

Zakat – Financial Inclusion Nexus: Empirical Evidence from Pakistan

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The contemporary development of Islamic finance raises the question of its practical implications. An important dimension of the effects of the development of Islamic social finance on financial sector development, relates to that of financial inclusion. Despite its relevance, the empirical literature offers little evidence on Zakat-financial inclusion nexus. This paper examines the relationship between Zakat and financial inclusion for the economy of Pakistan during the 1982-2015 period, by using ordinary least square (OLS) regression and Bayesian estimation methods. The empirical findings of the study suggest that Zakat has a positive impact in furthering financial inclusion. In other words, an increase in Zakat leads to a decrease in financial exclusion. The findings of the study support the view that Islamic social finance can be used as an instrument to eradicate financial exclusion. The study contributes to the existing literature on Islamic finance by suggesting that Zakat can be one of the tools to tackle the issue of financial exclusion. The results are robust against alternative proxies of financial inclusion and models' specifications i.e. two-stage least square (2SLS), three-stage least square (3SLS) and quantile regression (QR).

Key words: *Zakat, financial inclusion, financial exclusion, Islamic social finance.*

Introduction

The notion of financial inclusion emerged at the end of the twentieth century, with the view that development should not only be limited to the level of GDP, but it should be extended to the other spheres of life. Financial inclusion started as a political concern in the United Kingdom in 1997 and became a global development agenda which led to the foundation of the Global Partnership for Financial Inclusion (GPFI) in 2010. According to the former United Nations secretary general Kofi Annan, “*The stark reality is that most poor people in the world still lack access to sustainable financial services, whether it is savings, credit or insurance. The great challenge before us is to address the constraints that exclude people*



from full participation in the financial sector. Together, we can and must build inclusive financial sectors that help people improve their lives". In 2005, the United Nations proposed that financial inclusion be put forward globally, and that part of the agenda was to provide the entire society equitable access to financial facilities. The recent development of SDGs has also provided space to inclusive growth and financial inclusion. At the Hangzhou Summit in 2016, financial inclusion remained an important topic among the G20 states.

The financial reformations in most countries during the 1980s and 1990s were predicted to enhance the financial condition and the usage of formal financial services. Yet, despite these reforms, the excess to and utilisation of financial facilities is still at a low level. Financially excluded people are not enjoying the available financial facilities. There are many reasons behind such exclusion, including education, costly procedures and services, employment status, household income level, gender, financial complications, excessive documentations, affordability, place of residence and religion. The Center for Financial Inclusion at Accion, defined financial inclusion as: *"A state in which all people who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients. Financial services are delivered by a range of providers, most of them private, and reach everyone who can use them, including disabled, poor, rural, and other excluded populations"*.

a. Reason of financial exclusion

Despite these concerns, the current figures of financial inclusion in the world are very devastating. One of the recent reports of the Global Financial Development explored that 80 per cent of the deprived class of society — who are living on less than two dollars a day — do not have bank accounts. Currently, about half the total adult population (or 2 billion adults) are unbanked, they do not have excess to financial services or any accounts at regular financial institutions. Financially excluded people are not enjoying the available financial facilities. There are many reasons behind financial exclusion, including education, costly procedures and services, employment status, household income level, gender, financial complications, excessive documentations, affordability, place of residence and religion. On the other hand, financial exclusion leads to boost the vicious cycle of poverty, hamper economic growth and persistent inequality.

b. Benefits of financial inclusion

The main objective behind financial inclusion is to make financial services accessible to the deprived class of society, and at the lowest cost possible. Providing excess to fund¹ help to accelerate consumption, saving and investment. Making finance accessible to the deprived class of society, helps them to start businesses, raise their income level, absorb health shocks,

¹ These loans are either spend as a consumption expenditure by the household or saving and then converted into investments.



improve quality of life, invest in education and paying school fees. Likewise, making other financial facilities available, such as insurance cover and life protection, help the deprived class of society to manage the different risks. Financial inclusion empowered women to be economically stable and financially autonomous. Equally, financial inclusion helps the aged and retired population to invest their savings in pension funds, to protect their future and remain financially stable. It also helps adults to save for the future, so they can enjoy financial stability (Collins, Morduch, Rutherford, and Ruthven ,2009; Aportela, 1999; Allen et al., 2016; Burgess and Pande, 2005; Prasad, 2010). On the other hand, more financial inclusion is in favour of financial institutions themselves, because an increased use of bank deposits contributes to a more stable deposit base for banks in financial crises and economic shocks. The countries who have deeper financial intermediation services, can grow faster and have the ability and tools to eradicate poverty and decrease inequality (Demirgüç-Kunt et al., 2015).

c. Islamic finance and financial inclusion

According to the global Findex report of 2017, in a majority of Muslim countries, the reason behind a low share of adults having no attachment with formal financial institutions, was due to religious reasons. Even though there are many other reasons of financial exclusion, such as a complex set of personal, cultural, social, political, legal, and economic factors (Mylonidis, 2017; World Bank, 2014). However, all these reasons can be classified into two main classes; involuntary exclusion and voluntary exclusion (Allen et al., 2016; Mylonidis, 2017). As we see in the figure 1, where one of the main components of financial inclusion is voluntarily exclusion. The reason behind such exclusion is that the current financial system is not in line with their religious beliefs². Therefore, they are voluntarily excluded. However, if we look at these reasons from an Islamic perspective, Islam is the fastest-growing religion in the world (Bello, 2018) and about 25 per cent of the world population is Muslim (Lipka and Hackett, 2015). According to global Findex, more than 7 per cent of the population worldwide is excluded due to religious reasons, which accounts for approximately 150 million adults around the world.

To summarise, taking into consideration the above statistics, it can be argued that enhancing the size of and access to *Shari'ah*-compliant financial products can reduce voluntary financial exclusion. Similarly, *Shari'ah*-compliant financial products, such as profit and loss sharing contracts — Musharakah and Mudarabah — and instruments — *Zakat*, *Sadaqa*, *Waqf* and *Qard Hassan* — also have the potential to reduce involuntary financial exclusion.

Finally, if Islamic finance is to bring more people into the financial system, then it needs to come up with products which on the one hand, have the elements of fintech to keep the

² Majority of the world countries included Muslim majority countries have conventional financial system and share if Islamic finance in the world is only 1.5% approx.



products cost effective and convenient, and on the other hand, need to be collateral free. The financial exclusion can only be reduced with use of technology that offers connectivity with different digital financial products. Similarly, it is worth mentioning that these digital services should be fully protected from any kind of cyber-attacks.

d. Zakat and financial inclusion

The core principal of Islamic Finances is based on economic justice, inclusion and the sharing of resources between haves and have not. In Islam, the property or asset given to us is not our owing, but a custodianship from Allah. Not only will we be asked as to how the money was earned, but also how was it spent, and what was done with that money to help those in need. Obaidullah (2008) explains that there are two broad categories of Islamic finance models that are globally used; charity based not-for-profit models and market-based commercial models. The former model uses Qard-e-Hasan, Waqf, and Zakat funds for providing non-compensatory loans or non-repayable grants. Market-based commercial models provide microcredit using Murabaha and micro-leasing using Ijarah.

According to a UNDP report US \$3 trillion and \$4.5 trillion is needed annually to achieve the SDGs, while current investment in relevant sectors is around \$1.4 trillion, creating a financing gap of around \$2.5 trillion (3). This gap is almost impossible to be filled by Governments alone; the worldwide value of zakat alone is potentially US \$200 billion to US\$1 trillion annually. (www.irinnews.org/report/95564/analysis-a-faith-based-aidrevolution-in-the-muslim-world)

This potential of Zakat with a no zero-financing cost could be a 'game changer' if structured properly through the identification of economic programmes, which would not only increase the financial inclusion, but would also help in reducing income inequality.

Zakat & Waqf has an inbuilt characteristic of being redistributive in nature, thus reducing or fighting the concept of the 'hoarding of wealth', which has become a benchmark of modern capitalism.

Zakat, because of its redistributive nature, can be used in various ways to achieve financial inclusion. For instance, according to a world bank report (2), 35 per cent of adults in low income countries receiving a government payment opened their first financial account. As Zakat is for a specific category which is generally the poorest of the society, it can be used for this purpose.

e. Zakat link with financial inclusion justification from a Shariah perspective

The Islamic Economic System greatly emphasises on financial inclusion, social justice, equal opportunities and the sharing of resources between all types of society members, irrespective



of haves and have-nots. If we review the core principles of Islam, and analyse the literature of Islamic finance, it suggests two ways to address the issue of financial inclusion:

Promotion of PLS contracts:

The first way is to address the issue of financial inclusion is to promote profit and loss sharing or risk sharing contracts, such as murabahah and musharakah contracts. This will help to smooth the just and fair distribution of wealth and provide a viable alternative of debt-based contracts, which are dominant in the conventional financial system.

Effective utilisation of redistributive instruments:

Secondly, Islamic finance places great emphasis on the effective utilisation of instruments of the redistribution of wealth, such as Zakah, Sadaqat & Waqf. These redistributive instruments, especially Zakah, which is made mandatory on the persons who reach a certain level of wealth (nisab), help the poor and needy to fulfil their basic needs of life. Further, Zakah and other redistributive instruments increase financial inclusion by reducing poverty and enabling the low-income population to start businesses and avail financial services. Both profit and loss sharing contracts and redistributive instruments complement each other to tackle the issue of financial inclusion (Iqbal & Mirakhor, 2013).

This is not a conceptual fact, but it is proved empirically that the redistributive instruments of Islam, especially Zakah, play a vital role in improving the financial inclusion. The researchers of the World Bank have completed a comprehensive study and arrived at several interesting facts. The study reveals that 20 out of 39 OIC countries have enough in the amount of Zakah to eradicate poverty. The study states, that if these countries use their collections of Zakah effectively, they can fight poverty and improve the lives of all those people whose daily income is less than USD \$1.25. The research also estimates that the portion of Zakat to GDP vis-à-vis the resources needed to reduce the poverty and it concludes that half of the countries from the sample have sufficient funds of Zakah to cover the shortfall (MIFC, 2015).

Redistribution can be explained as a post-distribution phase when a portion of wealth is collected from wealthy people via mandatory (Zakah) and voluntary (Sadaqah) levies. Basically, it is the redemption of the rights of the low-income and needy population, in the income of the wealthy and rich people. By way of giving Zakah and Sadaqah, the wealthy people assert that the resources of wealth are created by Allah (swt) for all humanity and mankind. However, he (swt) does not give equal or similar abilities to gain the access of resources due to a number of reasons, which may be beyond the capacity of our limited intellect and wisdom (Mohieldin et al., 2011).

Allah (swt) explains this point in various verses of the Holy Quran. For instance, Allah (swt) says:

“Give to them from the property of Allâh which he has bestowed upon you.” (24:33).

At another place in the Holy-Quran, Allah (swt) says:

“Well, tell Me about that (seed) which you sow. Is it you who grow it, or are We the One who grows?” (56: 63, 64).

In these verses, Allah (swt) reveals the fact that the man only put his efforts into labour and the process of production, and he has no ability to make his efforts fruitful and productive. Only Allah (swt) can make his efforts fruitful. For example, the man can only sow the seed in the soil. He has neither the ability or capacity to make the seed grow or make it turn into a tree. All processes after sowing the feed occur without the intervention of man. This simple example explains the fact that the wealth belongs to Allah (swt), irrespective of its form. Allah (swt) created the wealth and bestowed it upon man to exploit it. So, the real owner of wealth is Allah (swt). He has given the right of exploitation to man as an act of mercy and blessing. So, this right is not absolute and boundless. There are a few conditions or restrictions which need to be observed in the exploitation of resources bestowed upon man by Allah (swt). Firstly, do not consume the wealth in a way which may harm society or spread disorder on the earth (*fasad fil arz*). Secondly, to redeem the share of those who are low-income and needy by way of Zakah, etc. (Shafi, 1975).

Methodology

Ordinary least square (OLS) and Bayesian regression techniques:

OLS is a statistical technique used to estimate the association between the regressor and regress, and by minimising the sum of squares between the predicted and the observed values. It gives us the relationship between the dependent and independent variables. For example, for the impact of Zakat on financial inclusion, we can develop the following equation:

$$FI_t = \beta_0 + \beta_1 Zakat_t + \theta_1 X_t + \epsilon_t \quad (1)$$

Where FI_t is the financial inclusion at time t, $Zakat_t$ denotes zakat at time t, X_t is a vector of the control variables (gross domestic income, population growth, gross capital formation, education, and labour force participation) at time t, and ϵ_t is a noise term. β_0 is the intercept i.e. indicating the value of financial inclusion when zakat and control variables are equal to

zero, β_1 and θ_1 are the coefficients i.e. representing the slope of the regression coefficients and that describes the change in financial inclusion with a unit change in zakat and control variables.

Similarly, we have also used the Bayesian statistical technique, which combines previous information with the present data to obtain the estimator. In this method, the standard deviations tend to decrease because of using prior knowledge of the population parameters. We developed the following equation:

$$\hat{\pi} = (Z'Z)^{-1}Z'W \quad (2)$$

$\hat{\pi}$ is the estimate of the Bayesian model, which is based on the assumption of random and normality having prior mean (μ) and variance (σ) i.e. $[\hat{\pi} \sim N(\mu, \sigma)]$. Empirically, we can calculate it as:

$$\hat{\pi}_B = E\left(\frac{\pi}{\hat{\pi}}\right) \quad (3)$$

where

$$E\left(\frac{\pi}{\hat{\pi}}\right) = v(\hat{\pi}_B) [\rho^2(Z'Z)^{-1}\hat{\pi} + \mu\sigma] \quad (4)$$

where

$$V(\hat{\pi}_B) = \left[\frac{1}{\rho^2}(Z'Z) + \sigma^{-1}\right]^{-1} \quad (5)$$

The t-statistic can be estimated as:

$$t_B = \left(\frac{\hat{\pi}_B}{se_B}\right)$$

Where B stands for Bayesian and se denotes the standard error.

Result and Discussion

The impact of zakat on financial inclusion, on the basis of OLS regression analysis and empirical Bayesian estimation, are presented in Table 3, while descriptive statistics and correlation analyses are presented in Table 1 and Table 2, respectively. ATM³ and BB are found to have a high correlation with one another, which shows that both can be used interchangeably to proxy financial inclusion. Similarly, in Table 1, we see a high variation in Zakat compared to other variables. We have estimated various regression estimations to find the impact of Zakat on financial inclusion, and to check the robustness of our empirical results.

³ For details of variables refer table 4 in appendix.

The results in Table 3 show that Zakat has a statistically significant but positive impact on financial inclusion, as the coefficient of Zakat contains a positive value of 0.0383. This Zakat coefficient is significant at a 1 per cent level of significance. This result justifies and supports the view of that Islamic economics and finance is inclusive in nature and takes care of those people who are financially excluded (Iqbal and Shafiq, 2015; Mohieldin et al. 2011, Mohieldin et al. 2012, Iqbal and Mirakhor, 2013). Based on this result, Zakat can be used as an instrument to increase financial inclusion.

Moreover, to find the impact of Zakat on financial inclusion, we utilised the Bayesian method and the results are depicted in Table 3. As we see that the coefficient of Zakat is positively significant, having a mean value of 0.0283. This finding indicates that the impacts of Zakat on financial inclusion is alike to those reported by employing the OLS method. Now we are moving towards the Bayesian method, as we see in Table 3 that the overall acceptance rate (AR) is 0.6194 and 0.6571 respectively, meaning that 65 per cent or 62 per cent out of a 10,000-proposal parameter value were accepted by the algorithm. This is a good acceptance rate for the MH algorithm because values below 10 per cent may be a cause for concern, because a very low acceptance rate may also mean a high autocorrelation and may indicate problems with the convergence of MCMC. The efficiency values are 0.6853 and 0.6214 respectively and are considered good for the MH algorithm, while efficiencies below 1 per cent should be investigated further and would require further tuning of the algorithm and possibly revisiting the considered model. Finally, the estimated posterior mean for {z: cons} is 0.010822 and 0.0382 which are also consistent with our OLS estimation coefficients.

a. Robustness tests

We have done a couple of robustness tests in order to see the consistency of our result. Firstly, we have used different proxies for financial inclusion in order to see the consistence of our variables coefficients. Secondly, we have used the Bayesian method which utilises previous knowledge along with current data to estimate the coefficients.

Conclusion

This paper has tried to empirically support the famous view that Islamic finance is more inclined towards inclusive development and is welfare oriented. Therefore, in order to address the issue of financial inclusion through Islamic finance instruments, such as Zakat, this study focusses on the impact of Zakat on financial inclusion in Pakistan by using time-series data spanning from 1928-2015, and through the use of OLS and Bayesian methodology. To check the robustness and consistency in the results, we have also employed 2SLS, 3SLS and quantile regression techniques. The results suggest that there is positive association between Zakat and financial inclusion. The paper substantially contributes to the



existing literature on the topic by finding empirical evidence that Zakat could be considered as an important instrument to reduce financial inclusion. Finally, that Islamic finance has the capability to play an important role in financial inclusion. Moreover, other products and instruments of Islamic finance, such as musharakah and mudarabah, and waqf and qard hassan, can be used to have broader impacts on financial exclusion.



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Unlocking the potential of Zakat & other forms of Islamic Financing to achieve SDG's in Indonesia by UNDP & BAZNAS (<http://www.id.undp.org/content/dam/indonesia/2018>)

Appendix

Table 1: Descriptive statistics

Variable	obs	Mean	Std. Dev.	Min	Max
ATM	12	4.296718	2.491343	0.750167	8.770469
BB	12	8.664349	0.74845	7.661877	10.01782
Z	36	74.91487	28.97213	0	118.5772
GDI	34	6.32E+12	2.40E+12	2.66E+12	1.09E+13
POP	34	7.56E+07	2.13E+07	4.45E+07	1.15E+08
LF	26	51.41546	1.260715	49.192	53.715
GCF	34	3.696751	6.50975	-9.1909	18.53185
EDU	24	28.26666	8.529797	17.12933	44.38661

Table 2: Correlation analysis

	ATM	BB	Z	GDI	POP	LF	GCF	EDU
ATM	1							
BB	0.9978	1						
Z	-0.7854	-0.7825	1					
GDI	0.994	0.9887	-0.8132	1				
POP	0.9922	0.9877	-0.8415	0.9973	1			
LF	-0.0917	-0.0911	-0.6268	0.7813	0.7727	1		
GCF	0.0275	0.0336	0.1496	-0.1597	-0.174	0.2427	1	
EDU	0.9619	0.9518	-0.7515	0.9511	0.9433	0.5395	-0.1835	1

Table 3: Impact of Zakat on financial inclusion by using OLS, 2SLS, 3SLS and Quantile Regression

	(1)	(2)	(3)	(3)	(4)	(5)	(6)	(7)	(9)	
	OLS	OLS	Bayesian	Bayesian	OLS	2SLS	2SLS	3SLS	3SLS	QR
	ATM	BB	BB	ATM	BB	BB	ATM	BB	ATM	ATM
Z	0.0383***	0.0312*	0.010822***	0.038263**	0.0108**	0.0108**	0.0383***	0.0108***	0.0383***	0.0381**
	[0.001]	[0.004]			[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]
GDI	-0.00	-0.0000	-4.25E-	-1.88E	-0.0000	-0.0000**	-0.000	-0.00	-0.000	-0.0000



	00 ^{***}	*	13 ^{***}	- 12 ^{**} *	**	*	0 ^{***}	00 ^{***}	0 ^{***}	**
	[0.00 0]	[0.000]			[0.000]	[0.000]	[0.00 0]	[0.00 0]	[0.000]	[0.000]
LP OP	33.2 435 [*] **	19.877 2 [*]	8.5733 25 ^{***}	33.24 351 [*] **	8.5733 **	8.5733 ^{**} *	33.24 35 ^{***}	8.57 33 ^{***}	33.24 35 ^{***}	33.068 1 ^{**}
	[0.38 1]	[2.391]			[0.177]	[0.063]	[0.13 5]	[0.06 3]	[0.135]	[0.699]
LF	0.44 62 ^{***}	0.2974 *	0.1299 9 ^{***}	0.446 233 [*] **	0.1300 **	0.1300 ^{**} *	0.446 2 ^{***}	0.13 00 ^{***}	0.446 2 ^{***}	0.4385 **
	[0.00 6]	[0.026]			[0.003]	[0.001]	[0.00 2]	[0.00 1]	[0.002]	[0.010]
LG CF	- 0.19 00 ^{***}	- 0.1574 **	- 0.0383 7 ^{***}	- 0.190 05 ^{**} *	- 0.0384 **	- 0.0384 ^{**} *	- 0.190 0 ^{***}	- 0.03 84 ^{***}	- 0.190 0 ^{***}	- 0.1876 **
	[0.00 2]	[0.009]			[0.001]	[0.000]	[0.00 1]	[0.00 0]	[0.001]	[0.003]
ED U	0.00 29		- 0.0233 ***	0.002 949 [*] **	- 0.0233 **	- 0.0233 ^{**} *	0.002 9 ^{***}	- 0.02 33 ^{***}	0.002 9 ^{***}	0.0047
	[0.00 1]				[0.001]	[0.000]	[0.00 0]	[0.00 0]	[0.000]	[0.002]
Con stan t	- 619. 4355 ***	- 366.74 20 [*]	- 158.47 1 ^{***}	- 619.4 36 ^{**} *	- 158.47 14 ^{**}	- 158.471 4 ^{***}	- 619.4 355 ^{**} *	- 158. 4714 ***	- 619.4 355 ^{***}	- 615.89 37 ^{**}
	[7.09 0]	[43.58 7]			[3.300]	[1.167]	[2.50 7]	[1.16 7]	[2.507]	[13.01 5]
Obs erva tion s	36	36	36	36	36	36	36	36	36	36
R ²	1.00 0	0.999			1.000	1.000	1.000	1.00 0	1.000	
Adj uste	1.00 0	0.995			1.000	1.000	1.000			

d R^2										
Pseudo R^2										0.99
F-Statistics	0.0012	0.0504			0.0040					
chi2 (P-value)						0.0000	0.0000	0.0000	0.0000	
Acceptance rate			.6194	0.6571						
Efficiency			.6853	0.6214						
sigma2			0.0039456	0.004149						

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Variables description

Commercial bank branches (per 100,000 adults)	BB
Automated teller machines (ATMs) (per 100,000 adults)	ATM
Total Deduction of Zakat at Source (USD Million)	Z
Population ages 15-64, total	POP
Labor force participation rate, total (% of total population ages 15+)	LF
Gross capital formation (annual % growth)	GCF
Gross domestic income (constant LCU)	GDI
School enrollment, secondary (% gross)	EDU