show an interesting fluctuating trend. In 2018, the Williamson index value reached 0.511, reflecting a significant level of imbalance in income distribution in the region. However, the following year saw a fairly sharp increase to 0.522, indicating a change in economic dynamics that may be related to various factors, such as development policies, investment, and external conditions.

The growth trend of the index continued in 2020, reaching 0.575, reflecting the potential for widening imbalance in South Sulawesi. Although in 2021 there was a slight decrease to 0.568, this change still indicates a fairly high level of imbalance. Interestingly, the calculation results in 2022 show that the Williamson index stagnated again at 0.568, highlighting the stability or perhaps the presence of factors that restrain the rate of change of the index. These results provide a complex picture of the dynamics of economic imbalance in South Sulawesi over the study period.

These results prompt important questions about the development policy and resource distribution in South Sulawesi. Does the increase in the Williamson index reflect the need for policy interventions to reduce economic imbalance, or is the decline that occurred in 2021 temporary or reflective of structural changes in the regional economy? Further analysis is needed to understand the factors underlying fluctuations in the Williamson index and its implications for sustainable development in South Sulawesi. This research contributes to understanding the dynamics of the regional economy and provides a foundation for policy formulation that can lead to a sustainable reduction in economic imbalance in the future.

#### 4.5. Klassen Typology



**Figure 5. Classification Results of South Sulawesi Klassen Typology Using Scatter Plot**

Based on the scatter plot graph above, it can be seen that only one region falls into quadrant I or as a rapid growth region, twelve regions are in quadrant II or as a growth region, two regions are categorized as quadrant III or retarded region, and the remaining nine regions are categorized as quadrant IV, which is classified as a relatively backward region.

**Table 3. Klassen Typology Classification Results South Sulawesi**

Quadrant I	Quadrant II
Makassar	Bantaeng; Gowa; Sinjai; Barru; Bone; Soppeng; Pinrang; Luwu; Tana Toraja; North Luwu; North Toraja; Palopo
Quadrant III	Quadrant IV
Pangkep East Luwu	Kep. Selayar; Bulukumba; Jeneponto; Takalar; Maros; Wajo; Sindereng Rappang; Enrekang; Parepare

a. *Quadrant I: Rapid Growth Region*

Makassar City is the only region included in the Rapid Growth Region. The city's significant economic growth can be attributed to massive investment, developed infrastructure, and progressive development policies.

b. *Quadrant II: Growth Region*

Twelve regions, including Bantaeng, Gowa, Sinjai, Barru, Bone, Soppeng, Pinrang, Luwu, Tana Toraja, North Luwu, North Toraja, and Palopo, belong to the Growth Region. Although they are not growing as fast as Makassar City, these regions show a steady positive growth trend.

c. *Quadrant III: Retarded Region*

Pangkep and East Luwu fall into the Retarded Region category. Economic growth in these regions is not as fast as other regions, indicating the need for a more careful development strategy.

d. Quadrant IV: *Relatively Backward Region*

Nine other regions, including Selayar Islands, Bulukumba, Jeneponto, Takalar, Maros, Wajo, Sindereng Rappang, Enrekang and Parepare, fall into the Relatively Backward Region category. These regions require special attention in an effort to improve economic growth and the welfare of their populations.

These results provide a more in-depth picture of economic diversity in South Sulawesi. The implication is the importance of policy development that focuses on the unique characteristics of each region, ensuring that economic development is inclusive and sustainable across the province. With a better understanding of the Klassen typology, it is expected that development policies can be better targeted, accelerate growth, and reduce inter-regional imbalance in South Sulawesi.

## 5. CONCLUSION

This study comprehensively analyzes fiscal imbalance in South Sulawesi Province by applying the Williamson Index and Klassen Typology. The analysis aims to identify the dimensions and levels of fiscal imbalance, as well as provide insights into the contributing factors to economic imbalance in the region.

The results of the Williamson Index analysis show significant fluctuations in the level of fiscal imbalance in South Sulawesi over the study period (2018-2022). Although there was a slight decrease in 2021, the index remained at a fairly high level in 2022. The implication is that there is a need for more effective policy interventions to reduce economic imbalance at the regional level.

The Klassen typology illustrates the economic diversity of the various regions in South Sulawesi. Only Makassar City is included in the Rapid Growth Region, while most other regions are in the Growth Region category. There are also regions that fall into the Retarded Region and Relatively Backward Region categories, showing significant differences in economic growth rates.

In conclusion, South Sulawesi Province requires a more differentiated and inclusive policy approach to address fiscal imbalances. The interaction between economic, social and policy aspects must be carefully considered. Improved economic growth and a more equitable distribution of resources across regions in South Sulawesi can be achieved through more focused and data-driven policy formulation.

This research makes a significant contribution to the understanding of fiscal imbalance in South Sulawesi and provides a foundation for policy formulation that can lead to a sustainable reduction in economic imbalance in the future. With a better understanding of the challenges and opportunities at the regional level, it is expected that strategic policy measures can be taken to achieve more equitable, sustainable and inclusive development across all regions of the province.

## REFERENCES

Badan Pusat Statistik Provinsi Sulawesi Selatan. (2023). Jumlah Penduduk - (Jiwa) 2018-2022. Diakses dari <https://sulsel.bps.go.id/indicator/12/439/1/jumlah-penduduk.html>

Badan Pusat Statistik Provinsi Sulawesi Selatan. (2023). Kontribusi PDRB Kabupaten/Kota terhadap Total PDRB Sulawesi Selatan Atas Dasar Harga Berlaku Menurut Lapangan Usaha 2018-2022. Diakses dari <https://sulsel.bps.go.id/indicator/52/1669/1-seri-2010-kontribusi-pdrb-kabupaten-kota-terhadap-total-pdrb-kabupaten-kota-atas-dasar-harga-berlaku-menurut-lapangan-usaha.html>

Badan Pusat Statistik Provinsi Sulawesi Selatan. (2023). Laju Pertumbuhan Kabupaten/Kota di Sulawesi Selatan Menurut Lapangan Usaha (Persen), 2020-2022. Diakses dari <https://sulsel.bps.go.id/indicator/52/1668/1-seri-2010-laju-pertumbuhan-kabupaten-kota-menurut-lapangan-usaha.html>

Badan Pusat Statistik Provinsi Sulawesi Selatan. (2023). PDRB Per Kapita Atas Dasar Harga Berlaku Menurut Kabupaten/Kota (Juta Rupiah) 2020-2022. Diakses dari <https://sulsel.bps.go.id/indicator/52/1670/1-seri-2010-pdrb-per-kapita-atas-dasar-harga-berlaku-menurut-kabupaten-kota.html>

Daniel, P. A. (2018). Analisis pengaruh inflasi terhadap laju pertumbuhan ekonomi di Kota Jambi. *Ekonomis: Journal of Economics and Business*, 2(1), 131-136.

Ermalina, E., Efriadi, A. R., & Masduki, U. (2017). Tingkat ketimpangan dan desentralisasi fiskal Provinsi Banten. *Jurnal Ilmiah Gema Ekonomi*, 5(2 Agustus), 717-736.

Guk, S. V. R. G., & Fatmawati, A. (2023). Analysis of Imbalance and Classification of Regency/City Economic Development in The Riau Archipelago Province, 2016-2021. *Journal of Economic Education*, 12(1), 26-32.

Hidayah, R. A. D. N., & Tallo, A. J. (2020). Analisis Ekonomi Provinsi Jawa Tengah Periode 2015-2019 dengan Metode Indeks Williamson, Tipologi Klassen dan Location Quotient. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, 6(3), 339-350.

Soleh, A. (2015). PERTUMBUHAN EKONOMI DAN KEMISKINAN DI INDONESIA. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis*, 2(2). <https://doi.org/10.37676/ekombis.v2i2.15>.

Suyanto, S. (2017). Kajian Ketimpangan Fiskal (Fiscal Imbalance) Dan Kebijakan Desentralisasi Fiskal Pada Daerah Otonom. *Develop*, 1(1).

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).