Original scientific paper
UDC: 352:336.132.11:616.9-036.21Covid-19(594)
https://doi.org/10.18045/zbefri.2022.2.353

The flypaper effect phenomenon of intergovernmental transfers during the Covid-19: Evidence from Indonesia*

Lela Nurlaela Wati[1], *Heri Ispriyahadi*[2], *Dhika Habibi Zakaria*[3]

Abstract

This study aims to confirm the flypaper effect phenomenon and the impact of the Covid-19 pandemic on local own-source revenue (LOR), general allocation fund (GAF), and local government financing on local government expenditure in Indonesia. The research used a quantitative method, while the sample was data on regional government budget (RGB) realization in 335 local governments in 2019 – 2020. The data were analyzed using Moderating Regression Analysis. The study found that there was a flypaper effect phenomenon that encouraged the local governments to use GAF, instead of LOR for their local expenditure. The GAF and local government expenditures were higher during the Covid-19 period. To overcome the flypaper effect phenomenon, the central government is advised to improve the GAF policy by setting priorities for its use. Local governments must encourage micro, small, and medium enterprises to help support LOR. This study proves there exists the phenomenon of the flypaper effect in developing countries that implement the presidential system (republic) and provide substantial empirical evidence on government spending policies during crisis and non-crisis (Covid-19).

Key words: *flypaper effect, general allocation fund, local government expenditure, local government financing, local own-source revenue*

JEL classification: *H30, H53, H70, H74*

* Received: 14-10-2022; accepted: 28-12-2022

[1] *Associate Professor, Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonesia. Scientific affiliation: financial management, corporate finance, political finance. Phone: +6281291181859, E-mail: lela@stiemj.ac.id; lela_nwm@yahoo.com.*

[2] *Assistant Professor, Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonesia. Scientific affiliation: financial management, corporate finance. E-mail: herivrpat64@gmail.com.*

[3] *Student of Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonesia. Scientific affiliation: financial management. E-mail: dhika.habibi.zakaria@gmail.com.*

1. Introduction

The current decentralization movement in Indonesia includes the adoption of regional autonomy. The adoption of Law No. 32 on Local Government (Republic Indonesia Law, 2004a) and Law No. 33 on Central and Local Fiscal Balance harmonized with regional autonomy (Republic Indonesia Law, 2004b). Local own-source revenue (LOR), which is used to support regular and development expenses, is the primary financial source for the local government. Besides LOR, Local governments also get support from the central government in the form of a Balance Fund. Balance funds consist of specific allocation funds (SAF), general allocation funds (GAF), and revenue-sharing funds (Republic Indonesia Law, 2004b). The distribution of the balance fund is intended to help local authorities finance and eliminate vertical fiscal disparities (the financial gap between the central and local governments) and horizontal fiscal disparities (the financial gap among local governments).

The issue today is that local governments rely too heavily on Balance Fund allocation to pay for ongoing expenses and development without fully utilizing its potential. The GAF allocation, established by the Central Government, is not based on the local income potential. The GAF formula is allocated based on the fiscal gap and the basic allocation on the generalization in each local government that the local government with a larger fiscal gap earns a higher GAF. The GAF concept has high flexibility even without terms and conditions, and greater allocation, the local government will always expect a greater GAF from the Central Government. It is because the fund is more focused on the income distribution between local governments (horizontal); rather than the potential capacity of local income, and not to maximize efforts to explore the local tax base. This phenomenon is generally referred to as the flypaper effect. A study on flypaper effects in Japan used a Bayesian approach and found that the phenomenon was especially common in the financing for sanitation, education, police, and disaster management (Kakamu et al., 2014). Given the transfer from the central government, the local authorities become more dependent on these practices rather than efforts to increase local revenue (Dick-Sagoe and Tingum, 2021).

The flypaper effect is to explain the tendency of government fiscal policy, especially in local government, that the transfers or grants from the central government are used more primarily than the local government expenditures fund compared to LOR (Dick-Sagoe and Tingum, 2021). An empirical study in Ghana shows that central government transfers dominate the local government expenditures fund more than local revenue (Dick-Sagoe and Tingum, 2021). This phenomenon also occurs in Italy regarding the funding of specific local government expenditures, such as spending in the health sector (Levaggi and Zanola, 2000). Likewise, local governments in other countries were more likely to use transfers from the central government rather than their local own revenues (Levaggi and Zanola, 2000). However, the research results conducted in Indonesia are different, where the LOR influenced local government expenditures much stronger than the balance fund effect. It proves that there was no flypaper effect in Indonesia (Iskandar, 2012), and also (Delgado and Mayor, 2011) study in Spain revealed that there was no flypaper effect phenomenon. The dominant contribution of central government transfers compared to LOR for funding local government expenditures in the long term will impair good governance. The results of previous studies showed that dependence on central government transfers had a negative impact on development (Barenstein and de Mello, 2001).

Covid-19 caused budget constraints on the local government fiscal. In May 2020, there was an increase in local government expenditure in line with the efforts to overcome the impact of Covid-19. The local government strove to overcome Covid-19 by refocusing and reallocating the budget. Decreasing fiscal availability during Covid-19 reduced the local government's revenue sources, which were dominated by transfer revenues, accounting for 56% share of the local government budget in the 2020 FY (Bank Indonesia, 2020). Meanwhile, the allocation of transfer funds allocated by the central government has also decreased in line with the rationalization of government expenditure. Covid-19 pressures the local governments to adjust their local budget (Ulya, 2020) 2020 via transfer income LOR adjustment based on the calculation of potential tax revenue, and fees for services they provided. Options for LOR optimization as a source of local government revenue in a pandemic were limited, which was in line with the implementation of relaxation of tax penalties in several local governments. Spatially, the local government's dependence on transfer funds is indicated in the ratio of financial independence which is below 36% in almost all provinces except North Sulawesi (Bank Indonesia, 2020). The Covid-19 pandemic has a devastating effect on economic conditions that affect the local income. It is an extraordinary condition, which is a different condition from what has been done by previous researchers, which raises the question of whether LOR, GAF, and local government financing affect regional expenditures before and during the Covid-19 pandemic. To evaluate this relationship, the authors suggest the key hypothesis that (1) Local own revenue (LOR), general allocation fund, and local government financing (LGF) have a positive effect on local government expenditure (LGE); (2) Covid-19 has a negative effect on LGE; (3) LOR, GAF, and LGF during the Covid-19 pandemic have an effect on LGE.a positive effect on local government expenditure (LGE); (2) Covid-19 has a negative effect on LGE; (3) LOR, GAF, and LGF during the Covid-19 pandemic have an effect on LGE.

It is necessary to overview the regional financial condition during the Covid-19 pandemic, especially LOR, general allocation fund, and local government financing that can be used as a funding source for local government expenditures. During the Covid-19 pandemic, the implementation of a social distancing policy and the issue of increasing the number of Covid-19 cases made it more difficult for the local government efforts to encourage the local economy. Meanwhile, in the future, it is expected that economic activities contribute to local income. Therefore, this study fills the gaps in previous research that studied the flypaper effect under normal conditions with different concepts (Kakamu et al., 2014). The rest of this essay is organized as follows: Following the introduction, Section 2 explores pertinent literature, examines relevant theories, and develops hypotheses, while Section 3 elaborates on the research method. The analysis of empirical data is covered in Section 4, Results and Discussion are covered in Section 5, and the study is summarized and ended in Section 6.

2. Literarure review

The underlying theory of this research is the flypaper effect theory and fiscal federalism. Central government transfers make local government officials tend to be more dependent on general allocation fund (GAF); rather than relying on their efforts to increase local own-source revenue (LOR). In the theory of the flypaper effect on local government, Niskanen (1976) suggested that the flypaper affects the incentives of local bureaucrats, based on the power of their position in public decision-making to enhance local spending. It leads to the bureaucrats' behavior that freely spend intergovernmental transfers rather than focusing on increasing local revenue because they have more information about income sources.

The flypaper effect is a stimulus condition of local government expenditures that occur due to the addition of the value/amount of transfer from the central government (unconditional grants) larger than the other fund as a component in local own-source revenues (Iskandar, 2012). This condition is revealed in most studies that unconditional grants have a more stimulative impact on local government expenditures than local revenue (Dahlby and Ferede, 2016). Meanwhile, unconditional grants have a "price effect" and "income effect" because they allow the recipient government to reduce local tax revenues, lowering the costs of public fund, while still providing the same level of service (Dahlby and Ferede, 2016). It occurs because the local government improves the services quality to the people without increasing the tax rate. The flypaper effect can be shown by the coefficients of transfers (unconditional grants) in their effect on local government expenditure compared to LOR. The flypaper effect can be recognized if the transfer coefficient value (unconditional grants) is greater than the coefficient value of LOR (Cárdenas and Sharma, 2011; Iskandar, 2012; Sagbas and Saruc, 2004).

The large and regular transfers to local governments increase their income and make them biased toward these transfers, less focused on their own local revenues (Dick-Sagoe and Tingum, 2021; Niskanen, 1976; Pöschl and Weingast, 2013). When local governments are focused more on central government transfers than their LOR, they will automatically reduce their autonomy. It is because they will be more dependent on the central government and they ignore the people in their regions who should be a priority for them to serve. As such, the local government spending does not reflect the needs and priorities of the region (Sirenko et al., 2018). On the other hand, if local governments depend on LOR, they will be more autonomous than central government transfers. They will have freedom to regulate their government and fund their routine and development expenditures from their local revenues. Thus, they cannot be controlled and used as agents of the central government to achieve their political goals. Local governments will focus on the role of regional development and serving local communities. It fulfills the principle of allocation efficiency as suggested by (Oates, 1999). (Cárdenas and Sharma, 2011; Iskandar, 2012; Sagbas and Saruc, 2004).

2.1. Local government expenditures

Local expenditures in Indonesia refer to general treasury accounts that do not need to be received back by the region and other expenditures in accordance with the provisions of the legislation. They are recognized as a deduction from equity, which is a regional obligation in one fiscal year (Republic of Indonesia, 2021). It can be assumed that in the process of making spending policies, policymakers are very concerned about the ability of income and the level of expenditure or according to the ability of their respective local government income (Moller and Messina, 2012).

Oates (1999) stated that there are several studies proving that local government spending is much more responsive to an increase in transfer receipts from the central government than an increase in local own revenue. The growth of GDP is one of the indicators to determine the improvement of people's welfare. Several studies found that LOR has an impact on the growth of GDP that can positively become a proxy of the positive growth of local government expenditure since it is a component of the GDP. In several countries, the relationship between tax revenues and GDP growth leads to the conclusion that tax revenues significantly affect the growth of GDP, such as in Ghana (Egbunike et al., 2018), Kosovo (Gashi et al., 2019), and Nigeria (Joseph and Omodero, 2020).

2.2. Local own-source revenue (LOR)

Local own revenue is a part of the local revenue as the right of the local government originating from the regional business itself to obtain funding sources for development activities. The local government regulates the local revenue in accordance with the provisions of local regulations. In accordance with the Minister of Home Affairs Regulation of the Republic Indonesia No. 27 (2021), the components of LOR are local tax revenue, local levies, separated local assets management results (revenue earned from regional company profits), and other legitimate local own revenue.

LOR is sourced from a local government effort to obtain funding sources for development activities. With the right policy, economic activities will run smoothly and encourage the growth of LOR, which is then used for expenditure allocation. Thus, the greater the LOR the government receives, the more increased the impact on the allocation of local government expenditures (Kakamu et al., 2014). Based on the explanation above, the following hypothesis is formulated:

> H_{1a}: Local own revenue (LOR) has a positive effect on local government expenditure.

2.3. General allocation fund (GAF)

The fiscal balance transfers from the central government to regions is one of the sources of local income allocated by the central government through the state budget. The fiscal balance transfers from the central government to the local government (*dana perimbangan*) are divided into three funding sources that have their respective categories. A revenue sharing fund (*dana bagi hasil*) is a transfer allocated to local governments based on the performance of central tax revenues collected by the local government as a form of profit sharing the local government. Meanwhile, special allocation funds (*dana alokasi khusus*-SAF) are transfers allocated by the central government to fund specific needs including operational expenditure in the non-physical special allocation fund and capital expenditure in the physical special allocation fund. Furthermore, the general allocation fund (*dana alokasi umum*-GAF) is a transfer allocated from the central government as an unconditional character called a block grant. It means that GAF does not have specific provisions, such as the special allocation fund or the revenue sharing fund. Thus, the local government has more discretion in its use. The fund GAF is also an equalization grant to fulfill the fiscal gap between local governments. It is appropriate with the formula of the former GAF, one of which is the fiscal gap that aims to fill the gap between local governments' fiscal capacity and fiscal needs. Furthermore, as a source of funding from flexible transfers, the local government will maximize the use of the GAF to finance its expenditures. The GAF is a fund derived from the state budget, which is allocated with the aim of equalizing financial capacity among regions to finance their expenditure needs in the implementation of decentralization (Iskandar, 2012).

A general allocation fund is a transfer fund allocated by the central government to local governments, as a flexible/unconditional transfer. The central government provides flexibility in its utilization to local governments according to development priorities that have been established by local governments to encourage regional spending. General allocation fund has a positive effect on local government expenditure (Barenstein and de Mello, 2001; Dahlby and Ferede, 2016; Dick-Sagoe and Tingum, 2021; Kakamu et al., 2014; Levaggi and Zanola, 2000; Lewis and

Smoke, 2017; Liu and Zhao, 2011). Based on the elucidation above, the following hypothesis is formulated:

> H_{1b}: General allocation fund (GAF) has a positive effect on local government expenditure.

2.4. Local government financing (LGF)

Local government financing is a financial transaction to cover a budget deficit or to take advantage of a surplus. Deficits or surpluses occur when there is a difference between regional budget revenues and regional expenditures. Funding is provided to budget for every expenditure that will be received back and/ or revenue that needs to be repaid both in the current fiscal year and the following fiscal year. In its budgeting, LGF is divided into 2 parts, namely LGF receipts and LGF expenditures (Law of the Republic of Indonesia No. 1, 2022). The main objective of LGF in the local government's financial budgeting is to cover the budget deficit resulting from spending plans that are larger than planned revenues and or utilizing the available budget surplus. LGF receipts are all regional revenues that enter the regional general treasury account (RKUD), which can, among other things, come from receipt of bonds and loans, transfers from or disbursement of reserve funds and also proceeds from the sale of separated regional assets. LGF receipts are recognized as receipts when received in the regional general cash account. LGF expenditures consist of repaying the principal of the loan, equity participation by local governments, as well as loans to other entities.

Local government financing is one of the alternative sources of funding to cover the regional budget deficit (local government budget). They can use it as a funding source for expenditures aimed at accelerating local economic growth and services improvement. There is a positive effect of local government financing on its expenditure proxied by the impact of SiLPA (financing surplus) on local government expenditure (Al Khoiri, 2015; Kosim, 2017). Based on the elucidation above, the following hypothesis is proposed:

> H_{1c}: Local government financing has a positive effect on local government expenditure.

Government policy aims to prevent the spread of Covid-19 and manage its impacts as well as to optimize the local economic activities. The local governments adjust their 2020 local budget through transfer to local government and village fund revenues, LOR by taking into account the potential for regional taxes and fees for each local government, rationalization of employees spending and goods/services spending at least 50% by budget reduction, rationalization of capital expenditure at least 50% (Ulya, 2020). The spending rationalization policy could have an impact on decreasing the realization of local government expenditure. Based on the elaboration above, the following hypothesis is proposed:

H_2: Covid-19 has a negative effect on local government expenditure.

The Covid-19 pandemic has caused the budget to constrain local government finances. With the policy of local spending rationalization by prioritizing to overcome the Covid-19 pandemic effect in Indonesia, the government has cut the budget for ministries as well as budget transfers to local government. It causes local governments to lack funding sources for their expenditures. In addition, to encourage the industries economic sustainability, especially small and medium enterprises, local governments made policies for local tax relaxation. Several sources of funding that can be used by local governments to fund their expenditures include LOR as original income of the local government and GAF as unconditional grants or transfers that are not earmarked for a specific purpose, and local government financing. Besides funding from these three funding sources, the local government faced the Covid-19 pandemic that impacts the growth of local revenues or the amount transferred to the GAF government. Based on the explanation above, the following hypothesis is formulated:

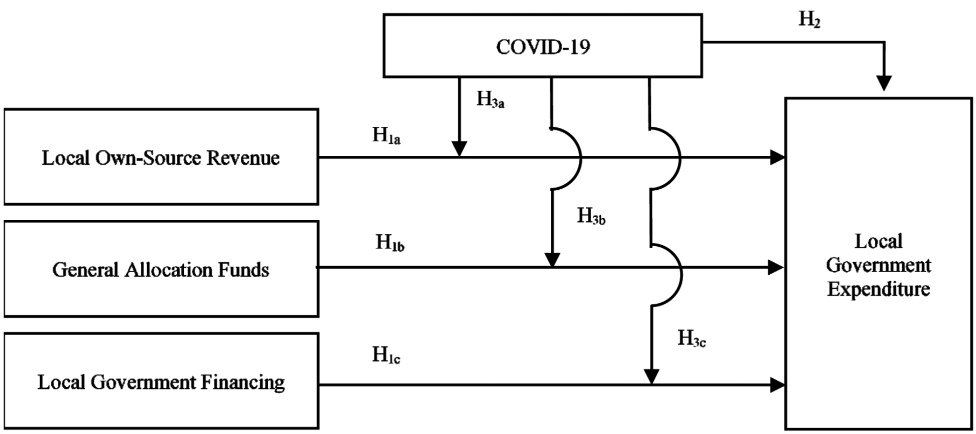
H_{3a}: LOR during the Covid-19 pandemic has a negative effect on local government expenditure.

H_{3b}: General allocation fund during the Covid-19 pandemic has a positive effect on local government expenditure.

H_{3c}: Local government financing during the Covid-19 pandemic has a positive effect on local government expenditure.

Based on the explanation above, we propose a theoretical framework of the research that describes the impact of the Covid-19 pandemic on the LOR, GAF, and local government financing variables as follows:

Figure 1: Research theoretical framework



Source: Authors' elaboration

3. Methodology

This study used a quantitative method with a causal design that tested the influence between variables. The dependent variable was local government expenditure, while the independent variable consisted of local own revenue (LOR), general allocation fund (GAF), local government financing, and Covid-19 as an independent and moderating variable. The indicators used to measure the research variables are described in Table 1 below.

Table 1: Variable operation

Variable	Indicator	Reference
Local government expenditure (LGE)	LGE = DE + IE Note: LGE: local government expenditure DE: direct expenditure IE: indirect expenditure	Law of the Republic of Indonesia No. 1 (2022)
Local own revenue (LOR)	LOR = local taxes + local levies + separated results of local wealth management + other legitimate LOR	
General allocation fund (GAF)	GAF = base allocation + fiscal gap basic allocation: regional civil servant salary fiscal gap: fiscal needs – fiscal capacity	
Local government financing (LGF)	LGF = local financing revenue – local financing expenditure	
Covid-19	Dummy 1 = Covid-19 Dummy 0 = non Covid-19	(Ulya, 2020)
Flypaper effect (observed phenomenon)	1) Insignificant effect of the independent variable 2) The value of the coefficient of the independent variable If the GAF coefficient > LOR coefficient, then a flypaper effect occurs, or it also can be used if b1 > b2, meaning >1, then a flypaper effect occurs.	(Dick-Sagoe and Tingum, 2021; Iskandar, 2012; Tresch, 2002)

Source: Authors' elaboration

The population of this study was derived from data on the realization of the 2019 and 2020 regional revenue and expenditure budget (RGB) of all local governments consisting of district, city, and provincial governmments with a total of 531 local governments. The research samples were taken using purposive sampling, selected based on certain criteria. Data on the realization of RGB in 335 local governments consisted of 259 district governments, 57 city governments, and 19 provincial governments.

Furthermore, the data were then analyzed using Moderating Regression Analysis (MRA). The panel data regression equation model was used to test the hypothesis of the effect of LOR, general allocation fund, regional financing on regional expenditures as follows:

$$\begin{aligned} LGE_{it} = \alpha_{it} + \beta_1 PAD_{it} + \beta_2 DAU_{it} + \beta_3 LGF_{it} + \beta_4 COV_{it} + \\ + \beta_5 COV * PAD_{it} + \beta_6 COV * DAU_{it} + \beta_5 COV * LGV_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

4. Empirical data and analysis

The minimum value of the pre-pandemic spending variable was IDR 136 billion, and the minimum value during the pandemic was IDR 149 billion. Meanwhile, the maximum value of the pre-pandemic spending variable was IDR 11.9 trillion, and the maximum value during the pandemic was IDR 10 trillion. The mean of the spending variables pre-pandemic and during the pandemic was IDR 708 billion and IDR 683 billion, respectively.

Table 2: Data description

Pre-Covid-19 pandemic (non Covid-19)				
	Local gov. expenditure	GAF	LOR	Local gov. financing
	(in bn)	(in bn)	(in bn)	(in bn)
Mean	708	466	224	121
Median	448	385	62	33
Maximum	11,900	2,330	10,100	4,590
Minimum	136	136	0.666	-103
Std. Dev.	1,050	265	804	374
Observations	335 samples	335 samples	335 samples	335 samples
During Covid-19 pandemic				
	Local gov. expenditure	GAF	LOR	Local gov. financing
Mean	683	432	216	105
Median	448	356	66.2	37.8
Maximum	10,000	2,210	8,930	4,350
Minimum	149	0.048	0.939	-9,890
Std. Dev.	904	248	749	689
Observations	335 samples	335 samples	335 samples	335 samples

Source: Authors' calculation

Based on the comparison of LOR conditions pre and during the pandemic presented in Table 2, the minimum value of LOR increased, while the maximum value of LOR decreased, indicating the range between the maximum value and the minimum value of LOR was narrowing.

The range between the minimum and maximum values of general allocation fund (GAF) during the pandemic tends to widen, which is indicated by the lower value of the minimum GAF during the pandemic when the maximum value of the GAF does not experience a large enough decline or is more likely to be constant. The negative value of financing in Table 2 indicates that the financing expenditure made by the local government is greater than the financing earned. During the pandemic, the minimum value of financing becomes smaller, indicating that during the period the local government carried out a mechanism for financing local expenditures greater than revenue as the funding sources.

Based on panel data model testing, the right model is used to test this hypothesis using a fixed effect model by providing “cross section-weight”, with the following model results:

Table 3: Results of the moderating regression analysis

Variables	Local government expenditure				
	Prediction	Coefficient	t-Statistic	Prob.	Result
Local own revenue (LOR)	β+	-0.039986	-1.8110	0.0711*	Rejected
General allocation fund (GAF)	β+	0.043376	2.1344	0.0335**	Accepted
Local government financing (PD)	β+	-0.113367	-10.4378	0.0000***	Rejected
Covid-19	β-	-9.90E+09	-4.6225	0.0000***	Accepted
Covid-19* LOR	β+/-	-0.286497	-27.2207	0.0000***	Accepted
Covid-19* GAF	β+/-	0.075308	9.4082	0.0000***	Accepted
Covid-19* PD	β+/-	0.148172	10.9255	0.0000***	Accepted
R-squared	0.9994				
Adjusted R-squared	0.9989				
F-statistic	1734.23***				
Observations	355 samples				

Note: ***significant α 1%, **significant α 5%, *significant α 10%

Source: Authors’ calculation

Based on f-Statistic value of 1734.23 with a probability result of 0.000, it can be concluded that this research has a good model. The adjusted R-squared value of 0.9989 shows that the variation of the independent variable is 99%, while the difference of 1% is explained by other variables. It means that local government is determined by LOR, general allocation fund, and local government financing of 99.89% both during the Covid-19 pandemic and before the pandemic.

Based on the results of hypothesis testing, both LOR and financing have a negative effect on local government expenditure. The Covid-19 pandemic was also able to reduce local government expenditure in various cities in Indonesia. On the other hand, general allocation fund have a positive effect on local government expenditure. The Covid-19 is able to reduce the effect of LOR on local government expenditure, but enhance the effect of GAF and local government financing on local government expenditure. It means that GAF and local government financing are able to increase the local government expenditure during the Covid-19 pandemic. Further differences in LOR, GAF, local government financing, and local government expenditures before and during the Covid-19 are explained in Table 4 below.

Table 4: Paired samples test

Variable	Mean		Sig. (2-tailed)
	Pre-Covid-19 pandemic (in millions)	During Covid-19 pandemic (in millions)	
Locally generated revenue	223	216	0.158
General allocation fund	466	432	0.000***
Local government financing	121	105	0.626
Local government expenditure	708	683	0.065*
Observations	355 samples		

Note: ***significant α 1%, **significant α 5%, *significant α 10%

Source: Authors' calculation

Based on the results of the Paired Sample Test with data before the pandemic (non Covid-19) and during the Covid-19 period, it revealed that LOR, GAF, local government financing, and local government expenditures were smaller during the Covid-19 pandemic than before the period. General allocation fund and local government expenditures differ significantly before and during the pandemic.

5. Results and Discussion

Transfer of general allocation fund (GAF) has a significantly positive effect on local government expenditure (LGE), while local own-source revenue (LOR) has a significantly negative impact on local government expenditure. In the short term, an increase in the general allocation fund will increase LGE, while the opposite effect is shown in LOR. This is shown by the value of the GAF coefficient which is greater than the LOR coefficient both before and during the pandemic (see table 3), this result means that there is a flypaper effect on local government expenditure in 335 Regional Governments in Indonesia. The pre-pandemic GAF coefficient value was 0.043, meaning that every 100% increase in the flypaper effect on GAF will increase regional spending by 4.3%. During the pandemic, the flypaper effect will increase regional spending by 7.5%. This empirical evidence shows that the flypaper effect on GAF has a positive effect on regional spending, and its value has increased during the pandemic. These results prove that there is a flypaper effects phenomenon. This condition occurred both before and during the Covid-19 pandemic. Such a phenomenon was also confirmed in several researcher findings that found the flypaper effect in local government expenditure, such as in Ghana (Dick-Sagoe and Tingum, 2021), Italy, in which there was flypaper effects to fund on specific local government expenditure, i.e., in the health sector (Levaggi and Zanola, 2000). Furthermore, flypaper effect was also found in a study conducted in Japan where the phenomenon was found in the financing for sanitation, education, police, and disaster management sector (Kakamu et al., 2014). In China, the flypaper effect was revealed where the provincial government also prioritized the use of government transfer fund, and was reluctant to develop its regions (Wu and Wang, 2013). The flypaper effect also occurred in the Netherlands (Allers and Vermeulen, 2014), Mexico (Cárdenas and Sharma, 2011; Sour, 2013), Brazil (Mattos et al., 2011), Italy (Gennari and Messina, 2014), Turkey (Sagbas and Saruc, 2004), and Ukraine (Sirenko et al., 2018). However, the results are contrary to the research results of Kang and Setyawan (2012), which revealed that there was no flypaper effect in Indonesia, also Delgado and Mayor (2011) in Spain. The results of this study are also different from previous researchers who tested the flypaper effect in Indonesia (Iskandar, 2012). The contrary results could be due to the narrower scope of the research area, which only tested local governments in West Java Province (Iskandar, 2012).

The flypaper effect refers to a strong empirical asymmetry between the magnitude of the reaction to spending on an increase in GAF or LOR. Such asymmetry found in the literature is associated with the sign of variation in transfer or subtraction versus addition (Moller and Messina, 2012). When transfers decrease, the budget deficit for spending will be compensated by an increase in LOR, or even suppress the spending by reduction from the LOR side. On the other hand, the flypaper effect phenomenon can also be caused by the consequences of increasing taxation to raise LOR if taxpayers are more sensitive to a decrease, rather than an increase in welfare. If they do not have an increase in current income and efforts to increase income in the future, it seems that the local government is more likely to choose to increase the budget from GAF instead of LOR (Moller and Messina, 2012).Tosun and Abizadeh (2005)and Dahlby and Ferede (2016) studied the flypapers effects in the provinces in Argentina and 28 cities in America. It was found that there were flypapers effects in the areas with the majority with high tax rates. According to the research results of (Dahlby and Ferede, 2016), the flypaper effect can occur because the local government suppresses tax revenues while maintaining tax rates services to the people without additional tax rates. The existence of empirical evidence of the flypaper effect in Indonesia supports Sirenko et al. (2018), where local governments in Indonesia are more focused on central government transfers, rather than their LOR. The condition will automatically undermine the autonomy of local governments because they will be more responsible to the central government. They will ignore the people in their responsibility supposed to be the priority for their service.

LOR has a significantly negative effect on local government expenditure. The results of this test do not support the hypothesis and are inconsistent with previous studies which state that LOR had a positive effect on local government expenditure (Kakamu et al., 2014). It indicates that there is a reduction in expenditure funding from the LOR side while local government expenditures have increased. One of the factors is the condition of the local government budget at the beginning of the year when there was delayed disbursement of LOR while other funding, such as the GAF was more stable. Thus, GAF was used for local government expenditures. Another factor is from the government policy, especially from the economic aspect, rather than increasing revenue from the regional taxation (LOR), the government prefers to relax taxation. It aims to encourage regional economic growth and fund transfers (GAF) the central government provides for regional development. Local government financing used by local governments as shown in table 5 has no effect on increasing regional spending. However, regional financing has had a positive effect on regional spending during the COVID-19 pandemic.

In-depth analysis on funding for local government expenditure, especially during the Covid-19 pandemic, it was found that the funding originating from the local government (LOR) had a negative coefficient, while local government financing had a positive coefficient. Funding on expenditure is also challenging in other countries, such as in USA in providing transfers to regions in the education sector during the financial crisis and COVID-19 pandemic (Al-samarrai and Lewis, 2021). There might be a deceleration or weakening of income indication due to the Covid-19 pandemic in the country. Then, to find out the relationship between LOR, which has a negative coefficient, and local government financing with a positive coefficient, there is an assumption test of the effect of LOR on local government financing as shown in Table 5.

Table 5: Results of the effect of LOR on local government financing test

Variable	Local government financing		
	Coefficient	t-Statistic	Prob.
LOR	-0.177436	-11.31168	0.0000***
Covid-19	-11,8 bn	-79.93324	0.0000***
Covid-19* LOR	-0.023558	-10.65838	0.0000***
R-squared	0.999545		
Adjusted R-squared	0.999082		
F-statistic	2161.93***		

Note: ***significant α 1%, **significant α 5%, *significant α 10%

Source: Authors' calculation

It is understood that local government must prepare policies to achieve fiscal sustainability. Thus, it could be assumed that during the Covid-19 pandemic, local governments would prioritize to utilize the available local government financing mechanism when LOR generation is difficult. Table 5 shows a significantly negative relationship between LOR and local government financing. When there is a decrease in LOR, local government financing increases, indicating that the local government during the Covid-19 pandemic fund the spending using the local government financing mechanism. Efforts to improve local government fiscal capability during the Covid-19 pandemic in terms of regional financing can be performed by optimum use of the financing surplus which was one of the government's financings mechanisms to fill the fiscal gap.

Local government financing as shown in Table 5 only occurs during the Covid-19 pandemic. However, GAF is funded by the local government both before and during the Covid-19 pandemic. From the observation results presented in Table 1, it can be seen that GAF is still the best option for local governments to fund their expenditures because it has minimal risk and is not specific transfer (unconditional grants). During the Covid-19 pandemic, the GAF coefficient increased, indicating that local governments were more likely to use GAF during the pandemic.

Based on the results of the Paired Sample Test, LOR, GAF, local government financing, and local government expenditure before and during the pandemic in Table 5, it is proven that the pandemic reduced GAF and regional expenditures. This result is in agreement with the current condition that the central government issued an adjustment policy on the fiscal balance transfers from the central government to local government to overcome the Covid-19 pandemic. Local government expenditure dropped because the components that make up the regional spending decreased during the pandemic. The fund transferred from the central government consist of DAK, GAF, revenue sharing fund, and other transfer. This empirical evidence is relevant to the study results of Al-samarrai and Lewis (2021) revealing that during the Covid-19 pandemic, it is important to maintain economic stability in the short term to prevent development problems in the long term. This condition is following the central government's policy which prioritized solving health problems. However, the next step that needs to be taken into consideration is how to improve the trend of the local government dependence in expenditure funding on the GAF as indicated by the flypaper effect. It is because the high contribution of LOR has a negative correlation with the development of the government (Barenstein and de Mello, 2001).

The low absorption of local revenue and regional dependence on fiscal transfers indicates that any changes in economic conditions will have an impact on LOR. This relationship infers that regions with sound economic conditions are indicated with high LOR. Thus, there is a positive relationship between economic growth and LOR, in line with economic growth, such as conditions that occur in several regions in China where there are regions with better regional income, which have better sources of income. Higher power to increase regional development which then has an impact on the regional economy even though there is no direct relationship between local income and economic growth (Wu and Wang, 2013). In addition, economic growth as measured by GDP per capita has a significant effect on tax revenues in OECD countries (Tosun and Abizadeh, 2005).

6. Conclusions

The results of this study indicate that there is a flypaper effect phenomenon in local government expenditure in Indonesia. Local governments prioritize funding their expenditure from the general allocation fund (GAF) both before and during the Covid-19 pandemic; rather than depending on their locally generated revenues (LOR). The Covid-19 has been proven to decrease LOR, GAF, financing and local governance expenditure, but the most significant ones are GAF and local governance expenditure. It is interesting that there is a positive coefficient on local governance financing, while LOR has a negative coefficient during the Covid-19 pandemic, indicating that local expenditure funding is mostly funded from the financing side, instead of LOR. The low economic growth in Indonesia during the Covid-19 pandemic in 2020 reflected that the LOR component was affected, which in turn had an effect on the decline in local government expenditure.

The implication of this empirical evidence is the central government can make improvements to the GAF policy by setting priorities for its use. The government should make special arrangements regarding the provisions that regulate the priority of the use of the GAF. When the central government wishes to narrow the horizontal disparity gap between regions, the policy on the use of the GAF should naturally be prioritized to encourage economic development focusing on micro-enterprises. Although the local government acts only as a coach for micro-enterprises, it can play a maximum role if the GAF can be used to support the achievement of fostering business planning and operation, up to the opening of marketing forums. For instance, the establishment of agropolitan area development program as an agriculture-based economic development in the agribusiness area, designed and implemented by synergizing the various existing potentials to encourage the agribusiness development as competitive, people-based, sustainable and decentralized, and driven by the community and facilitated by the government. Furthermore, it is expected that the local government concerns to these micro-enterprises can encourage business development and support LOR.

This study has some constraints since it cannot use the entire financial report data to obtain more complete results. Transfer fund distributed by the central government to local governments only test the GAF, so that further research should consider other transfer fund variables other than GAF as a comparison with local revenue to analyze the flypaper effect. In addition, there is the potential to conduct further research incorporating the theory that the majority of the flypaper effect is found in areas with high tax rates. Thus, it is possible to map local governments with flypaper effect conditions.

Acknowledgments

The authors would like to thank to Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta for providing grant for this research. We are also grateful to the Directorate of Research Technology and Community Service (DRTPM) and Prof. Amirul Mukminin for his sincere assistance in the publication of articles in reputable journals.

References

Al Khoiri, R. H. (2015) “Flypaper Effect Dan Belanja Daerah Di Propinsi Jawa Barat”, *Signifikan: Jurnal Ilmu Ekonomi*, Vol. 4, No. 2, pp. 211–230. https://doi.org/10.15408/sjie.v4i2.2306.

Allers, M. A., Vermeulen, W. (2014) *Fiscal equalization, capitalization and the flypaper effect*, Working paper, Vol.14023-EEF, SOM Research Reports, Faculty of Economics and Business, University of Groningen, Groningen.

Al-samarrai, S., Lewis, B. (2021) *The Role of Intergovernmental Fiscal Transfers in Improving Education Outcomes*. *International Development in Focus,* World Bank, Washington, DC.

Bank Indonesia (2020) *Kajian Ekonomi dan Keuangan Regional. Laporan Nusantara*, Vol. 13, No. 4, Bank Indonesia, Available at: <https://www.bi.go.id/id/publikasi/laporan/Documents/Laporan--Nusantara_Mei_2020.pdf> [Accessed: January 10, 2021].

Barenstein, M., de Mello, L. (2001) *Fiscal Decentralization and Governance: A Cross-Country Analysis*, IMF Working Papers, Vol. 2001, No. 71, https://doi.org/10.2139/ssrn.879574.

Cárdenas, O. J., Sharma, A. (2011) "Mexican Municipalities and the Flypaper Effect", *Public Budgeting and Finance*, Vol. 31, No. 3, pp. 73-93, https://doi.org/10.1111/j.1540-5850.2011.00990.x.

Dahlby, B., Ferede, E. (2016) "The Stimulative Effects of Intergovernmental Grants and the Marginal Cost of Public funds", *International Tax and Public Finance*, Vol. 23, No. 1, pp. 114–139, https://doi.org/10.1007/s10797-015-9352-5.

Delgado, F. J., Mayor, M. (2011) "Tax mimicking among local governments: some evidence from Spanish municipalities", *Portuguese Economic Journal*, Vol. 10, pp. 149–164. https://doi.org/10.1007/s10258-010-0067-3.

Dick-Sagoe, C., Tingum, E. N. (2021) "Flypaper Effect of Intergovernmental Transfers and Incentives to Improve Own-Source Revenue Mobilization of Local Governments in the Central Region of Ghana" *Open Journal of Social Sciences*, Vol. 09, No. 08, pp. 434–447, https://doi.org/10.4236/jss.2021.98030.

Egbunike, F. C., Emudainohwo, O. B., Gunardi, A. (2018) "Tax Revenue and Economic Growth: A Study of Nigeria and Ghana", *Signifikan: Jurnal Ilmu Ekonomi*, Vol. 7, No. 2, pp. 213–220, https://doi.org/10.15408/sjie.v7i2.7341.

Gashi, B., Asllani, G., Boqolli, L. (2019) "The Effect of Tax Structure in Economic Growth" *International Journal of Economics and Business Administration*, Vol. 6, No. 2, pp. 56–67, doi: 10.35808/ijeba/157.

Gennari, E., Messina, G. (2014) "How Sticky are Local Expenditures in Italy? Assessing the Relevance of the Flypaper Effect Through Municipal Data International", *International Tax and Public Finance*, Vol. 21, No. 2, pp. 324–344, https://doi.org/10.1007/s10797-013-9269-9.

Iskandar, I. (2012) "Flypaper Effect Pada Unconditional Grant", *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, Vol. 13, No. 1, pp. 113–131, https://doi.org/10.23917/jep.v13i1.186.

Joseph, F. I., Omodero, C. O. (2020) "The Nexus Between Government Revenue and Economic Growth in Nigeria" *Economics and Business*, Vol. 34, No. 1, pp. 35–45, https://doi.org/doi:10.2478/eb-2020-0003.

Kakamu, K., Yunoue, H., Kuramoto, T. (2014) "Spatial Patterns of Flypaper Effects for Local Expenditure by Policy Objective in Japan: A Bayesian Approach" Economic Modelling, Vol. 37, pp. 500–506, https://doi.org/10.1016/j.econmod.2013.11.028.

Kosim, E. (2017) "Pengaruh Pendapatan Asli Daerah (Pad), Dana Alokasi Umum (Dau) Dan Sisa Lebih Pembiayaan Anggaran (Silpa) Terhadap Anggaran Belanja Modal Pada Pemerintah Kota Banja", *Journal of Management Review*, Vol. 1, No. 1, pp. 13–24, https://doi.org/10.25157/jmr.v1i1.509.

Levaggi, R., Zanola, R. (2000) *The flypaper effect: evidence from the Italian national health system*, POLIS Department's Working Papers, No. 10, Institute of Public Policy and Public Choice - POLIS.

Lewis, B. D., Smoke, P. (2017) "Intergovernmental Fiscal Transfers and Local Incentives and Responses: The Case of Indonesia", *Fiscal Studies*, Vol. 38, No. 1, pp. 111–139. https://doi.org/10.1111/1475-5890.12080.

Liu, Y., Zhao, J. (2011) "Intergovernmental Fiscal Transfers and Local Tax efforts: Evidence from Provinces in China", *Journal of Economic Policy Reform*, Vol. 14, No. 4, pp. 295–300, https://doi.org/10.1080/17487870.2011.591175.

Mattos, E., Rocha, F., Arvate, P. (2011) "Flypaper Effect Revisited: Evidence for Tax Collection Efficiency in Brazilian Municipalities" *Estudos Econômicos (São Paulo)*, Vol. 41, 239–267, https://doi.org/10.1590/S0101-41612011000200002.

Moller, L., Messina, G. (2012) *How Sticky are Local Expenditures in Italy? Assessing the Relevance of the "Flypaper Effect" Through Municipal Data*, Temi di Discussione (Working Paper), No. 844, In Bank of Italy.

Niskanen, W. A. (1976) "22. The Peculiar Economics of Bureaucracy", In R. Amacher, R. D. Tollison, T. D. Willett (Eds): *The Economic Approach to Public Policy*, Cornell University Press.

Oates, W. E. (1999) "An Essay on Fiscal Federalism", *Journal of Economic Literature*, Vol. 37, No. 3, pp. 1120–1149, https://doi.org/10.1257/jel.37.3.1120

Pöschl, C., Weingast, B. R. (2013) "The Fiscal Interest Approach: The Design of Tax and Transfer Systems", *SSRN Electronic Journal*, pp. 1–26, https://doi.org/http://dx.doi.org/10.2139/ssrn.2370560.

Minister of Home Affairs Regulation of the Republic Indonesia (2021) *Regulation of the Minister of Home Affairs, Number 27 concerning: Guidelines for Preparation of Regional Revenue and Expenditure Budgets for Fiscal Year 2022*, No. 926, Available at: https://peraturan.bpk.go.id/Home/Details/175749/permendagri-no-27-tahun-2021 [Accessed: September 7, 2022].

Republic Indonesia Law (2022) *Law Number 1 concerning Financial Relations between the Central Government and Regional Governments*, No. 104172A, Available at: <https://www.dpr.go.id/dokjdih/document/uu/1789.pdf> [Accessed: September 7, 2022].

Republic Indonesia Law (2004a) *Law Number 32 of 2004 concerning Local Government*, Available at: <https://www.dpr.go.id/dokjdih/document/uu/33.pdf> [Accessed: January 5, 2022].

Republic Indonesia Law (2004b) *Law Number 33 of 2004 concerning Central and Local Fiscal Balance*, Available at: <https://www.dpr.go.id/dokjdih/document/uu/34.pdf> [Accessed: January 5, 2022].

Sagbas, I., Saruc, N. T. (2004) "Intergovernmental Transfers and the Flypaper Effect in Turkey", *Turkish Studies*, Vol. 5, No. 2, pp. 79–92. https://doi.org/10.1080/1468384042000228602.

Sirenko, N. M. et al. (2018) "State and Tendencies of Intergovernmental Regulation in Ukraine in conditions of Fiscal Decentralization", *Financial and Credit Activity Problems of Theory and Practice*, Vol. 2, No. 25, pp. 157–164. https://doi.org/10.18371/fcaptp.v2i25.136489.

Sour, L. (2013) "The Flypaper Effect in Mexican Local Governments", *Estudios Económicos*, Vol. 28, No. 1, pp. 165–186, http://www.jstor.org/stable/23609654.

Tosun, M. S., Abizadeh, S. (2005) "Economic Growth and Tax Components: An Analysis of Tax Changes in OECD", *Applied Economics*, Vol. 37, No. 19, pp. 2251–2263, https://doi.org/10.1080/00036840500293813.

Tresch, R. (2015) *Public Finance: A Normative Theory,* Third Edition, Academic Press, London.

Ulya, H. N. (2020) "Alternative Strategies for Handling the Economic Impact of Covid-19 East Java Regional Government in Agropolitan Areas", *El-Barka: Journal of Islamic Economics and Business*, Vol. 3, No. 1, pp. 80–109, https://doi.org/10.21154/elbarka.v3i1.2018.

Wu, A. M., Wang, W. (2013) "Determinants of Expenditure Decentralization: Evidence from China", *World Development*, Vol. 46, pp. 176–184. https://doi.org/10.1016/j.worlddev.2013.02.004.

Fenomen efekta muholovke međuvladinih transfera tijekom Covid-19: dokazi iz Indonezije

Lela Nurlaela Wati[1], *Heri Ispriyahadi*[2], *Dhika Habibi Zakaria*[3]

Sažetak

Ova studija ima za cilj potvrditi fenomen efekta muholovke i utjecaj pandemije Covid-19 na lokalne prihode iz vlastitih izvora (LOR), fond opće raspodjele (GAF) i financiranje lokalne samouprave na rashode lokalne samouprave u Indoneziji. U istraživanju se primjenjuje kvantitativna metoda, a za uzorak su korišteni podaci o realizaciji regionalnog proračuna (RGB) u 335 jedinica lokalne samouprave u razdoblju 2019. – 2020. Podaci su analizirani moderirajućom regresijskom analizom. Studija je otkrila da je postojao fenomen efekta muholovke koji je potaknuo lokalne vlasti da koriste GAF umjesto LOR za svoje lokalne izdatke. GAF i rashodi lokalne samouprave bili su veći tijekom razdoblja Covid-19. Kako bi se prevladao fenomen efekta muholovke, središnjoj vladi se savjetuje da poboljša politiku GAF postavljanjem prioriteta za njezinu upotrebu. Lokalne vlasti moraju poticati mikro, mala i srednja poduzeća da pomognu podržati LOR. Ova studija dokazuje da postoji fenomen efekta muholovke u zemljama u razvoju koje provode predsjednički sustav (republika) i pruža značajne empirijske dokaze o politici državne potrošnje tijekom krize i bez krize (Covid-19).

Ključne riječi: *efekt muholovke, fond općih izdvajanja, rashodi lokalne samouprave, financiranje lokalne samouprave, vlastiti prihodi lokalne samouprave*

JEL klasifikacija: *H30, H53, H70, H74*

[1] *Izvanredni profesor, Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonezija. Znanstveni interes: financijski menadžment, korporativne financije, političke financije. Tel.: +6281291181859, E-mail: lela@stiemj.ac.id; lela_nwm@yahoo.com.*

[2] *Docent, Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonezija. Znanstveni interes: financijski menadžment, korporativne financije. E-mail: herivrpat64@gmail.com.*

[3] *Student, Sekolah Tinggi Ilmu Ekonomi Muhammadiyah Jakarta, Indonezija. Znanstveni interes: financijski menadžment. E-mail: dhika.habibi.zakaria@gmail.com.*