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Fiscal Decentralization and Per Capita Income Convergence between Regencies/Municipalities in Java Island

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ABSTRACT

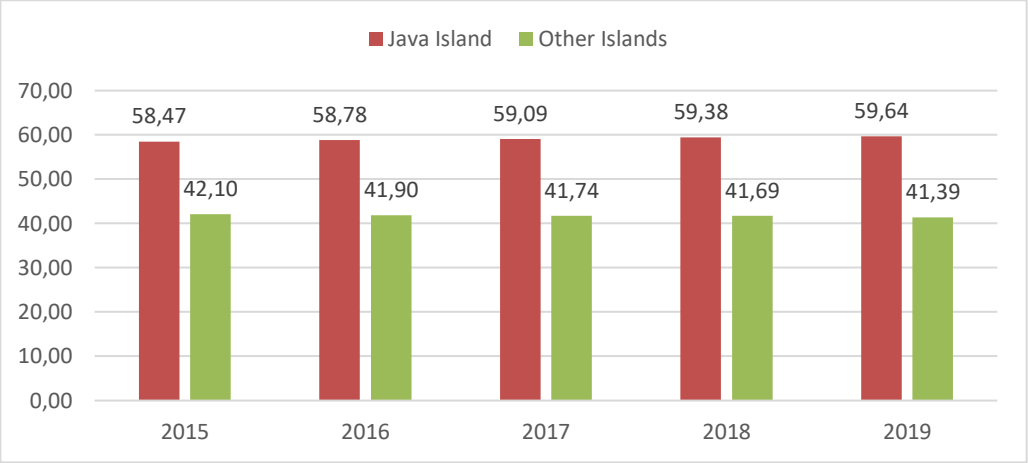
The purpose of this research is to examine the likelihood of beta absolute convergence and beta conditional convergence, the impact of fiscal decentralization in terms of income and expenditure side on per capita income and data from the Central Bureau of Statistics and the Directorate General for Fiscal Balance from the years 2015-2019 are being used to speed up the convergence of per capita income in 113 different regencies and municipalities. Using fixed effect regression models, this study confirms that there are beta absolute convergence and beta conditional convergence in Java Island during 2015-2019. It was also demonstrated that local own source revenue and the fiscal balance fund have a considerable impact on the rate of growth in per capita income, whereas personnel and capital expenditures significantly slow GDP growth and thus cut per capita income. The findings also reveal that all fiscal decentralization indicators significantly contribute to speeding up the convergence of per capita income. Based on the results of estimates, Local Government Own Source Revenue should be optimized and quality of government spending have to be improved to foster income per capita convergence between regions in Java Island.

Keywords: Income Per Capita Convergence, Fiscal Decentralization Regional Inequality, Beta Absolute Convergence, Beta Conditional Convergence

INTRODUCTION

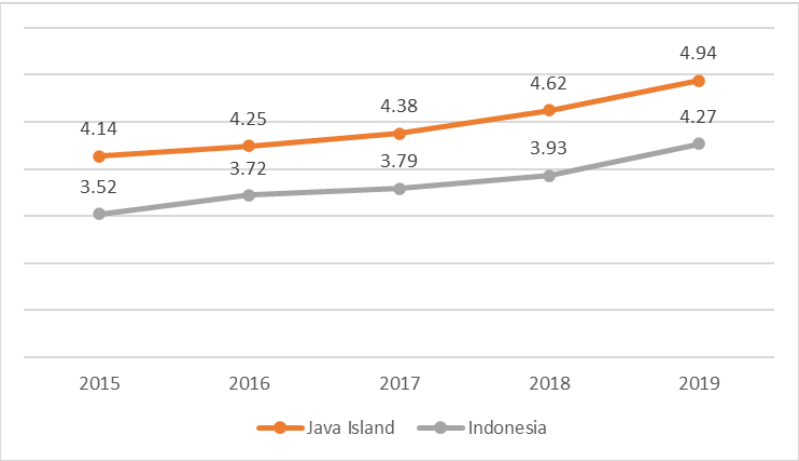
Regional inequality is a fundamental problem for developing countries, including Indonesia(Mendez & Kataoka, 2021). Indonesia's economy during 2015-2019 is still concentrated on Java Island. Java generates over half of Indonesia's GDP.

Figure 1
Contribution of Java Island and Other Islands to Indonesia's GDP(%)



As the centre of economic activity and also governance, economic growth in Java Island is faster than other islands in Indonesia. Based on Central Bureau of Statistic report, average growth of GRDP per capita at provinces in Java Island in the period 2015 to 2019 always increases every year and is able to exceed the average national GRDP growth per capita. The high growth of GRDP per capita in Java shows that most of the economy and the level of welfare of the people in the provinces in Java are quite good.

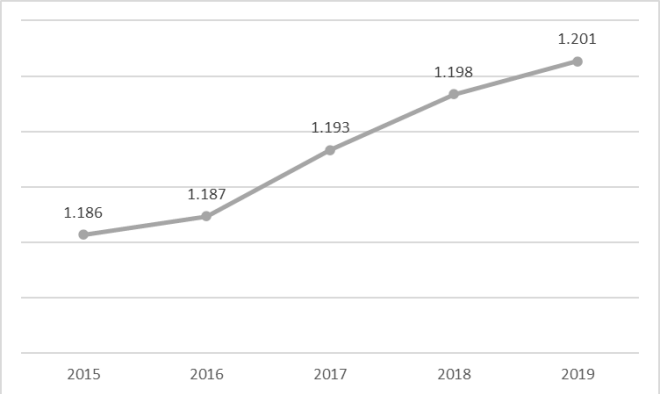
Figure 2
Average per capita GRDP growth (%) amongst Provinces in Java and Indonesia, 2015-2019



Along with the increase in economic growth, regional inequality in Java is getting bigger. The Williamson index is used as a proxy for regional inequality. Based on Figure 3, the value of the Williamson Index in Java continues to increase every year. This indicates that the regional per capita income gap at the regencies/municipalities level in Indonesia

is still high, and the economy between regions in Java tends to diverge, where regencies/municipalities with low economies are unable to catch up with relatively richer regencies/municipalities. From this phenomenon, the main challenge of development today is how to reduce inequality and encourage the convergence of per capita income(Mishra, 2009).

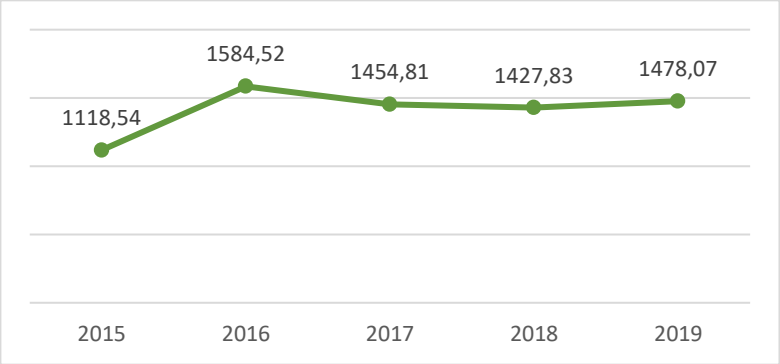
Figure 3
Williamson Index between regencies/municipalities in Java, 2015-2019



Regional inequality issues have been increasingly highlighted since implementation of fiscal decentralization in Indonesia in 2001. Basically, Long-term regional economic growth and development is a target of fiscal decentralization's efforts to improve public sector efficiency. With more comprehensive information and knowledge about regional resources, Local governments must provide public services according to the preferences and needs of the community at a more efficient cost(Tiebout, 1956). One way in which fiscal decentralization promotes convergence is by allowing lagging regions to more quickly embrace and reap the benefits of policy innovations developed in more advanced regions (Blöchliger et al., 2016). However, despite these objectives, there are concerns that the implementation of fiscal decentralization policies will actually increase regional inequality (Mahi, 2016). This is because Indonesia isn't ready to implement fiscal decentralization in the sense that different regions would have different levels of success when operating under a decentralized system due to disparities in local government's institutional capability and the expertise of its officials (Aginta et al., 2020).

The implementation of fiscal decentralization over the past two decades has brought many major changes for Indonesia, such as an increase in per capita GRDP, a decrease in the percentage of poor people and an increase in HDI. However, in the midst of those successful development achievements, there are several problems that still need to be resolved. This can be seen from the achievement of the essential goals of decentralization and regional autonomy itself, such as improvement of community welfare and public services, also democratization at regional level (Ong & Fritzen, 2007). The implementation of fiscal decentralization has its own consequences for regional fiscal, where regional fiscal needs are increasing due to the transfer of responsibility from the Central Government to Regional Governments, while on the other hand, the ability of regions to explore sources of regional revenue tends to stagnate, except for regions with abundant natural resources. To overcome the fiscal gap in the regions, the Central For the regions' fiscal balance, the federal government distributes tax and non-tax revenue in the forms of special allocation funds (DAK), general allocation funds (DAU), and profit-sharing funds (DBH). In Figure 4, it can be seen that there is no significant development on the average amount of fiscal balance funds in 2015 to 2019. The high average amount of balancing funds shows that during the implementation of fiscal decentralization, most of the regencies/municipalities in Java Island are still dependent on fiscal balance funds.

Figure 4
Development of fiscal balance funds at regencies/municipalities level in Java,2015-2019 (billion rupiahs)



Since the quality of local government spending has not been prioritized in the past, we now face development problems; nonetheless, an increase in fiscal balance funds granted by the central government to local governments should act as a key economic driver. Personal expenses still account for the bulk of local government budgets. In addition, the percentage of capital expenditures to total expenditures in a number of regions is still relatively small.

There are several studies that examine the effect of fiscal decentralization on convergence and show varying results. Negara & Khoirunurrofik (2021) explore the impact of fiscal decentralization to per capita income convergence amongst 505 regencies/municipalities in Indonesia. According to the findings of this research, fiscal decentralization is able to accelerate per capita income convergence. These findings are in line with research result of Blöchliger et al. (2016) Barkah (2019) and Kharisma & Saleh (2013). In contrast, Bonet (2006) find that fiscal decentralization is even more increase regional income disparities This happens because the largest allocation in direct expenditure is for wages and salaries and not for productive spending, the absence of a redistributive component of central government transfers, and the local government's inability to provide adequate leadership and infrastructure. Due to regional policy inconsistencies and economic uncertainty, some experts argue that fiscal decentralization inhibits investment growth (Brodjonegoro, 2004; Tijaja and Faisal, 2014). This ambiguity led us to examine how revenue and spending decentralization effect per capita income convergence.

LITERATURE REVIEW

Concept of Convergence

With the increasing regional inequality, there is a need for mechanism that can reduce this gap which are called convergence. Convergence happens when economically weaker countries or areas experience quicker growth than economically stronger countries or regions, letting the latter surpass the former with respect to GDP per person. Economic growth literature studies sigma and beta convergence. If a poor country builds its economy faster than a rich country, it will eventually catch up in per capita income or product. This phenomenon is known as "beta convergence."(Barro & Sala-i-martin, 1992). Absolute and conditional convergence can assess empirical convergence. In contrast to the conditional convergence hypothesis, which suggests that other factors like labor, investment, fiscal decentralization, etc. also contribute to economic growth, The absolute convergence theory states that economic growth depends solely on beginning per capita income. Barro and Salai-martin (1992) model yields beta convergence formula equation:

$$\log\left(\frac{y_{it}}{y_{i,t-1}}\right) = a_{it} - \left(1 - e^{-\beta}\right)\left[\log(y_{i,t-1}) - x_i(t-1)\right] + u_{it}$$

where I represent the specific nation or region and t the specific year According to the idea, the intercept, a_i, equals x_i +(1– e–β) * [log(ŷᵢ*) + x_i (t–1)], where ŷᵢ* is the steady-state level of ŷᵢ and x_i is the rate at which new technologies are developed. It's taken for granted that the random variable u_{it} has 0 mean, variance σ^2_{ut}, it is dispersed apart from $\log(y_{i,t-1})$, u_{jt} for j≠i,and delayed disturbances. Given that the intercept$a_{it}$is the same in all places and β>0, equation (1) suggests that low-income economies expand more rapidly than high-income ones.

Growth models and convergence: Neoclassical and Endogenous Growth Theory

The origins of the idea of convergence can be seen in the forerunners of neoclassical growth theory. Once a certain level of capital per person is attained (the steady state), the neoclassical model predicts that the pace of increase in terms of population will level off to zero (Barro & Sala-i-martin, 1992; Matter et al., 2012). In a steady state economy, when savings (and thus investments) completely offset the decline in capital stock due to depreciation and population increase, returns on capital dwindle and eventually approach zero. Neoclassical theory defines growth and stability as external factors, not internal dynamics. Due to falling returns to capital, all economies will reach a steady state regardless of savings, population growth, or depreciation rates. The farther an economy is from its steady state, the higher its per capita growth rate.

Neoclassical economic growth theory predicts that there will be a decrease in income inequality (convergence optimism), where the economy in poor country/region grows faster than rich countries/regions because there are decreasing returns from the capital factor so that poor country/region are able to reduce the income gap with richer countries/regions.

However, the endogenous growth theory predicts economic divergence in regions where the returns on investment, including investment in human resources, rise in tandem with economic output. Human capital's external benefits and knowledge spillovers between producers prevent the rate of return from gradually declining over time. That's why more technologically advanced and resourceful areas will expand more rapidly. That's why the idea of endogenous growth doesn't forecast convergence: a widening wealth gap between different regions. If the spillover effect mechanism from one country or region to another is functional, then, according to endogenous growth theory, regional income convergence is possible.

Fiscal Federalism Theory

Fiscal federalism is the study of financial relationships between the level of government at which the system uses the program government that puts on different levels of government (Prasetyia, 2012). Fiscal federalism is a set of guiding principles for government national and sub-national level financial plans for countries that apply fiscal decentralization. The term "fiscal decentralization" refers to the process through which authority and responsibility for making fiscal decisions, such as those pertaining to revenue collection and expenditure allocation, are delegated to different levels of government(Prawirosetoto, 2002). Fiscal federalism theory can be broken down into two distinct groups: the first generation and the second generation. Two schools of thought, both grounded in first-generation theory, argue that fiscal decentralization offers allocative benefits. First, Oates discusses the use of knowledge in society, highlighting how fiscal decentralization makes local governments more effective at creating services and delivering public goods, which has the potential to boost long-term economic growth and improve people's standard of living. If we consider public financing, it is clear that local governments have greater information than the federal government about the

potential and conditions of their various regions, improving public service decision-making. resource allocation efficiency. To improve the quality of public services and provide citizens more options in meeting their specific wants and preferences, Tiebout (1956) proposed the aspects of competition within the government and rivalry between regions in the distribution of public spending. If the government provides all essential services and goods consistently, this won't be the case. One of the basic tenets of the first-generation economic theory is that individual regions should be able to provide for their own needs. The allocation of taxes and other fees between different levels of government is given additional weight in the second generation hypothesis. This idea explains local government fiscal decentralization responses. In other words, if the local government is given the power to create economic restrictions, the federal government will be less likely to intervene.

Public Expenditure Theory

There are two public expenditure theories that related with study, namely Rostow & Musgrave's public expenditure model and Wegner's Law. According to the theory of development of government spending by Rostow and Musgrave, the economy can be said to have progressed through three distinct phases: the nascent, the middle, and the mature. Government spending accounts for a disproportionate share of initial investment since public infrastructure like hospitals, schools, and roads must be built from the ground up. Then, in the transition phase, private investment plays a larger role and the role of government investment decreases, although both are necessary to kickstart economic growth. When a country reaches the next stage of economic development, spending priorities shift from building new infrastructure to supporting social services like public health and retirement security.

According to Adolf Wagner, the role and activities of the government in the community's economy are increasing over time, where this condition is in accordance with the law always the role of the government. According to Wegner's Law, a relative increase in per capita income will be followed by an increase in government spending. This statement is also the basis for market failures and externalities that require government intervention. The role and activities of the government in the economy are increasing because the government must regulate relations that occur in society in various fields, such as security, control, or sectors, development and welfare. In other words, increasing the role and activities of the government is a form of regulating relations between sectors in society(Prasetyia, 2012).

RESEARCH METHOD

This study is quantitative research using panel data in the period of 2015 - 2019 with 113 regencies/municipalities in Java Island. This study use the model of Barro & Sala-i-martin (1992) estimate absolute and conditional beta convergence.

$$Y_{i,t} = \ln \frac{y_{i,t}}{y_{i,t-1}}$$

Absolute beta convergence

$$Y_{i,t} = \propto + \beta_0 \ln y_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

Conditional beta convergence (fiscal decentralization indicators affect growth)

$$Y_{i,t} = \propto + \beta_0 \ln y_{i,t-1} + \beta_1 \ln LGOR_{i,t} + \beta_2 \ln BF_{i,t} + \beta_3 \ln PE_{i,t} + \beta_4 \ln CE_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where $\ln \frac{y_{i,t}}{y_{i,t-1}}$ is per capita income growth rate, $y_{i,t-1}$ is initial per capita income, $y_{i,t}$ is latest per capita income, β_0 is convergence rate. If $\beta_0 < 0$, economy between regions in the long term tends to converge, meanwhile, if $\beta_0 > 0$, economy between regions in the long term tend to diverge. The ratios of LGOR (Local Government Own Source Revenue)

to TLGR (Total Local Government Revenue), BF (Fiscal Balance Funds) to TLGR (Total Local Government Revenue), PE (Personnel Expenditures) to TLGR (Total Government Expenditures), and CE (Capital Expenditures) to TLGR are shown below. In addition, the equation to determine the rate of convergence is v = −ln (1+ β_0),and to calculate the time required to eliminate half initial imbalances (half-life of convergence) using the formula $\boldsymbol{\mu_{half-life} = \ln 2/v}$
In estimating panels, the Chow Test is used to choose between the Common Effect Model (CEM) and the Fixed Effect Model (FEM), while the Hausman Test is used to pick between the Fixed Effect Model (FEM) and the Random Effect Model (REM)

RESULTS

This research incorporates the following variables: initial income per capita ($\ln y_{i,t-1}$), local government own source revenue (LGOR), fiscal balance funds (BF), personnel expenditure (PE), capital expenditure (CE) and per capita income growth (Y). This research uses 565 observations during period of 2015-2019. The average of initial per capita income is 10.1376 with range 9.266 to 12.7183. The average of local government own source revenue is 0.1874, with range 0.0631 to 0.6140. Most of regencies/municipalities in Java Island have ratio balance funds more than 50% with range 0.2092 to 0.7978. This indicates that most regencies/municipalities in Java Island still dependent with fiscal balance funds.The average of personnel expenditure is 0.4358 with range 0.2257 to 0.6403. Most of regencies/municipalities still have low ratio of capital expenditure per total expenditure with average at 0.4358 and range 0.0429 to 0.4127. Average per capita income increase is 0.0554, with the largest growth at 0.7705 and the lowest at -0.0359

Table 1. Descriptive Statistics (*N* =565) use

Variables	Min.	Max.	M	SD
$\ln y_{i,t-1}$	9.266	12.7183	10.1376	0.6293
LGOR	0.0631	0.6140	0.1874	0.1033
BF	0.2092	0.7978	0.6059	0.1041
PE	0.2257	0.6403	0.4358	0.0657
CE	0.0429	0.4127	0.1921	0.0533
Y	-0.0359	0.7705	0.0554	0.0850

Note. M = Mean, *SD* = Standard Deviation.

In this research, we estimate the beta convergence rate under both unconditional and conditioned conditions. Unlike absolute beta convergence, conditional convergence is impacted by economic growth factors like fiscal decentralization. The Chow and Hausman tests for model selection in panel data reveal that the fixed effect model is superior for estimating absolute and conditional beta convergence (FEM).
Table 2 displays predicted outcomes for absolute beta convergence and conditional beta convergence from 2015 through 2019. It is known that the coefficient value of _0 is negative, specifically -0,0560198, from the calculated result of the absolute beta convergence equation. It takes 24.04 years to eradicate all inequality, but after that, 113 of Java Island's regencies and municipalities will have reached absolute beta convergence. Absolute beta convergence yields a convergence rate of 5.76% per year, Half of that time, or around 12.02 years, is needed for the lowest-income region to catch up to the highest-income region. Initial income negatively impacts later income growth.
As calculated by the conditional beta convergence equation, the projected value of the coefficient _0 is -0,089857, indicating its negative nature. This suggests that over the

next 16,44 years, there will be a conditional convergence between the regencies/municipalities of Java Island, at which point all inequality will have been eradicated. Convergence occurs at a rate of 8.44% per year, and 8.22 years are needed for the region with the lowest income per capita to catch up to the region with the highest income per capita, according to the results of conditional beta convergence. Personnel expenditure and capital expenditure are two decentralization indicators found to have a negative effect on per capita income growth in the estimation results, while Local Government Own Source Revenue (LGOR) and fiscal balance funds (BF) are found to have a positive significant effect on per capita income growth.

Table 2. Regression Results

Variable	**Absolute Beta Convergence Model**	**Conditional Beta Convergence Model**
Initial Income per capita ($\ln y_{i,t-1}$)	-0,0560198*** (2,2e-16)	-0,089857*** (2,2e-16)
Local Government Own Source Revenue (LGOR)	-	0,372412*** (0,0001151)
Fiscal Balance Funds (BF)	-	0.092626 ** (0,0035095)
Personnel Expenditure (PE)	-	-0.902082 *** (2,2e-16)
Capital Expenditure (CE)	-	-0,583796*** (2,2e-16)
R-squared	0,63236	0,84312
Adjusted R-squared	0,54024	0,80205
β_0	-0,0560198	-0,0809857
Speed of convergence	**0,05765**	**0,08436**
Half-life	**12,02 years**	**8,22 years**
Time	**24,04 years**	**16,44 years**

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

DISCUSSION

A-Beta, To the Letter The island of Java has seen a convergence of its several regencies and municipalities between 2015 and 2019. The initial level of per capita income has a negative effect on subsequent per capita income increases. This finding suggests that areas with high wealth per capita are less likely to experience rapid increases in their standard of living, while areas with low income per capita are more likely to experience slow increases. Kediri and Semarang Municipality both have high starting per-capita incomes, but their incomes are growing more slowly than those in Kebumen and Kuningan Regency. Java Island convergence potential. Since per capita income is expected to change between 2015 and 2019, this gap may affect how quickly we converge. Kulonprogo was one of the worst regencies in terms of per-capita income in 2005, but in 2019 it jumped up to the upper echelons. Construction of New Yogyakarta International Airport is a major factor in Kulonprogo's rapid economic expansion.

Conditional Beta Convergence is also occurred amongst regencies/municipalities in Java Island during 2015-2019 period. Existence of decentralization indicators such as Local government own source revenue (LGOR), fiscal balance funds (BF), personnel expenditure (PE), and capital expenditure (CE) can foster the income per capita convergence rate from 5,76% to 8,34%.

Local government own source revenue has positive significant effect on per capita income growth because the high local government own source revenue also shows the high ability of local governments to finance development activities in the region. Greater funding capacity means that the government can spend more, so that it can have an effect on economic activity. Likewise, an increase in economic activity as measured by a high level of economic growth can also increase local revenue. This relates to the source of government revenue originating from the existence of taxes or retribution collected on an economic activity carried out in a region. That is to say, higher levels of regional original income will spur greater economic activity, which will in turn boost regional original income as a result of economic expansion.

Because fiscal balancing funds can boost the allocation of financial capacity among regions to finance the requirements of regions within the framework of adopting decentralization, they have a positive and statistically significant effect on the growth of per capita income. These results are in line with the results of Paat et al.(2019).

Personnel Expenditure has negative significant effect on per capita income growth because personnel expenditures can be categorized as non-productive expenditures that cannot have a direct influence on increasing economic activity in a regency/municipality. Personnel expenditures, which are mostly allocated to pay salaries and allowances, are expenditures that do not have added value to the community's economic activity and will reduce the level of economic growth. These results are in line with the results of Barkah (2019),Heng & Hong (2012), Amalia et al. (2018).

In the early stages of economic development, capital expenditure/infrastructure is still an economic burden that has not been able to stimulate economic growth. However, in the long term, it is hoped that the results of government-issued capital expenditures will have a contribution to improving facilities and increasing economic activity, mitigating the negative effect on per capita income growth. These results are in line with the results of Barkah (2019),dan Paat et al.(2019).

CONCLUSION

The study's findings that the economies of Java Island's regencies and municipalities are converging between 2015 and 2019 are based on a technique called dynamic convergence analysis. Both absolute and conditional tests of beta convergence show this to be the case. Beta absolute convergence is known to be 5.8%, whereas beta conditional convergence, which accounts for fiscal decentralization indices, is known to be 8.4%. Beta absolute convergence takes 12 years, but beta conditional convergence with fiscal decentralization indicators takes 8.2 years to close the same size of disparity. It can be concluded that fiscal decentralization can help regions/municipalities speed up the convergence rate. Indicators of fiscal decentralization that have significant impact on per capita income growth is Local government own source revenue, fiscal balance funds, personnel expenditure and capital expenditure. There are some feasible steps that can be taken. First, Central government should pay attention to improve regional fiscal capacity, especially strengthening sources of regional income originating from local taxes and retribution (increase local taxing power). Second, Central government should increase the transfer of funds that stimulate local government to continue to compete and innovate. Third, Process of accelerating income per capita convergence between regions requires intervention from the central government, such as: increase the amount of funds for financing the development of regions that have low fiscal capacity and only relies on transfer funds. Last, Local Government must improve the quality of spending according to the value for money principle.

LIMITATION

This research is only focus to provide evidence empirically that the implementation of fiscal decentralization has the effect of accelerating the speed of per capita convergence. The use of fiscal decentralization indicators in this study only uses fiscal measures in terms of regional revenues and expenditures. Thus, further research should consider additional decentralization indicator variables like administrative and political decentralization in the model. Further research should consider control variables such as investment, labors, HDI,infrastructure that can affect growth. The use of spatial analysis in further research may provide better explanation to estimate income per capita convergence.

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DECLARATION OF CONFLICTING INTERESTS

The authors disclosed no conflicts of interest.

REFERENCES

Aginta, H., Gunawan, A. B., & Mendez, C. (2020). Regional income disparities and convergence clubs in Indonesia: new district-level evidence. *Journal of the Asia Pacific Economy*, *104264*. https://doi.org/10.1080/13547860.2020.1868107

Amalia, S. K., Santoso, D. B., & Brawijaya, U. (2018). *Convergence Analysis of Economic Growth in East Java*. *11*(1), 151–161.

Barkah, A. R. (2019). PERAN KEBIJAKAN FISKAL TERHADAP PERCEPATAN KONVERGENSI DI JAWA TIMUR. *Jurnal Ilmiah Mahasiswa FEB Universitas Brawijaya*.

Barro, R. J., & Sala-i-martin, X. (1992). Convergence. *Journal of Political Economy*, *100*(2), 223–251. https://doi.org/10.1086/261816

Blöchliger, H., Bartolini, D., & Stossberg, S. (2016). Does Fiscal Decentralisation Foster Regional Convergence. *OECD Economic Policy Paper*, *17*(17), 1–19.

Bonet, J. (2006). *Fiscal decentralization and regional income disparities : evidence from the Colombian experience*. *676*, 661–676. https://doi.org/10.1007/s00168-006-0060-z

Heng, Y., & Hong, Z. (2012). *Social Sciences in China A Study of Productive Expenditure Bias in County-level Finance in China*. *May 2015*, 37–41. https://doi.org/10.1080/02529203.2012.650414

Kharisma, B., & Saleh, S. (2013). Convergence of Income Among Provinces in Indonesia 1984-2008 : *Journal of Indonesian Economy and Business*, *28*(2), 167–187.

Matter, T., Senger, K., & Mulquin, M.-ève. (2012). *Economic convergence of regions : do interpersonal transfers matter ?* https://doi.org/10.3917/rpve.512.0019

Mendez, C., & Kataoka, M. (2021). Disparities in regional productivity, capital accumulation, and efficiency across Indonesia: A club convergence approach. *Review of Development Economics*, *25*(2), 790–809. https://doi.org/10.1111/rode.12726

Mishra, S. C. (2009). *Economic inequality in Indonesia: Trends, causes and policy response.* UNDP Report for Strategic Asia.

Negara, B. P., & Khoirunurrofik, K. (2021). Dampak desentralisasi fiskal terhadap konvergensi pendapatan perkapita antar kabupaten/kota di Indonesia. *Indonesian Treasury Review: Jurnal Perbendaharaan, Keuangan Negara Dan Kebijakan Publik*, *6(1)*(April), 1–18. https://doi.org/10.33105/itrev.v6i1.185

Ong, P., & Fritzen, S. (2007). Decentralization in Developing Countries. In *Encyclopedia of Public Administration and Public Policy, Second Edition (Print Version)* (Issue 581). https://doi.org/10.1201/noe1420052756.ch96

Paat, D. C., Koleangan, R. A. M., & Vekie A. Rumate. (2019). *Terhadap Pertumbuhan Ekonomi Serta Dampaknya Di Kota Bitung*. 1–10.

Prasetyia, F. (2012). *Modul Ekonomi Publik*.

Prawirosetoto, F. X. (2002). Desentralisasi Fiskal di Indonesia. *Jurnal Ekonomi Dan Bisnis Fakultas Ekonomi Universitas Katolik Indonesia Atmajaya)*, *2*(September 2002), 132–143.

Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *The Journal of Political Economy*, *64*(5), 416–424.