ZAKAT AND INEQUALITY: SOME EVIDENCE FROM PAKISTAN

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Zakat is an important form of religiously-mandated charity under Islam. This paper examines its impact on income inequality in Pakistan. Data from 1987–88 are used to construct two income distributions—one that would have obtained if zakat had not been given, and one that did obtain when such giving took place. Atkinson–Kolm–Sen relative indices of income inequality are computed which show that zakat does reduce measured income inequality in Pakistan. Both intra-province and inter-province components of over-all inequality decline, though the amount of change is small.

> *So give to the kinsman his due, and to the needy, and to the wayfarer.*
> *That is best for those who seek Allah's countenance.*
>
> The Koran

1. INTRODUCTION

Islam is the world's second largest religion, with nearly a billion followers worldwide. Under Islam, individuals have five fundamental duties, called Pillars of the Faith. One of these is a special duty—falling on those most able to bear it—to share *Allah's* bounty with those less fortunate. In early Muslim society, institutions emerged to implement these Koranic injunctions. Most important of these was zakat—an annual tax levied on wealth above some threshold, the proceeds of which were distributed to the needy. Zakat and related forms of religiously-mandated charity survive today, in one form or another, as central elements of economic life in Muslim societies.[1]

To virtually all interpreters zakat is understood to include a levy on "idle" wealth, and 2.5 percent per year is considered something of a benchmark. The traditions of Islam, the *Sunnah*, call for payment of zakat on some forms of "productive wealth," as well. However, there are obvious problems of definition in notions of "idle" and "productive" wealth, and neither the Koran itself nor the Sunnah provide unambiguous guidance to modern Muslims on precisely how their obligation should be reckoned. Nonetheless, all Muslims are aware that they have some such obligation, whether broadly or narrowly conceived, and all recognize that the object of that obligation is to reduce economic inequality and alleviate misery within their community.

This paper presents empirical evidence on the degree to which zakat— and related forms of religiously-mandated charitable giving—achieve their intended objectives in Pakistan, one of the most populous Islamic republics in the world.

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[1] Pryor (1985) has described the outlines of an Islamic economic system in the non-Islamic literature. As-Sadr (1982) provides more detail and compares the Islamic system to alternatives from an Islamic point of view. Kuran (1986) presents a cogent survey and critical analysis of recent literature on Islamic economics.

Detailed income and expenditure data for 1987-88 are used to construct two separate income distributions—one containing the distribution which would have obtained if relevant forms of charity were not given and received, and one containing the distribution of spendable income which actually does obtain under a regime in which such charitable giving takes place. Atkinson–Kolm–Sen (AKS) ethical relative indices of income inequality are computed for Pakistan and each of its four provinces separately, for each of these two income distributions, and are compared over a range of parameter values. Evidence is found that zakat does, on balance, redistribute from those better off to those worse-off, and so achieves some reduction in measured income inequality in Pakistan. Both intra-province and inter-province components of overall inequality decline, though the amount of change is generally small. These conclusions are robust to a wide range of normative values the investigator may adopt.

2. DATA

The *Household Income and Expenditure Survey* (HIES) is the most careful and representative survey of income and expenditure in Pakistan. The 1987-88 survey included 8,384 urban households and 9,761 rural households, for a total of 18,145 households nationally. Though the broad middle of the income spectrum is probably well represented in this survey, both tails may be under-sampled, and this should be borne in mind.

Data on transfers within appropriate Islamic categories are collected in the HIES for all households in the sample. On the expenditure side, the survey reports a household's combined monthly outlay on zakat, usher (zakat on landed wealth), and nazrana (other charitable giving), in both cash and kind. In-kind gifts are attributed a cash value by the survey, and here "zakat given" will refer to the sum of all cash gifts and the cash value of all in-kind gifts in all the mentioned categories. Similarly, on the income side, "zakat received" will refer to the sum of cash and the cash value of all in-kind assistance received in the form of zakat, usher, and nazrana.

This paper follows Havinga *et al.* (1990) and corrects for household size and composition using an equivalence scale proposed by Wasay (1977). The number of single adult equivalents in each household is determined as:

$$(1) \qquad AE = x_1 + 0.8 * x_2 + 0.7 * x_3,$$

where x_1 is the number of earners in the household, x_2 is the number of other adults in the household, and x_3 is the number of children less than ten years old.[2]

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[2]There may be some deficiencies in these estimates. Intra-household gender differences are ignored; there is no "economies of scale" factor included, and Havinga *et al.* (1990) believe a coefficient of 0.7 on the number of children under 10 may be high, considering that the average age of that group in the 1984-85 data they examined was less than five years. Coulter *et al.* (1992) have shown that inequality measurements can be sensitive to such deficiencies. Nonetheless, these figures represent the current state of knowledge on Pakistan, and so are accepted with due caution.

3. ZAKAT IN PAKISTAN

Income distribution in Pakistan is typical of LDCs generally. Nationally, poverty-line income is roughly Rs 242 per month, and 23 percent of the population have incomes below that level.[3] Mean (Rs 414) and median (Rs 332) incomes are low, with almost 80 percent of the population receiving an income no more than twice the poverty-line. At the same time, about 63 percent of the population of adult equivalents give some zakat. Across the provinces the percent giving ranges from a high of 70 percent in the most populous province, Punjab, to a low of 40 percent in the least populous, the North West Frontier Province (NWFP). The high proportion who give something suggests that a great many people throughout the country recognize their obligations under Islam, and take some action upon it. Their giving, however, reaches a much smaller percent of the population. Only about 6 percent of the population of adult equivalents in Pakistan report receiving some zakat. The greatest proportion reached is in Punjab (8 percent), and the

TABLE 1

RECEIVERS AND GIVERS OF ZAKAT

(in Rupees)

	Pakistan	Punjab	Sind	Balunchistan	NWFP
Receivers					
Mean income of receivers	410.3	394.8	529.9	380.1	315.8
Mean amount received	41.9	43.3	40.3	30.1	90.7
Median income of receivers	354.7	338.9	434.4	374.4	435.7
Median amount received	12.5	12.5	10.0	15.3	96.3
Givers					
Mean income of givers	447.2	428.7	500.1	452.0	452.8
Mean size of gift	5.5	5.6	5.6	4.8	4.2
Median income of givers	349.5	339.1	375.0	370.6	358.5
Median size of gift	1.8	1.6	2.0	2.8	2.5
The population					
Mean income	413.7	401.4	455.8	392.8	430.8
Median income	331.8	320.7	355.3	326.9	357.1
Poverty line	241.6	206.1	300.9	183.8	262.5
(% population at or below)	(22.8)	(15.3)	(33.9)	(7.7)	(16.1)

lowest is in the NWFP (1 percent). Table 1 provides some summary information on incomes of those who receive and those who give zakat in Pakistan and its provinces. For reference, mean and median incomes for the entire populations are also included, along with estimates of poverty-line income adapted from Havinga, *et al.* (1990).

Receivers

Nationally, mean income of those who receive zakat is just slightly below that of the population. A similar pattern is found in Punjab and Baluchistan. In the NWFP the difference is somewhat larger; mean income of those receiving

[3]Poverty-line income is the monthly expenditure, at 1987–88 prices, just adequate to acquire a simple diet providing daily caloric intake of 1,500 to 2,000 calories. For a single adult earner (adult equivalent), FAO/WHO recommend a minimum of 2,000 calories per day to adequately sustain life and forestall physical deterioration.

zakat is around 115 rupees lower than mean income of the population in the province. In Sind mean income of those receiving zakat is Rs 75 *higher* than mean income in the province. Note that nationally, and in every province, mean incomes of zakat receivers are Rs 53 to Rs 229 higher than the poverty line. That difference is particularly striking in Sind. There, those who received zakat had mean incomes of Rs 530, while 34 percent of the population had incomes below the poverty line of Rs 301 per month. Both nationally and in each province, the median income of those who receive zakat is higher than the median income in the respective populations. When compared to the poverty line, the median incomes of zakat receivers show quite clearly that over half of those who receive zakat are not among the poorest members of society.

The mean amount of zakat received by those who receive it varies a good deal across the provinces—from a low of Rs 30 per month in Baluchistan, to a high of Rs 91 per month in the NWFP. Mean and median amounts received are very close to each other in the NWFP, while elsewhere in the country the mean amount received is significantly above the median. In Sind, for example, while the mean amount received is Rs 40, the median is only Rs 10, indicating that one-half of those who receive some zakat receive an amount of Rs 10 or less per month.

TABLE 2

MEAN PERCENT OF INCOME RECEIVED IN ZAKAT BY INCOME
CLASS OF RECEIVER

Income Class by Rs 100	Pakistan	Punjab	Sind	Baluchistan	NWFP
0 to 100	0.01	0.01	0.00	0.00	0.00
100 to 200	0.08	0.10	0.04	0.07	0.00
200 to 300	0.17	0.23	0.06	0.12	0.07
300 to 400	0.10	0.14	0.02	0.07	0.09
400 to 500	0.08	0.09	0.05	0.07	0.11
500 to 600	0.04	0.06	0.03	0.01	0.01
600 to 700	0.03	0.03	0.04	0.02	0.01
700 to 800	0.01	0.01	0.01	0.00	0.01
800 to 900	0.01	0.01	0.00	0.03	0.00
900 to 100	0.01	0.00	0.02	0.01	0.00
1,000 and above	0.04	0.07	0.01	0.00	0.00

Table 2 reports the mean percent of income received in the form of zakat payments by those who receive it, in various income ranges, giving a picture of dependence on zakat. Two things stand out there. First, it is quite clear that the "average recipient" of zakat within each of the income classes depends hardly at all on what is received from others in the form of zakat. In none of the income ranges, in any of the provinces, does the mean percent of income received in zakat by those who receive it reach even one quarter of one percent of the recipient's income. This pattern is fairly uniform across the provinces. In general, the very poorest who receive zakat receive virtually none of their income from that source. Across Pakistan it is poor and near-poor recipients in the 200 to 500 rupees income range who depend most on what they receive, however slight that dependence may be. Moreover, as the incomes of recipients rise, there is a broad tendency for the percent of income received in zakat to fall.

Givers

The bottom panel of Table 1 provides some summary information on those who give zakat and on what they tend to give. Across Pakistan, both mean and median income of givers are slightly greater than mean and median income of the respective populations, yet these differences are small. While many people give something, relatively few give very much. Both mean and median amounts given are very low, and there is great regularity in this across the provinces. Nationally, one-half of those who give at all give RS 1.8 or less per month.

Finally, Table 3 reports the mean percent of income given by those who give in various income classes. That table bears careful consideration. The uniformly low proportion of income given in zakat is striking. Nowhere in Pakistan's provinces, in any income range, does the mean for the range even reach one-half of one percent of income. Indeed, in most income ranges, the mean percent of income given does not even approach one-tenth of one percent. Most striking is the "inverted-U shape" to the distribution of this figure across the income ranges. For Pakistan as a whole, the percent of income given by those who give reaches its peak of 0.33 percent for givers in the Rs 200 to 400 income range then drops off steadily and steeply as we consider higher and higher income ranges. This pattern is repeated in all of the provinces as well.

TABLE 3

MEAN PERCENT OF INCOME GIVEN BY INCOME CLASS OF GIVER

Income Class by Rs 200	Pakistan	Punjab	Sind	Baluchistan	NWFP
0 to 200	0.06	0.08	0.02	0.04	0.03
200 to 400	0.33	0.37	0.27	0.25	0.28
400 to 600	0.17	0.21	0.13	0.10	0.07
600 to 800	0.06	0.06	0.06	0.03	0.04
800 to 1,000	0.03	0.03	0.03	0.02	0.00
1,000 to 1,200	0.01	0.01	0.01	0.01	0.00
1,200 to 1,400	0.01	0.01	0.01	0.00	0.00
1,400 to 1,600	0.01	0.01	0.01	0.00	0.00
1,600 to 1,800	0.00	0.01	0.00	0.00	0.00
1,800 to 2,000	0.00	0.00	0.00	0.00	0.00
2,000 and above	0.01	0.01	0.02	0.01	0.00

To the extent that income is correlated with wealth, Table 3 suggests the same "inverted-U shape" in the distribution of the percent of wealth given in zakat across wealth classes. If the 87 percent of the population with incomes lower than Rs 600 represent the 87 percent least wealthy individuals, then the wealthiest 13 percent of the population contribute to reducing inequality at a rate substantially lower than the least wealthy 87 percent of the populations do. Clearly, those on whom the Islamic injunction to give is greatest—those with higher incomes— seem to pull much less of their weight in the overall effort than those much poorer than themselves.

3. INEQUALITY

These profiles paint an ambiguous picture of how zakat as a social institution works in practice. Nationally, the mean income of those who give is only a bit

higher than that of those who receive, yet that relationship is reversed in one populous province, Sind, where the mean income of givers is actually *less* than that of receivers. Moreover, for the country as a whole, the median income of receivers is greater than that of givers, and this same pattern obtains in each province separately, except in Punjab where the two are essentially identical. Both mean and median amounts given by those who give are considerably less than the mean and median amounts received by those who receive, suggesting that individuals who receive zakat tend to receive it from multiple sources. When we consider these patterns, together with the facts that absolute amounts given and received both increase with income, while rates of giving and receiving as a percent of income both fall steeply as income rises, it is not at all clear what the overall redistributive impact of this system will be.

To gauge that overall effect, ethical relative indices of income inequality are computed and compared under two alternative scenarios: first, on an income distribution that *would have* obtained, had there been no Islamic institution of zakat in place—i.e. if no individual felt any special obligation to give out of their income to others as required of them by Islam—and, second, the distribution of "disposable" income that actually did obtain after those individuals who responded to it acted upon their Islamic obligations. The former income distribution will be referred to as the distribution "without zakat," and the latter the distribution "with zakat."

An important class of ethical indices of inequality has developed out of work by Atkinson (1970), Kolm (1969), and Sen (1973). AKS indices depend upon the "equally distributed equivalent income," defined by reference to some explicit social evaluation function over incomes reflecting the investigator's distributional values. For a flexible, CES social evaluation function, the AKS index over populations of size N is[4]

$$(2) \qquad I_r(y) = \begin{cases} 1 - \left[\dfrac{1}{N} \sum_{i=1}^{N} \left(\dfrac{y_i}{\mu(y)} \right)^r \right]^{1/r}, & r \neq 0, r \leq 1; \\ 1 - \prod_{i=1}^{N} \left(\dfrac{y_i}{\mu(y)} \right)^{1/N}, & r = 0. \end{cases}$$

This is a *relative* index, depending only on income shares. For fixed population size and constant mean income, it is *normatively* significant, so that $I(y^1) < I(y^2)$ if and only if the underlying social evaluation function ranks the distribution y^1 socially better than y^2. It is also *cardinally* significant, measuring the percentage of total income that can be saved by moving from the existing distribution to one

[4]Any social evaluation function of the form

$$W_r(y) = \begin{cases} W^* \left(\left[\dfrac{1}{N} \sum_{i=1}^{N} y_i^r \right]^{1/r} \right), & r \neq 0, r \leq 1; \\ W^* \left(\prod_{i=1}^{N} y_i^{1/N} \right), & r = 0, \end{cases}$$

for $W^* : \mathbb{R} \to \mathbb{R}$ monotonic increasing, yields the AKS index (2).

of complete equality with social indifference. For $r = 1$, this index reflects utilitarian values; as $r \to -\infty$, it converges toward Rawlsian values. In general, as r decreases away from unity, a greater bias in favor of *equality* in the distribution of income is incorporated into $I_r(y)$.

This index may also be *decomposed*, in order to isolate both inter- and intra-group components of overall inequality within arbitrary (exhaustive) partitions of the population. Blackorby, Donaldson and Auersperg (1981) (hereafter, BDA) measure intra-group inequality by the percent of income saved in moving (with social indifference) from the initial distribution to one with no intra-group inequality. Inter-group inequality is measured by the percent of income saved in moving (with social indifference) from no intra-group inequality to no inequality at all.[5]

AKS indices (2) were computed for Pakistan and each of its provinces. In every case these were computed separately for two different income distributions obtained from the actual distribution of income after transforming that data using (1). To obtain the income distribution *without zakat*, adult equivalents who reported receiving some zakat had that deducted from their income. This then represents the distribution of income per adult equivalent that *would have* obtained if those who gave had no obligation to give and if therefore those who received did not receive any zakat-related charity. To obtain the distribution *with zakat*, adult equivalents who reported giving some zakat on the expenditure side of the survey had the total amount of that giving deducted from their reported income. The resulting distribution represents the actual distribution of "disposable income," available for all other uses, after the obligation to pay zakat had been satisfied.

Results

Computed indices are presented in Table 4 for values of the ethical parameter, r, of 0.8, 0.5, 0, -0.33, -1, -3, and $-\infty$. To help interpret those numbers, note that for the underlying CES social evaluation function the elasticity of social substitution between any two individuals is constant and given by $\sigma = 1/(1-r)$. This can be thought of as the percentage decline in relative income between any two individuals which is required in order to increase by 1 percent the rate at which we are prepared, with social indifference, to transfer income from the richer to the poorer individual. These r-values therefore correspond to σ-values of 5, 2, 1, 0.75, 0.5, and 0.25 respectively. When, for example, $r = 0.5$, we have $\sigma = 2$, so a 200 percent decline in relative incomes is required to increase the rate of social substitution in favor of the relatively poorer individual by 1 percent. Naqvi (1981) has argued that a Rawlsian *maximin* criterion ($r \to -\infty$) best formalizes the normative values of Islam on matters of distribution. Others have taken less extreme views, but in general it is probably fair to argue that lower values of r correspond to increasingly "strict" Islamic ideals incorporated into the underlying criterion of social welfare.

[5]This BDA decomposition—while consistent in aggregation—does not lead to a simple linear aggregation rule. Instead, overall $I(y)$, intra-group $I_A(y)$, and inter-group $I_R(y)$, indices are related non-linearly as follows:

$$I(y) = I_A(y) + I_R(y) - I_A(y)I_R(y).$$

TABLE 4
AKS INDICES FOR PAKISTAN AND ITS PROVINCES, 1987-88
WITH AND WITHOUT ZAKAT

	Ethical Parameter, r (σ)						
	0.8 (55)	0.5 (2)	0 (1)	−0.33 (0.75)	−1 (0.5)	−3 (0.25)	−∞ (**)
Pakistan							
Without zakat	0.04085	0.09070	0.15579	0.19133	0.25357	0.46682	0.95925
With zakat	0.04053	0.08994	0.15421	0.18903	0.24867	0.40378	0.95904
Change (+/−)	(−)	(−)	(−)	(−)	(−)	(−)	
Punjab							
Without zakat	0.04084	0.09178	0.15914	0.19592	0.25987	0.47518	0.95790
With zakat	0.04065	0.09124	0.15776	0.19375	0.25489	0.41376	0.95773
Change (+/−)	(−)	(−)	(−)	(−)	(−)	(−)	(−)
Sind							
Without zakat	0.04728	0.10033	0.16406	0.19706	0.25211	0.37615	0.84484
With zakat	0.04672	0.09919	0.16235	0.19509	0.24963	0.37141	0.84419
Change (+/−)	(−)	−)	(−)	(−)	(−)	(−)	(−)
Baluchistan							
Without zakat	0.03041	0.07101	0.12903	0.16288	0.22674	0.49732	0.94056
With zakat	0.03007	0.07016	0.12709	0.15979	0.21867	0.38596	0.88803
Change (+/−)	(−)	(−)	(−)	(−)	(−)	(−)	(−)
NWFP							
Without zakat	0.02868	0.06506	0.11410	0.14136	0.18935	0.31221	0.82753
With zakat	0.02854	0.06468	0.11329	0.14018	0.18703	0.29758	0.74201
Change (+/−)	(−)	(−)	(−)	(−)	(−)	(−)	(−)

The AKS indices in Table 4 behave as expected. Inequality is generally very low for large values of r, increasing steadily as r decreases and the underlying welfare criterion becomes more and more sensitive to the circumstances of the less well-off members of society.

Consider first the income distribution without zakat. When r is close to unity, reflecting a more "utilitarian" criterion, the percent of total income that could be saved by eliminating inequality altogether with no loss in social welfare is quite low, hovering between 3 percent and 5 percent for the country as a whole and each of its provinces separately. By the time r has declined to −3.0, reflecting a more "Rawlsian" criterion, that percent of income is both larger and less uniform across Pakistan and its provinces—ranging from a low of 31 percent in the NWFP to a high near 50 percent in Baluchistan. Under a strict Rawlsian criterion ($r \rightarrow -\infty$), those percentages rise even higher.

Consider next the distribution with zakat. Overall, the indices behave similarly with respect to changes in the ethical parameter. Index levels for the various parameter values suggest similar potential savings from complete elimination of inequality with no loss in social welfare, at least until r declines to −3 and lower, at which point larger differences between index values with and without zakat begin to appear nationally and in several provinces.

One rather clear conclusion emerges from the results in Table 4. For every value of the ethical parameter and in every province of Pakistan, index values for the distribution with zakat are lower than the corresponding index value for the

distribution without zakat. This suggests quite strongly that the Islamic practice of zakat does indeed tend to redistribute income from those better-off to those worse-off throughout Pakistan. Since populations in the two distributions are the same, and mean incomes are the same, we can conclude that the zakat system does lead to a reduction in income inequality and to an unambiguous increase in social welfare in every province of Pakistan. Of course, since the underlying criterion of social welfare is ordinal, not cardinal, we can attribute no normative significance to the size of the change in $I(y)$ reported there.

There is, however, some *cardinal* significance to the size of differences in index values between distributions with and without zakat. That difference, for each value of r, measures the reduction in the percent of income which could be saved by eliminating inequality with no loss in social welfare that is achieved as a result of the operation of the zakat system. Across Pakistan that reduction is very small at high levels of the ethical parameter, reflecting the relative social indifference to income inequality (and hence to its alleviation) in the underlying social evaluation function. As r decreases, that underlying social evaluation function becomes relatively more sensitive to the circumstances of society's worse-off members, and some interesting differences among the provinces begin to become evident.

Nationally, the size of the change in the index value remains fairly small as r decreases, though it does reach a maximum of 0.063 when $r = -3$. This (and most other) national patterns are dominated by the situation in the largest province, Punjab, where these differences remain very small until $r = -3$ and become very small again when $r \to -\infty$. This is consistent with a view that the pattern of giving and receiving in that province does not result in a substantial redistribution of income in favor of the very least well-off in the province. Only when the index is very sensitive to improvements in the circumstances of the very least well-off (at $r = -3$), and so would register *any* attention to that group with a very high weight, do we see much of a discernible movement in the index at all. Similarly in Sind, the change in the index of inequality remains remarkably small even as $r \to -\infty$. This suggests that habits of giving in Sind are barely redistributive at all and that little of the giving that is done ever reaches the neediest in the province.

Pakistan's two small provinces, Baluchistan and the NWFP, present a somewhat different picture. In both, relatively large changes in the index value begin to appear once r reaches -1, and those differences increase and persists as r decreases further. This suggests not only that zakat leads to a somewhat larger reduction in inequality in those two provinces than in the other two but also that what giving is done there has a relatively greater impact on the circumstances of the very worst-off within those provinces.

As a final perspective, we consider the separate impacts of zakat on inter-province and intra-province income inequality in Pakistan. Table 5 reports BDA decompositions of the AKS indices into intra- and inter-province components for various values of r. Comparing the first column of Table 5 with the first row of Table 4, it is quite clear that intra-province inequality in Pakistan is by far the largest factor in determining overall income inequality in the country. This, of course, is reflected most vividly in Table 5 itself by comparing the index values in the first two columns with those in the last two.

TABLE 5
INTER- AND INTRA-PROVINCE INEQUALITY
PAKISTAN, 1987-88

r	Intra-province Inequality			Inter-province Inequality		
	Without	With	Change	Without	With	Change
0.80	0.04056	0.04025	(−)	0.00030	0.00029	(−)
0.50	0.09004	0.08931	(−)	0.00072	0.00069	(−)
0.00	0.15448	0.15296	(−)	0.00155	0.00147	(−)
−0.33	0.18953	0.18732	(−)	0.00222	0.00210	(−)
−1.00	0.25055	0.24591	(−)	0.00403	0.00366	(−)
−3.00	0.44637	0.39457	(−)	0.03694	0.01522	(−)
−∞	0.92177	0.91101	(−)	0.47906	0.53971	(+)

The results in Table 5 reinforce the earlier findings. Not only does zakat achieve reductions in overall inequality, it also reduces both intra-province *and* inter-province components[6]. Since it seems reasonable to suppose that most giving is done close to home, we should expect zakat to have its greatest impact on intra-province inequality. That it also reduces inter-province inequality is more provocative. At least two factors might help account for that impact. The first is Pakistan's official "zakat tax." While it is still largely a voluntary matter whether one pays this tax or not, the government's Eddie Foundation decides where the money will be spent. These results may reveal some tendency for that organization to channel giving from richer to poorer provinces. Second, large numbers of young men and women from the poorer provinces (Baluchistan and NWFP) migrate at least temporarily to the richer ones (Sind and Punjab) for employment. Many maintain close cultural and family ties to their home villages, and so might do much of their giving there. This, too, would tend to reduce inter-province inequality. These can only be conjectures, however. The HIES data do not allow official and unofficial sources of zakat to be distinguished, nor givers and receivers to be matched.

4. CONCLUSION

The special obligation under Islam to give charity to those less well-off is clear and well-understood by Muslims everywhere. Indeed, payment of the wealth-duty, zakat, is one of the five Pillars of the Faith. This paper has examined how zakat and related forms of charitable giving encouraged by Islam affect the distribution of income in Pakistan. Several broad conclusions are suggested by the data.

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[6]The one exception to these observations—the *increase* in inter-province inequality in moving from a regime without zakat to one with zakat that is reported as $r \to -\infty$—may well be anomalous. That is directly attributable to the fact that the adult equivalent with the lowest reported income in the survey reported giving some zakat, thereby reducing the lowest income in the sample when we move from the distribution without zakat to the distribution with zakat. Such regressive transfers no doubt do take place and should appropriately lead to an increase in the index when they do. However, because there may be reason to doubt the accuracy of the HIES in the very "tails" of the income distribution, measured movements in the index value as $r \to -\infty$—placing as it does *all* welfare weight on the situation of the very poorest individual in the sample—should be interpreted skeptically.

First, a high proportion of the population in Pakistan responds to its religious obligation in regard to charity and takes some action upon it. Across the income spectrum, the proportion of the population in each income class giving religiously-motivated charity is high and increases with the level of income considered. However, there is a marked and widespread tendency for the degree of sacrifice individuals make towards the overall objective of reducing inequality to decline rather sharply as individuals in higher and higher income brackets are considered. Second, the great bulk of both giving and receiving throughout Pakistan—each measured in various ways—appears to be done by the poor and the near-poor among themselves.

Overall, the system of religiously-motivated charitable giving in Pakistan appears to reduce both intra- and inter-province income inequality and so fulfills some part of its intended social function. This conclusion seems warranted in each of Pakistan's four provinces separately, and is robust across a wide range of ethical values one might adopt. At the same time, however, the impact of this system of giving seems small. In Pakistan's two largest provinces, there is little clear evidence that giving efficiently reaches those most in need, though they are the principal intended beneficiaries of the system as it is conceived under Islam.

Several unexplored questions remain, and these may be fruitful avenues for future research. For one, just how "progressive" is the actual system of voluntary zakat in Pakistan, relative to some appropriate standard of comparison? Blackorby and Donaldson (1984) propose separate measures of tax, benefit, and tax/benefit-system progressivity—all with the same ethical basis adopted in the present paper. It would be natural to appropriately adapt those methods to more carefully explore the separate and combined effects of zakat-giving, zakat-receiving, and overall effective progressivity in the zakat system as a whole. In addition, one might ask how voluntary systems such as that in Pakistan compare with compulsory, state-run systems currently in place in other Muslim countries. There is some evidence (anecdotal and otherwise) that such systems differ greatly—ranging from some that are very progressive to some that may actually be regressive. This evidence needs to be carefully examined.

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