

Is Informal Sector Employment Marginal to Formal Sector Growth?

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1. INTRODUCTION

Pakistan has adopted a neoliberal regime to open the economy to global competition and reduce the role of the state. This directional change brought increased flow of overseas remittances, speculative investment, and consumerism. Consequently, the economy in mid-2000s grew but commodity-producing sector contracted. Public sector spending has been falling, especially on social sectors. There are inadequate provisions for social security and employment based income guarantees. However, this growth and stability was short lived and there is now a fragile state and slowing economy. In the absence of an effective regulatory role of the state, and due to the failure in developing a long-term strategy to harness the labour force potential, there is a huge informal sector existing side by side with the formal economy. Almost 22 million of the employed labour force is earning its livelihood in streets and the government has no record of it. The informal workers can be categorised as self-employed workers and wage workers, doing diversified jobs from petty traders to small producers and from rickshaw driver to shoe shiners. It is difficult to measure the value added contribution of the informal sector in Pakistan. Indirect estimation approaches on the basis of employment and hours worked have been used to estimate the contribution of informal economy. For instance, Idris (2008) estimates the share at 36.8 percent of GNP, which is significant. Arby, Malik and Hanif (2010) measured the size of informal economy in Pakistan through a monetary approach. They find that the size has declined considerably.

Pakistan is the 6th most populous economy of the world with a total population of 177.10 million in 2011-12, of which 85.51 million (48.3 percent) are females. Out of the total population, 59.33 million (34 percent) constituted the recorded civilian labour force for all age groups, almost 77 percent consisting of males.¹ According to Labour Force Survey (LFS) 2010-11, almost 74 percent of employment in non-agriculture work force is

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¹GOP (2012).

unorganised and in informal sector. However, women's share of the informal non-agricultural employment was a miniscule 4 percent of all employment. Informal workers are present in rural as well as in urban areas.

According to the Articles 3 and 37e of the Constitution of Pakistan (2010), the state shall "ensure the elimination of all forms of exploitation and the gradual fulfilment of the fundamental principle, from each according to his ability, to each according to his work" and "make provision for securing just and humane conditions of work...". Pakistan is a signatory to the Universal Declaration of Human Rights 1948 that recognises the right to work, to freely choose employment and to have just and favourable working conditions. It has ratified all eight core conventions that codify the four most basic human rights related to the world of work i.e. the right to organise and engage in collective bargaining, the right to equality at work, the abolition of child labour and the abolition of forced labour. For ensuring the implementation, Pakistan has the Labour Protection Policy (2006) and Labour Inspection Policy (2006). However, the constitutional framework, ratification of ILO conventions and labour policy has not satisfactorily secured labour rights even in Pakistan's formal sector. The informal sector remains unrecognised in rights terms.

Data available on the informal sector do not depict the true picture. No comprehensive survey has been carried to find the contribution of informal sector in Pakistan [Gennari (2004)]. Kemal and Mehmood (1998) made the first attempt to conduct a survey of urban informal enterprises in Pakistan. Their study finds tax exemption and no government intervention as a reason for its growth. Informal enterprises are found to be intensive in unskilled labour. Most of the information about the informal sector and especially women's involvement in Pakistan comes from individual studies [Shaheed and Mumtaz (1981), Mumtaz and Saleem (2010)] that have highlighted the key characteristics of the sector i.e., long hours of work, lack of continuity, absence of contracts and its often hazardous nature. Khan and Khan (2009) termed women's work in informal sector as a struggle for family survival. They were of the view that women's contribution is an effective way to reduce family poverty. Data on informal sector is quite general without informing about any integration with the formal sector. Moreover, there is a lack of data on actual number of informal workers in the economy and what the factors for their continuous growth are. The government documents such as the LFS, Medium Term Development Framework and Poverty Reduction Strategy Paper have failed to respond to the dilemmas of informal workers and to the shortcomings of the informal sector, besides failing to furnish some reasonably reliable information on the informal economy. This paper is an attempt to bridge this gap.

This paper looks at the existing scenario of informal sector in Pakistan to understand the socioeconomic characteristics of individuals engaged in the activities of street vendors, waste pickers and home-based workers in five towns of the city district of Lahore. It builds a model to show that informal employment continues to be marginal to the formal sector. We test the structuralist hypothesis of heterogeneity [Portes and Schauffler (1993)].

Followed by this introduction, Section 2 outlines conceptual frame work, Section 3 explains methodology and research design. Section 4 explains some international findings, while Section 5 gives descriptive analysis on the bases of LFSs and the results of our survey of towns in Lahore. Section 6 provides results of the dynamic panel data modelling exercise. The last section presents conclusions and major findings.

2. CONCEPTUAL FRAME WORK

In its simplest form, microeconomic theory explains the relationship between wages and labour demand. Employment depends on equality between wages and marginal productivity of labour in a profit-maximising competitive structure, keeping capital constant. Increased labour demand results in higher wages, which decreases profit as prices are determined exogenously. Increased wages have a negative effect on labour demand because of scale and the substitution effects [Franz (1999)]. Efficiency wage model brings institutional arrangements along with productivity differential in wage setting. It states that shrinking employment has negative implications and is costly for firms. Firms can pay wages above marginal productivity. We can say that productivity differential and institutional setting play a crucial role in wage setting. For increasing employment opportunities, wages should be below the marginal productivity of the labour [Lehment (2000)].

$$\hat{\beta} = \alpha(\pi^* + \hat{\rho}) - \hat{w}$$

$\hat{\beta}$ = increase in employment, π^* = employment neutral increase in labour productivity,

$\hat{\rho}$ =inflation rate and \hat{w} is wage increase.

Mishel and Shierholz (2011) describe the increasing gap between productivity and wage setting. Wages are sluggish to grow as compared to productivity, particularly in private sector. These theories discuss employment in private sector in general, and do not discriminate between employment in informal or formal sector.

According to dualistic theories, surplus labour is the reason for employment in informal sector; hence it results in lower wages. There is an alternative view presented by Hart (1973) and De Soto (1989) that employment in informal sector has low barriers to entry, is self-employment, uses less physical capital and lacks well-defined property rights. However, empirical evidence does not support this view. Employment in informal sector is growing but continues to be a residual. According to Chen (2007), when the notion of informal sector first got attention in the seventies, it was considered marginal and peripheral, not linked to the formal economy. Some continued to believe that the informal sector in developing countries would disappear once they achieved sufficient levels of economic growth and modern industrial development. However, the informal economy is not only growing but also contributing to economic growth and enjoying linkages with formal sector [Pietrobelli, Rabellotti, and Aquilina (2004), Bruton, Ireland and Ketchen (2012)]. But the market never accounts for vulnerability while claiming to resolve the question of economic choices [Portes and Hoffman (2003)]. “Freedom without opportunity is a devil’s gift, and the refusal to provide such opportunities is criminal. The fate of the more vulnerable offers a sharp measure of the distance from here to something that might be called ‘civilisation’” [Chomsky (1997)]. Informal workers are poor because their incomes are low, they have low skills, and there is no comprehensive government plan to protect the workers and regulate employers in informal sector [Charmes (2000)]. Neoliberal agenda was market oriented and gender neutral. It never paid attention to family and the position of women in a family [Coulter (2009)]. In actual practice, gender neutrality is “implicit masculinisation of these macro-structural models”

[Freeman (2001)]. Neoliberal policies affect men and women differently and their impact on various women groups is discriminatory. These policies have increased gender inequalities and poverty. Women are economically poorer because on average asset poverty is higher amongst women. Their mobility is low and it makes it difficult for them to avail opportunities and alternatives [Pearson (1998); Standing (1999), Hutton and Giddens (2000)]. Women are usually on the lower tier of the workforce; they work in the informal sector as shock absorbers [Babb (1996)]. The share of women in the export oriented industries has increased but “international institutions and trade agreements rarely take the gendered nature of globalisation into account” [Bell and Brambilla (2002)].

Portes and Schauffler (1993) presented the structuralist view of employment in informal sector. According to this exposition, employment in informal sector is neither dualistic in nature nor subsistence. It is heterogeneous but not isolated from formal sector. Informal sector activity is closely associated with formal sector activity. Low labour cost (wages) and low regulations are important for the growth of big firms who sub-contract to these petty workers at low rates. Informal workers provide low cost goods to big firms and most of the time these workers are performing the same type of work at low compensation. Informal worker supports the formal activity. Informal sector constitutes at least two sub-sectors, one dynamic and pro-cyclical and the other demonstrating a disconnect with the formal economy and behaving countercyclical. Employment in informal sector is divided along socioeconomic lines with a view to identify the dynamic and the static sub-sectors.

3. METHODOLOGICAL FRAMEWORK

We use the three possible methodologies—primary survey, secondary data from LFSs and modelling informal sector on the basis of LFSs. The definition used for informal sector is the same as given in the LFSs.

Data from Labour Force Survey

LFSs are used to analyse basic features of the informal sector of employment in Pakistan by area, gender and employment status. There are, however, some gaps. LFSs ignore the fact that informal workers are part timers and are involved in multiple jobs simultaneously. These workers are usually engaged in work which has seasonal variations. There are also variations in wages among informal workers due to age, gender, experience, and location. LFSs do not give any information on wages in informal sector, nor income level and household characteristics based clustering.

Primary Survey

In order to get further insights into the various dimensions of the informal sector and the lives of those engaged in activities that are widespread but underrepresented or ignored in the national surveys and planning, we carried out a survey in Lahore. This survey helped us to find socio-economic profiles, nature, and conditions of informal work and causative factors of employment in the informal sector. According to international studies [Chen, *et al.* (2012)], three types of informal work broadly represent the informal

sector—street vendors, waste pickers and home-based workers. Our survey chose the same categories of workers.

Convenience sampling technique was employed to select individuals, as no comprehensive list is available for street vendors and waste pickers. Home based workers were identified with the help of various NGOs working in Lahore. Structured questionnaires were used to interview 100 street vendors out of which 75 were male, 95 waste pickers of whom 85 were male and 105 home based workers all of whom were females. The majority of the workers (85 percent) were within the age group of 25 years and above. Issues and policy gaps were highlighted through focus group discussions.

Modeling Employment in Informal Sector

We use dynamic panel data modelling technique by Arellano and Bond (1991) to find the relationship between formal sector wages and informal employment. Employment in informal sector (y_{it}) is measured as percentage distribution of employed persons 10 years of age and over engaged in informal sector by major industry division and sex. Explanatory variables include wages and growth rate of industry. The measure of wages, (w_{it}), is average monthly wages of employees by wage groups and major industry divisions.

Panel Data Modelling

Panel data refers to data sets consisting of multiple observations on each sampling unit, generated by pooling time-series observations across a variety of cross-sectional units including countries, states, regions, firms, or randomly sampled individuals or households [Baltagi (1998)]. Panel data set is considered desirable because of efficiency gains due to greater variability and alleviation of multicollinearity problem in cross sectional or time series data [Griliches and Hausman (1986)]. One can identify some effects which are not detectable in time series or in cross sectional data. Traditionally it provides more sophisticated and reliable estimates with a less restrictive behavioural model. However, individual heterogeneity and exogeneity (common cross sectional dependence) pose a challenge. There are issues related to measurement error and questionnaire design as well. Failure in controlling them can generate bias and inconsistent result [Hsiao (1986)].

$$y_{it} = b'_{1i} w_{it} + b'_{2i} z_t + b'_{3i} h_i + \varepsilon_{it}$$

where

w_{it} ($k_1 \times 1$) varies both across time and groups.

z_t ($k_2 \times 1$) varies only across time periods, measures unobserved time effect.

h_i ($k_3 \times 1$) varies only across groups, measures unobserved individual effect.

$$y_{it} = \beta x_{it} + \varepsilon_{it}$$

where x_{it} is a vector of observations on k explanatory variables, β is a k vector of unknown coefficients and ε_{it} is a zero mean random disturbance with variance $\sigma^2\varepsilon$. Estimating fixed effect will result into biased results and within transformation is unable to estimate invariant time effect of gender and individual invariant effect of wage on employment. If h_i and z_t are random variables with zero means and constant variances

σ^2_h and σ^2_z , the model is known as random effect model. It can be estimated with GLS by regressing y_{it}^* on X_{it}^* .

3.1. Dynamic Panel Model

$$y_{it} = y_{it-1} + \beta x'_{it} + \varepsilon_{it}$$

Correlation between lagged dependent term and error term will generate biased and inconsistent results. Its inconsistency will increase with large 'T'. Hsiao (1986) suggested first difference transformation. It can resolve the problem of inconsistency of GLS estimator with T being large and 'N' small, but may generate serial correlation.

Bias can result especially when the sample is finite or small. If one uses general methods of moments, with instrumental variables, the use of the proxy variables or instruments may circumvent problems with correlations of errors. Moreover, there are a large number of instruments provided by lagged variables.

Arellano (1989) used second difference instead of difference at level, but it generated singularity issue. Arellano and Bond (1991) recommended GMM with use of instruments and larger orders of moments to obtain additional efficiency gains. They further recommended using orthogonality conditions between lagged variables and GMM framework and Sargan-type test for over-identifying restrictions to resolve singularity point and small variance.

3.2. Data Sources and Limitations

Data was taken from LFSs during 2001-2011. As the LFS changed its questionnaire design three times during this period, some adjustments were necessary. Wage groups after 2005 and 2008 were different. Since no wage data for formal sector employment was available in LFS before 2005, we had to use PBS information on construction workers wages for this purpose. Labour force survey has different characterisation of employment in major industry division before 2005. We have to aggregate and merge some categories. Dynamic panel data model was estimated on the basis of aggregated labour force data. We used incomplete panel data model to deal with randomly missing observations [Baltagi (1985)]. For socio-economic profiling of informal workers we used structured questionnaires to interview 100 street vendors out of which 75 were male, 95 waste pickers of whom 85 were male and 105 home based workers all of whom were females.

4. INTERNATIONAL FINDINGS

Informal workers are not counted as members of organised labour force recognised by laws. They have low incomes, live at subsistence level and have no link and interaction with or access to government. They have no voice, no recognition and no visibility [Rodin, *et al.* (2012)]. Being the only work opportunity for the workers who decide to join the informal sector, it is considered as the optimal decision of the worker [Chaudhuri and Mukhopadhyay (2010)]. Informal workers rise and fall with the fate of formal sector due to its linkages with formal sector, trade and industry, etc. It is cost effective for the large firms to hire cheap labour at lower wages. Informal enterprises exist because of the cumbersome procedures and rules of registration for the firms and to

save taxes [Soto (1989)]. According to De Pardo and Castano (1991), informal activities are more prevalent in the age group of (4–19) and among individuals older than fifty years. Findings of others show that women are more likely to be informal workers or operating business as unpaid family workers as they are also responsible for family and child care. Various studies show that males are usually more involved as family traders and street vendors as compared to women (41 percent). Informal workers are usually literate and concentrated at low level of skills and schooling. Informal sector is characterised by longer working hours, low wages, no job compensation, wage differential on the basis of sex and low turnover [Guisinger and Irfan (1980); Fortuna and Prates (1991), De Pardo and Castano (1991)].

Florez (2002) gives evidence that employment in informal sector is counter cyclical. It shrinks with economic growth and expand during recession. Ranis and Stewart (1999) find that formal sector has pro-cyclical growth and informal sector has counter-cyclical growth in Thailand and Philippines.

V. CHARACTERISTICS OF THE INFORMAL SECTOR

This section outlines the characteristics of the informal sector on the basis of LFSs and our survey of Lahore.

5.1. Pakistan

According to the LFS data, the informal sector in Pakistan is more or less evenly distributed across rural and urban areas. Almost 91 percent of the informal sector workers are male. Women seem to be non-existent in the informal economy according to official figures (Table 1). According to LFS 2010-11, 54.94 percent of the total employed labour force was engaged in the non-agriculture sector and the informal sector, which falls within it, accounted for 40.56 percentage points (21.8 million) of all employment. However women's share of the informal non-agricultural employment was a miniscule 3.93 percentage points of all employment though still more than double that of women in formal employment in the same sector (Table 1). The share of the informal sector has not changed significantly but more women are joining the informal sector as the female share increased from 3.7 percentage points in 2007-08 to 3.93 percentage points in 2010-11.

Table 1

Percentage Distribution of Major Sectors of Employment in Pakistan

	2007-08			2009-10			2010-11		
	Total Employment	Male	Female	Total Employment	Male	Female	Total Employment	Male	Female
Pakistan									
Total	100	79.5	20.4	100	78.21	21.79	100	77.51	22.49
Agriculture	44.7	29.3	15.3	44.97	28.63	16.33	45.06	28.09	16.97
Non-agriculture	55.3	50.2	5.1	55.04	49.58	5.46	54.94	49.42	5.52
Formal	15	13.6	1.4	14.69	13.22	1.47	14.38	12.78	1.6
Informal	40.3	36.6	3.7	40.35	36.36	3.99	40.56	36.64	3.93

Source: Relevant Labour Force Surveys.

Figures in table are in percentages.

The LFS 2010-11 (Table 2) reveals that only 0.07 percentage point women are recorded as employers. Compared to this, in 2007-08 there was no women employers. Women employment in the informal sector for all categories and areas has slightly increased but it contracted for males. Unpaid family workers were 1.75 percentage points, another 3.52 percentage points were self-employed and employee in the sector were 1.75 percentage points. One of the major issues regarding the informal sector is the invisibility of women workers in the national statistics and in the policy discourse. This is due to definitional problems and socio-cultural constraints as well as gender biases and flaws in sample sizes and data collection methods. As a result activity patterns of women workers remain ignored, not because they are not working but as many independent studies have highlighted, their work does not get counted or recognised. On almost every site of the Pakistan Participatory Poverty Assessment [PPA (2003)] for instance, women were found to be engaged in productive work (sewing shoes, footballs, peeling nuts, etc.). A number of reasons may be offered for the invisibility, including the fact that women do not seem to own businesses in the informal economy; that women are less likely to be reported as self-employed and much more likely than men to be reported to be unpaid family workers. Similarly, one sees that men in the informal sector form 90 percent of the total employed whereas women barely form one-tenth of the sector.

Table 2

Percentage Distribution of Employment Status in Informal Sector by Sex and Area

Years	Area	Pakistan	Total	Employer	Self-employed	Unpaid	Employee
2010-11	All Area	Total	100	2.91	42.71	10.42	43.96
		Male	90.32	2.84	39.2	8.68	39.61
		Female	9.68	0.07	3.52	1.75	4.35
	Rural	Total	51.18	0.78	21.89	4.34	24.16
		Male	45.76	0.76	19.67	3.36	21.97
		Female	5.42	0.02	2.22	0.98	2.2
	Urban	Total	48.82	2.12	20.82	6.08	19.79
		Male	44.56	2.07	19.52	5.32	17.65
		Female	4.26	0.05	1.3	0.76	2.15
2007-08	All Area	Total	100	2	41.6	12	44.5
		Male	90.8	2	39.2	10	39.6
		Female	9.2	0	2.4	1.9	4.9
	Rural	Total	51.1	0.5	21.3	5.5	23.9
		male	45.7	0.5	19.8	4.3	21.1
		Female	5.4	0	1.5	1.1	2.8
	Urban	Total	48.9	1.5	20.3	6.5	20.6
		male	45.1	1.5	19.4	5.7	18.5
		Female	3.8	0	0.9	0.8	2.1

Source: Relevant Labour Force Surveys.

5.2. Punjab

In Punjab 43.4 percent of the labour force is employed in the agriculture sector whereas 56.5 percent is employed in the nonagricultural sector. Approximately 13.1 percentage points of the overall employment in Punjab is in the formal sector and 43.4 percentage points in the informal sector. The informal sector comprises 38.0 percentage points of male and 5.4 percentage points of female workers. Women have only a small

role to play in Punjab, which is considered as the most affluent province of Pakistan. However, there are major income disparities within the population. Poverty is increasing both in urban and rural areas of Punjab.² It has more income poverty than food poverty. Mostly, poverty is concentrated in the depressed areas and *katchiabadis* and slum concentrations.

5.3. Lahore

Districts are the administrative divisions under the provinces in Pakistan. Punjab has 35 districts with 400 tehsils and more than 6,000 union councils. Lahore is the second largest city of Pakistan, the fifth largest city of South Asia and the 25th largest city of the world. It has a population of above 10 million. It is the capital of Punjab, the largest province of Pakistan. This city has not been included in the district level employment report published by the Pakistan Bureau of Statistics for 2009-10. It has a literacy rate of 83.5 percent against the literacy rate of 73.3 percent for Punjab. It is thus one of the more literate areas of Pakistan. The unemployment rate was 6.4 percent [MICS (2008)].

Lahore is divided into nine towns and one military cantonment area for administrative purposes. The field research for this paper was conducted in five towns. These include Data Ganj Baksh Town, Samanabad Town, Nishtar Town, Ravi Town and Shalimar Town. In our survey, 60 (20 percent) respondents lived in Data Ganj Baksh Town, 60 (20 percent) in Samanabad Town, 40 (13 percent) in Nishtar Town, 80 (27 percent) in Ravi Town and 60 (20 percent) in Shalimar Town. The following activity profiles emerged.

5.3.1. Activity Profiles

Waste Pickers: These workers collect waste from street and neighbourhood dumps. Usually they rummage for recyclable items like paper, glass, steel scrap, plastics, etc. Most of the waste pickers are Afghan refugees who have camped in the area. Bulk of the waste is hazardous in nature. A number of them scavenge from Lahore's major dumping ground near Mehmood Booti (in Ravi Town) on the banks of the River Ravi, where the city's waste is dumped. An alarming reality is that the waste and damaged material is not vetted properly before recycling and can be injurious to the health of the pickers as well as the end users of the recycled products.

Home Based Workers: These workers are usually women working in their own houses. Women consider their work as a part time activity and usually every member is involved as helper. It is a safe opportunity of work and a regular source of income for their family's education or health. These women are involved in work related to textiles, garments, jewellery, shoemaking, washing bottles, candy wrapping and electronics. One of the grave issues for these women is low wages despite long hours of daily work. Home-based workers earn from Rs 100 to 150 for 16 hours of work. These women are aware of their exploitation by the middleman because many NGOs are working with them in resolving their capacity issues. Women harassment was found as a common problem.

²Multiple Indicator Cluster Survey 2007-08.

Street Vendors: This is the most visible and diversified subsector of the study. These are usually self employed entrepreneurs who prefer to work independently as compared to work under someone in a factory as an informal worker. This group not only varies with respect to economic activity but also differs from each other with respect to working hours. Their clientele also varies from formal sector factories and retailers to the poor and vulnerable. Some vendors are involved in trading between cities and working as self employed entrepreneurs. Others own carts or stalls and sell things by using public spaces. It also includes peddlers who hawk to sell their products in parks, streets and at rail and bus stations. We found insignificant presence of women workers. All types of vendors complained about inappropriate treatment by various government departments. A few reported a regular amount of monthly charges which they have to pay in order to have liberty at their work place. Mostly children are found as helpers working at very low wage.

5.3.2. Socio-economic Profiles

Our survey in Lahore showed informal workers losing out not only from the exclusion from the economic sector, but also suffer the pains of social exclusion. This exclusion is reflected in low education, low skills, low wages, poverty, lesser availability of civic facilities, financial services, and harsh working conditions. Details follow.

First, our research area showed that all respondents are buyers of basic urban facilities but due to living in underserved *katchiabadis*, receive poor quality of service. Streets and roads were a shambles. All respondents have shared housing, 57.2 percent of the respondents own a house which is mostly family property, 23.4 percent live in rented houses and the rest of the respondents live in government subsidised housing or properties owned by the employers. 70 percent of these houses were in *katchiabadis*. Most of these houses are small and consist of one to two rooms. 86 percent of the houses are *pucca* (have concrete foundations). Almost 96 percent of the residents have electricity, 81.4 percent of the inhabitants have access to gas, and 73 percent have usage of telephone. Drinking water is available to 96 percent of the households and 98 percent have toilet facilities available in their vicinity. 5 percent of the inhabitants own agricultural land and of this 85 percent own land that is valued at over Rs 100,000. Almost all informal workers complained about electricity shortages and high load shedding. About 40 percent of the respondents had no transportation facility, whereas about 10 percent use bicycles and a quarter carts for their work related activities. Child care was an issue for women who worked outside the house as vendors.

Secondly, low education is a distinct feature of informal sector in our research. The total literacy rate among those who are above 10 years is 60 percent, and 56 percent for females. The net primary enrolment rate in research area is 72 percent with 59 percent for girls. The gross primary school enrolment rate is 104 percent with 97 percent for girls. The primary public school attendance rate of students between 5 to 17 years is 24 percent though the access to schools (less than 2 km) is 95 percent. Amongst the interviewed almost 65 percent have received some type of education. Within the literate 40 had received formal education with 41 percent completion rate at primary level. Only 4 percent manage to complete the matriculation level. None of the workers had received any training. Only two learned on the job that they were currently doing. This shows that in informal sector many are deprived of better education and skill training.

Thirdly, low income is also an attribute of informal sector. Most of the workers (69 percent) are earning hardly Rs 6000 per month: 20 percent of the respondents earn less than Rs 3000 per month, 6 percent earn more than Rs 10,000 every month and 5 percent of the households received remittances from abroad with the median value of Rs 400,000 in the year 2010-11. Low education, low income, large family size and high dependency ratio are reasons for the prevalence of extreme poverty in the informal sector. Informal workers (34 percent) in our survey felt they had no other option as preferred mode of earning. Only half of the respondents wished to be part of the formal sector to benefit from the facilities that they feel are being provided in the formal sector e.g. the minimum wage. A small number (less than 5 percent) also felt that they would be eligible for social protection and have better access to the market through formalisation and better economic prospects. The remaining respondents are happy with their informal status. However, for more than two-thirds of those interviewed, poverty played a key role in forcing them to join the informal sector. A small number (10 percent) felt that with rampant unemployment they had been almost forced to join the informal sector. Almost 52.5 percent of the respondents had households with 7-9 members with 24.6 percent households having eight to ten family members and about 5 percent having more than eleven family members. Informal households are poor because only a few family members are part of the workforce. There were only 20 percent families with more than two breadwinners and rest of the families had only one member of the household with the responsibility to earn.

Fourthly, a crucial aspect of the informal sector is very low capacity to save and poor access to financial services. Approximately 52 percent claimed that they just manage to live and spend all their earnings, while over 44 percent of the respondents reported having taken out loans. There seem to be five main purposes of borrowing in the sample: business, household expenditures, marriage of daughters, medical treatment, and children's needs. Most informal workers borrow for medical treatment and household expenditure. These loans are usually obtained in informal ways and only 10 percent of the respondents tried to avail loans from formal banks and only 6 percent were granted. Around 20 percent have obtained loans from various NGOs and rest of the respondents prefers to borrow from friends and relatives. Only 6 percent of the households are able to save and 4 percent of them use informal ways of savings (committee system and gold). Only 10 percent of the informal workers have bank accounts and 4 percent have the facility of ATM card and credit card.

Fifthly, all informal workers reported poor medical facilities. They usually use traditional medicine or fake healers. Headache was the most common ailment that the respondents suffered from, besides seasonal ailments like fever, coughs, cold and diarrhoea. Some also got injured during work. When injured, almost half of them tried home treatments and the other half sought medical help. Those working outside homes (waste pickers and vendors) are also exposed to road accidents and occasionally dog and snake bites. Employers/contractors were never willing to pay compensation for the accidents occurring at work.

Sixthly, almost nonexistent entertainment facilities were reported for the lowest tier. It appears that these workers toil all day and hardly get time for recreation. In spite of that, 75 percent respondents said they do manage to take time out for watching

television, 15 percent of the respondents said they listen to the radio and tape recorder in their leisure time. Occasionally, they went to public parks and attended marriage ceremonies and family get-togethers on *Eid*, which they reported as entertainment.

Table 3

Sample Characteristics of Survey

Mean Age	25
Age Range	14–50
Average Number of Children	5
Family Size	7-9
1 Bread Winner in the Household	80%
Own a Shared House	57%
Concrete Foundations (Pucca Ghar)	86%
Literacy Rate	65%
Female Literacy Rate	56%
Primary School not Completed	59%
School Access	95%
Average Mean Income per Month	6000
Assets Value above Rs 100,000 (Livestock, Equipment, Land)	10.70%
Banking Facilities	10%

5.3.3. Work and Working Conditions

Most of the workers were not satisfied with their working conditions and wanted to leave work if they could, though a quarter of the sample said they were happy and would like to stay in the work that they were doing. About 30 percent were uncertain and evasive about what they would prefer to do, as they did not have any other options. The rest of the respondents were of the view that they were willing to leave work if a government job was available. Most (80 percent) of the women were satisfied and contented with their work as it was just a part time activity, allowing them to contribute to family earnings. Here are the details.

First, our research showed that harsh working conditions are a reality of the informal sector. 68 percent of the respondents complained about it: 60 percent of them complained about tough work and long working hours, 12 percent talked about heat and no provision of shade, and remaining 28 percent had other problems like travelling, nonavailability of Sui Gas and lack of husband's permission to work outside. Another prominent feature of informal work condition is abuse at work but our respondents considered it as something separate from working conditions. A little over a quarter reported abused at work, the majority stating that they had been victim of verbal abuse, 5 percent said that they were subjected to physical abuse, and one percent of the workers had suffered from sexual abuse. It should be noted that family members and associates had generally abused them. Two had been exploited by their employers. All the home based workers in our survey reported exploitation by the middle man, whereas waste pickers reported abuse by the contractors and family associates.

Secondly, most of the workers reported long working hours and having to carry heavy loads, something that the home based workers were spared. But they too had to work for long hours. About 41 percent worked for 9 to 12 hours a day and another 34.3 percent for up to 8 hours a day with no day off in a week. However 25 percent respondents managed to get a day off during the week. Almost 12 percent respondents carried up to 12 kgs of weight, 56 percent had to carry between 13kgs to 50kgs of weight, 22 percent respondents' load ranged between 51kgs to 100kgs and that of 10 respondents as heavy as 100kgs to 200kgs.

Thirdly, as the focus principally was on home-based workers, street vendors and waste collectors, these three groups were asked about the period for which they had been involved in this kind of work. Our survey of the informal sector showed that most of the respondents (about 68.9 percent) had been involved in their work for more than 5 years, and rest of the respondents joined informal work with no experience and for less than 2 years. Most of the informal workers are young, 70 percent of the respondents having started work when between 13 and 15 years of age and about 11.5 percent were forced to work at the age of seven.

Fourthly, 72 percent of those surveyed were unemployed and only 28 percent were doing some petty work in the formal sector. Out of these 28 percent, 4 percentage points were working as helpers/assistants, 10 percentage points were working as contract workers in different factories, 2 percentage points were assisting their fathers, selling vegetables or were working in a garment factory and 12 percentage points of the respondents (mainly women) reported doing nothing apart from the household chores.

Fifthly, isolation and no interaction with any government official or department is the hallmark of our survey. Non-registered, the informal workers are outside the tax net. All street vendors pay someone either in bribes or as *bhatta* and think of themselves as registered. They have the pride of working for themselves. Vendors putting up stalls in the weekly Tuesday/Sunday Bazaars pay Rs 100/day to the Market Committee as a fee on a weekly basis. Even those collecting waste in these Bazaars have to pay, though it is not clear whether this was official or just some kind of commission to the organisers to guarantee the collection.

Sixthly, those surveyed reported a general lack of support from official or unofficial quarters (NGOs, contractors/intermediaries). In cases of emergency or crises about two-thirds reported seeking help from family or friends though not necessarily receiving positive responses. Just one-tenth of the respondents confirmed that they had been approached by NGOs who had tried to assist them and some 15 percent reported assistance and support from contractors. When enquired about the kind of help they expect to get from the government or the NGOs, 55.7 percent respondents said that they needed financial assistance in order to meet their expenses: home/shelter; shop to be allocated to them in the market where they work; funds for marriages of their daughters and sisters. Only 2 percent respondents asked to provide education for their children and 5 percent wanted jobs for themselves, while 38 percent were not clear about the kind of help they needed.

VI. RESULTS AND DISCUSSION

This section provides empirical evidence of panel data model on the informal sector of Pakistan. A summary of the results of panel data model, fixed effect and

random effect is given in Table 4. Fixed Effects Model (FE) is used to analyse the common effect of the predictor which may or may not have a relationship with the outcome variable. It is also called within group effect. In our study a fixed effect model assumes that all factors that can influence employment in informal sector are the same. Fixed-effect models cannot be biased because of omitted time-invariant characteristics. In Random Effect Model (RE), there is an array of effects, so it allows variation.

Column II represents fixed effect estimates with group 1 (mining and quarrying) as a reference category. We estimated fixed-effects model assuming that wage is not constant for all the major industrial employment groups in informal sector in Pakistan. It allowed us to observe heterogeneity among various employment levels. Coefficients of fixed effect model are insignificant and show that employment in informal sector is negatively associated with wages. Value of rho shows 97 percent of the variance is due to differences across panels.

Table 4

Results of Panel Data Model (Fixed Effect) and (Random Effect)

	Model 1 (F.E) Coefficient (Standard Error)	Model 2(R.E) Coefficient (Standard Error)
X	-3.6E-05 (0.0000192)	-3.4E-05 (0.0000193)
Constant	7.607413 (0.2736723)	7.125552 0.004
sigma_u	10.45824	9.89076
sigma_e	1.827882	1.827882
Rho	0.970358	0.966974
Model effect	No	Yes
Group effect	Yes	-
Time effect	No	-

The coefficient of wage variable is the same in both FE and RE model. This means there is not much unobserved heterogeneity. On the basis of Breusch and Pagan Lagrangian Multiplier test for random effect, we rejected the null hypothesis and conclude that random effect is appropriate. There is significant evidence of differences across employment groups.

To find whether there is need to estimate time fixed effects while we are estimating fixed effect model, we conducted parm test. It is a joint test to see if the dummies for all years are equal to zero, in which case no time fixed effects are required. On the basis of parm test, we failed to reject the null hypothesis that all years' coefficients are jointly equal to zero; therefore, no time fixed effects are needed.

After estimating the panel data, we estimated the dynamic panel model. It enabled us to identify group effect and to control for missing or unobserved variables. Arellano and Bond (1991) suggest GMM that uses maximum lagged values as instrument to gain efficiency and minimisation of bias. We compared Arellano and Bond GMM one-step procedure with 21 instruments and two controls, GDP growth rate and population growth rate with System GMM, two-step procedure with 25 instruments and no control. The results of these experiments are given in Table 5.

Table 5

<i>Dynamic Panel Data Estimation</i>		
	Arellano and Bond Dynamic Panel Data Estimation (GMM1) 1 Step 21 (Instruments) and Two Controls	System Dynamic Panel Data Estimation (GMM2) 2 Step 25 Instruments
Y	Coef. (St. Error)	Coef. (St. Error)
L1.	0.240639 (0.19045)*	0.961388 (0.004016)
L2.	-0.04744 (0.161399)*	-3.6E-05 (9.39E-07)
X	-3.5E-05 (2.25E-05)*	-3.84E-06 (3.66E-07)
L1.	-2.8E-05 (2.37E-05)*	-
P	0.010621 (0.01988)*	-
G	-0.03149 (0.084973)*	-
L1.	-0.07803 (0.087973)*	-
_cons	5.901768 (3.339431)*	0.807782 (0.016671)

One-step GMM procedure outperforms the two-step GMM2. GMM1 produces smaller bias and a lower standard deviation results into efficiency gains. Interestingly, there is a tradeoff between the number of instruments and average bias, and the efficiency gain of the estimator.

In the four models, coefficient of wage equation is smallest in random effects model with minimum standard error. We can say GMM method is not superior in terms of average bias or efficiency.

VII. CONCLUSIONS AND FINDINGS

Informal sector is a permanent feature of our urban industrial sector and has grown over the years. It is heterogeneous and has a dynamic sub-sector supporting the formal

sector. On the whole, however, informal employment is marginal to overall GDP growth and informal sector workers receive wages less than formal sector wages. The marginalisation thus continues. Informal workers have to face social and economic exclusion. Work opportunities are limited because of low and poor quality of education, low skill, low wages, poverty, lesser availability of civic facilities, banking services and harsh working conditions. Employment in informal sector is due to rural-urban migration and labour surplus because of fewer opportunities in formal sector. Moreover, wages in informal sector are low because of low productivity, which is due to socio economic backwardness. The initial condition bias very much present in the case of Pakistan. Informal work appears as the only opportunity for earning a livelihood, which provides meagre means to satisfy basic needs. These workers are financially productive and a means of earning for formal sector.

Women's work is found invisible and unrecognised. No data is available as it is unpaid and non-monetised. Further, the rate of income that women in the informal sector earn is usually found to be low in comparison with those that are associated with the formal sector. The crucial factors for women employment are household size, the number of children in the household, dependency ratios, fertility patterns and housing characteristics. Most of the women work because of poverty, which in Pakistan has been on the rise. Our results confirm positive effect of manufacturing sector growth rate and wages on employment in the informal sector. The results of our empirical exercise also confirm that wages are negatively associated with employment in informal sector. Random effect and Arellano and Bond (1991) GMM style dynamic panel model outperforms other techniques. There is a positive effect of population growth on employment in industrial informal sector whereas GDP growth rate is negatively related with employment in informal sector. Informal sector employment is countercyclical to growth in Pakistan. It is interesting to note that in the period under study (2001-2010), market based reforms were accompanied by low GDP growth. It resulted in more informal employment.

Finally, the value of the wage coefficient remained consistent in all models, which shows there is no unobserved heterogeneity. Group effect is significant in case of manufacturing, wholesale and retail trade, transportation and community and social work when compared with reference to mining and quarrying sector employment opportunities. In these sectors, wages are also positively related with employment opportunities. When we compare these categories with female workers, except for manufacturing and community and social work, all types of employment opportunities turned out to be insignificant and negatively related to wages. However, latent time effect is not significant. Our results thus show more significant gender heterogeneity. The market is gender insensitive and does not have a human face. Neoliberal policies have increased gender inequalities and poverty.

APPENDIX

Table 1

Labour Force in Pakistan

Years	Total Labour Force (Millions)	Male Labour Force (Millions)	Female Labour Force (Millions)	Male Share of the Labour Force (%)	Female Share of the Labour Force (%)
2001-02	42.4	35.6	6.8	84	16
2005-06	50.05	39.92	10.41	79.3	20.7
2007-08	51.78	40.82	10.96	78.8	21.2
2008-09	53.72	41.91	11.81	78	22
2009-10	56.33	43.53	12.8	78.2	22.7
2010-11	57.24	43.95	13.29	77.00	23.00

Table 2

Employed Labour Force in Pakistan

Years	Total Employed Labour Force	Male Employed Labour Force	Female Employed Labour Force	Total Employed Labour Force (%)	Male Employed LF Share (%)	Female Employed LF Share (%)
2001-02	38.88	33.19	5.69	8.3	78.28	13.42
2005-06	47.65	38.11	9.54	5.33	75.72	18.95
2007-08	49.09	39.06	10.03	5.2	75.43	19.37
2008-09	50.79	40.04	10.75	5.46	74.53	20.01
2009-10	53.21	41.62	11.59	5.6	73.7	20.8
2010-11	53.84	41.73	12.11	6.0	72.9	21.2

Table 3

Percentage Distribution of Employment Status in Informal Sector by Sex and Area

(Figures in Table are in Percentage)

Pakistan	Rural	Male	Female	Urban	Male	Female
Total Informal Employment	51.1	45.7	5.4	48.9	45.1	3.8
Employer	0.5	0.5	–	1.5	1.5	0.0
Self-employed	21.3	19.8	1.5	20.3	19.4	0.9
Unpaid Family Worker	5.5	4.3	1.1	6.5	5.7	0.8
Employee	23.9	21.1	2.8	20.6	18.5	2.1

Source: Labour Force Survey 2007-08.

Table 4

Time Effects of Panel Data (Fixed Effect)

Year	Coefficient (P-Value)
year_2003	-1.05036 (0.126)*
year_2005	0.065499 (0.922)*
year_2006	-0.01217 (0.985)*
year_2007	0.023271 (0.973)*
year_2008	0.224219 (0.732)*
year_2009	0.531641 (0.453)*
year_2010	0.267416 (0.685)*
Cons	7.750079 (0.000)

*Insignificant at 5 percent.

Table 5

Group Effects of Panel Data (Fixed Effect)

Group	Coefficient (P-Value)
group_2 MANUFACTURING (Male)	21.02599 (0.000)
group_3 ELECTRICITY, GAS AND WATER SUPPLY (Male)	-0.221876 (0.809)*
group_4 CONSTRUCTION (Male)	12.99147 (0.000)
group_5 WHOLESALE AND RETAIL TRADE, REPAIR & HOTELS AND RESTAURANTS (Male)	36.29655 (0.000)
group_6 TRANSPORT, STORAGE AND COMMUNICATION (Male)	10.82721 (0.000)
group_7 FINANCIAL INTERMEDIATION (Male)	1.456234 (0.114)*
group_8 COMMUNITY, SOCIAL AND PERSONAL SERVICES (Male)	16.1882 (0.000)
group_9 MINING AND QUARRYING (FEMALE)	-0.3433643 (0.761)*
group_10 MANUFACTURING (FEMALE)	5.230658 (0.000)
group_11 ELECTRICITY, GAS AND WATER SUPPLY (FEMALE)	-0.2607427 (0.817)*
group_12 CONSTRUCTION (FEMALE)	-0.06074 (0.947)*
group_13 WHOLESALE AND RETAIL TRADE, REPAIR & HOTELS AND RESTAURANTS(FEMALE)	0.5953732 (0.519)*
group_14 TRANSPORT, STORAGE AND COMMUNICATION (FEMALE)	-0.2236219 (0.808)*
group_15 FINANCIAL INTERMEDIATION (FEMALE)	-0.1380083 (0.88)*
group_16 COMMUNITY, SOCIAL AND PERSONAL SERVICES (FEMALE)	2.871128 (0.002)
_cons MINING AND QUARRYING (TOTAL EMPLOYMENT)	0.5049788 (0.46)*

*Insignificant at 5 percent.

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