

## **An Analysis of The Flypaper Effect and Its Implications for The Fiscal Behaviour of District and City Governments in North Sulawesi Province**

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### **Abstract**

*This study aims to analyse the flypaper effect and its implications for the fiscal behaviour of district and municipal governments in North Sulawesi Province. The flypaper effect describes a situation where local government expenditure is more responsive to transfer funds from the central government than to local revenue. This study employs a quantitative panel data approach using local government financial records for the years 2022–2024, sourced from budget implementation reports. The variables analysed include local own revenue, transfer funds and local government expenditure. The analysis method used is multiple linear regression for panel data. The results indicate that transfer funds from the central government have a more dominant influence on local government expenditure than local own revenue, suggesting that the flypaper effect is still occurring in districts and municipalities in North Sulawesi Province. This situation reflects that local governments remain dependent on transfer funds to finance public expenditure, whilst the contribution of local own revenue to local expenditure is relatively smaller. Furthermore, the fiscal behaviour observed indicates a tendency towards low fiscal autonomy, the presence of moral hazard in the management of local revenue, and the potential for inefficiency in budget expenditure. The implications of these findings suggest that fiscal dependence on the central government remains quite high, making local areas vulnerable to changes in fiscal transfer policies. Therefore, efforts are needed to enhance fiscal autonomy through the optimisation of local revenue, the strengthening of local financial management capacity, and the improvement of the efficiency and effectiveness of local expenditure to achieve more autonomous and sustainable financial governance.*

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**Keywords : Flypaper Effect, Local Revenue, Transfer Funds, Local Expenditure, Fiscal Behaviour, Local Government, North Sulawesi.**

## INTRODUCTION

The era of regional autonomy in Indonesia during the reform era came into effect following the enactment of the Regional Autonomy Act, namely Law No. 22 of 1999. This legislation became a major milestone in the implementation of decentralisation in Indonesia, replacing the centralised system of the New Order era; the most recent refinement of regulations on regional autonomy is Law No. 23 of 2014. In the context of local finance, the very first law governing local finance in the reform era was Law No. 25 of 1999 on the financial balance between the central government and local governments. This regulation marked the initial milestone of fiscal decentralisation, governing the distribution of revenue sources. The most recent regulatory update on local government finance is Law No. 1 of 2022 on financial relations between the central government and local governments. Through fiscal decentralisation, local governments have been granted significant authority to manage various revenue sources and local expenditure in order to improve the quality of public services and enhance the welfare of the community. In the implementation of fiscal decentralisation to date, local governments have obtained funding from Local Own-Source Revenue, as well as transfers to local governments in the form of General Allocation Funds, Special Allocation Funds, and Revenue-Sharing Funds. Other sources of funding include other lawful revenue. Of these funding sources, the General Allocation Fund constitutes the largest source of funding and serves as an instrument for the central government to address fiscal disparities and inequalities between regions. As the funding requirements for various work programmes and development financing in the regions continue to rise, there is a growing trend towards increased central government fund transfers to the regions. This increase in fund transfers from the central government has, however, been accompanied by a rise in regional expenditure that exceeds the growth in Local Own-Source Revenue. This phenomenon is known as the Flypaper Effect. A significant number of studies have identified the occurrence of the Flypaper Effect in several regions across Indonesia. Research by Juniarta et al. (2025) indicates that the Flypaper Effect has occurred in the expenditure of regencies and municipalities in East Java Province between 2018 and 2020, suggesting that dependence on central government transfers—particularly general allocation funds—remains very high in financing local expenditure. Research findings by Dewi et al. (2024) show that the Flypaper Effect occurred in the Bali Provincial

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Government between 2019 and 2022, and this situation has a negative impact on local financial performance, particularly local fiscal autonomy. Research by Marbun et al. (2016) concluded that there were indications of the flypaper effect occurring in Papua Province during the 2010–2013 budget period. The flypaper effect has implications, one of which is a tendency for local government expenditure in Papua Province to exceed the transfer receipts themselves, as well as a tendency to await assistance from the central government rather than managing the local resources available in Papua. Findings from Yacoub & Lesatri (2019) indicate that the flypaper effect is present in local expenditure across all regencies and cities in Kalimantan, meaning that local governments in Kalimantan remain dependent on the central government to fund local expenditure. They are unable to maximise their respective local revenues.

A study of the flypaper effect on regency and city governments in North Sulawesi Province (12 regencies and 4 cities) is important given the still high proportion of central government transfer funds within the structure of local revenue. This situation has the potential to influence the fiscal behaviour of local governments in determining spending policies. On the other hand, the economic characteristics and fiscal capacities of regencies and cities in North Sulawesi vary considerably, meaning that local governments' responses to revenue sources are not always the same. An analysis of the flypaper effect is required to identify whether local expenditure is more influenced by central government transfers or by the region's ability to generate own-source revenue. In the context of regional development, North Sulawesi is one of the economic growth centres in eastern Indonesia, with key sectors such as tourism, international trade, fisheries, and services. The scale of this economic potential should enhance the capacity for local revenue generation; therefore, it is important to determine whether the increase in local government expenditure is driven by growth in local fiscal capacity or remains dependent on central government transfers. The findings of this study not only provide an overview of the level of local fiscal autonomy but also serve as an evaluation tool to assess the effectiveness of fiscal decentralisation and financial equalisation policies between the central and local governments in North Sulawesi Province.

### **Objectives**

The objectives of this study are :

1. to analyse the impact of local revenue on local expenditure
2. to analyse the impact of transfer funds on local expenditure



3. to analyse the occurrence of the flypaper effect in regency and city governments in North Sulawesi
4. to analyse the implications of the flypaper effect on the fiscal behaviour of regency and city governments in North Sulawesi.

## **THEORETICAL FOUNDATION**

### **The Theory of Fiscal Decentralisation**

The concept of fiscal decentralisation was systematically formulated by Wallace E. Oates (1979) through the Decentralisation Theorem, which states that public services will be more efficient if provided by local governments, as the policies produced can be tailored to the conditions and preferences of the local community. Oates emphasised that local governments have the capacity to determine development priorities that are more appropriate than the uniform policies of the central government. In the context of intergovernmental fiscal relations, fiscal decentralisation is realised through the granting of authority to local governments to manage their own revenue and to receive transfers from the central government to address disparities in fiscal capacity between regions. However, if local governments rely more on transfer funds than on efforts to increase local revenue, the primary objective of fiscal decentralisation—to create local financial autonomy—becomes less effective. Therefore, the theory of fiscal decentralisation serves as a crucial foundation for explaining the flypaper effect.

### **The Flypaper Effect Theory**

The concept of the Flypaper Effect was first popularised by Wallace E. Oates through his research on the relationship between intergovernmental transfers and local government expenditure. Oates (1979) found that grants or transfers from central government were more likely to encourage an increase in local government expenditure than to reduce taxes or improve public welfare directly. According to Oates, if local governments acted in accordance with conventional economic theory, their response to transfers and local revenue should be identical. However, empirical evidence shows that central government transfers have a greater stimulative effect on local public spending. This finding subsequently formed the basis for the development of various studies on the fiscal behaviour of local governments in numerous countries, including those implementing fiscal decentralisation systems. According to Robert P. Inman (2008), the Flypaper Effect can occur because local governments have a tendency to maintain or increase the size of their budgets when receiving transfers from the central government.

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Inman explains that fiscal transfers often create financial dependence at the local level, thereby reducing the incentive to tap into local revenue sources. Meanwhile, Harvey S. Rosen (2014) argues that this phenomenon is linked to the existence of a ‘fiscal illusion’—a condition where the public does not fully realise the cost burden borne in financing government expenditure because the funds originate from central government transfers. Consequently, public pressure to monitor the efficient use of the budget is lower than it would be if the budget were funded by local taxes paid directly by the public. Furthermore, William A. Niskanen (1971), through his theory of bureaucratic behaviour, explains that government bureaucracies tend to maximise the budget (budget-maximising behaviour). When local governments receive larger transfers from the central government, the bureaucracy has the opportunity to expand programmes and activities, thereby significantly increasing local expenditure. From this perspective, the Flypaper Effect is caused not only by economic factors, but also by organisational behaviour and the bureaucracy’s interest in maintaining or expanding the budget capacity under its management. One of the most widely used theories is the Fiscal Illusion Theory, proposed by Amilcare Puviani (1903) and further developed by Richard E. Wagner (1976). This theory explains that the public and local governments often do not fully realise the real costs of public expenditure funded by central government transfers. Because transfer funds are not perceived as coming directly from taxes paid by the local community, local governments tend to increase public spending to a greater extent than when using their own local revenue. Consequently, central government transfers create the perception that fiscal resources are greater than they actually are, thereby encouraging an expansion of local spending. This theory is widely used as the primary explanation for the emergence of the Flypaper Effect in the context of public finance.

### **Agency Theory**

Agency Theory has a fairly strong connection with the Flypaper Effect, as both address how those who receive and manage funds may act differently from what the fund providers expect. Michael C. Jensen and William H. Meckling (1976) explain that agency relationships give rise to conflicts of interest because agents do not always act to maximise the principal’s interests. In the context of local government finance, local authorities may make spending decisions that are more beneficial to their own organisation than those expected by central government or the public. Under a system of fiscal decentralisation, central government channels transfer funds to local authorities to finance public services and development. However, local authorities, as agents, possess

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more information regarding needs and budget utilisation than central government, as the principal (information asymmetry). Thus, based on this theory, the flypaper effect arises as a result of the agency relationship between the central government as the principal and local governments as agents. Local governments have the discretion to manage transfer funds, so they tend to increase local expenditure more significantly than when generating revenue from their own sources. This situation indicates a divergence of interests and information asymmetry, which are the key characteristics of an agency relationship.

### **The Flypaper Effect in Indonesia Today**

Based on various research findings in Indonesia, the Flypaper Effect is still observed in many local governments, although the incidence varies across regions and research periods. Recent findings suggest that fiscal decentralisation has increased the capacity for local revenue generation in some areas, but dependence on central government transfer funds remains quite strong, particularly in districts/cities with limited economic bases and local revenue. Research by David Andrianto N. P. (2012) on districts and cities in Indonesia during the 2006–2010 period found that the General Allocation Fund had a greater influence on local expenditure than local revenue. These results indicate that the Flypaper Effect phenomenon persists because local governments are more responsive to transfers from the central government than to their own funding capacity. A broader study by Santi Rahma Dewi (2017) covering 112 districts and cities in Indonesia also showed that the Flypaper Effect occurs in a number of regions, characterised by a higher coefficient of influence of the General Allocation Fund on local expenditure compared to local revenue. This study concludes that many regions still rely on central government transfers as the primary source of funding for public expenditure. Research by Nur Isna Inayati and Doddy Setiawan (2017) on 492 regencies/cities in Indonesia for the period 2009–2013 also found the Flypaper Effect phenomenon in local government expenditure. These findings indicate that fiscal transfers, particularly the General Allocation Fund, the Special Allocation Fund, and revenue-sharing funds, remain the dominant factors in determining the level of local government expenditure. However, some recent studies suggest that changes are taking place.

### **HYPOTHESES**

Based on the research objectives, the hypotheses proposed in this study are as follows :

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1. Local own-source revenue has a positive and significant effect on local government expenditure
2. Transfer funds have a positive and significant effect on local government expenditure
3. Local own-source revenue and transfer funds simultaneously have a significant effect on local government expenditure.
4. A flypaper effect occurs in the local governments of regencies/cities in North Sulawesi Province

The criteria for the occurrence of the flypaper effect are as follows :

1. Transfer funds have a significant effect on local government expenditure.
2. The regression coefficient for transfer funds is greater than that for local revenue, where both variables have a significant effect on local government expenditure.
3. The significance level or probability of local revenue and transfer funds must be lower than the specified threshold, namely less than 0.05.

## RESEARCH METHODOLOGY

### a). Data and Data Sources

The data used in this study are secondary data from 2022–2025 and consist of panel data from all regencies and cities in North Sulawesi Province. The primary data source used in this study is from the Directorate General of Fiscal Balance, Ministry of Finance of the Republic of Indonesia, which presents the financial data of all regencies and cities in North Sulawesi Province. There are 12 regencies and 4 cities, namely:

1. Minahasa Regency
2. South Minahasa Regency
3. North Minahasa Regency
4. Southeast Minahasa Regency
5. Talaud Islands Regency
6. Sangihe Islands Regency
7. Sitaro Islands Regency
8. Bolaang Mongondow Regency
9. East Bolaang Mongondow Regency
10. South Bolaang Mongondow Regency
11. North Bolaang Mongondow Regency
12. Manado City
13. Bitung City



14. Tomohon City

15. Kotamobagu City

**b). Data Collection Method**

Data was collected through a search on the website of the Directorate General of Fiscal Balance, Ministry of Finance of the Republic of Indonesia.

**c). Operational Definitions and Measurement of Variables**

The variables used in this study consist of :

1. Local Revenue : The total realised local revenue derived from the respective local potential of the regencies/cities in North Sulawesi Province. Measured in rupiah per year.
2. General Allocation Funds : The total realised funds derived from the state revenue and expenditure budget and allocated to all regency and city governments in North Sulawesi Province to finance various local needs. Measured in rupiah per year.
3. Local Expenditure : The total realised expenditure of each regency and city government in North Sulawesi Province in financing local needs. Measured in rupiah per year.

**d). Analysis Method**

The analysis method used is multiple linear regression to process the panel data collected from each regency/city in North Sulawesi Province. The regression equation model used is :

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

Y = Regional Expenditure (Dependent Variable)

X<sub>1</sub> = Regional Own-Source Revenue (Independent Variable 1)

X<sub>2</sub> = Transfer Funds (Independent Variable 2)

β<sub>0</sub> = Constant

β<sub>1</sub> & β<sub>2</sub> = Regression Coefficients

ε = Error Term

The panel data regression models that can be used consist of three models, namely : the Common Effects Model (CEM), the Fixed Effects Model (FEM) and the Random Effects Model (REM). To determine the best and most accurate model to be used in this research analysis, the Chow test, the Hausman test and the Lagrange Multiplier (LM) test will be conducted. Data processing will be carried out using Eviews-14 software.



**RESEARCH FINDINGS**

Based on the analysis of the research data, the following results were obtained :

- 1) The model selected to test the hypothesis is the Fixed Effects Model (FEM); consequently, as this model is used, no classical assumption tests are required.
- 2) The results of the hypothesis testing can be seen in the following output table :

Table 1 Regression Coefficients, t-Statistic & Probability

| Variable                 | Coefficient | t-Statistic | Prob.  |
|--------------------------|-------------|-------------|--------|
| Local Own-Source Revenue | 0.785536    | 5.522391    | 0.0000 |
| Transfer Funds           | 1.311417    | 16.82596    | 0.0000 |
| C                        | -91.30917   | -1.971249   | 0.0536 |

Source : Data processed using Eviews-14

Based on the processed data presented in Table 1, the following interpretation can be provided:

- The regression equation from this study is :  

$$\text{Local Government Expenditure} = -91.309 + 0.786 \text{ Local Own-Source Revenue} + 1.312 \text{ Transfer Funds}$$
This means that if local own revenue increases by 1%, local expenditure will also increase by 0.786 %. If the transfers fund increases by 1%, local expenditure will also increase by 1.312 %.
- The t-test statistic for the Local Own-Source Revenue variable is 5.5223 and for the transfer funds is 16.8259. With a sample size (n) of 60, a significance level of 5% (0.05) and two independent variables, the critical t-value is 2.0003. The t-test values for the Local Own-Source Revenue and transfer funds variables are greater than the t-table value; therefore, it can be concluded that, partially, the Local Own-Source Revenue variable has a positive effect on local government expenditure. Similarly, the transfer funds variable has a positive effect on local government expenditure.
- The probability value for the local revenue variable is 0.0000 and the probability value for the general allocation fund variable is 0.0000. As the probability values for both independent variables are less than 0.05, it can be concluded that local revenue and the general allocation fund have a highly significant partial influence on local expenditure.



Simultaneously, the variables of local own revenue and general allocation funds have a significant influence on local expenditure. This can be seen in the following table :

Table 2 Simultaneous Contribution & Influence

|                    |          |
|--------------------|----------|
| Adjusted R-squared | 0.932776 |
| F-statistic        | 410.3290 |
| Prob(F-statistic)  | 0.000000 |

Source: Data analysis results using Eviews-14

Based on the data analysis results presented in Table 2, the following interpretation can be provided :

- Based on Table 2, it can be seen that the adjusted R-squared value is 0.9327, or 93.27%. This implies that the combined contribution of the variables local revenue and transfer funds to the local expenditure variable is 93.27%, whilst the remaining 6.73% is contributed by other variables not included in the study.
- The calculated F-statistic is 410.32, whilst the table F-value for  $n = 60$  at a 5% significance level ( $\alpha = 0.05$ ) and with two independent variables, using a one-tailed test, is 3.94. Consequently, local government revenue and transfer funds simultaneously have an influence on local government expenditure. The probability value of the F-statistic is 0.000000, which is far smaller than the 5% threshold value of 0.05; it can therefore be concluded that the variables of local revenue and transfer funds have a highly significant influence on local expenditure.

### 3) Testing for the Flypaper Effect.

Based on the results of the data analysis, the following key findings were obtained :

- The transfer funds variable has a significant influence on local government expenditure.
- The local revenue variable has a significant influence on local expenditure
- The regression coefficient for the transfer funds variable is 1.311, whilst the regression coefficient for the local revenue variable is 0.7855. Thus,  $1.311 > 0.7855$
- The probability values for both the transfer funds and local revenue variables are the same, namely 0.0000, which is far lower than the 0.05 threshold.



In accordance with these criteria, it can be concluded that the Flypaper Effect has occurred in the financial management of regencies and cities in North Sulawesi Province throughout the observation period of 2022–2024.

4). Implications for Local Government Fiscal Behaviour

The occurrence of the Flypaper Effect will have implications for the fiscal behaviour of district and city governments in North Sulawesi Province, namely :

- Fiscal Dependency : Local governments tend to rely on central government transfers to finance public expenditure. In the context of regencies and cities in North Sulawesi for the period 2022–2024, this situation is reflected in the significant contribution of the General Allocation Fund, the Special Allocation Fund, and other transfers to total local revenue. When transfer funds become the primary source of financing, local governments tend to increase expenditure in line with the increase in transfers received, whilst an increase in own-source revenue does not have the same significant impact on local expenditure.
- Fiscal Moral Hazard : This situation arises when the availability of substantial transfer funds from the central government leads local governments to be less motivated to optimise their own revenue. In this context, local authorities perceive that their expenditure needs are already relatively met through transfers, thereby reducing the incentive for intensification.
- Expenditure inefficiencies: Increased transfers can trigger an expansion in spending without due regard for programme productivity and efficiency. This occurs when increased transfer funds from central government encourage local governments to increase spending without this being balanced by an analysis of programme needs, productivity and efficiency. Under these circumstances, budget allocation tends to focus on the absorption of funds rather than on the outcomes and benefits generated for the community. Consequently, some local government expenditure risks being sub-optimal, poorly targeted, and failing to deliver a significant impact on improving local welfare or economic growth.
- Low fiscal autonomy : The flypaper effect indicates that some local governments are not yet able to finance development independently. This is reflected in the situation where local governments are unable to finance the majority of their development and public service needs independently through Local Own-Source Revenue. The flypaper effect demonstrates that local government expenditure is more heavily influenced by transfer funds from the central government than by the



local government's internal fiscal capacity. This indicates that the regional financial structure remains dependent on external sources, thereby limiting the fiscal space to independently determine development priorities and preventing fiscal autonomy from being optimally achieved.

- **Fiscal Risk** : Should central government transfers decrease, regions face the potential for significant fiscal pressure. This situation arises when local governments are heavily reliant on transfer funds from the central government to finance public expenditure. In such circumstances, should there be a reduction or a change in transfer allocation policy, local authorities may face significant fiscal pressure as their limited own-source revenue is insufficient to cover expenditure needs. Consequently, local authorities may be forced to make budgetary adjustments, such as cutting development programmes, postponing priority activities, or increasing local government debt to maintain the sustainability of public services

## DISCUSSION

The flypaper effect in the financial management of regencies and cities in North Sulawesi during the 2022–2024 period occurred because local expenditure was more responsive to transfer funds from the central government than to local revenue. This situation indicates that increases in the General Allocation Fund, the Special Allocation Fund, and other transfers tend to be directly followed by increases in local expenditure. Fiscal capacity varies considerably among districts and cities in North Sulawesi. Some local authorities have a limited economic base and sources of local revenue, meaning that tax and local levy receipts are not yet sufficient to optimally support development needs. Consequently, when transfers from the central government increase, local governments tend to immediately increase public expenditure as these funds are regarded as the primary source of funding. Conversely, increases in local revenue often do not have the same significant impact on rising local expenditure. Local planning and budgeting factors also contribute to the emergence of the flypaper effect. In practice, many local government programmes and activities have been designed on the assumption of stable transfer funds from the central government. This situation encourages local governments to focus more on optimising the use of transfer funds rather than innovating to increase local revenue. Consequently, local expenditure becomes more sensitive to changes in central government transfers than to changes in revenue generated from local fiscal efforts. During the 2022–2024 period, the post-

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pandemic economic recovery may also reinforce this phenomenon. The central government has channelled various transfers to support economic recovery, infrastructure development, and public services in the regions. These additional funds significantly increased the spending capacity of regency and city governments in North Sulawesi. This finding aligns with the results of a study by Septianingrum, Halim, & Utami (2025), which found that local government expenditure in Indonesian regencies and cities still exhibits a greater response to transfer funds than to local revenue, indicating the presence of the 'flypaper effect'. Another study by Fitrianti, Zaenal, Fattah, & Hidayah (2025) also reached the same conclusion: research across six provinces in Sulawesi showed that transfer funds from the central government have a greater influence on local government expenditure than local revenue, thus indicating the presence of the flypaper effect. Furthermore, North Sulawesi is among the provinces with a high dependence on central government funds. These findings align with the research by Santi Rahma Dewi (2021), which found that the flypaper effect occurs in districts and cities across Indonesia because the influence of the General Allocation Fund on local expenditure is greater than that of local revenue. The study concluded that many local governments still rely on central government transfers to finance local expenditure. Similar findings were also obtained by Nur Isna Inayati and Doddy Setiawan (2017), who demonstrated that districts and cities in Indonesia rely more on the General Allocation Fund than on local revenue when determining local expenditure, thereby resulting in the flypaper effect on local government expenditure. More specific research in eastern Indonesia also supports these findings. A study by Wiwin A. Salawali, P. Kindangen, and A. Ch. Lapien (2019) found that a flypaper effect occurs in regencies and cities in Central Sulawesi because general allocation funds are the dominant source of revenue influencing the level of local government expenditure. Furthermore, research by Swasito (2021) indicates that local government spending policies in Indonesia are more responsive to changes in general allocation funds than to local own-source revenue, confirming the existence of the flypaper effect in local financial management. Thus, if the results of the study on regencies and cities in North Sulawesi for the period 2022–2024 show that central government transfers have a greater influence on local government expenditure than local revenue, then these findings are consistent with various previous studies that have proven the existence of the flypaper effect in Indonesia.



## **CONCLUSION**

Based on the results of the analysis of the flypaper effect and its implications for the fiscal behaviour of district and municipal governments in North Sulawesi Province, it can be concluded that the flypaper effect phenomenon still occurs in local financial management. This is demonstrated by the fact that local expenditure is more responsive to transfer funds from the central government, such as the General Allocation Fund and the Special Allocation Fund, than to local own-source revenue. This means that an increase in transfers from the central government tends to be followed by a greater increase in local expenditure than that caused by local revenue, thus indicating a continued high level of local fiscal dependence. Furthermore, the fiscal behaviour of local governments in North Sulawesi exhibits characteristics of dependence on transfer funds, which results in low local fiscal autonomy. This situation also implies the emergence of moral hazard, namely a reduced incentive for local governments to optimise local revenue, as well as the potential for inefficiency in expenditure because spending is more oriented towards budget absorption rather than programme effectiveness. In the long term, this makes the region more vulnerable to fiscal risks should there be changes or reductions in transfer allocations from the central government. It can therefore be concluded that the flypaper effect not only reflects the structure of fiscal dependence but also influences the overall behaviour of local financial management. Consequently, strategic efforts are required from local governments to enhance fiscal autonomy through the optimisation of local revenue, the strengthening of financial management capacity, and the improvement of the efficiency and effectiveness of local expenditure, so as to create a fiscal governance system that is more autonomous, productive, and sustainable.

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