CHAPTER 1

DETERMINANTS AND TRENDS OF INTERNAL MIGRATION IN PAKISTAN

Rashid Memon

1. INTRODUCTION

Migration into areas that now constitute Pakistan is a historic phenomenon, and since national borders have only been recently drawn, these movements initially constituted part of the internal migration stream within the Indian sub continent.

Not withstanding the incessant nature of the process, the history of migration is nevertheless marked by certain periods of mass migration, which have significantly influenced the magnitude and nature of future streams.

In the late nineteenth century and earlier decades of the twentieth century for example, a large migration stream generated as a response to the establishment of agricultural colonies and construction of canal networks for irrigation in the region[1]. The British settled many 'cultivating' castes originally belonging to what is now eastern Punjab in Faisalabad, and later in Bahawalnagar and some parts of Bahawalpur. Similarly, people from Punjab were settled in areas of Sindh, such as Sukkur and later Sanghar, following the construction of the Sukkur barrage. Migration of similar nature also took place in the post independence era, when after the construction of the Ghulam Muhammad Barrage, migrants from Punjab settled in the district of Badin.

The British were also instrumental in the establishment of cantonments, which attracted migrants and eventually grew into large urban settlements. Bahawalpur, Karachi and Peshawar are some examples. Interestingly, while migration into Peshawar and other cantonments in the NWFP was mainly from the same province Karachi and Bahawalpur differed on this count and experienced migration from Punjab[2].

This said, the pace of urbanization in the first half of the twentieth century though secularly increasing was nevertheless very slow. 1947 however proved a watershed and it is estimated that net inflows into Pakistan, mainly into Punjab and Sindh, were as high as two million. Flows of similar magnitude moved into India as well, but considering the much larger population of India, these did not figure as significantly as they did in Pakistan. Flows following a similar pattern but at a much smaller scale kept trickling in until the early 1950s.

---

[1] See Ali, Imran (2003)

[2] Note that Bahawalpur was a princely state then and migration from Punjab was tantamount to inter provincial migration.

1

The second migration landmark was the 1971 separation of East and West Pakistan, when former citizens became irregular migrants and the third wave of cross border migration occurred with the Afghan crises in 1978. Approximately three million refugees poured into parts of NWFP, Balochistan and Karachi[3]. These migratory waves were not one-off events, and continued not only to attract irregular movements from the east and the west, but as cross border migrants moved within the country before permanently settling down, they also constituted part of internal migration stream.

Meanwhile, almost immediately after 1947, rapid population growth was accompanied by striking shifts in the location of the population and migration from rural into the urban areas accelerated[4].

Considering the magnitude of flows involved, estimates of which ranged from 9 to 20 percent of the total population, a rich literature developed that analyzed census and small-scale survey data. With the exception of the Population, Labour Force and Migration survey (1979) these data source were usually general surveys and restricted the nature of the analysis that could be performed using this data. There is ample anecdotal evidence for example, that rural to rural migration due to landlessness, displacement due to large projects and migration from arid areas was also prevalent. Unfortunately however, there is not much informed research on these issues to warrant mention.

The usual focus of research has been on determining the effect of a class of variables on the probability of migration. This strand of work has particularly answered important questions on the effect of human capital on the probability of migration[5]. A second strand of research has highlighted the impact of remittances on the welfare of migrant sending households[6]. There was also an effort in the early 1980s to understand the pattern of migration in terms of rural and urban status of origin and destination as well as inter and intra provincial movement[7].

The last in particular is now out-dated, and this paper is largely an endeavor to fill this gap and look into the changing patterns and determinants of internal migration. Besides refreshing the debate on issues raised earlier, the study departs from earlier work by informing discourse on three aspects of migration analysis. Firstly it provides a comparative evaluation of all three recent data sets containing information on migration i.e. the Pakistan Integrated Household Survey, (1998), the Labour Force Survey (1998) and the Pakistan Population Census (1998). The analysis of the PIHS in particular allows commentary on intra district migration besides the usual discourse on inter-district migration. Secondly, by looking at district level census data, the study brings to light the emerging migratory flows from certain districts of southern Punjab. Thirdly, the study formalizes the debate on the role of wage differentials in rural to urban migration viz other factors by explicitly accounting for expected wage differentials in a probabilistic model.

The paper proceeds as follows. Section 2 deals with a brief discussion on the merits and limitations of the different data sources followed by a detailed description of

---

[3] See Gazdar (2004)
[4] See Seiler and Karim (1986)
[5] See Khan and Shahnaz (2000), and Ahmed and Sirageldin (1994)
[6] See Irfan (1986)
[7] See Irfan, Demery and Arif (1983)

2

the data. Section 3 provides a formal econometric treatment to the discussion set out in section 2. Concluding remarks follow in section 4.

2. QUANTITATIVE OVERVIEW OF INTERNAL MIGRATION: CURRENT PATTERNS AND TRENDS

This section constitutes the main body of this paper. By using statistical analysis on data from three sources, it identifies the major patterns of migration in terms of regional and provincial movements, characteristics of migrating people and time trends. The section constitutes four sub-sections. The first looks at the different data sources used, their advantages and disadvantages. The second section looks at migrants in general, the third focuses on economic migrants, and the fourth looks at migration at the household level.

2.1. Data Sources

Three different sources of data were used for the proceeding analysis: The Pakistan Integrated Household Survey (PIHS) 1998-99, the Labour Force Survey (LFS) 1997-98 and the Pakistan Census 1998.[8] The three data sets can be compared on the basis of four parameters i.e. (i) coverage, (ii) definition of migration, (iii) the type of regional (rural/urban) movements they contain information on, and (iv) demographic or economic indicators on which data is available. Since neither data set was collected to study migration in particular, all data sets have their own limitations and need to be used in conjunction.

It merits mention that all data sets are at least five years old, and it is possible that some structural determinants of migration have changed in the last few years. This limitation was imposed on the study by the fact that the PIHS 2001-02 does not contain information on migration, whereas the PIHS 1998-99 does. The LFS 1999-98 was however used to allow comparison with the PIHS 1998-99 and the Census 1998.

PIHS 1998-99: The Pakistan Integrated Household survey is based on a sample of 16,305 households that constitute 115,171 individual household members. A migrant is defined as a person who has not been living in the current city/town/village of residence since birth. A person who has moved from one village to another within the same district is therefore also classified as a migrant. The place of previous residence is identified only by the urban-rural classification and not by district, province or any other geographical location. The PIHS is therefore useful for the analysis of migration by rural-urban-origin.

Perhaps more importantly, the PIHS contains data on asset holdings and household expenditure that is not available in any other data set. Since all these characteristics can be correlated with migration status, the PIHS can allow a much more nuanced analysis of the migration process. The ability to link migration with land ownership is a particularly important relationship the PIHS can allow one to study. A major drawback

---

[8] Henceforth all data sets will be referred to as pertaining to 1998.

of the data set lies in that the province of origin is not specified for migrants and inter and intra provincial migration cannot be studied.

This dataset is representative at both urban and rural level of disaggregation, and makes use of a two-stage stratified sampling strategy. At the first sampling stage, a number of Primary Sampling Units (PSUs) were selected from different strata. 12 households were then randomly selected from each urban PSU, and 16 households from each rural PSU. Use of this particular sampling procedure means that households residing in different parts of the country have been selected for the PIHS survey with differing probabilities of selection. In order to derive representative statistics for each of the provinces, as well as for the country as a whole, raising factors (i.e. sampling weights) need to be applied to the data. These weights take into account the sampling strategy adopted in the survey, and result in data for different households being weighted by a factor that is inversely proportional to their probability of selection in the survey sample. Although there is much controversy about the use of weights, this study follows Deaton's (1997) argument, and all reported statistics and regressions are weighed.

LFS 1997-98: The sample size of the Labour Force Survey is comparable to the PIHS and it enumerates approximately 18,000 households and 113,000 individuals. The LFS defines a migrant as one who has moved from one district to another. Any individual not living in a district since birth is a migrant. Intra district movements are however ignored. This said, the LFS allows for mapping intra and inter provincial movements, and that constitutes its advantage over the PIHS.

A drawback of the LFS is that information on household assets and expenditures is unavailable. Since assets in particular are, a priori important determinants of the migration decision, the PIHS needed to be used along with the LFS.

The difference in the sampling strategy of the LFS lies in that not only is the data set representative at the national and regional level, it is also representative for large cities such as Karachi, Lahore, Gujranwala etc. Like the PIHS, the LFS also makes use of population weights to provide national level representation.

Pakistan Population Census 1998: The Pakistan Census shares its definition of migration with the LFS, but provides information on the entire population rather than on a randomly drawn sample. The Census also provides data on inter and intra provincial migration and rural-urban migration. The latter is however limited to the extent that whereas the destination region is known, the source region is unknown i.e. one may study migration 'into' rural or urban areas, but not 'from' rural or urban areas.

A major drawback of the Census is that only aggregated data at the level of an administrative unit (District) are available. This implies that one cannot directly link different characteristics of the basic unit (individual or household), and cross-tabulations are limited to those provided by the Census reports.

4

2.2. The Migrant Population

2.2.1. Migration at a Glance

This section presents some summary statistics from all three data sources to provide an overview of the entire migrant population. It also provides an opportunity to discuss some caveats that merit reckoning at the outset.

The first and foremost difference across the data sets is the reported proportion of migrants. As shown in Table 1, the PIHS reports the highest proportion of migrants, a finding that can be explained by the fact that the PIHS also takes into account intra district migration whereas the other two data sets do not. The difference between the Census and the LFS however cannot be explained by this reasoning. To some extent, the sampling strategy used by the LFS[9] may be responsible. As explained earlier, the LFS considers major cities of the country as self-representative units, and the sample from these cities is selected accordingly. It could be expected that these major cities experienced a high proportion of in-migration and account for the difference between the Census and the LFS. Population weights would be expected to smoothen out such differences, but apparently they do not. On a similar note, this concentration on urban areas would have led to an overestimation of the proportion of migrants in urban areas, viz the census. This too does not appear to be forthcoming, and the proportion of urban migrants is actually greater in the census.

Table 1
Population Description

Variable	PIHS	LFS	Census
Number of Migrants	15,645	9,976	10,829,264
Migrants as Percentage of Population	21.5%	13.5%	8.2%
Rural(R)-Urban (U) Distribution of Population	69.9%(R) 30.1%(U)	65.2%(R) 34.8%(U)	67.5%(R) 32.5%(U)
Rural(R)-Urban (U) Distribution of Migrants	55.6%(R) 44.4%(U)	40.9%(R) 59.1%(U)	36.2 %(R) 63.8%(U)

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

More conspicuous however is the differential in the rural-urban distribution of migrants between the PIHS and the LFS. Since this differential is too large to be caused by any difference in sampling strategies, it is indeed a finding that the incorporation of intra district migrants does not only increase the extent of migration but also tilts the rural-urban distribution of migration streams. One would a priori expect intra district movement to be more prevalent in rural areas, and perhaps associated with marital movements.

---

[9] Note also that Khan and Shahnaz (2000) who use the LFS 1996-97, put the incidence of migration at 14%

Thirdly, Table 2 shows that an important category in the reasons for migration overlooked by both the LFS and the census is migration due to independence. This implies that people who migrated due to independence have been absorbed in either the 'others' category or some other category suggesting that migration is associated with multiple reasons. The proportion of migrants the Census reports as moving with family or marriage is much larger, indicating that at least some of the 'independence' migrants might have been absorbed into these two categories.

Table 2
Reported Reasons for Migration

	PIHS	LFS	Census
	Percentage of Migrants		
Reasons for Migration			
Job Transfer	2.8	5.5	12.1
Finding a job	12.5	8.9	N.A
Business	2.8	4.4	8.8
Education	1.1	0.5	1.2
Health	0.3	0.2	0.01
Marriage	41.2	26.1	17.0
With family	22.3	23.7	42.8
Returned home	3.1	9.3	1.1
Independence (1947)	8.4	N.A	N.A
Other	5.7	21.4	16.9
Proportion of Economic Migrants in Migrant sub- sample	18.1	18.8	20.9
Percentage of Economic Migrants in Full sample	4.7	1.7	1.7

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

Finally, an interesting feature of the PIHS and the LFS is that both these data sets allow one to look at migration at the household level. A migrant household can then be defined either as one where the household head is a migrant, or as one where at least one member of the household is a migrant. Table 3 presents data for both definitions. The percentage of households at least one migrant is much higher than households headed by migrants, in both data sets. This implies that a typical household head usually has a migrant spouse. The percentage of migrant households is an interesting indicator of the extent of migration in that it hints at the importance of social institutions in enhancing human mobility, and also at the inter-spatial integration of the population.

Table 3
Migrant Households

	PIHS	LFS
Percentage of Total Households with a migrant household head	26.2	17.6
Percentage of Total Households with at least one migrant	46.5	25.5

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

2.2.2. Migration and Age

Age has been considered an important 'cost' variable in the literature on labour migration[10]. It is argued that the probability of finding a job, and the ability to absorb new skills is decreasing in age. Furthermore, the gains from migration would be spread over fewer years for older workers. It would therefore profit younger people more, to migrate in search of work. The function relating age and migration however cannot be expected to be linear. Rather, migrants would be concentrated in an age bracket where society deems workers make their economic decisions.

The migratory process is however not limited to labour or economic migrants and people are found to be moving due to marital, family, environmental displacement, conflict and other reasons as well. Those migrating due to marriage would be expected to follow a similar age pattern as economic migrants since marital and economic decisions are taken at approximately similar ages. Other migrants however may not conform to this age profile, and would imply an age structure that is more in line with the non-migrant (and more representative) population.

Table 4 presents the average age of the migrants and non-migrants, rounded off to the nearest year, from the PIHS and the LFS[11]. It is interesting to note that the average age of migrants in general is much higher than non-migrants. This pattern is borne out by both data sets, and the differences in exact magnitudes are also minimal. Prima facie, this seems to suggest that family migration or other types of migration that do not necessarily follow the relationship expounded above dominate internal migration flows. Closer scrutiny however reveals that this age bias does not reflect a linear and increasing relationship between age and migration, but rather the fact that migration is an ongoing process and that migrant *flows*, however large, represent only a minor incremental to the migrant stock. For example, if sixty percent of migrants actually moved more than ten years ago and forty percent moved within the last year, the average age of migrants *as a group* would be much higher than the average age of people who have just moved.

---

[10] See for example Mincer (1979), Todaro (1969)
[11] Average age cannot be computed from the Census, because individual level data is not available.

7

<div align="center">Table 4</div>
<div align="center">Average Age of Migrants and Non-Migrants by Gender</div>

	PIHS	LFS
Mean age of Migrant Men	39	41
Mean age of Non-Migrant Men	29	29
Mean age of Migrant Women	36	37
Mean age of Non-Migrant Women	28	28

Source: Pakistan Integrated Household Survey 1998, and Labour Force Survey 1998. Author's Calculations

Secondly and perhaps most importantly, migrants are defined as those who actually make the geographic move while their progeny, born in the migration destination are classified as non-migrants. If one assumes, for explanations sake, that migration occurs in the 15-29 age bracket, which would be the time when one makes marital/economic decisions, note that those between 10 and 14 years of age would be present in the non-migrant population, but not in the migrant population, as shown in Table 5. This, in effect, truncates the distribution of migrants' age from below, thus raising the mean age. Practically, this cut off would be higher than 15, thus further skewing the age distribution.

<div align="center">Table 5</div>
<div align="center">Age Distributions of Migrants and Non-Migrants</div>

Age Group (Completed years)	PIHS		LFS		Census	
	Percentage of Population					
	Non-migrants	Migrants	Non-migrants	Migrants	Non-migrants	Migrants
00-09	-	-	-	-	31.3	8.7
10-14	23.1	6.1	17.1	5.7	14.5	6.5
15-29	39.7	30.0	40.0	27.4	29.3	27.6
30-39	13.8	20.0	16.3	18.1	10.4	18.9
40+	23.4	44.0	26.6	48.8	14.5	38.3
Total	100	100	100	100	100	100

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

Finally, the theoretical relation between age and migration pertains to migratory flows rather than stocks. Note in Table 6 column 1 that the majority of migrants changed residence prior to 1988, ten years before the surveys. Strictly speaking therefore, one should only be looking at the people who have migrated recently. Unfortunately, the number of observations in the LFS and the PIHS are too small to allow analysis at such disaggregated levels.

However, the census data can be modified to study this phenomenon, and Table 6 attempts to do this. Since this methodology is consistently used in other parts of the paper, it is merits description upfront.

Census data differentiates between migrants with respect to the time period they moved in. Migrants can have moved in 1997-98, between 1994-97 or 1989-93; the rest of the migrants are lumped into one category "those who migrated prior to 1989[12]". This latter category can be thought of as representing the stock of migrants in 1989, and the other categories representing flows within respective time brackets. These flows can be further converted into annual flows by dividing periodic flows by the number of years in the time period. Percentage change is then calculated by expressing the increase in the number of migrants in the ten years as a proportion of the migrant stock in 1988. This methodology does impose the restriction that annual flows are stable within a time bracket i.e. the flow in 1995-96 is assumed to be the same as that in 1996-97; this may or may not be true. Data limitations preclude any further treatment of the data.

Note that additions to all age groups in the stock of migrants are fairly high, but the highest is experienced in the case of 15-29 years age bracket. Since this is the age when individuals would be making both labour and marital decisions, this finding conforms to theory explicated earlier.

Two caveats are however in order. Firstly the survival rates of at least a group of those in the 40+ age bracket can be expected to be much lower than the survival rates of the younger populations. It is possible then that the flows of these people were higher in each period but they had passed away by the time of enumeration. This could imply that the share of this group is higher than that presented above. Note however, that the contribution of the 40+ group is decreasing, while survival rates would be low for a small proportion of these, perhaps the 60+. So the conclusion that migrant flows are composed mainly of younger people would remain.

Table 6
Flows over the Period 1989-1998 by Age Category

	Initial Migrant stock in 1988	Annual Flow in 1989-93	Annual Flow in 1994-97	Annual Flow in 1997-98	Final stock in 1998	Change (1988-98)	% Change (1988-98)
All ages	6,798,955	258,974	473,555	841,220	10,829,264	4,030,309	59.3
00-09	116,065	29,658	93,170	227,225	864,258	748,193	18.6
10-14	222,223	32,002	48,954	77,954	656,003	433,780	10.7
15-29	1,374,100	98,141	183,762	305,609	2,905,464	1,531,364	37.9
30-39	1,238,710	47,671	76,751	112,106	1,896,201	657,491	16.3
40+	3,847,857	51,502	70,918	118,326	4,507,365	659,508	16.4

Source: Pakistan Census Report 1998. Author's Calculations

---

[12] Those who migrated prior to 1989 constitute the stock of migrants in 1988 as shown in Table 2.6.

The second caveat is that flow in 1997-98 needs to be looked at carefully. Note that the data is essentially a snap shot of 1998. To actually make out trends from a snap shot by looking at annual flows as calculated above one must firstly assume that there exists some probability of migrating less than one, secondly that it is uniformly distributed over the entire population, and thirdly that migration is a one off event. Flows as described above would then reflect underlying trends. If however migration were not a one-off event, this would imply a group of people migrating cyclically and a non-uniform distribution of the probability of migration. These 'flows' then would not reflect an underlying trend and one would expect a large number of migrants to have been recorded in the most recent time period. These migrants would still be found in the most recent time period in a survey carried out in say 2005 exactly because of having migrated more than once.. This said, our earlier conclusion is not affected even if flows in 1997-98 are removed, since the trend of younger people contributing more to flows is present in previous periods also.

Finally, another issue that deserves attention is that migrants from other age brackets are also being added to the stock. This reflects the fact that while a significant proportion of migrants are marital and economic migrants, family movements are also very much present.

2.2.3. Migration and Educational Attainment

Education may affect not only the decision to migrate, but also the destination, through two channels, firstly through increasing expected earnings and secondly through increasing the probability of finding a job. The standard literature on migration assumes education as reducing the costs of migration and proposes a straightforward link between years of education and the propensity to migrate.

Almost half the population of Pakistanis however has not received any formal education. And given the evidence that migrant workers often join the large informal sector in urban areas[13] rather than the high end of the labour market, simple literacy[14] may apriori, also be a good indicator for higher expected earnings. Literacy here is defined as the ability to read a newspaper and write a simple letter in any language.

Migrants and non-migrants differ in terms of literacy irrespective of which data set is used (Table 7). It is interesting to note that while all data sets give similar literacy levels for aggregated data, they vary markedly when disaggregated at the migrant and gender levels. The PIHS then gives much higher levels compared to the census and LFS for men and much lower levels for women. The much lower levels of migrant female literacy could be attributed to the increased representation of the rural-rural migration stream, which is an upshot of looking at intra district migration. The reason for attributing lower literacy to the rural-rural migration stream is its association with marital migration of women and the expectation that these women may not necessarily be literate. This does not however explain the low literacy levels the PIHS accords to female non-migrants and high literacy levels to men.

---

[13] See for example, Yap (1976) and Pappola (1981) in Williamson (1988)

[14] Literacy for the purpose of this paper is defined as the ability to read and write in any language.

Table 7
Literacy Levels of Migrants and Non–Migrants by Gender   (%)

	Full-Sample	Non-Migrant Male	Migrant Male	Non-Migrant Female	Migrant Female
Literacy (PIHS)	44.5	65.1	70.6	22.1	25.8
Literacy (LFS)	45.3	56.8	61.3	31.0	38.4
Literacy (Census)	43.9	54.8	60.6	32.0	38.7

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

This said, we must take into account the fact that literacy per se implies a blanket description that obscures knowledge differentials within literate people. Table 8 differentiates literate people on the basis of post secondary qualification i.e. all those with a Matric degree or above. The PIHS reports a lower proportion of post secondary educated individuals viz the Census and LFS consistently at the aggregated and all disaggregated levels. This is surprising considering the fact that the PIHS reported higher literacy levels for men. A high proportion of PIHS migrants can therefore read and write but does not possess post secondary qualification. This would make sense to the extent that this difference is a reflection of a higher rural to rural migration; the difference for non-migrant males however remains unexplained.

Table 8
Individuals with Post Secondary Education as Percentage of Literate People   (%)

	Full-Sample	Non-Migrant Male	Migrant Male	Non-Migrant Female	Migrant Female
Post Secondary (PIHS)	27.5	26.6	36.1	24.1	34.4
Post Secondary (LFS)	32.6	31.9	49.6	27.4	43.4
Post Secondary (Census)	30.2	31.6	45.2	27.7	36.7

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

These differences apart, it is quite clear that on all counts, migrants have a higher educational attainment than non-migrants. Also, while literacy differentials between migrant and non-migrant women are not very high, attainment levels show a marked difference. This seems to suggest that either the migration decision is responsive to a higher level of educational attainment, or that migrant women achieve higher education after migration. One cannot pass a clear judgment on this issue since this is post hoc information. It is clear nevertheless that migration is associated with higher educational levels.

2.2.4. Inter and Intra Provincial Flows

Inter provincial movement of migrants has long been a burning issue in national, and provincial politics. The share of inter-provincial migrants as a percentage of provincial population has in particular been an issue of debate. And although mapping the province-ethnicity relationship is fairly complex, the four provinces of the federation represent four 'sub-national' groups that give migration its ethnic and political color. The debate is also reflective of the weight accorded to population shares in the distribution of resources to the provinces from the federal kitty.

From the viewpoint of the political economy of migration, the definition of migrant therefore should be synonymous with ethnic identity. The various data generated by the Federal Bureau of Statistics however define migration on the basis of the length of stay in the current area of residence. Progeny of the migrant therefore shares the ethnicity of the father but not his migrant status. It merits mention here that this definitional problem precipitated ethnic tensions, particularly in the province of Sindh and the results of the Census 1998 were met with skepticism from various quarters in the province. Since political discourse of this nature is beyond the scope of this paper we shall assume the definition of migrant as given and wash away the political and ethnic ramifications of the word in the following discussion.

Table 9 presents the distribution of the population and migrants across the four provinces, each province being presented as the destination. Note firstly that there does not seem to be any variation across the data sets on the population distribution across provinces. There is some variation however, in case of migrant distribution, particularly in case of Sindh, and to some extent in NWFP. The difference between the PIHS on one hand and the LFS and census on the other, is particularly stark in the case of Sindh. This is even more surprising given that the PIHS looks at intra district migration and therefore reports a higher proportion of migrants at the aggregated level. Anecdotal evidence claims that intra provincial migration in Sindh has increased significantly in the last decade due to tribal violence and water scarcity in the 1990s. The only forthcoming explanation then is that the increase in migration due to inclusion of intra district movements is so overwhelmingly occurring in the Punjab, that while the number of migrants settling in Sindh may be greater in the PIHS, the proportion of migrants decreases. The issue could be clarified if one could identify inter district migrants from intra district migrants, but the present data does not allow this. Nevertheless, Sindh retains its position as the second largest home to migrants after Punjab.

Table 9
Provincial Distribution by Destination[15] (Inter and Intra Provincial)   (%)

	Punjab			Sindh			NWFP			Balochistan		
	PIHS	LFS	Census	PIHS	LFS	Census	PIHS	LFS	Census	PIHS	LFS	Census
Share in Population	55.0	57.2	55.6	22.3	22.6	23.0	12.6	14.1	13.4	4.9	3.9	5.0
% of Migrants	70.8	68.1	67.0	17.7	26.2	25.1	8.0	5.1	5.7	1.4	0.4	2.2
Migrants as % of population	27.6	15.7	9.1	17.0	16.0	9.3	13.5	5.2	3.7	6.1	1.4	3.8

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

Punjab also comes out as the main *source* of migration streams according to both the LFS and the census data[16]. These findings are presented in Table 10. However the data presented therein show disagreement between the two data sets viz the magnitude of migration, and the Census puts Punjab's contribution at a much lower level than the LFS. The most evident reason for this discrepancy is that the LFS does not take into account people who have migrated from other countries, whereas the census does. Since this is apparently a large proportion of migrants, the share of Punjab in giving rise to migration streams increases significantly. The share of independence migrants does not however reduce Punjab's ranking and it is still the largest migrant emitting province. Sindh's ranking on the other hand does fall and NWFP overtakes it as the second largest migrant-sending province.

Table 10
Provincial Distribution of Migrants by Origin (Inter and Intra Provincial Migration)   (%)

Place of Previous Residence	LFS	Census
Punjab	54.1	45.3
Sindh	18.4	8.8
NWFP	8.7	12.9
Balochistan	1.0	2.3
Other Countries	-	27.6
Northern Areas	0.9	-
AJK	0.1	2.3
Others	16.9	1.2

Source: Labour Force Survey 1998, Pakistan Population Census 1998 Report, table 2.23 pp. 124[17]

---

[15] Percentages are given in terms of 'all' migrants, irrespective of origin or destination.
[16] The PIHS does not report province of origin.
[17] The census does not report origin of 13 percent of migrants. This table therefore leaves out those 13 percent and scales up the provincial shares accordingly.

These flows can be better understood by looking at Table 11, which presents net flows to the different provinces. It must be added here that migrants from other countries are ignored since the issue at hand is to map inter provincial movements. Furthermore, since the LFS does not contain information on independence migrants, this step improves their comparability.

As is evident from the table 11, Sindh is the only province, which irrespective of data source has a net inflow of migrants from other provinces, and significantly so. It is however very interesting to note that according to the LFS, Punjab is also a net receiving province. Flows primarily from Sindh and NWFP account for this status.

Secondly, NWFP outstrips Punjab as the main source of inter-provincial migration, primarily because a large number of migrants from NWFP have settled in the Punjab, therefore reducing net outflow for Punjab. It is interesting to note that this feature is shared by both data sets. It also merits mention that almost 200,000 people have also migrated from Sindh to Punjab, according to both the census and the LFS, which is surprising at first sight (see Table 12). Anecdotal evidence suggests that during the late eighties and early nineties, there was a significant return flow of Punjabi migrants in Sindh. However since ethnic information is not readily available, this hypothesis cannot be confirmed.

Another surprising result is that Balochistan has experienced a net outflow of migrants. One would have expected the contrary since there have traditionally been significant flows from NWFP in particular, into Balochistan. But this idea is not supported by the census data. The LFS data also shows an outflow, but given the very small number of actual observations in the data set, perhaps the census is a better source of information for this particular province. The main flows from Balochistan are into Sindh. This stream has existed for centuries, and old Baluch tribes can be found settled in northern districts such as Jacobabad and Larkana in the north and the suburbs of Karachi, such as Malir and Layari. Interestingly however, the census district reports suggests that the bulk of the recent flows are now not into the northern districts but into Karachi. This seems to suggest that while networks may still be important in choosing the destination of migration, the nature of migration has essentially changed. Whereas earlier migration could be related to the agricultural sector (hence northern Sindh), it is now directed towards manufacturing and services (Karachi and Hyderabad).

Table 11
Net Migration to Provinces

Province	In-migrants from other provinces		Out migrants to other provinces		Net Out flow	
	LFS[18]	Census	LFS	Census	LFS	Census
Punjab	637,685	596,412	460,245	761,490	- 177,440	165,078
Sindh	610,657	1,141,674	375,403	251,647	-235,254	- 890,027
NWFP	129,477	93,219	773,017	806,529	643,540	713,310
Balochistan	11,392	101,593	71,360	113,232	59,968	11,639

Sources: Pakistan Population Census 1998. Author's Calculations

---

[18] Weighted frequencies are reported for the LFS, hence the large number of observations.

INTRA PROVINCIAL MIGRATION

While analysis of inter provincial migration provides insight into long-distance spatial mobility, intra provincial migration cannot be ignored, simply by virtue of its magnitude. Table 12 shows that for all provinces except NWFP, at least half the out-migrants from the province settle within the province in a different district. In reality, this figure would be much higher since both the LFS and the Census do not account for intra district movements. As far as differences between data sources are concerned, note that while observations for Punjab and Sindh are not very far apart, those for NWFP and Balochistan are significantly different. This has been noted earlier also, and one may find the census a more reliable data source in these matters.

This said, three features of the data presented corroborate our earlier findings. Firstly if out migrants [19] are fixed as the base category, then although Punjab experiences a net outflow of migrants into other provinces, that flow is a small proportion of the total movement originating from the province (see Table 13). This conclusion stands even if one is to look at migrants coming into Punjab i.e. of all migrants settling in Punjab, 65% are internal migrants. Note that this is despite the fact that Punjab is home to a large number of 'independence migrants'. If one is to take these people out, this figure increases to 85%. In short, ethnically speaking, migration into Punjab is a closed affair.

Table 12
Intra and Inter-Provincial Movements (Out Migrants as Base Category)   (%)

From	Punjab		Sindh		NWFP		Balochistan	
To	LFS	Census	LFS	Census	LFS	Census	LFS	Census
Punjab	**86.8**	**85**	15.7	25	27	28	15.0	15
Sindh	9.5	12	**76.5**	**71**	12.9	34	23.3	35
NWFP	2.8	1	6.9	2	**58.4**	**36**	1.6	1
Balochistan	1.0	1	1.0	3	1.6	2	**60.1**	**48**

Source: Labour Force Survey 1997-98 and Provincial Census Reports 1998. Author's Calculations

Secondly, while migrants originating from Sindh primarily settle within the province as shown in table 12, these are a small fraction of the total migrant stream into the province (see Table 13). In fact, the share of the local migrants in the total stream is the lowest among the four provinces. This result holds itself even if the proportion of independence migrants are taken out of the in-migrant stream. From an ethnic point of view however, the case for taking these out is not as straightforward as it is for the Punjab: while independence migrants into Punjab were primarily from eastern Punjab i.e. same ethnicity, this was not true for the independence migrants into Sindh. That migration in Sindh is predominantly an inter-provincial movement is obvious irrespective of the status of independence migrants.

---

[19] Out migrants consist of all migrants moving out of a particular province. In contrast, in migrants constitute all migrants moving into a particular province.

<div align="center">Table 13</div>
<div align="center">Provincial Distribution of Migrants (In migrants as base category)   (%)</div>

To From	Punjab	Sindh	NWFP	Balochistan
	(Percentages)			
Punjab	**64.8**	22.4	11.7	20.5
Sindh	3.2	**21.7**	2.2	9.2
NWFP	5.2	15.2	**68.6**	11.0
Balochistan	0.3	2.7	0.5	**41.7**
Other Countries	23.3	24.2	2.9	4.1

Source: Provincial Census Reports, 1998. Author's Calculations

Thirdly, the low percentage of intra provincial movement in the NWFP corroborates its status as the foremost source of inter-provincial migrants in the country.

Table 14 presents the reasons for migration by provincial origin. The two main categories that account for much of the migration are economic and family/marital. This said, the proportions accorded to these two reasons by the two data sets vary a lot, and without a significant pattern. One may only proceed with the caveat that these are self-reported reasons, and a host of literature argues that such responses are subject to cognitive ability as well as the social context[20] within which survey questions are asked.

<div align="center">Table 14</div>
<div align="center">Reasons of Migration by Provincial Origin   (%)</div>

Province of Destination	Punjab		Sindh		NWFP		Balochistan	
	LFS	Census	LFS	Census	LFS	Census	LFS	Census
Job Transfer	8.3	9.1	6.0	15.8	11.6	16.5	9.8	24.2
Finding a Job	10.3		7.1		17.4		15.0	
Business	5.8	8.7	3.4	9.1	4.6	7.1	0.0	12.3
Education	0.7	1	0.6	1.0	0.8	2	9.3	1.5
Health	0.2	0.1	0.4	0.1	0.1	0.05	0.0	0.03
Marriage	36.0	22.6	20.9	8.7	25.6	8.9	29.5	5.3
Family	21.9	38	23.2	49.1	26.7	57.5	30.6	43.9
Returned Home	4.5	1.2	23.2	1.0	4.2	0.8	3.6	0.6
Others	12.3	19.3	15.1	15.2	8.9	7.1	2.1	12.2

Sources: Labour Force Survey 1998, Pakistan Population Census 1998. Author's Calculations

INTRA PROVINCIAL MIGRATION FROM SOUTH PUNJAB

The districts of Southern Punjab are among the poorest districts of the country[21] and also those with the most severe inequality (references). Traditionally, these districts have also been characterized as those with the least mobile population. This

---

[20] See for example Bertrand and Mullainathan (2004)
[21] See for example, SPDC (2003)

phenomenon casts doubt on the poverty-migration nexus and some research[22] has suggested that segmentation in the labour market has perhaps been a significant obstacle to migration. The last ten years have however seen a marked increases in out migration from these districts, particularly to Karachi. Since this is a recent observation and perhaps suggests some structural changes in the labour market, it is worth discussing here. The Population Census provides district level data on migration within a province so one can estimate out migration from Southern Punjab to various districts of Punjab. An analysis of movements into Karachi would have significantly enriched the study, but data limitations preclude this exercise.

For the purpose of this paper, we define South Punjab as comprising the districts of Bahawalpur, Bahawalnagar, Rahim Yar Khan and Rajanpur. Technically Dera Ghazi Khan and Lodhran would also be part of this area but the Census establishes that the incidence of out migration in these districts has been very low, and these have therefore been disregarded. In fact, the inclusion of Rajanpur was to illustrate this very issue.

The data thus accumulated is presented in Table 15. The total out migration from South Punjab to the rest of Punjab is apparently very limited, and accounts for only four percent of the total intra provincial movement. But even within these limits, interesting phenomenon can be studied.

Table 15
Incidence of Migration from Selected Districts of Southern Punjab

District of Previous Residence	Bahawalpur	Bahawalnagar	Rahim Yar Khan	Rajanpur
Total Migrants	46,500	71,044	26,443	1,914
Male Migrants	17,642	32,565	10,849	793
Female Migrants	28,858	38,479	15,594	1,121
Total Migrants as percentage of Intra provincial migrants in Punjab	1.5 %	2.4 %	0.9 %	0.06 %

Source: Pakistan Population Census 1998, District Reports. Author's Calculations

Tables 16 and 17 set out migratory patterns of these migrants in terms of destination districts. Districts have been classified as urban if they contain one major urban center. It is assumed that while a good proportion of migrants would be migrating to rural areas within a district, the proximity of an urban center can be expected to have positive externalities and could feature dominantly in the migration decision. Indeed, the proportion of migrants moving to districts so defined vindicates this disaggregation.

---

[22] See Gazdar (2003)

17

Table 16
Migrants from Southern Punjab to Urban Centers   (%)

Previous Residence	Bahawalpur		Bahawalnagar		Rahim Yar Khan	
Current Residence	Male	Female	Male	Female	Male	Female
Sialkot	9.6	3.8	0.9	0.9	1.8	2.2
Lahore	22.3	11.0	18.6	10.8	27.2	15.9
Rawal Pindi	2.3	0.3	7.8	3.4	7.5	6.1
Faisalabad	18.0	10.9	10.6	6.1	18.8	16.6
Multan	4.6	13.9	3.6	8.2	2.7	4.3
Total	56.8	39.9	41.5	29.4	58.0	45.1

Source: Pakistan Population Census 1998, District Reports. Author's Calculations

An interesting phenomenon differentiates movements into rural and urban districts. Note that the percentage of women migrating to urban districts is much less than the percentage of women migrating to rural districts. This could to some extent reflect the hypothesis that labour migration is correlated with men, and that labor migration is in general moving towards urban districts. This said, also note that the gender difference in this urban movements is much less pronounced in movements from Rahim Yar Khan. This could either imply that movement from this particular district is motivated by reasons other than economic, or that women belonging to Rahim Yar Khan are also being absorbed in the labour force of destination districts. Only a more detailed study of the labour force participation of women from this district can shed light on this pattern. In the same tune, it is also worth noting that the flows to Multan seem to be different from those to other urban centers in their gender composition.

Another noticeable feature of the data presented in Table 16 is that migrants from different districts are choosing different urban destinations. For example, the proportion, and indeed the number, of migrants moving from Bahawalpur to Pindi is much less than the proportion of migrants moving from Bahawalnagar and Rahim Yar Khan to Pindi. On similar lines, more people from Bahawalpur are moving to Sialkot. However, Lahore and Faisalabad feature prominently in migrant streams from all three districts.

It is interesting to note that on the basis of social networks, one would expect Faisalabad to be a prime destination for those from Bahawalnagar. Bahawalnagar, and certain parts of Bahawalpur were actually settled by people from Faisalabad by the British in the 1930s, following the construction of irrigation channels in the area. Residents of Faisalabad and Bahawalnagar therefore have social ties that could facilitate migration. However, table 16 shows that flows to Lahore dominate flows to Faisalabad. Prima facie, one may argue then that since Lahore would have a higher wage rate than Faisalabad, wage differential dictate migration. This does not however preclude the possibility that social networks emerge in different place over time and that migrants from Bahawalnagar have over time established links in Lahore and elsewhere.

A similar, and more pronounced pattern of differential destinations is also present in the migration into rural districts (see Table 17). While the majority of migrants from Bahawalnagar are migrating towards Pakpattan, Okara and Vehari, those from Bahawalpur and Rahim Yar Khan are mainly migrating to Bahawalnagar and Vehari. It

18

is very interesting to see that Bahawalnagar is receiving a lot of migrants from Bahawalpur at the same time as it is sending migrants to Pakpattan and Vehari. These are interesting patterns that give migration its different nuances and cannot be analyzed simply by looking at census or available sample data.

Table 17
Migrants from Southern Punjab to Rural Areas   (%)

Previous Residence	Bahawalpur		Bahawalnagar		Rahim Yar Khan	
Current Residence	Male	Female	Male	Female	Male	Female
Bahawalnagar	13.2	17.6	-	-	8.9	9.7
Okara	2	2.2	8.7	9.2	3.3	4.5
Lodhran	4.6	10.1	1.1	1.5	1.9	3.0
Pakpattan	1.7	1.3	22.4	25.1	0.7	1.8
Vehari	11.8	14.1	17.0	21.5	6.4	8.7
Total	33.3	45.3	49.2	57.3	21.2	27.7

Source: Pakistan Population Census 1998, District Reports. Author's calculations

Table 18 presents flows into various districts from South Punjab. The first column gives the net change in migrant stock, with the number of migrants in 1988 as base category. The other columns provide *annual* flows in each time interval, keeping the same base.

Generally, there seems to be an increasing trend in the annual flows except for Multan and Rawalpindi where migrants have actually stopped trickling in. Disaggregated data shows that in case of Rawalpindi, almost all migrants are from Bahawalnagar and Rahim Yar Khan and all of these have settled during the 1989-93 period. Multan on the other hand faces a secular decrease in the number of migrants. These two cases are very interesting since they suggest that the presence of networks do not ensure continuous flows. Again as before, an analysis of the labour market may help clarify the conundrum.

Table 18
Migration Trends from South Punjab by Major Destination   (%)

District of Destination	Change in Migrant Stock	Annual flows in		
	(1989-98)	(1997-98)	(1994-97)	(1989-93)
Bahawalnagar	55	7	6	5
Sialkot	190	38	29	7
Lahore	100	15	10	9
Okara	45	6	6	3
Multan	54	2	4	7
Pakpattan	63	9	8	4
Vehari	57	12	6	5
Rawalpindi	125	0	3	23
Faisalabad	83	25	5	8

Source: District Census Reports 1998, Author's calculations

Another interesting case is that of Sialkot. Migrants from Bahawalpur make up the majority of South Punjabi migrants here and therefore drive the trends. The 1994-1997 period witnessed a sudden increase in migrants from Bahawalpur whose number had not been much higher than other South Punjabi migrants. It is not clear whether this trend has continued into 1997-98 or whether the latter is driven to some extent by transitory migrants as well. Nevertheless, Sialkot has emerged as increasingly attractive to migrants from Bahawalpur.

2.3. Trends of General Migration over Time

Trend analysis is possible for all data sets. Information pertaining to four distinct time periods is available as shown in Table 19. The first column of the table shows the annual increments within each time period. These have been calculated as the average annual migrant flow within a time interval as a proportion of the migrant stock in 1988. One can therefore analyze migrant flows in the ten years between 1988 and 1998.

Two patterns are comprehensible here. Firstly, the PIHS and the LFS both underestimate the flows in each time period viz the census. The LFS and PIHS report a higher proportion of migrants but lower flows, implying that they capture older flows more than the census does.

Secondly, note that the change in migrants in 1997-98 is very high compared to earlier time intervals, irrespective of data source. Prima facie, this seems to represent a dramatic increase in mobility in the country. It is possible however, that a good portion of these migrants consists of transitory migrants who will return to their source areas within a short period of time, or move again. It is not possible to distinguish these from long-term migrants, but the trend of increasing migration is nevertheless conspicuous even if one is to scale down the 1997-98 flows by 40 percent. The magnitude of the increase however certainly diminishes. A caveat is however in order here: It can be expected that some migrant population of the 1988 stock would have passed away during the ten years prior to the survey, and this proportion would be more for older time periods than for the latter. Annual increments for each successive year would be somewhat inflated.

Thirdly, the PIHS and LFS differ considerably on the 1997-98 flow, while estimates are fairly in line with each other for other time intervals. This is particularly interesting since unlike the LFS, the PIHS looks at intra district migration and therefore reports a higher proportion of migrants. Similar growth rates would then imply that growth rates in intra district migration are synchronous with inter-district movements. It would also make sense for transitory migration to be higher for intra district movements since migration costs would be smaller viz inter-district migration; hence the higher flows in 1997-98.

20

Table 19
Trends in Flows and Various Migrant Characteristics

Time Period	Annual increment to the 1989 stock		Average Age of Migrants		Percentage of women		Marital status		Marital Status of Men		Literacy	
	PIHS	LFS	PIHS	LFS	PIHS	LFS	PIHS	LFS	PIHS	LFS	PIHS	LFS
1997-98	10.4	7.4	27.0	27.7	59.6	52.5	67.8	66.5	42.3	56.7	33.8	50.8
1994-97	5.3	5.2	27.0	27.6	64.6	57.2	70.4	61.6	47.3	51.9	31.7	60.5
1989-93	4.9	4.4	28.9	29.2	66.3	56.4	71.0	63.7	53.8	56.5	37.0	60.7
Prior to 1989	Base	Base	44.3	44.5	62.3	53.2	77.3	74.6	74.5	72.9	46.8	43.7

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

Trends in movements between rural and urban areas are provided by the PIHS and the LFS and are presented in Figures 1 and 2 respectively. The base figure provides the direction of movement for migrants who had arrived prior to 1989. Figures for other time periods explain the direction of movement of corresponding flows. Before one ventures into further detail, a caveat is in order. While the rural-urban status of destination is recorded by the survey, that of the origin is self reported. Like all self-reported responses therefore, there is room for error here, especially given that the definitions of rural-urban might not have been clear to the respondent.

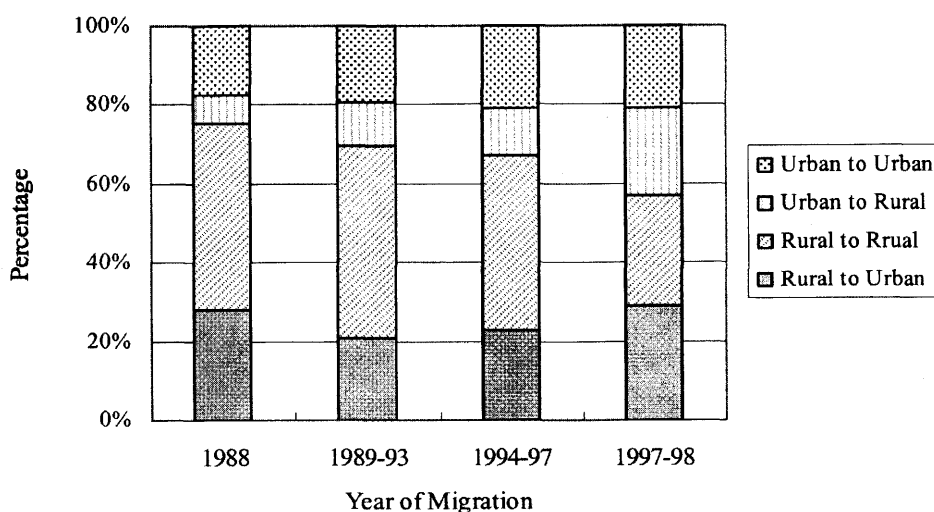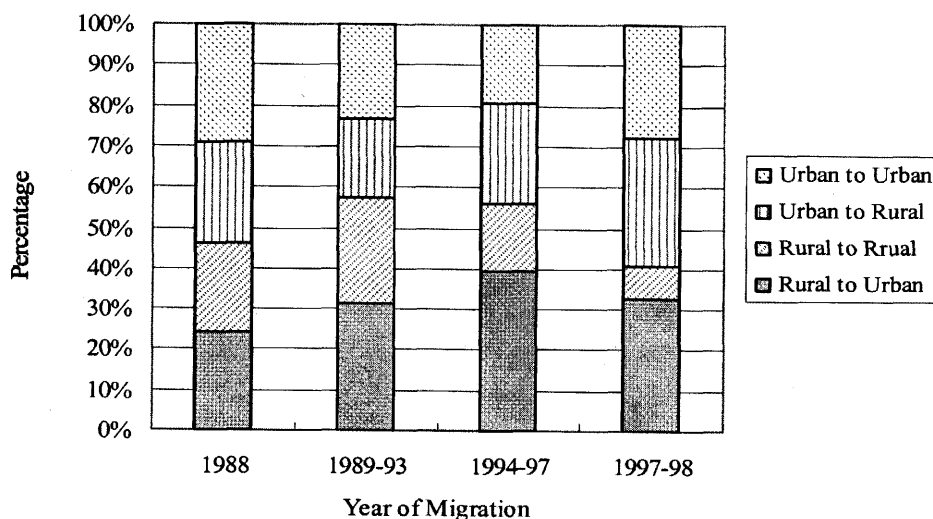Figure1. Trends in Rural-Urban Migration Streams (PIHS)

Figure 2. Trends in Rural-Urban Migration Streams (LHS)

This said the two data sources do not provide trends consistent with each other. The only trend agreed upon by both sources involves the increasing urban to urban movement and the decreasing rural to rural movement. Other than that, the PIHS for example gives a clear increasing trend in the rural to urban movement while the LFS gives an exact opposite trend. This said, trends suggested by the PIHS seem to be more logical and also consistent with literature: rural to urban movements are increasing, and rural to rural movements are decreasing. Given that the PIHS is looking at intra-district migration, it is interesting to note that this does not diminish the importance of rural to urban movements, suggesting that a good proportion of intra-district movement involves movement from rural suburbs to urban towns/cities.

An interesting feature of the data presented in Figure 1 and 2 is that the PIHS seems to present a higher magnitude for the 1997-98 time period for all movements except urban to urban migration. One could expect all movements except urban to urban migration to involve some degree of intra-district movements, which the PIHS could bring out. That does not imply however that the LFS would give higher figures for urban to urban movements.

The reasons giving rise to migration, though informative, are subject to the same measurement error as the rural-urban status since these too are self-reported. Table 20 produces the main reasons of migration for each time period provided by the LFS and the PIHS. With reference to the PIHS, the main increasing trends are in economic, family and return migration while a decline is evident in marital migration. However there is a lot of overlap between family and marital migration and note that if taken as one category there does not seem to be any clear trend in the marital and family flows.

Both data sets are however synchronous on the increasing trend in economic and return migration and both trends are consistent with the overall increasing trend in

migration. The increasing proportion of returning migrants is particularly interesting. As noted earlier, the migrants belong to the 1997-98 period would partly consist of transitory migrants. One can expect these migrants to be either economic migrants who would leave if they fail to materialize their expected gains, or returned migrants who would migrate again after a while. Similarly, one would expect the share of marital and family migrants to decrease in the 1997-98 stream because these would be expected to be permanent migrants. The trebling of return migrants in the 1997-98 is borne out by the data, but the share of economic migrants in the 1997-98 stream actually declines, implying that the bulk of transitory migrants consists of those who migrate for education, health and other reasons.

Table 20
Trends in Reasons of Migration   (%)

Time Period	Economic		Marriage		Family		Returned		Independence	
	PIHS	LFS	PIHS	LFS	PIHS	LFS	PIHS	LFS	PIHS	LFS
1997-98	20.8	25.2	33.8	28.5	26.4	14.3	9.1	16.1	0	-
1994-97	22.7	18.0	38.9	23.0	24.8	28.5	3.4	14.7	0	-
1989-93	16.8	18.3	42.0	25.4	28.3	28.3	3.7	12.2	0	-
Prior to 1989	17.1	18.8	42.2	26.6	19.8	22.3	2.3	7.0	13.0	-

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

2.4. Labour Migrants

This section analyses that sub-group of migrants who have migrated for economic reasons. These are classified as having either migrated due to job transfer, while looking for a job and for business reasons. It is worth mentioning here that there is some criticism on differentiating between different types of migrants on the basis of self-reported reasons. Critics argue that these could be biased, and instead emphasis should be placed upon individual characteristics to differentiate among migrants. While this criticism has its logic, the ensuing analysis shows that the various characteristics of economic migrants as identified by self reported reasons are fairly in line with standard neo-classical migration theory. In retrospect therefore, such a selection does not do any injustice to the analysis.

While economic migrants constitute up to 20 percent of the total migrants depending on the source of data used, they only form a very small proportion of the total population, and observations are limited, thus precluding many a disaggregated analysis. It is not possible for example to check for any time trends since all data sets provide information on four time zones. The bulk of the migrants is pre 1988, and the number of remaining migrants spread across three time zones do not allow authoritative statistical determination of any underlying trend. Technically, the issue of

23

sample size can be evaded by using the census, but this cannot be used since the census provides aggregated data and one cannot separate labour migrants from the general migrants for a closer analysis. The data presented in this section are therefore gleaned from the PIHS and the LFS.

Table 21 presents the number of economic migrants in the sample as well as the gender composition of the economic migrant stream. Firstly, note that the number of economic migrants in the PIHS is much more than that reported from the LFS although both have a similar sample size. This is a direct upshot of the fact that the PIHS looks at intra district movements as well as inter-district mobility. The interesting corollary of this finding is that economic migration need not necessarily be long distance migration. It is not possible to distinguish between inter and intra district migrants, but if one assumes the LFS and the PIHS to be structurally similar, then the difference between the two figures would give a ball park figure for the extent of intra district economic migration.

Table 21
Demographics of Labour Migrants

Variable	PIHS	LFS
Labour Migrants as percentage of Population	4.7	2.9
Percentage of Women in Labour Migrants	15.7	13.1
Percentage of Women in Non-economic Migrants	46.4	47.0
Percentage of Women in the non-economic migrant stream	63.0	54.2

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

Secondly, the percentage of women is lower than their share in the general population and much lower than their share in the general migrant stream. This suggests that while to some extent the female population does not possess the requisite credentials to find a job as a migrant, labour markets in Pakistan may also be segmented on the lines of gender. It would follow then that women migrate primarily because of marital and family reasons. However, while the majority of women may 'themselves' migrate less because of economic reasons, and more as 'tied-migrants', this does not preclude ex post participation in the labour market. In fact, their expected participation in the informal sector and the resulting addition to household income may well be part of the pre-migration calculus. It is not illogical to assume that for tied migrants, the underlying cause of migration could be a change in the labour participation status, though the reported reason for migration may be family or marital. Indeed this is borne out by the data (see Table 25) and the percentage of migrant women working for wages is almost double the percentage of non-migrant women working for wages.

Table 22 presents the age profile of economic migrants. Note that this is consistent with that of the general migration stream. As with the latter, migrants are much more

aged than non-migrants, and this holds true for both male and female individuals. As with general migration, this age differential is driven by the large stock of migrants who migrated prior to 1988 (the earliest time-category provided by the LFS and PIHS) and by the fact that progeny of migrants is not defined as migrants: the proportion of people aged less than 18 years is therefore much larger for the non-migrant population and drives down their average age.

Table 22
Age Profile of Migrants and Non-Migrants

	PIHS	LFS
Mean Age of Migrants	42.5	43.5
Mean age of Male Migrants	43.0	44.0
Mean age of Female Migrant	38.0	38.0
Mean Age of Non-migrants	28.0	29.0

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

Perhaps the most engaging finding is the difference in the rural-urban distribution of economic and general migrants. Table 23 presents the proportions contributed by the four different movements. Note that the distributions for general and economic migrants are structurally different. For non-economic migrants, the PIHS suggests that the rural-rural stream is the most dominant followed by the rural to urban stream. For economic migrants, this is reversed, though rural to rural migration is still very much prominent.

The LFS also provides structurally different distributions for economic and non-economic migrants too, but the distinguishing feature here is that the proportion of urban to urban migrants increases at the cost of rural to rural migration. While it is logical for urban to urban migration to increases in the economic migration stream, rural to rural migration is oddly low, especially in comparison to the PIHS. Since it is possible that intra district migration reduces the proportion of urban to urban and urban to rural migration[23], both rural to urban and rural to rural streams increases much more, and it is this perhaps that drives the difference between the two data sets. This said, it merits noting that the number of observations on rural to rural and urban to urban are very small in the LFS, 23 and 53 respectively and should therefore be read carefully. It is also worth mentioning that whereas the rural-urban status of the migration destination is recorded by the enumerator as per the census, which of the sending region is reported by the respondent, and should be interpreted with care. This is compounded by the fact that the rural-urban status of many areas is not clear and does not necessarily reflect the actual status of the place in terms of infrastructure and employment opportunities.

---

[23] It would be unlikely to find more than one urban centers within the same district.

Table 23
Rural-Urban Movements of Labour   (%)

Movement	PIHS		LFS	
	Economic Migrants	Non-Economic Migrants	Economic Migrants	Non-Economic Migrants
Rural to Urban	41.7	22.7	32.2	33.4
Rural to Rural	31.0	49.1	6.2	13.8
Urban to Rural	7.3	10.3	27.1	28.8
Urban to Urban	20.0	17.9	34.5	24.0
Rural-Urban Distribution of Migrants	38 (R)		33 (R)	

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's Calculations

The data on provincial movements[24] is available only from the LFS (see Table 24) and shows that Punjab is the largest source of migrants while NWFP and Sindh tie for the second place. Perhaps more interestingly, Punjab is home to the highest proportion of migrants, followed by Sindh. NWFP and Balochistan on the other hand are receiving negligible numbers of migrants, implying that NWFP is the largest *net* sender of economic migrants.

Table 24
Provincial Movements of Labour (all migrants as base)   (%)

From	Punjab	Sindh	NWFP	Balochistan	Total
To					
Punjab	55.0	3.4	5.9	0.5	64.8
Sindh	10.3	12.2	4.9	1.2	28.6
NWFP	0.7	0.3	5.0	0.0	6.0
Balochistan	0.2	0.1	0.1	0.3	0.7
Total	66.2	16.0	15.9	2.0	100
Net Flows	+1.4	-12.6	+9.9	+1.1	

Sources: Labour Force Survey 1998. Author's Calculations

This scenario changes drastically when one accounts for the proportion of intra provincial migration. The last row in table 24 presents this information. Sindh now becomes the only net receiver of economic migrants, while NWFP is the main sending province. This is in conformation with the analysis of the general migrant population presented earlier. An interesting point to note here is that as with the general migrant stream, Punjab's net addition to the out migrant stream is reduced mainly because

---

[24] There was not much information for FATA and AJK in the LFS data set, so these were taken out and only data for the four provinces is presented here.

NWFP is sending out a large proportion of its migrants to the Punjab. This is at first sight contradictory to observation and anecdotal evidence, since Karachi is the largest concentration of migrants from NWFP in the country. If one is to accept the findings from the LFS data, the logical explanation for this is that migrants originating from NWFP have not been able to concentrate in large numbers in any urban location in Punjab and have spread throughout the province.

Another very interesting characteristic to differentiate between economic migrants and non-migrants is their occupation. Table 25 below presents all occupations with an incidence level of 5% above. Before analyzing this data however, a caveat is in order. The occupations reported for migrants are ex post, and no information is available on their occupations before migration. Also these are current (1998) occupations so there is no information on whether occupations were switched at any time after migration. This said, the data presented provides interesting insights into the avenues available to migrants, and the labour market segmentation on lines of gender.

<div align="center">

Table 25

Occupations of Migrants and Non-Migrants by Gender   (%)

</div>

	Male non-migrant	Migrant Males	Female non-migrants	Migrant Females
Personal and Protective	5.8	11.0	5.53	25.3
Models/salespersons	9.0	10.19	0.78	3.3
Market oriented skilled agriculture	26.6	14.28	31.0	19.5
Subsistence agriculture	10.7	4.6	18.6	3.1
Agricultural, fishery	4.5	3.9	12.4	22.6
Mining and Construction	13.1	15.0	4.0	4.1
Sales and Services, elementary	5.2	8.0	1.42	4.8
Precision, handicraft	2.7	2.7	11.8	7.7
Drivers and mobile plant operators	4.1	5.6	0.0	0

Source: Pakistan Integrated Household Survey (1998), Author's calculations

A general pattern to be observed is that the proportion of agricultural workers, both market oriented and subsistence agriculture is much less in the migrant population, which seems to suggest that agriculture is characterized by surplus labor that is migrating and switching occupations. This seems to be consistent with the fact that unpaid family workers constitute 53 percent of the non-migrant labour force, but only 4 percent of the migrant labour force. Another explanatory idea is that returns to agriculture are reducing to the extent that people want to migrate and opt out. Both these factors are not necessarily mutually exclusive.

While the reduction in agricultural work holds true for both men and women, the work of migrant men and women is structurally very different. While personal and protective work is one of the main categories where migrants and non-migrants differ, note that the proportion of migrant women working in this area is much higher than the proportion of migrant men. The agriculture and fisheries category is also one that is absorbing a lot of migrant women; in fact these two categories account for almost half the working migrant women. This said, it is not clear how this category is different

from the subsistence and market oriented agriculture. At the moment, not enough information is available to warrant further comment.

For men, given the earlier caveat, there does not seem to be any major occupational change except for the increase in personal and protective work, and the labor market in the destination seems to be a continuum of the labour market in the area of origin.

Finally, land ownership, or rather the lack thereof has been considered an important determinant of the migration decision, both in the literature as well as policy circles. It is in order therefore to end this discussion with a brief overview of the issue.

Data on land ownership and holdings are available only in the PIHS and are reported in Table 26. It merits highlighting that land is a household level variable. Given the importance accorded to it however, each individual within a household is assigned the same asset value. The assumption here is that all members have equal access to land, which is fairly reasonable, at least for the migration decision.

A smaller proportion of migrants have ownership of assets viz non-migrants. Note however, that for those migrants who do possess agricultural land, the average land holding is very similar to that for non-migrants. In fact, a difference of means test yields that the difference between the two means is statistically insignificant[25]. This said, it must be borne in mind that land is an instrumental variable in the migration decision as it provides employment opportunities and is a source of earnings. The quality of land therefore would, apriori be an important issue. Since data on land quality is not readily available, this paper does not dwell on this issue and concentrates on land ownership as the main decisive division between migrants and non-migrants.

Table 26
Land Ownership

	Migrants	Non-Migrants
Percentage with agricultural land	16.0	37.0
Mean agricultural land holding (Acres)	10.2	12.4
Percentage with commercial land	4.2	6.1
Percentage with non-agricultural land	3.0	6.6
Percentage with residential land	65.0	91.0

Sources: Pakistan Integrated Household Survey 1998, Labour Force Survey 1998. Author's calculations

---

[25] t statistic: 1.2

3. DETERMINANTS OF MIGRATION

3.1. Sub-Sample of Migrants for Regression Analysis.

Whereas previous sections have discussed the descriptive statistics pertaining to different types of migration in much detail and have outlined the apparent correlations between different individual/household characteristics and the migration process, issues of causality can benefit from a more rigorous econometric analysis. Whereas both the LFS and the PIHS data allow for such a treatment, the latter were used for analysis since PIHS contains information on households level variables such as assets.

Of the different types of economic migration viz rural and urban status of origin and destination, the rural to urban stream has been characterized the predominant stream by both the PIHS and the LFS. It pays therefore to determine the causes of this particular type of migration in a regression framework. This does not downplay in any manner, the importance of the other migration streams, in particular the rural to rural stream, which has not been taken up much in the literature also. In fact, this paper attempted to look at this stream as well, but unfortunately the data available does not contain enough information on explanatory variables to model this movement properly. For example, one may hypothesize institutions such as land tenure and sharecropping, the market for credit, in particular for inputs and trends in land quality to affect rural to rural migration. However, data providing information on these aspects are not readily available. Therefore, it is the rural to urban migration of labour that is taken up in what follows. The theoretical modeling issues and results are taken up in the next sub-section. It suffices here to discuss the sample used for the regressions.

The full sample for economic migrants has already been discussed at length. Since the regression analysis concentrates on rural to urban migrant, this sample was further filtered to include only non-migrants in the rural areas and rural to urban migrants in the urban areas. Since the proportion of women (13 percent) was very small, and was expected to adversely affect the behavior of regression parameters these were taken out as well. This was also warranted by the fact that determinants of female labour migration would be structurally different from men. Also, while the majority of women reportedly migrated due to family and marital reasons, working post migration is not precluded. Including only women filtered on the basis of reported reasons of migration would therefore bias regression estimates[26]. The last filter was applied to age and all observations below the age of 18 were removed. This was done in consideration of the fact that the migration decision is expected to be taken at around this age. Also, this put the average age of both migrant and non-migrants at a similar level. The total number of observations thus came to 10,090 out of which 960 or approximately 10 percent were migrants. The means of the variables used in the regression are presented in Table 27 below.

---

[26] Women migrating for economic reasons constituted 10 percent of all economic migrants.

Table 27
Means and Brief Descriptions of Important Variables

Variable		Full-Sample	Rural Non-Migrants	Urban Migrants
Constant		1	1	1
Age	Age of an individual in completed years	40.0	38.7	41.8
Age square	Square of Age	1720	1706	1910
Married	Dummy variable equal to 1 if individual is married, 0 otherwise	0.8	0.84	0.86
Literacy	Dummy variable equal to 1 if individual can read and write, 0 otherwise	0.47	0.48	0.78
Years of Education	Completed Years of Education	3.8	3.7	5.1
Agricultural Land	Dummy variable equal to 1 if individual owns agricultural land, 0 otherwise	0.39	0.42	0.09
Log Wage Difference	Difference between log of rural earnings of non-migrants and log of urban earnings of migrants	0.24	0.17	1.14

Sources: Pakistan Integrated Household Survey 1998. Author's Calculations

3.2. Theoretical Model for determination of Rural-Urban Migration[27]

The regression model used in this paper follows on the tradition of models motivated by Todaro (1969) and Harris and Todaro (1970). The structural form has been rendered by Nakosteen and Zimmer (1980) and Agesa (2001). In sprit, this estimation procedure has also been used in the analysis of unionization and wages by Duncan and Leigh (1980), among others.

Migration is modeled as a discrete choice variable, where the decision to migrate from rural to urban depends on variables that affect an individual's probability to migrate to an urban area. The model is specified as below:

$$\text{Prob} (M_i) = \phi\ [\alpha + \beta X_i + \phi Z_i + \omega\ (\ln W_{iu} - \ln W_{ir}) + \varepsilon_I] \qquad (1)$$

where ϕ is the normal probability density function. The dependent variable Prob (M_i) is a binary variable that takes the value of 1 if an individual is a migrant in an urban area, and 0 if the individual is a non-migrant in a rural area. The vector X_i contains individual characteristics that may affect the probability to migrate, such as age and gender. On a similar note, The vector Z_i contains household characteristics such as land ownership, that could affect the migration decision. The term ($\ln W_{iu} - \ln W_{ir}$) is the difference between log of urban migrant's earnings and log of rural non-migrant's earnings. The coefficient on this variable, ω, illustrates the effect of expected earnings differentials on the migration decision. It merits mention that while in the literature, the

---

[27] This section borrows heavily from Agesa (2001), Greene (2002) and Madalla (1986)

traditional use has been of wages, rather than earnings, the use of earnings has indeed been suggested by Heckman (1979). Also since the Pakistani rural labour market is much more nuanced than the standard textbook labor market, and is characterized by agriculture and unpaid family work, wages do not exist for a substantial number of observations, while individual earnings do. Furthermore, since the urban labour market is also dual in nature, with a flourishing informal sectoral characterized by self-employment, the distinction between wage and earnings may be rendered superfluous. In such a scenario, earnings differential may well explain migration decisions rather than wage differentials, and the paper concentrates on the former in what follows.

This paper allows for different earnings structures for migratory and non-migratory workers by estimating separate log earnings equations for migrant workers in urban areas, and non-migrant workers in rural areas. Thus a set of two wage equations is estimated:

$$\text{(Urban migrants)} \qquad \ln W_{iu} = \delta + \rho_u X_u + \mu_u \qquad (2)$$

$$\text{(Rural non-migrants)} \qquad \ln W_{ir} = \gamma + \rho_r X_r + \eta_r Z_r + v_r \qquad (3)$$

where $\ln W_{im,u}$ is the log of annual earnings. The log of earnings is measured in 1997-98 Pakistani Rupees. The matrix X consists of the individual characteristics for workers, and Z denotes land ownership. The ρ and γ vectors are the estimated parameters while μ and v are the white noise terms.

The predicted values of the earnings functions, based on the characteristics of migrants in urban areas and non-migrants in the rural areas are then used to construct a hypothetical wage difference for urban migrants and rural non-migrants. This provides rural-urban wage differentials for rural to urban migrants and rural non-migrants. This variable is then used as a regressor in the migration status equation.

Note however, that as it stands, the model suffers from incidental truncation. Urban earnings are observed only for those who migrated i.e. those for who the differential exceeded a critical value. Now, if the error term in the migration equation were correlated with the error terms in the earnings equations, then least squares estimation of the wages would not yield consistent estimates of the parameters. This is indeed a possibility, since it is likely that some unobservable characteristics explain both the urban-rural wage differential as well as the migration decision.

Heckman (1979) has suggested viewing this problem as an omitted variable specification bias and provide a technique to correct for it. This procedure involves estimating a reduced form Probit involving the migration decision and then creating a sample selection statistics (the inverse mills ratio) for both urban migrants and rural non-migrants. This selection statistic is then entered in the wage equations as a regressor which are then specified as follows:

$$\text{(Urban migrants)} \qquad \ln W_{iu} = \delta + \rho_u X_u + \lambda_u + \mu_u \qquad (4)$$

$$\text{(Rural non-migrants)} \qquad \ln W_{ir} = \gamma + \rho_r X_r + \gamma Z_r + \lambda_r + v_r \quad (5)$$

The earnings equations corrected for sample selection bias are then used to create the hypothetical wage differential and the final system involves equations (1), (4) and (5). Since the earnings differential is endogenous to the system, a simultaneous equations procedure is used.

3.3. Findings

3.3.1. The Migration Equation

Table 28 presents the results of the Probit model, the earnings equation for rural non-migrants and urban migrants. All the regressors are well behaved and consistent with theory and empirical the literature. I discuss the results of the main equation of interest, the Probit below.

That age has a positive effect on migration is a finding shared by many other studies of the subject. An increase in age over the mean age would therefore increase the probability of migrating. As suggested in the descriptive statistics earlier, this result is primarily driven by the uneven age distribution of migrants and non-migrants. The reason that migrants are in general much older than non-migrants is due to the fact that migration is a very old phenomenon and the stock of migrants is naturally quite old. Furthermore, as the progeny of migrants, born at destination are not classified as migrants, the age of the migrant population is truncated from below. To account for this, the sample used for the regression looks only at individuals aged 18 and above. This is as close as one can come to analyzing migrants who have moved recently; the positive coefficient withstands this. This said, the negative coefficient of age squared indicates that migration is obviously not linear in age and there comes a time when the expected gains of migration are not high enough to warrant movement.

Marital status has traditional been used as a 'cost variable' in the migration framework. The conventional logic is that the economic calculation of the migrant would have to take care of the calculations of the spouse, which may not be in synchrony at all times. And unless the pair separates, or the spouse expects a higher post migration wage, being married would reduce the net benefit of migration. In the current scenario, where migrants are mostly men and female labour market participation is very low, this could mean either of two things. Firstly, women may not migrate and may be left behind, in which case there is no economic cost imposed due to migration, but certainly a social cost on the migrant and his wife. Secondly, being married could impose a cost since the migrant's spouse would add to the living costs, which would presumably be lower in the rural areas. Both these phenomenon could be occurring in the population. The negative coefficient suggests that either the social cost of separation is indeed greater, or that spouses/family significantly increase the pecuniary cost of migration. It is also interesting to note that the decision for labour and spouse/family migration may not be taken simultaneously and the latter may actually follow the former. If one were to model female migration separately, marital status would indeed have a positive coefficient. It is however difficult to model the two together given the limited information available.

An interesting variable in the equation was the rural and urban wage differential, and as the results show, this is positive and significant. This supports the hypothesis that given other characteristics, workers respond to positive anticipated earnings in the urban areas viz their earnings in the rural areas. Since wages were used as a 'selectivity' criterion in the model, these results also suggest that there is some underlying self-selection mechanism through which workers who expect higher earnings migrate and others do not.

A very significant finding of the study is that ownership of agricultural land ceteris paribus significantly reduces the probability of migration. In the case of agricultural land, this result is consistent with theory and empirical evidence, and can have two explanations. Firstly, the presence of agricultural land can be a potential source of employment and can provide a certain level of guaranteed earnings in rural origins, which may be preferred to *expected* earnings in the urban destination. Secondly, sociological literature posits that agricultural land serves as a bond between rural communities and their geographical origins. Ownership of agricultural land in that sense may increase the social cost of migration.

Finally, the large and significant coefficient on the constant term, coupled with an adjusted R squared of 0.3 suggests that much of the migration story still remains to be told. Current research in migration is moving on from neo-classical perspectives to a more structural approach relating to wider processes, kinship networks, issues of power and the interaction between spatial mobility and the structuring of labour markets. These issues have however not been able to emerge in this paper due to data availability.

Table 28
Estimates of Probit Model and the Earnings Equations Corrected for Sample Selection Bias

	Probit Model		Urban Earnings (Migrants)		Rural Earnings (Non-migrants)	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Constant	-3.5	-13.14	8.5	10.5	8.2	19.7
Age	0.08	5.59	0.06	3.77	0.04	6.3
Age square	-0.001	-5.20	-0.0006	-3.40	-0.001	-7.19
Married	-0.29	-2.98	0.30	3.52	0.30	9.12
Literacy	0.19	2.73	0.10	1.38	0.17	7.31
Years of Education	0.03	4.67	0.04	7.36	0.03	9.77
Agricultural Land	-1.2	-13.17	...	...	0.1	2.27
Wage Difference	0.9	17.29	...	...	...	...
Inv. Mills	...	...	0.819	0.819	-0.9	1.54
F-value	415.1		22.8		136.7	
Adj R-sq	0.31		0.25		0.13	
N	10,092		906		9,186	

Source: Author's estimates using the Pakistan Integrated Household Survey 1998.

3.3.2. The Earnings Equations

While the determination of earnings in this paper is only instrumental, it merits a brief discussion. The estimation of wages here has employed the methodology adopted by the research on returns to education. This body of research is perhaps the most comprehensive effort of modeling returns (i.e. wages) to human capital investment. In the absence of data on innate abilities and cognitive skills, the paper makes do with a simple Mincerian earnings function. Note that for rural earnings, an additional variable, land ownership is also used. The logic of using this here is that of rural non-migrants, 41 percent of the sample owns land, and derives income from it, versus 8.5 percent in urban areas.

The estimates presented in Table 28 show that most of the coefficients are well behaved, and consistent with Nasir (2002)'s estimates using the PIHS 1995-96. It is interesting to note that the coefficient on the Inverse Mills Ratio (IMR) is insignificant for both the rural and the urban wage equations. The IMR is primarily an indicator of the selection mechanism that sorts out migrants from non-migrants. The model presented in this paper has suggested wage differentials as the selection mechanism. A positive and significant coefficient on the IMR would then imply that individuals are self-selecting themselves into the urban migrant stream given their characteristics. Highly skilled individuals would then migrate, leaving the least skilled behind.

Since the coefficient on the IMR in the urban wage equation is not significant, though positive, this implies that selection mechanism involves variables other than wages. On a similar note, the negative but insignificant coefficient on the IMR in the rural wage equation implies that the selection mechanism of lower skilled workers staying back in the rural areas is not telling the complete story either.

Though the self-selection mechanism is not wage differential dependent, the coefficient on the wage differential in the Probit migration equation is indeed positive and significant. What these two results together imply is that while rural-urban differentials are indeed present for those who actually migrated, there are many individuals who should be migrating on the basis of these expected differentials, but are not. i.e., there are other selection mechanisms such as kinship rules that need to be taken into account while modeling the migration decision.

Other variables such as marital status, being male, literacy, years of education and age show intuitive results. Being married increases wages. This is consistent with the theory in that marital status is a positive signal of reliability to the employer (reference). Finally the human capital variables of literacy and years of education also show consistent results and both positively affect wages.

3.3.3. Marginal Effects

Policy Makers may have many reasons to be concerned about migration flows. As shown in this study migration is an integral part of economic life and the social fabric of Pakistan. Our analysis of economic migrants moreover has attempted to identify some of the supply side characteristics that prompt or inhibit the decision to migrate.

The point of multivariate analysis is not only to identify different factors leading to a particular outcome, but also to estimate the relative weights of these factors in

34

comparison with each other. Policy makers interested in pursuing policies that increase, decrease or maintain the flow of migration, and in the efficient mix of policy levers can then benefit from such an exercise.

Our analysis has shown that there are several ways in which social and economic policy can affect migration (see Table 29). One of the main findings of this study is that the two most important determinants of migration are the rural-urban wage differential, and access to agricultural land.

The marginal effect for the wage differential implies that a percentage change in wage differentials will, ceteris paribus, increase the probability of migration by approximately 0.05 probability points *at* the average wage differential[28]. Since the Probit is non linear in its arguments, one would expect this probability to increase (decrease) non-linearly with an increase (decrease) in the wage differential.

For the land ownership dummy variable, the marginal effect, in essence an impact effect provides the change in migration probability induced by a discrete change in the dummy variable. Ownership of land for example decreases the probability of migration by 0.05 probability points *compared to* those who do not own land.

It is interesting to note that the quantitative effect of unitary changes in both these variables are similar but work in the opposite direction. What this implies is that at the quantitative level, the effect of either instrument on migration probability is the same; what matters therefore are the relative economic, political and social costs of implementing either policy.

Table 29
Marginal and Impact Effects of Independent Variables

Variable	Marginal Effect	P-Value**	X-bar
Age	0.004	5.59	38.98
Age-Square	-0.00004	-5.2	1720.02
Married*	-0.02	-2.98	0.84
Literacy*	0.01	2.73	0.65
Years of Education	0.001	4.67	3.87
Ownership of Agricultural Land *	-0.055	-13.17	0.39
Wage Difference	0.045	17.29	0.24

* Marginal Effect is for discrete change of dummy variable from 0 to 1.
** P values are the tests of the underlying coefficient being 0.

4. CONCLUSIONS

The objective of this paper was to glean all the available statistical evidence regarding patterns, trends and determinants of internal migration in Pakistan. Using all data sets that contained information on migration and were in the public domain i.e. the Pakistan Integrated Household Survey 1998, the Labour Force Survey 1998 and the Pakistan Population Census 1998, the previous sections have provided some insight into the magnitude and the nature of internal migration.

---

[28] STATA computes marginal effects for all variables at the variable mean.

This paper departs from the usual exercise of calculating the rate of in-migration in two ways. Firstly the use of the PIHS allowed the calculation of a rate of in migration that included intra district movements as well as inter district movements. Earlier studies, using the LFS were unable to provide such an inclusive measure. As can be expected, the PIHS rate of 21.5 percent is much higher than the LFS rate of 13.5 %. Data considerations however preclude precise estimation of the different contributions of inter and intra district migration.

Secondly, and perhaps more importantly, the analysis posits a different definition of the rate of migration: by allowing households to be labeled migrant or non-migrant on the migrant status of household members, we find that almost half of the households, 46.5% in Pakistan are migrant households.

Given that the study made use of three sets of cross sectional data from a similar time period, direct estimation of time trends was not possible. However, bifurcating individual migrants according to the time of actual migration allowed some preliminary comments to be made. This treatment of data suggests that in-migration flows have been increasing over the decade 1988-98. More importantly perhaps, it suggests the possible presence of a large number of transitory migrants who migrate more than once in a life time.

The paper also sheds light on intra and inter provincial movements. The data suggests Sindh is the only province that is a net recipient of inter-provincial migrants. On the other hand, Punjab and NWFP are the main sources of inter provincial migrants. We also find evidence to support the hypothesis that intra provincial movements dominate inter provincial movement.

The study also tests the anecdotal evidence of increasing intra province migration from South Punjab. Defining South Punjab as Bahawalpur, Rahim Yar Khan and Rajanpur we find that while increasing, this stream only constitutes 1.5 percent of the total intra provincial movement in the Punjab. Nevertheless, this movement conforms to definitive patterns: People from Bahalwalpur move to Bahawalnagar, those from Bahawalnagar move towards Pakpattan, Okara and Vehari, those from Rahim Yar Khan move to Bahawalnagar and Vehari. The highest growth rates are however experienced by the migrant stream moving towards urban districts such as Sialkot, Lahore and Faisalabad.

The paper also provides an econometric treatment of PIHS data on rural-urban labour migration. The methodology departs from the existing econometric discourse on migration in Pakistan in that rural-urban wage differentials are explicitly modeled as endogenously determined variables in the migration model. While the wage differential significantly increases the probability of migration, the overall low fit of the model suggests that factors besides economic variables are instrumental in the migration decision. These findings are in line with the statistical observations of patterns of migration from the South Punjab.

REFERENCES

Agesa, R. (2001). "Migration and the Urban to Rural Earnings Difference: A Sample Selection Approach," *Economic Development and Cultural Change,* pp 847-865.

Ahmed A.M., and I., Sirageldin. (1994). "Internal Migration, Earnings, and the Importance of Self-selection," *The Pakistan Development Review,* Vol. 33, No3, pp211-227

Ali, Imran (2003). *The Punjab under Imperialism,* 1885-1947. Karachi, Oxford University Press, 2003,

Bertrand, M., and S. Mullainathan. (2004). "Do people mean what they say? Implications for Subjective Survey Data," Mimeo, Harvard University.

Deaton, A., (1997) *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy,* The International Bank for Reconstruction and Development, Washington D.C.

Duncan, G., and D. Leigh (1980), "Wage Determination in the Union and Non Union Sectors: A Sample Selectivity Approach", *Industrial and Labour Relations Review,* Vol 34 , No 1, pp.24-34.

Gazdar, H. (2003). "A review of Migration Issues in Pakistan," *Migration Development and Pro Poor Policy Changes,*

Gazdar, H. (2004). "Labour Markets and Poverty In Pakistan: Institutional Arrangements and Policy," Working Paper 2, Center for Research on Poverty Reduction & Income Distribution, Islamabad.

Greene W. (2002). *Econometric Analysis,* Pearson Publishing, US.

Harris, J., and M. Todaro, (1970), "Migration, Unemployment and Development: A Two Sector Analysis", *American Economic Review,* Vol 60, no 1, pp.126-142.

Heckman, J. (1979). "Sample Selection Bias as A Specification Error," *Econometrica,* Vol. 47, No1, pp 153-163

Irfan, M. (1986). "Migration and Development in Pakistan: Some Selected Issues," *The Pakistan Development Review* 25:4, 743-755

Irfan, M., L. Demery and G.M. Arif. (1983). Migration Patterns in Pakistan: Preliminary Results from the PLM survey, 1979. Pakistan Institute of Development Economics, Islamabad. (Studies in Population, Labour Force and Migration Project, Report 6).

Khan, Aliya H. and Lubna Shehnaz. (2000). "Determinants of Internal Migration in Pakistan: Evidence from the Labour Force Survey, 1996-97," *The Pakistan Development Review,* 39:4 Part II (Winter) pp.695-712.

Madalla, G.S. (1986). *Limited Dependent and Qualitative Variables in Econometrics,* Cambridge University Press, Cambridge.

Mincer, J. (1979). "Family Migration Decisions', *Journal of Political Economy*," Vol 86, No. 5

Nasir, Z.M., (2002), "Returns to Human Capital in Pakistan: A Gender Disaggregated Analysis", *Pakistan Development Review,* Vol 41, No 1, pp.1-28.

Nakosteen, R,A., and M. Zimmer (1980). "Migration and Income: The Question of Self Selection", *Southern Economic Journal,* Vol 46, pp.841-851.

Pappola, T.S. (1981). *Urban Informal Sector in a Developing Economy,* New Delhi, Vikas Publishing House.

Seiler, F., and M. Karim. (1986). *Migration in Pakistan*, Vanguard Books, Lahore.

Social Policy Development Center. (2003). *Social Development in Pakistan: The State of Education*, SPDC, Karachi, Pakistan.

Todaro, M. (1969). "A Model of Labour Migration and Urban Unemployment in Less Developed Countries," American *Economic Review*, Vol. 59, pp 138-148

Williamson, J., (1988) "Migration and Urbanization" in *Handbook of Development Economics,* Vol1, Chenery, H. and Srinivasan, T (eds.), North Holland Publishers, Netherlands.

Yap, L. (1976). "Rural-urban migration and Urban Under employment in Brazil," *Journal of Development Economics*, Vol. 3 pp: 227-243.