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Zakat and Economic Development: Micro and Macro Level Evidence from Pakistan

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Abstract
Zakat, as a transfer payment, is an important instrument to achieve social welfare in a society in Islamic ideology. This study attempts to analyze the impact of Zakat on economic development using micro and macro level data for Pakistan. The overall analysis shows that Zakat has a positive impact on economic development in Pakistan. More specifically, micro evidence shows that Zakat significantly enhances the welfare of the households. Macro evidence also highlights that Zakat significantly contributes to economic growth in Pakistan. These findings have important implications for Pakistan.

Keywords: Zakat, transfer payment, social welfare, economic growth, Pakistan

I. Introduction

The global economic meltdown and rise in fuel and commodity prices severely affected the welfare of the people especially in developing country like Pakistan. The macro-economic crises in the country necessitated making social protection an urgent priority for the poor and vulnerable segments of society (GoP, 2013). Over the last five years, there has been tremendous increase in social transfer in Pakistan to eradicate poverty and promote welfare. The government of Pakistan has launched various social transfer programs such as Banazir Income Support Program (BISP). Through these programs huge income has been transferred to empower poor people especially women and enhance their welfare. In this context, Zakat, as a transfer payment, is considered an important instrument to achieve social welfare in a society in Islamic ideology.

Zakat is one of the five pillars of Islam and the most important tool to stimulate the economy and achieve income equality. Circulation of money through Zakat increases the overall demand for goods such as food, clothing that ultimately expand the overall economic activities and generate more employment. In Pakistan, Zakat system was introduced through an Ordinance called Zakat and USHR Ordinance 1980. Zakat funds are utilized to assist the needy, indigent, poor, orphans, widows, handicapped and disabled. These poor segments of society are provided Zakat funds either directly through respective local Zakat Committee or indirectly through institutions i.e. educational, vocational, social institutions and hospitals, etc.

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An amount of Rs. 3951 million was distributed in bulk amongst the provinces and other administrative areas of Pakistan up to March, 2013. Giving this background, the overall objective of this study is to analyze the impact of Zakat on economic development at the micro level and macro level in Pakistan. More specifically, first, this study attempts to investigate the impact of Zakat on household's welfare using Household Integrated Economic Survey (HIES) 2010-11. Second, this study investigates the impact of Zakat on economic growth using time series data over the period 1981-2013. The rest of paper is organized is as follow: section 2 explains the data and methodology, section 3 explains the results and last section concludes the whole discussion with policy implications.

To explore the impact of Zakat on economic development, we have used to different data set. For micro level analysis, we use the Household Integrated Economic Survey (HIES) 2010-11. The HIES is representative at the national level as well as for rural and urban areas. The HIES is carried out by the Pakistan Bureau of Statistics, the official agency for managing different types of household surveys. The HIES 2010-11 has been conducted covering 16341 households. The HIES provides detailed information on household income, savings, liabilities, consumptions expenditures, and consumptions patterns at national as well as provincial levels with further breakdown at rural and urban level. It also contains information on socio-economic indicator of the household. The HIES consists of all urban and rural areas of four provinces of Pakistan. A two-stage stratified random sampling scheme is used for this survey. Enumeration blocks in urban areas and villages in rural areas are selected at first stage. While in second stage, households within the sample enumeration block and/or village have been selected. See table 1 for sample distribution across provinces and regions. About 42 percent sample is selected from Punjab while 25 percent from Sindh.

Table 1: Sample Distribution

	Total		Urban		Rural	
Province/Region	No.	Percent	No.	Percent	No.	Percent
Punjab	6,954	42.56	2,935	44.54	4,019	41.21
Sindh	4,098	25.08	1,802	27.35	2,296	23.54
KPK	2,954	18.08	1,041	15.8	1,913	19.62
Balochistan	2,335	14.29	811	12.31	1,524	15.63

To analyze the impact of transfer payments on economic development, we select only those household those receive transfer payments. As in this study, we focus only Zakat and Usher as a transfer payments. Following question is asked to the respondent to collect the information on these kinds of transfer payments. The Section N of questionnaire of HIES collect information on

- "Transfer received and paid out (During the last 1 year).

In this section, Part A: collect information on

- "Income received from Zakat, Usher Remittances, and Other Sources by the Household

(HH) Members". More specifically, following question is asked to the HH members:

Income in cash from Zakat/Usher

Yes=1 or

No=2

In case of yes, further questions are asked:

a). Received from public sector (Federal/Provincial/District Semi government) (Ans. in Rupees)

b). Received from Private Sector (Relatives/Non-relatives/NGOs/trust (Ans. in Rupees).

For macro level analysis, we use time series data over the period 1981-2012. Data on Zakat collection are collected from the Fifty Year Economy of Pakistan and various annual reports published by the State Bank of Pakistan. Data on other economic variables is mainly taken from the Economic Survey of Pakistan (various editions). Data on human capital is taken from the Barro and Lee Dataset 2011.

II. Methodology

To see the impact of transfer payments (Zakat and Usher) on economic development at micro level, we carried out multivariate analysis using the HIES 2010-11 data. We use per capita consumption expenditure as a proxy for household income. Per capita consumption expenditure (logarithm) is used as the dependent variable in multivariate analysis. Data on the consumption expenditure, covering all food as well as non-food items were collected in the HIES in current prices. Household characteristics include age (year), level of educations and sex and transfer payments are used as explanatory/ independent variables. Following regression model is estimated:

$$Ln(\exp)_i = \alpha + \beta X_i + \gamma Z_i + \varepsilon$$

Where

$Ln(\exp)$ = Per capita consumption expenditure in logarithm form

X = Matrix of household characteristics include age, education, sex etc.

Z = Variables related to transfer payments.

i = Household

ε = error term

To estimate the model, we use Linear Regression Model procedure based on Ordinary Least Square (OLS).

For macro analysis, we use following regression model:

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The variables involved are:

Y the logarithm of real gross domestic product (GDP) per capita,

Z a measure of transfer payment i.e. Zakat

Matrix of control variables include investment, human capital, government consumption and trade.

error term time index

Descriptive Statistics

For micro analysis, the definitions of the variables used in the multivariate are as follow:

1) Per capita expenditure
   This represents the sum of all expenditure carried out by the households during last one month. These monthly expenditure are then divided by the household size to obtain the per capita expenditures. For multivariate analysis, we take the log this series. This is a continuous variable.

2) Male
   We define a dummy variable to capture the sex of the head of household. For this dummy variable 1 represents male while 0 represents female.

3) Literacy
   We define a dummy variable to capture the literacy of the head of household. For this dummy variable 1 represents literate while 0 represents illiterate.

4) Age
   Age is a continuous variable represents the total age of the head of the households. We also use square of the age to capture the nonlinearity of the age variable. This also represents the experience of the individual.

5) Zakat/User
   This represents the total transfer payment obtained by the household during last on year. It contains transfer from both sources i.e. private and public and also both type i.e. Zakat and Usher. We divide the sum by 12 to get monthly Zakat/Usher.

Table 2 shows the descriptive statistics of the variables. The mean value of log zakat/usher variable is equal to 6.50. The mean value of log of per capita expenditure is 8.19. GDP.The mean value of dummy variable male is 0.82. The literacy rate mean value is equal to 0.39. The age

variable mean value is equal to 46 while age square means value given in statistics is equal to 2343.

Table 2: *Descriptive Statistics*

Variables	Obs.	Mean	S.D.	Min.	Max
Log Zakat/Usher	214	6.50	1.12	2.81	10.13
log per capita expenditure	214	8.19	0.64	6.24	11.10
Male	214	0.82	0.38	0.00	1.00
Literacy	214	0.39	0.49	0.00	1.00
Age	214	46	14	18	85
Age Square	214	2343	1446	324	7225

Source: Authors' own calculations based on HIES dataset.

For macro analysis, following variables are used:

1) GDP per capita: GDP is defined as the total market value of all final goods and services produced within a country.

2) Investment

   Investment is measured as Gross Fixed Capital Formation as a percent of GDP.

3) Human capital:

   Educational attainment of people is used as proxy for human capital in our data set.

4) Trade:

   We use trade balance as proxy for trade. Trade balance is differential between the total imports and exports during a given fiscal year.

5) Zakat:

   Zakat receipt indicate the sum of deduction of zakat from fixed deposits, saving deposits, government securities, share of debenture of companies and life time insurance policies etc. along with zakat voluntarily paid and other receipts.

The table 3 shows the descriptive statistics of given variables in the model. The mean value of zakat variable is equal to 0.18. The mean value of GDP growth is equal to 4.85.The mean value of per capita GDP is given 592 while the investment mean value is 16.62 and human capital is 23.21 in our data set .

Table 3: *Descriptive Statistics*

Variables	Obs.	Mean	S.D.	Min.	Max
Zakat	32	0.18	0.11	0.02	0.36
GDP Growth	32	4.85	1.97	1.01	7.92
GDP per capita	32	592	112	414	802
Investment	32	16.62	2.20	10.92	20.96
Human Capital	32	23.21	6.96	14.42	35.84

III. Results and discussion

In table 4, we present the multivariate analysis to check the impact of Zakat/Usher on poverty. The analysis shows that sex of the head household is important factor in removing the household from poverty status. As it is noted Male has a positive and significant impact on per capita household expenditure. The estimated coefficient is 0.048 which is significant at 10 percent. This implies that as heads of the households is male, it contribute to 0.048 percent in the overall expenditures. We also find that education paly very important role in increasing the per capita expenditures of the households. We find that literacy has a positive and significant impact on per capita expenditures. The estimated coefficient is 0.14 which is significant at 5 percent level. Therefore, as the education level increases, there are more chances that household get rid from poverty.

Table 4: *Impact of Transfer payment on Poverty: A multivariate analysis*

Variable	Coefficient	T-Value
Constant	7.50396	14.29
Male	0.0480428	1.67
Literate	0.144981	2.09
Age	0.005719	0.32
Age Square	-5.8E-05	-0.33
Zakat/Usher	0.071343	1.78

We also examine the impact of transfer payments on per capita expenditures. We find that transfer payment has a positive and significant impact on per capita expenditure. The estimated coefficient is 0.07 which is statistically significant at 10 percent. This shows that if we increase the transfer payment by one percent there is 0.07 percent increase in the overall expenditure of the households. The most of studies ((Mohamed, (2007); Bakar, N and Rashid, H. (2010); support our empirical result specifically concerning to zakat as a source for eradicating household poverty level because it is voluntary support from rich people to poor people which increase the public expenditures which enhance the overall market activity through higher demand for market goods thus it bring the societal prosperity in Pakistan (Shirazi, N. S.

(1996)).

Before applying the multivariate analysis on time series data, it is quite essential to check the stationarity issues in data set. For stationary checking, we apply the Ng-perron(2001) unit root test. Before applying unit root test, the size and power properties of test matter alot. For testing the data stationarity, following standard tests have been proposed that include Phillips-Perron (PP) and the Augmented Dickey-Fuller (ADF), but test reliability is questionable in case of small sample size. The most suitable unit root tests proposed in case of small sample are Dickey-Fuller Generalized Least Square (DFGLS) test and Ng-Perron test(Harris and Sollis, 2003). The (DFGLS) test faces size distortion problem and Ng-Perron test keeps better power for unit root testing (Ng and Perron, 2001). We have applied Ng –perron unit root test approach on our time series data. The results predict that Govt consumption, human capital and trade are not stationary at level except economic growth, zakat and investment. This implies that we cannot reject null hypothesis of unit root of all variables except economic growth, zakat and investment. But all variables are stationary at first difference which implies that null hypothesis of unit root is rejected .Thus, there is mixed order of integration like some variables are I(0) and I(1).It can be concluded that long run co-integration exists among the variables. The results are reported in table 5.

We have analyzed the impact of Zakat on economic growth and results are presented in table 6. We use Ordinary Least Square (OLS) to quantify the impact of Zakat on economic growth. To remove the endogeneity issues among the variables, we use the 2SLS and GMM an alternative estimation techniques. We have used lag variables as instruments in these models. The columns 1, 2 and 3 represent that zakat receipt show positive effect on economic growth in long run and. It means that zakat receipt has positive contribution to our economic growth at macro level. The suggestion of results in context of zakat receipt is not new but theoretically supported by Abdul et al (1995), Al-Qardawi (1999) and Shirazi (1996).A recent study of Pakistan experience by zaman et al,(2013) suggest that strengthening zakat system help in mitigating the challenge of poverty in future at macro level. They argue that zakat strengthened the financial health of poor people in economy and they can attain their all basic need and in this way the overall economy can come out from poverty circle. Amjad et al (2011) argue that more effective and judicious distribution of zakat fund to poor people is an effective economic tool that can help economy to come out from stagflation phenomena for achieving the sustained economic growth. Our own approach is quite different from literature on the basis of appropriate specification of estimators and robustness of econometric methodologies for analysis. Furthermore, the human capital exerts a positive effect on economic growth and its coefficient value is significant in Pakistan in all three columns of Table 6 which resolves the complexity of arguments regarding human capital and economic growth in economic literature. Some says that human capital plays a positive role on economic growth (suri et al, 2010) and negative effect on economic growth (Afzal et al, 2013).

Table 5: Ng-Perron Unit Root Test

At Level				
Variable	**Ng-Perron Test Statistics**			
	MZa	MZt	MSB	MPT
Economic Growth	-10.5700*	-2.27024	0.21478	2.42851
Zakat	-1.36790**	-0.76589	0.55990	16.3263
Investment	-61.5306**	-5.38249	0.08748	
Human Capital	-61.5306	-5.38249	0.08748	0.77040
Govt.consumption	-4.34553	-1.40849	0.32412	5.73737
Trade	-10.1278	-2.23089	0.22027	2.49406
At 1st Difference				
Variable	**Ng-Perron Test Statistics**			
	MZa	MZt	MSB	MPT
Δ Economic Growth	-13.3924***	-2.55866	0.19105	1.93976
ΔZakat	-11.7345**	-2.42203	0.20640	2.08867
ΔInvestment	-11.6427*	-2.41048	0.20704	2.11308
ΔHuman Capital	-31.53062**	-5.00324	0.08045	0.75059
ΔGovt.consumption	-13.9818***	-2.64125	0.18891	1.76285
ΔTrade	-14.5523*	-2.69238	0.18501	1.70264

*, ** and *** represent that we may reject the null hypothesis of unit root at 10%, 5% and 1%,

Table 6: Impact of Zakat on economic growth: Macro Evidence

VARIABLES	(1)	(2)	(3)
	OLS	2SLS	GMM
Zakat	19.16***	29.59***	29.74***
	(4.517)	(6.200)	(6.149)
Investment	0.157	0.153	0.143
	(0.155)	(0.0984)	(0.0992)
Human Capital	0.555***	0.681***	0.647***
	(0.159)	(0.141)	(0.141)
Govt. Consumption	-0.521**	-0.915***	-0.935***
	(0.222)	(0.240)	(0.237)
Trade	-0.00693	0.0954	0.146
	(0.162)	(0.173)	(0.169)
Constant	1.285	-0.426	-1.554
	(3.960)	(4.302)	(4.261)
Observations	32	30	30

R-squared	0.489	0.332	0.326
F-Statistics	4.98		
Wald chi2		37.93	36.54

The human capital effects positively to economic growth in Pakistan via foreign technological frontier channel. It can be justified on the ground that human capital is accelerating economic growth in Pakistan due to higher level of enrollment in secondary school that help in attracting foreign technology in Pakistan. The government consumption indicates negative effect on economic growth and its coefficient value is significant in all three columns. Our result are in favor of Most of studies argue that in developing countries government misallocate its expenditure in security which is non-productive expenditure. Due to misallocation of public resources lead to deter the overall economic growth in a country.

IV. Conclusion

In this paper we have analyzed the impact of Zakat on economic development at micro and macro level. We have shown that Zakat has a positive and significant impact on economic development both at micro and macro level. These findings suggest that Zakat, as a transfer payment, is an important instrument to achieve social welfare in a society. The main policy implication of this study is that Zakat is an important source to enhance social welfare of the country. In this context, there is needed to institutionalize the Zakat collection system to increase the overall Zakat collection. Over the last decade, there is decreasing trend in Zakat collection as percent of GDP. Zakat collection has declined from 0.3 percent of GDP from 1981 to 0.02 percent of GDP in 2012. Government should design policies to strengthen the collection mechanism. On the other hand, government should also develop a transparent and user friendly method for distribution of Zakat to benefit the needy people.

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