

## **The Effect of Macroeconomics on the Receipt of Zakat, Infaq, and Shadaqah at BAZNAS Central for 2015-2024 Period**

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### **ABSTRACT**

*In recent years, Indonesia's economy has grown steadily, supported by strong household purchasing power and stable investment. However, this stability was disrupted with the emergence of the COVID-19 pandemic in early 2020. This study aims to analyze the effect of macroeconomic variables on the collection of zakat, infaq, and sadaqah at BAZNAS Central during the 2015–2024 period. The research use secondary quarterly time-series data from 2015 to 2024. The analysis is conducted using descriptive analysis combined with the Autoregressive Distributed Lag (ARDL) method. The results show more clearly that GDP consistently exerts a positive and significant influence on zakat as well as infaq and shadaqah receipts in both the short and long run, confirming the central role of economic growth in strengthening Islamic philanthropic capacity. Meanwhile, the Consumer Price Index (CPI), as a proxy for inflation, and the BI Rate were not proven to significantly affect infaq and shadaqah receipts; however, CPI demonstrates a positive long-run effect on zakat, and the BI Rate shows a negative but weak influence, indicating limited monetary policy transmission to ZIS behavior. The impact of the COVID-19 pandemic was found to be significantly negative for zakat receipts, but relatively insignificant for infaq and shadaqah. Furthermore, digitalization at BAZNAS is shown to significantly increase ZIS collection, underscoring the growing role of technological adoption in expanding accessibility and strengthening fundraising performance. Overall, these findings highlight the need for macroeconomic stability and continuous digital transformation to optimize ZIS mobilization.*

**Keywords:** *ARDL, BAZNAS, infaq, macroeconomics, shadaqah, zakat*

### **INTRODUCTION**

The Indonesian economy has a complex pattern, namely relatively strong growth but is also vulnerable to domestic and foreign shocks (Sustainable 2024). In recent years, the Indonesian economy has grown steadily, supported by strong public purchasing power, stable investment, and a low and controlled inflation rate (BI, 2020). However, this stability was shaken when the COVID-19 pandemic emerged in early 2020. To address the impact of the pandemic, the government implemented various economic policies, both fiscal and monetary, to support economic recovery since

2021 (Indrawati et al., 2024). The Indonesian economy continues to demonstrate its resilience amidst current global uncertainty and challenges. According to data from the Badan Pusat Statistik (BPS, 2025), the Indonesian economy grew by 5,02% (yoy) in the fourth quarter of 2024 compared to the fourth quarter of 2023. According to BPS (2024), Indonesia's economic growth was driven by relatively stable domestic activities, such as increased public mobility, stronger investment realization, maintained public production and consumption activities, and economic policies conducive to growth. Although the Indonesian economy has

shown recovery and growth, the problems of income inequality and poverty remain major challenges (Sianturi et al., 2021). Therefore, planned and sustainable efforts to reduce inequality and poverty remain the main priority of national development.

The Indonesian government plays an active role in managing the economy and addressing inequality and poverty. Social assistance programs such as the Family Hope Program (PKH), the Basic Food Card, and Direct Cash Assistance (BLT) have been strengthened and expanded to protect vulnerable communities from the economic impacts (Salsabila et al., 2024). In addition to implementing social assistance programs, the government also supports efforts to alleviate poverty and income inequality through Islamic social financial instruments through the Badan Amil Zakat Nasional (BAZNAS). The government supports BAZNAS's efforts in collecting zakat, infaq, and shadaqah (ZIS) funds through the regulatory provisions of Undang-undang (UU) No.23 of 2011 concerning Zakat Management. UU No.23 of 2011 concerning zakat management has given a mandate to BAZNAS as a non-structural government institution responsible for the collection and distribution of ZIS throughout the country. The stipulation of UU No.23 of

2011 then became one of the provisions that had implications in eliminating the existence of individual amils who could reduce the professionalism, accountability, and credibility of zakat management.

In Islamic economic teachings, zakat holds a crucial position as a pillar of the socio-economic system. Zakat has two main dimensions: as a religious obligation and as a tool for socio-economic goals (Qardawi, 1999). Zakat is a financial obligation for every able-bodied Muslim (muzakki) to distribute to eight designated recipient groups (mustahik). Its purpose is not only to purify wealth but also to distribute wealth from the rich to the needy, reduce inequality, and achieve social justice (Hafidhuddin, 2002). The command to pay zakat is stated in the highest legal basis of Islam, namely the Qur'an in QS Al-Baqarah {(2):43} and QS At-Taubah {(9):103}. In addition to zakat, voluntary infaq and shadaqah complement the role of zakat in Islamic philanthropy. Zakat collection institutions such as BAZNAS play a vital role in managing ZIS funds professionally. These funds are distributed to various programs and serve as an important tool that complements the welfare programs run by the government (BAZNAS, 2024a).

Table 1 Countries with the largest Muslim population in 2025

Country	Muslim population (million people)	Total population (million people)	Muslim population (percent)	Global Muslim population (percent)
Indonesia	242,700,000	275,000,000	88.3	12.3
Pakistan	240,760,000	249,600,000	96.5	12.2
India	200,000,000	1,370,000,000	14.6	10.1
Bangladesh	150,800,000	165,200,000	91.3	7.6
Nigeria	97,000,000	200,000,000	48.5	4.9

Source: World Population Review (2025)

Indonesia is known as the country with the largest Muslim population in the world, with Muslims making up approximately 88% of the total population of over 270 million (World Population Review 2025). This is

illustrated in Table 1. This demographic provides significant potential for the collection of zakat, infaq, and shadaqah (ZIS) funds in Indonesia as an Islamic social financial instrument that helps alleviate income

inequality. Based on a study by BAZNAS, Indonesia has a national zakat potential of Rp200 trillion per year, or approximately 3% of GDP, reflecting the economic capacity of Muslims to allocate a portion of their wealth (Puskas BAZNAS, 2020). However, the realization of ZIS revenues is still far from its maximum potential due to the influence of various factors, both internal and external. External factors that can influence the receipt of zakat, infaq, and sedekah stem from the financial condition of the Indonesian people, which is inextricably linked to macroeconomic factors, such as the Industrial Production Index (IPI) (Noviyanti & Beik, 2016), GDP (Senawi et al., 2018), BI rate (Mukarromah, 2019), inflation and exchange rates (Ahmad, 2011), consumer price index (CPI) and gold prices (Afendi 2018).

As the world's most populous Muslim country, with approximately 242,7 million people, or approximately 88% of the total national population, Indonesia ranks first globally in terms of the number of Muslims, surpassing other countries with large Muslim populations such as Pakistan, India, and Bangladesh. Based on this, Indonesia has a very significant share of the potential for developing the sharia economy, particularly social financial instruments based on zakat, infaq, and shadaqah (ZIS). This very dominant proportion of the Muslim population provides a very strong demographic base for optimizing ZIS fundraising.

Indonesians are not only known for their high level of generosity, but also for their highly philanthropic culture. In the 2024 World Giving Index (WGI) report by the Charities Aid Foundation, Indonesia once again ranked first as the most generous country in the world, maintaining this record for seven consecutive years since 2017. Figure 2 shows that Indonesia's generosity score reached 74, far above the global average. This is influenced by

a deep-rooted culture of mutual cooperation, active participation in charitable activities, and a high level of social awareness within the community (Butler, 2017).

The potential for receiving zakat, infaq, and shadaqah (ZIS) in Indonesia is enormous, in line with the country's position as a Muslim majority and its track record of global generosity. Based on the results of the study and calculations, BAZNAS stated that the total zakat potential in Indonesia based on the Zakat Potential Mapping Indicator (IPPZ) components reached IDR 327.6 trillion. (BAZNAS Center for National Aid, 2020) and should continue to increase annually in line with GDP growth and the Muslim population. This is illustrated in Table 1. However, the actual ZIS revenue to date remains far from this potential figure. In 2023, BAZNAS recorded that national ZIS collection had only reached IDR 32 trillion, or 10% of the estimated total potential. This indicates a gap between the actual capacity and the maximum potential for ZIS collection in Indonesia. The gap between potential and realized ZIS revenue is inseparable from macroeconomic factors that influence the financial condition of the Indonesian people.

## LITERATURE REVIEW

### *Zakat, Infaq and Shadaqah*

Etymologically, the word zakat comes from the Arabic word "zaka," meaning to grow and develop. In Islamic terminology, zakat is a portion of one's wealth that must be distributed by its owner after fulfilling certain requirements to those entitled to receive it. Zakat is a mandatory financial obligation (fardhu) for every Muslim who meets the requirements of nisab (minimum wealth limit) and haul (ownership period) (Qardawi, 1999). Zakat is distributed to eight ashnaf (groups) of mustahik as determined by Allah SWT in QS At-Taubah {(9):60}, namely for 1) the poor; 2)

the needy; 3) zakat administrators; 4) converts; 5) slaves who are to be freed; 6) people in debt; 7) fighters in the path of Allah; and 8) people on a journey. The pattern of zakat receipts tends to show higher stability and predictability due to its nature as a sharia obligation bound by clear rules. Fluctuations in zakat receipts are influenced by factors directly related to sharia compliance and macroeconomic conditions that affect the ability of muzakki to reach the nisab, such as economic growth that increases income and asset accumulation, or inflation that affects the real value of the nisab (Senawi et al., 2018).

On the other hand, etymologically, the word "infaq" comes from "anfaqaa," which means allocating something for a specific purpose. Unlike zakat, which has a minimum amount (nisab), infaq has no such limit. It can be given by any believer, regardless of their income level (Hafidhuddin, 2002). Meanwhile, shadaqah giving is linguistically derived from the word "shadaqaa," which means truth. A person who is enthusiastic about giving shadaqah reflects the truth of their faith. According to Islamic law, shadaqah giving has a similar meaning to infaq in terms of its laws and provisions. However, there is a fundamental difference: infaq only refers to material giving, while shadaqah giving has a broader meaning, encompassing non-material things such as a smile, good advice, or assistance (Hafidhuddin, 2002). Infaq and shadaqah are voluntary (tathawwu') without binding nisab or haul, and recipients are not limited by social class. Infaq and shadaqah patterns tend to be sensitive to short-term economic fluctuations and public sentiment. As economic conditions improve and disposable income increases, the potential for Infaq and shadaqah tends to increase (Nurhelina, 2024). In addition, psychological factors, awareness campaigns, and the level of trust in the managing institution also play a greater role in encouraging infaq and shadaqah than zakat

(Othman et al., 2024). Therefore, a separate analysis of zakat and infaq or shadaqah is essential to more accurately understand the dynamics of the influence of macroeconomic variables.

#### *Islamic Consumption Theory*

The theory of consumption in Islam put forward by Muhammad bin Yussof is an acceleration of Keynes' theory of consumption with a perspective that integrates sharia values and Islamic ethics. In view Yusoff (2010) the concept of consumption is not only based on conventional economic aspects, but also considers halal values, social justice, and the afterlife. The position of income in Islamic consumption theory is central because it is a resource that must be allocated proportionally between worldly consumption needs and social obligations such as zakat and shadaqah for the welfare of society as a whole. This theory measures consumption not only quantitatively but also qualitatively, where consumption behavior is influenced by Islamic ethics. In contrast, Keynes (1936) which states that consumption is a function of income ( $C=a+bY$ ) Yusoff (2010) corrected this theory by adding variables based on the principle of monotheism, namely by including consumption, investment, zakat, and taxes as components in determining national income in Islamic economics. This consumption model then divides households into two groups, namely the muzakki (zakat payers) and the mustahik (zakat recipients), as well as the role of the government as a collector and distributor of zakat funds to the zakat recipient group (asnaf mustahik) according to sharia provisions. National income in the model Yusoff (2010) formulated as follows:

$$Y = C (C1 + CZ) + I + G$$

Information:

$C$  : household consumption expenditure consisting of muzakki consumption (C1) and mustahik consumption (CZ)

$I$  : private investment

*G* : government expenditures originating from taxes

Consumption must meet conditions such as being halal, not excessive (*israf*), and not wasteful (*tabzir*). In the view of Yusoff (2010), the income earned by an individual is a trust that must be accounted for to Allah. Therefore, a portion of this income must be set aside for zakat as a mandatory obligation, and shadaqah as a voluntary form that strengthens social solidarity and improves community welfare. Thus, a Muslim's consumption patterns cannot be separated from the principles of justice and social concern, so that consumption is not solely for one's own benefit, but also to fulfill the rights of others in society. Islamic consumption theory emphasizes that income influences consumption decisions and the distribution of wealth in an Islamic manner, making zakat and shadaqah important mechanisms in balancing consumption between personal needs and social responsibility. Consumption within this framework becomes an activity that reflects the values of faith and adherence to Islamic teachings, while also being an instrument for achieving equitable and sustainable economic prosperity.

Macroeconomics Variables

*GDP as a proxy for income*

GDP measures the total value of goods and services produced in an economy, which in aggregate reflects national income. In Islamic economics, the income generated, after reaching the nisab and haul, is subject to zakat. Theoretically, there is a positive and significant relationship between increasing GDP and ZIS receipts. Economic growth will lead to prosperity (Beik & Arsyianti, 2019). If income increases, which reflects an increase in individual and corporate economic activity, then the amount of assets subject to zakat and the capacity to give shadaqah will also increase (Oemar et al., 2023). GDP serves as an

indicator of the potential economic capacity to increase acceptance ZIS (Ilham et al., 2024).

*CPI as a proxy for inflation*

Inflation which is characterized by a general increase in the price of goods and services, has the potential to reduce people's purchasing power, thus impacting people's ability to fulfill their obligations and social worship in the form of ZIS (Mukhtar et al., 2016). However, ZIS in Islamic economics is seen as an important instrument to reduce the negative impact of inflation by distributing wealth from the better off to the less well off, thus helping to maintain social balance and economic stability (Anggraini et al., 2018). According to Yusoff (2010), the income allocated for zakat and shadaqah should not be significantly eroded by inflation because zakat plays a key role in wealth redistribution and poverty alleviation.

*Bank Indonesia's interest rate (BI rate)*

According to Samuelson and Nordhaus (2001), interest rate is the percentage of the amount of money borrowed that is paid per unit of time. The interest rate determines whether someone saves or invests (Haugen 2001). The BI rate is defined as the interest rate set by Bank Indonesia (BI), the monetary authority, and used as a reference for determining lending and deposit rates for banks in Indonesia, as well as an instrument for anticipating inflation. Changes in interest rates will impact real assets (Haugen 2001). According to Boediono in Huda et al. (2008) If people predict that the return on investment over a certain period of time will be greater than the return on saving money in a bank, they will prefer to use their money for investment. The opposite is true. If interest rates rise, people will prefer to save their money in banks rather than invest in the real sector. This results in a decrease in real sector production. This will certainly impact zakat receipts. Assuming a constant income level, a decrease in interest rates will increase

consumption and zakat payments, thereby increasing collected zakat receipts (Karim 2007).

*Hypothesis*

Zakat model hypothesis

H1: GDP is thought to have a positive influence on zakat receipts at the Central BAZNAS

H2: The CPI is suspected of having a negative influence on zakat receipts at the Central BAZNAS

H3: The BI rate is suspected of having a negative influence on zakat receipts at the Central BAZNAS

H4: Dummy COVID-19 is suspected to have a negative impact on zakat receipts at the Central BAZNAS

H5: Dummy digital is thought to have a positive influence on zakat receipts at the Central BAZNAS

Hypothesis of the infaq and shadaqah model

H1: GDP is thought to have a positive influence on the receipt of infaq and shadaqah at the Central BAZNAS

H2: The CPI is suspected of having a negative influence on the receipt of infaq and shadaqah at the Central BAZNAS.

H3: The BI rate is suspected of having a negative influence on the receipt of infaq and shadaqah at the Central BAZNAS.

H4: Dummy COVID-19 is suspected of having a negative impact on the receipt of infaq and shadaqah at the Central BAZNAS

H5: Dummy digital is thought to have a positive influence on the receipt of infaq and shadaqah at the Central BAZNAS

**METHODOLOGY**

*Data Types and Sources*

This study uses secondary data obtained from the Badan Amil Zakat Nasional (BAZNAS), the Badan Pusat Statistik (BPS), and Bank Indonesia (BI). Supporting data for the study is sourced from existing literature. The data type used is time series, with quarterly data from 2015 to 2024.

Table 2 Variables in Research

Variable name	Symbol	Unit	Data source
Zakat Receipt	Zakat	Rupiah	BAZNAS
Receipt of Infaq and Shadaqah	IS	Rupiah	BAZNAS
Gross Domestic Product	GDP	Rupiah	BPS
Consumer Price Index	CPI	Index	BPS
BI Rate	BIR	Percent	BI
COVID-19 Pandemic	<i>Dummy_Covid</i>	Binary	BAZNAS
Digitalization at BAZNAS	<i>Dummy_Digital</i>	Binary	BAZNAS

*Data Analysis Methods*

Descriptive Analysis

Descriptive analysis provides a role in the form of simple but important information in explaining the development of variables

(Putera, 2023). This analysis aims to describe the movement of the research variables. In this study, the selected variables will be described in terms of movement, patterns, and

relationships between them according to the research period.

**Inferential Analysis**

The inferential analysis aims to conclude the macroeconomic factors that influence zakat receipts and the receipt of infaq dan shadaqah at the Central BAZNAS. The method used is the Autoregressive Distributed Lag (ARDL), an effective econometric approach for analyzing short-term and long-term relationships between dependent and independent variables in time series data. The ARDL model is a model consisting of the lag of the dependent variable, the independent variable, and the lag of the independent variable. ARDL can be used as long as no variable is stationary at I(2) (Nkoro & Uko, 2016).

Pesaran and Shin (1997) as well as Pesaran et al. (2001) proposed a cointegration test for the ARDL model. The cointegration test, also known as the bound test, is used to investigate cointegration in variables with varying degrees of stationarity, namely between I(0) and I(1). If cointegration is present in the model, then there is also a long-term relationship in the model. The purpose of cointegration is to obtain information about the adjustment of short-term and long-term effects. Information about short-term parameters and

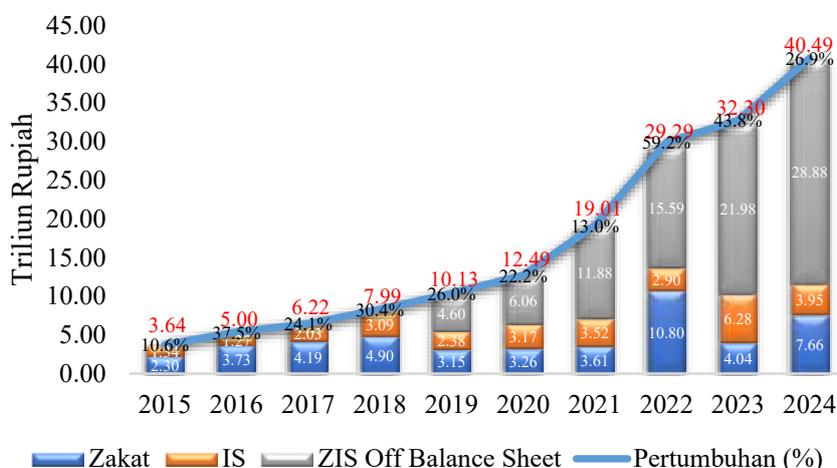
correction factors for short-term and long-term effects can be obtained using an error correction model (ECM).

Before conducting analysis using the ARDL method, a pre-estimation test is required to determine the best model. The ARDL pre-estimation test consists of a data stationarity test, an optimum lag test, a cointegration test, and a Gauss-Markov assumption test. The following are the steps in conducting an ARDL pre-estimation test.

**RESULTS AND DISCUSSION**

*Development of Zakat, Infaq, and Shadaqah (ZIS) Receipts Nationally in the 2015-2024 Period*

The development of national zakat, infaq, and shadaqah (ZIS) receipts from 2015 to 2024 shows a very significant and consistent growth trend from year to year. This growth can be observed both in terms of the nominal amount collected and in terms of public participation in paying ZIS through official institutions. This indicates increasing public trust and the effectiveness of ZIS fund management in Indonesia. Overall, there is a continuous growth in the national ZIS collection curve, influenced by macroeconomic factors and national zakat management policies.



Source: data processed from BAZNAS (2025)  
 Picture 1 Development of National ZIS Fund Receipts

Picture 1 shows that in 2015, total ZIS revenues reached Rp3,64 trillion. In 2016, total revenues increased to Rp5,00 trillion, indicating stable growth over the course of one year. This positive trend continued into 2017, with total revenues reaching Rp6,22 trillion and then Rp7,99 trillion in 2018. This annual increase reflects the progressiveness of BAZNAS and other LAZ in collecting ZIS funds. A more substantial increase began to be seen in 2019, when total revenues reached Rp10,13 trillion. This was a significant milestone because, for the first time, total ZIS revenues nationally reached double-digit trillion rupiah. This growth continued to accelerate in 2020, with total revenues reaching Rp12,49 trillion, despite the global economic challenges caused by the COVID-19 pandemic. The continued growth in ZIS revenues demonstrates resilience and adaptability in the face of uncertain economic conditions. The most dramatic surges in revenues occurred in subsequent years. Total ZIS revenues increased rapidly to Rp19,01 trillion in 2021 and nearly reached Rp30 trillion in 2022, with total

revenues of Rp 29,29 trillion. This exponential growth trend continued, with total revenues reaching Rp32,30 trillion in 2023 and closing at a phenomenal Rp40,49 trillion in 2024 (BAZNAS, 2024b).

ARDL Model Estimation of Zakat, Infaq, and Shadaqah Receipts

Pre-Estimation Test Results

Data processing using the ARDL method involves several stages, beginning with generating process data to determine whether all research variables meet stationarity requirements. The testing stages include stationarity testing, multicollinearity testing, optimum lag testing, cointegration testing, and the classical Gauss-Markov assumption test.

1. Stationarity test

The results of the stationarity test indicate that no variables are stationary at the level level. Meanwhile, at the first difference level, it shows that all variables are stationary, which is indicated by an ADF-stat value greater than the MacKinnon critical value of 5% or a probability value smaller than the 5% level.

Table 3 Stationarity Test Results

Variables	Level		First difference	
	t-Statistic	Prob.	t-Statistic	Prob.
ZAKAT	-0.649	0.8465	-7,190	0.0000***
IS	-0.645	0.8482	-11,966	0.0000***
GDP	-0.625	0.8532	-5,987	0.0000***
CPI	-1,539	0.5036	-5,046	0.0002***
BIR	-2,548	0.1125	-4,105	0.0027***
DUMMY_COVID	-1,477	0.5343	-6,000	0.0000***
DUMMY_DIGITAL	-1,599	0.4731	-6,082	0.0000***

Source: processed data (2025)

Note:\*\*\*),\*\*), and \*) indicate significance levels at 1%, 5%, and 10% levels.

2. Determining the optimum lag

The optimum lag test is a further step in estimating a research model. It aims to obtain accurate estimates of the long-term and short-term relationships between variables (Hill et al., 2017). The lag length determination uses the

lowest AIC criteria value as the best model from 20 alternative models listed in Appendix 3. Table 4 shows that the optimum lag selected in the zakat model is ARDL(3,3,1,2,3,0) and in the infaq and shadaqah model is ARDL(3,1,3,1,3,3).

Table 4 Optimal Lag Test Results

Variables	Zakat	Infaq and Shadaqah
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	Lag	AIC	Lag	AIC
GDP	3	0.0299	1	0.3994
CPI	1		3	
BIR	2		1	
DUMMY_COVID	3		3	
DUMMY_DIGITAL	0		3	

Source: processed data (2025)

### 3. Cointegration test

The results of the cointegration bound test of the zakat model show that the F-statistic value of 12,15446 is above the upper bound value (I(1)) at all significance levels. The

cointegration test through the F-bound test indicates a long-term relationship between the macroeconomic variables of GDP, BI rate, CPI, COVID-19 dummy and digitalization dummy with zakat receipts at the Central BAZNAS.

Table 5 Results of the Cointegration Test of the Zakat Model

F-Bound Test				
Test statistics	Value	Significant.	I(0)	I(1)
<i>F-Statistic</i>	12,15446	10%	2.08	3
		5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.25

Source: processed data (2025)

The results of the cointegration bound test of the infaq and shadaqah model show that the F-statistic value of 10,67466 is above the upper bound value (I(1)) at all significance levels. The cointegration test through the F-

bound test indicates a long-term relationship between the macroeconomic variables of GDP, BI rate, CPI, COVID-19 dummy and digitalization dummy with the receipt of infaq and shadaqah at the Central BAZNAS.

Table 6 Cointegration Test Results of the Infaq and Shadaqah Model

F-Bound Test				
Test statistics	Value	Significant.	I(0)	I(1)
<i>F-Statistic</i>	10.67466	10%	2.08	3
		5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: processed data (2025)

The results of the bound test cointegration test show that the F-statistic value of 10.67466 is above the upper bound value (I(1)) at all significance levels. The cointegration test through the F-bound test indicates a long-term relationship between the macroeconomic variables of GDP, BI rate, CPI, COVID-19 dummy and digitalization dummy with the receipt of infaq and shadaqah at the Central BAZNAS.

### 4. Normality test

The normality test is carried out by comparing the probability value with a real

level of 5% (Hill et al., 2017). The results of the Jarque-Bera test for the zakat model have an F-statistic probability value of 0,0672, which is greater than the 5% significance level, so it can be concluded that the data is normally distributed. Meanwhile, the results of the Jarque-Bera test for the infaq and sedekah models show that the F-statistic probability value of 0,8785 is greater than the 5% significance level, so it can be concluded that the data is normally distributed.

Table 7 Results of Jarque-Bera Test of the Zakat Model

Classical assumption test	Prob.
normality	0.067294

Source: processed data (2025)

Table 8 Results of Jarque-Bera Test on the Infaq and Shadaqah Model

Classical assumption test	Prob.
normality	0.878533

Source: processed data (2025)

5. Autocorrelation test

Table 9 and Table 10 show that the Chi-square probability value of the zakat model and the infaq and sedekah model is greater than the 5% significance level so it can be concluded that H0 is rejected (Hill et al., 2017). This

shows that there is no significant correlation between time in both models so that the ARDL zakat model and the ARDL infaq and shadaqah model are declared free from autocorrelation problems.

Table 9 Results of the Autocorrelation Test of the Zakat Model

Classical assumption test	Prob.
autocorrelation	0.2796

Source: processed data (2025)

Table 10 Autocorrelation Test Results of Infaq and Shadaqah Model

Classical assumption test	Prob.
autocorrelation	0.1306

Source: processed data (2025)

6. Heteroscedasticity test

The heteroscedasticity test was conducted by comparing the Chi-square probability values with a 5% significance level. The results in Tables 11 and 12 show that the Chi-square probability values for the zakat

model, as well as the infaq and sedekah models, are greater than the 5% significance level, thus concluding that H0 is accepted (Hill et al., 2017). This shows that both models are homoscedastic and do not contain heteroscedasticity problems.

Table 11 Results of the Heteroscedasticity Test of the Zakat Model

Classical assumption test	Prob.
heteroscedasticity	0.7515

Source: processed data (2025)

Table 12 Results of Heteroscedasticity Test of Infaq and Shadaqah Models

Classical assumption test	Prob.
heteroscedasticity	0.5405

Source: processed data (2025)

ARDL Estimation Test Results

1. ARDL Estimation Results of Zakat Model

After conducting the pre-estimation test, the next step is to estimate using the ECM to assess the short-term impact and the ARDL

analysis to assess the long-term impact. Due to the potential for short-term imbalances, model corrections using the ECM method are necessary (Tilova, 2024). ECM measures short-

run effects as well as the speed of adjustment towards long-run equilibrium.

Table 13 ARDL-ECM Zakat Model

Variables	Coefficient	Prob.
	Short-term	
CointEq(-1)*	-2.829227	0.0000***
D(ZAKAT(-1))	1,200160	0.0000***
D(ZAKAT(-2))	0.556520	0.0001***
D(GDP)	10,15662	0.0000***
D(GDP(-1))	-8,014890	0.0001***
D(GDP(-2))	-2.682967	0.0434**
D(CPI)	1,128703	0.2430
D(BIR)	-0.177238	0.0346**
D(BIR(-1))	-0.255784	0.0062***
D(DUMMY_COVID-19)	0.629020	0.0047***
D(DUMMY_COVID-19(-1))	0.159059	0.4010
<i>R-squared</i>	0.950251	
<i>Adjusted R-squared</i>	0.927449	
	Long-term	
GDP	3,317441	0.0000***
CPI	0.250794	0.0028***
BIR	0.003557	0.8719
<i>Dummy_COVID-19</i>	0.167392	0.0355**
<i>Dummy_DIGITAL</i>	0.113969	0.0711*

Source: processed data (2025)

Note: \*\*\*, \*\*, and \*) indicate significance levels at 1%, 5%, and 10% levels.

Table 13 shows that the adjusted R-squared value of the ARDL model is 0,9274 in the short term. This means that 92,74% of the variation in the zakat variable can be explained by the independent variables used in the model, while 7,26% is explained by other factors outside the model. The coefficient value of the error correction term (ECT), indicated by *cointEq(-1)*, is negative and significant at the 1% level. This indicates that there is a deviation between the actual and long-term equilibrium between zakat and the independent variables, according to the results of the cointegration test using the bound cointegration test (Pesaran et al., 2001). The negative ECT coefficient *cointEq(-1)* of -2,829227 indicates that if there is a deviation from long-term equilibrium, zakat receipts will adjust back at an adjustment speed of around 282% per period, which means

that the adjustment takes place very quickly to restore the equilibrium. An absolute value greater than one indicates a very fast adjustment mechanism.

## 2. ARDL Estimation Results for the Infaq and Shadaqah Model

After conducting the pre-estimation test, the next step is to estimate using the ECM to assess the short-term impact and the ARDL analysis to assess the long-term impact. Due to the potential for short-term imbalances, model corrections using the ECM method are necessary (Tilova, 2024). ECM measures short-run effects as well as the speed of adjustment towards long-run equilibrium.

Table 14 ARDL-ECM Infaq and Shadaqah Model

Variables	Coefficient	Prob.
	Short-term	
CointEq(-1)*	-2,176126	0.0000***
D(IS(-1))	0.771106	0.0000***
D(IS(-2))	0.455948	0.0002***
D(GDP)	5,269753	0.0037***
D(CPI)	2.919237	0.0148***
D(CPI(-1))	-6,905314	0.0002***
D(BIR)	-0.170308	0.0739*
D(DUMMY_COVID)	0.176108	0.4435
D(DUMMY_COVID(-1))	-0.722360	0.0052***
D(DUMMY_COVID(-2))	-0.938612	0.0021***
D(DUMMY_DIG)	0.127909	0.5776
D(DUMMY_DIG(-1))	-0.855914	0.0016***
D(DUMMY_DIG(-2))	-0.731988	0.0089***
<i>R-squared</i>	0.938636	
<i>Adjusted R-squared</i>	0.902376	
	Long-term	
GDP	4.016757	0.0000***
CPI	1,766477	0.0312**
BIR	-0.016254	0.6216
<i>Dummy_COVID</i>	-0.289599	0.0483**
<i>Dummy_DIGITAL</i>	0.420631	0.0010***

Source: processed data (2025)

Note: \*\*\*, \*\*, and \*) indicate significance levels at 1%, 5%, and 10% levels.

Table 14 shows that the adjusted R-squared value of the ARDL model is 0,9023 in the short term. This means that 90,23% of the variation in the infaq and shadaqah variable can be explained by the independent variables used in the model, while 9,87% is explained by other factors outside the model. The coefficient value of the error correction term (ECT), indicated by cointEq(-1), is -2,176126 and significant at the 1% level. This indicates that there is a deviation between the actual and long-term equilibrium of infaq and shadaqah receipts and the independent variables, according to the results of the cointegration test using the bound cointegration test (Pesaran et al., 2001). A coefficient value of -2,17 means that approximately 217% of the imbalance that occurred in the previous period will be corrected in the next period, an absolute value greater than one indicates a very fast adjustment mechanism.

#### *The Influence of Macroeconomic Variables on Zakat Receipts*

Based on the ARDL model estimation results, GDP plays a very dominant role and has a significant positive effect on zakat receipts. This is evident from the long-run coefficient of 3,317441, indicating that every 1% increase in GDP will be followed by an increase in zakat receipts of approximately 3,31%. This research aligns with previous findings that noted GDP as the most consistent macroeconomic variable influencing zakat receipts nationally (Zubaidah & Munawar, 2021). As a socio-economic instrument, zakat follows healthy economic dynamics. The theory of philanthropic motivation is also relevant, as economic growth not only encourages personal consumption but also motivates individuals to contribute socially through zakat, a form of Islamic philanthropy (Jedidia and Guerbouj 2021). In the short term, the change in GDP in the current period

(D(GDP)) has a very significant positive effect with a coefficient of 10,15662, meaning that every 1% increase in GDP directly increases zakat receipts by 10,16% in the short term. However, it is important to note the negative effect of GDP on the lags of one and two previous periods, which indicates a dynamic adjustment mechanism where past GDP increases tend to reduce current zakat receipts.

The CPI, as a proxy for inflation, has a positive and significant effect with a coefficient of 0,250794. Every 1% increase in inflation is estimated to increase zakat receipts by approximately 0,25% in the long term. This means that inflation over a long period will not cause people to neglect their obligation to pay zakat. This aligns with Yusoff's (2010) opinion, which states that the essence of zakat, in particular, is an instrument of wealth redistribution aimed at helping those entitled to receive it maintain their well-being amidst inflationary pressures.

The Bank Indonesia interest rate (BI rate) does not show a significant long-term effect on zakat receipts. This indicates that interest rate fluctuations tend to have no immediate impact or only a small effect on people's zakat payment behavior over the longer term. In the short term, the BI rate has a significant negative effect at lags one and two, indicating that past interest rate increases tend to reduce current zakat receipts. Previous research has found that interest rates have a significant and negative effect on zakat receipts, as interest rate increases tend to reduce people's ability to distribute zakat optimally (Butt et al., 2023).

Dummy COVID-19 has a positive coefficient of 0,167392 and is significant at the 5% level, indicating that the COVID-19 pandemic actually triggered an average increase in zakat receipts of 0,17% in the long term. This phenomenon can be explained by the increasing sense of social solidarity and

empathy among the community towards others affected by the pandemic, which encourages an increase in zakat obligations and other social donations during the crisis. The pandemic has become a unique momentum that has given rise to a collective awareness of helping those in need, as also noted in various socio-humanitarian studies. In the short term, the COVID-19 dummy in the current period also has a significant positive effect of 0,629020, indicating that the COVID-19 pandemic triggered a short-term increase in zakat receipts, possibly driven by increased social awareness and the need for philanthropy during the crisis.

Digitalization, represented by the digital dummy, shows a positive effect, although its significance is at the 10% level, with a coefficient of 0,113969. Increased digitalization, for example through digital payment platforms and online zakat applications, provides easier access and effectiveness in zakat collection, thus it can be said that the technology base shows a positive contribution in increasing zakat fund collection. Although its influence is not yet significant in the long term, digitalization has the potential to become an important instrument in the future to expand the reach and efficiency of zakat collection.

#### *The Influence of Macroeconomic Variables on the Receipt of Infaq and Shadaqah*

Based on the ARDL model estimation results, GDP has a highly significant positive effect, with a coefficient of 4,016757 in the long run. This means that every 1% increase in GDP will increase the receipt of infaq and shadaqah by 4,02% in the long run. This demonstrates the powerful role of national economic growth in increasing community philanthropic activity (Butt et al., 2023). In the short term, GDP plays a central role in predicting changes in infaq and shadaqah receipts, as evidenced by the positive and significant coefficient of 5,269753. Every 1%

increase in GDP is immediately followed by a 5,27% increase in infaq and shadaqah receipts. These results confirm the positive relationship between economic growth and the community's ability to provide infaq and shadaqah. Several economic theories suggest that increasing economic capacity at the household and community levels nationally increases resources for social and charitable activities, especially in the context of Islamic economics. Therefore, maintaining and encouraging economic growth is a fundamental strategy for managing infaq and shadaqah-based philanthropy (Giloth, 2019).

The CPI, as a proxy for inflation, has a positive and significant effect with a coefficient of 1,766477. Every 1% increase in inflation tends to increase the receipt of infaq and shadaqah by approximately 1,76% in the long run. This means that sustained inflation increases the contribution of infaq and shadaqah from the community over a long period. In Islamic consumption theory, consumption not only fulfills personal needs but also reflects a relationship with God, is carried out based on the priority of welfare, and includes spending to help others through infaq and shadaqah (Yusoff 2010). Increased inflation can increase the receipt of infaq and shadaqah because people are motivated to give more infaq and shadaqah as a form of social concern and religious obedience, as well as to help others meet the increasing social needs caused by inflation. Research conducted by Fadhilah et al. (2022) stated that rising inflation can be followed by an increase in the collection of infaq and shadaqah, possibly because rising prices also increase the amount of ZIS that must be paid. However, the influence of inflation shows a more complex pattern in the short term. In the current period, inflation has a significant positive effect, indicating that in the short term, inflationary pressure increases people's infaq and shadaqah behavior. Meanwhile, in the

previous period, inflation has a significant negative impact with a coefficient of -6,905314, meaning that the previous increase in inflation can reduce revenue by around 6% in the following period. This condition indicates that people may delay or reduce the distribution of infaq and shadaqah when facing high price pressures, because income allocation is used more for basic needs. This finding is consistent with economic literature showing that inflation causes a redistribution of consumption and income allocation, and negatively affects socio-economic behavior (Huda et al., 2008).

The BI benchmark interest rate (BI rate) did not show a significant effect in the long term, thus it can be concluded that interest rates are not expected to have a significant effect on the receipt of infaq and shadaqah in the long term. However, in the short term, the BI benchmark interest rate (BI rate) showed a negative effect with a coefficient of -0,170308 and a significance level at the 10% limit. This implies that a 1% increase in interest rates can reduce infaq and shadaqah by approximately 0,17% in the short term. This decrease is likely due to people choosing to save or invest in interest-based instruments rather than channeling funds as infaq and shadaqah, especially in situations of high economic uncertainty (Boediono, 2014).

In the long term, COVID-19 had a negative and significant impact at the 5% level with a coefficient of -0,289599. This means that the pandemic contributed to a decrease in the receipt of infaq and shadaqah by approximately 0,29% in the long term, reflecting the impact of the health and socio-economic crises on the community's ability to distribute social funds. This decline could be due to the economic slowdown and uncertainty that persisted during the pandemic. In the short term, particularly during the first and second periods of the previous COVID-19 pandemic, significant negative effects were observed. The results of

this study differ from the data on the receipt of infaq and shadaqah during the pandemic. Based on data from BAZNAS, the receipt of infaq and shadaqah actually showed a significant increase annually during the COVID-19 pandemic. Muttaqien and Mas'ud (2022) proves that philanthropic behavior in the form of infaq and shadaqah continued to flow during the pandemic, along with the rise of social solidarity campaigns on social media. Furthermore, a study by Hafizd and Mardiatta (2021) emphasized that zakat, infaq and shadaqah (ZIS) play an important role in socio-economic resilience in times of crisis. Forms of voluntary generosity such as infaq and shadaqah are very relevant to strengthening the values of social solidarity, in accordance with the objectives of maqasid sharia in protecting lives, property and social harmony. This is due to increasing social awareness and the successful adaptation of philanthropic institutions such as BAZNAS in utilizing digital technology and strengthening humanitarian campaigns.

Dummy digital shows a significant positive effect with a coefficient of 0,420631, indicating that digitalization has a positive contribution to increasing the collection of infaq and shadaqah. This indicates that ease of access and donation activities through digital platforms have helped expand the reach and

effectiveness of social fundraising in the long term. This finding is important as empirical evidence that digitalization is a strategic instrument in increasing public awareness and participation in infaq and shadaqah. In the short term, the digital dummy shows a significant negative influence pattern at lags one and two with coefficients of -0,855914 and -0,731988, respectively. This may reflect the adaptation and transition period of digital donation technology, where the community and institutions collecting zakat, infaq, and shadaqah are still adjusting to the new mechanism. Over time, digitalization is expected to increase the accessibility and transparency of social fundraising, which can encourage positive growth in infaq and shadaqah in the future (BAZNAS 2024).

*Differences in External Influences on the Receipt of Zakat, Infaq, and Shadaqah in the Long Term*

Long-term estimation results show that GDP has a positive and significant effect on both models, including zakat, infaq, and shadaqah. This indicates that economic growth generally increases people's ability to fulfill their obligations and make voluntary donations. However, there are differences in the characteristics of the impact of other variables and the sensitivity of the two models to external conditions. This can be seen in Table 15 below.

Table 15 Long-Term Estimation Results of the Two ARDL Models

Variables	Zakat			Infaq and Shadaqah		
	Coefficient	Std. Error	Prob.	Coefficient	Std. Error	Prob.
GDP	3,317	0.172	0.0000***	4,016	0.278	0.0000***
CPI	0.250	0.306	0.0028***	1,766	0.611	0.0312***
BIR	-0.003	0.021	0.8719	-0.016	0.032	0.6216
Dummy_COVID	0.167	0.073	0.0355**	-0.289	0.135	0.0483**
Dummy_DIGITAL	0.113	0.059	0.0711*	0.420	0.105	0.0010***

Source: processed data (2025)

Note: \*\*\*,\*\*), and \*) indicate significance levels at 1%, 5%, and 10% levels.

In the zakat model, the COVID-19 pandemic dummy variable showed a significant positive effect, indicating that zakat payers continued to fulfill their zakat obligations

despite the economic and social disruption caused by the pandemic. The pandemic, which brought widespread health and economic impacts, triggered increased social awareness

and awareness among zakat payers to help affected communities, thus driving an increase in zakat receipts. This finding supports the literature suggesting that socio-economic crises such as the pandemic can increase collective awareness and philanthropic activity (Maclean et al., 2013). In contrast, the results of the infaq and shadaqah model actually show a significant negative impact from the COVID-19 pandemic, reflecting the economic pressure and uncertainty that have led to a long-term decline in infaq and shadaqah flows. This is understandable, as a prolonged pandemic will significantly impact the community's economy, to the point that funds that could have been allocated for voluntary infaq and shadaqah will ultimately be used to meet other needs (Blanco et al., 2021). However, the facts in Indonesia actually show something different from the research results. Reporting from Indonesian Philanthropy Team, there was a 72% increase in digital donations during the pandemic driven by a narrative of social solidarity and strong humanitarian campaigns on social media. A study by Dinata and Darna (2022) also showed a significant increase in donations through zakat, infaq, and shadaqah institutions during the pandemic in Depok City, with the primary motivation being individual perceptions and social influences, including empathy and concern for others affected by the pandemic. In other words, this voluntary giving behavior is more influenced by social factors, religious values, and community solidarity, which can remain strong even during times of crisis.

Dummy digital have a positive impact on both the zakat model and the infaq and shadaqah models. This indicates that accelerated digitalization is contributing to a gradual increase in zakat, infaq, and shadaqah (ZIS) receipts. Digitalization in the context of ZIS management includes the use of digital payment platforms, online zakat applications, and information systems that facilitate faster,

more transparent, and more efficient payments (BAZNAS, 2020). With this ease of access, digitalization has the potential to expand the contributor base and increase the effectiveness of ZIS collection, which is in line with previous studies showing the positive impact of digital technology on the management of Islamic philanthropy (Sirojuzilam et al. 2019).

## CONCLUSIONS

Based on the analysis, zakat, infaq, and shadaqah (ZIS) receipts at the Central BAZNAS during 2015–2024 experienced a strong upward trend, driven primarily by sustained economic growth and institutional improvements, although the realization still falls substantially short of the estimated national ZIS potential. Economic growth (GDP) consistently exhibits a positive and significant effect on both zakat and infaq–shadaqah receipts in the short and long run, confirming that higher national income directly strengthens the fiscal capacity of Islamic philanthropy. Inflation (CPI) shows a nuanced role: in the long run it is associated with higher ZIS receipts—particularly for infaq and shadaqah—while in the short run it can temporarily dampen zakat payments, reflecting households' need to reallocate income toward basic consumption when prices rise. The BI interest rate does not have a significant long-term impact on ZIS, but higher interest rates tend to reduce ZIS receipts in the short run, indicating that tighter monetary conditions can crowd out philanthropic allocations. External shocks such as the COVID-19 pandemic generate asymmetric effects: the pandemic is associated with higher zakat receipts—through strengthened social solidarity and religious awareness—but is linked to lower infaq and shadaqah in the long run, suggesting that voluntary contributions are more sensitive to prolonged income and liquidity constraints. Digitalization, captured by the digital dummy,

consistently strengthens ZIS collection, as digital channels expand access, reduce transaction costs, and improve the convenience and frequency of giving.

These findings imply that macroeconomic stability—particularly policies that sustain inclusive growth and protect real household purchasing power—plays a key role in supporting ZIS mobilization. In practical terms, the government can integrate ZIS more explicitly into social protection and poverty-alleviation strategies by coordinating countercyclical fiscal and monetary policies with BAZNAS, so that increases in ZIS receipts during periods of economic expansion are better aligned with programs targeting vulnerable groups. For BAZNAS, the results underscore the strategic importance of (i) strengthening communication, religious literacy, and public education programs that emphasize the obligation of zakat and the social value of infaq and shadaqah, especially during periods of crisis; and (ii) accelerating the development of secure, transparent, and user-friendly digital platforms, coupled with digital literacy campaigns, to broaden the muzakki and donor base and to sustain giving even when mobility or face-to-face collection is constrained. In addition, BAZNAS is advised to periodically review and refine its methodology for estimating and reporting ZIS collections, as some observers have noted that reported figures may underestimate actual giving activity; a more rigorous verification process could help ensure that published data more accurately captures the scale of community contributions. Future research could extend this study by incorporating micro-level data on household giving behavior and institutional performance indicators, in order to better disentangle the interaction between macroeconomic shocks, digitalization, and Islamic philanthropic behavior

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