

BANKING AND TELECOMMUNICATION INFLUENCING MIGRATION IN MAJOR CITIES OF PAKISTAN

Munazah NAZEER,* Uzma TABASSUM,
and Shaista ALAM*****

The paper is designed to present the descriptive as well as, the empirical analysis for investigating links between the growing investments and flow of migration towards major cities of Pakistan. Specifically, study explores the link of foreign investment in banking, telecommunication and migration. The descriptive analysis is confined to a single year (2013) while empirical analysis is spread over a time span from 2005 to 2013. The descriptive results show that more migration inflow is experienced by cities with greater Foreign Direct Investment (FDI) index values. The empirical results are in line with strands of theory and expectations of the study with all variables bearing correct signs. The core variables Foreign Banks' Branches (FB) and Foreign Telecommunication Franchises (FTF), proxies for FDI inflow are highly significant, strengthening the hypothesis that FDI and migration are complement to each other.

I. Introduction

In Pakistan, share of services sector in GDP is growing faster than the agricultural and industrial sectors [Ahmed and Ahsan (2011)]. As per economic survey of Pakistan 2013-14, contribution of services sector to GDP was 58.1 per cent. The service sector is gaining its pace out of this FDI and as it enjoys a significant chunk of FDI inflows, financial businesses and telecommunication holds a major share followed by food and power generation. The rest is distributed among the left over. This is the reason that in these heads, greater employment opportunities invite more investment and more labour force. This increased demand is to be met either by native or migrated labour force. Hence, these employment opportunities serve a green signal for migrants to rush towards such friendly investment areas. Investment is inclined towards areas with greater demand, i.e., towns and cities. Cities experience more investment, economic, social and political opportunities and thus there are more migration inflows.

* PhD Scholar, ** Research Assistant, *** Senior Research Economist, Applied Economics Research Centre, University of Karachi, Karachi, Pakistan.

As discussed earlier, service sector on an average is contributing more than 50 per cent of the GDP, generating almost 35 per cent employment opportunities and attracting significant amount of FDI. FDI is expected to attract migrants not only by employment generation but also by raising labour productivity as well [Renard, et al. (2007)]. Interestingly, FDI inflows are increasing in two major service providing sectors in Pakistan, namely the financial business and telecommunication. Food and power sectors are next in line. These four sectors together constitute about more than 50 per cent of the FDI.

TABLE 1
Share of Services Sector in GDP,
Employment and Foreign Direct Investment

Services Sector (%)			
Year	Share in GDP	Share in Employment	Share in FDI
2005-06	56.0	36.9	39.13272
2006-07	56.1	36.3	47.01911
2007-08	56.0	36.1	46.06111
2008-09	56.6	35.1	45.84817
2009-10	56.9	35.1	45.65705
2010-11	57.1	34.6	45.83811
2011-12	57.4	SNC*	42.13658
2012-13	58.1	34.9	NYP**

Source: Authors' calculation Economic Survey, Labour Force Survey and Investment Position of Pakistan.

*Survey not conducted. **Not yet published.

TABLE 2
Share of FDI Inflows (Total) in Major Heads of Services Sectors

Sector-wise Share of FDI (%)							
Sectoral share in total FDI	2006	2007	2008	2009	2010	2011	2012
Financial business	18.78	27.45	23.26	25.30	23.55	20.22	22.23
Telecommunication	12.08	10.06	14.52	16.61	14.38	17.47	13.94
Food	4.76	4.73	5.14	0.95	8.90	10.88	13.49
Power	11.34	6.10	9.49	6.57	7.18	5.79	9.16
Total share of above sectors	46.96	48.34	52.41	49.44	54.01	54.36	58.82
Others	53.04	51.66	47.59	50.56	45.99	45.64	41.18
Total	100	100	100	100	100	100	100

Source: Authors' calculation from Investment position of Pakistan, State Bank.

Regions with more FDI, usually generates more and better employment opportunities. Such regions are expected to experience more in-migration, not only because of better job opportunities but also because of increased probability of attaining employment which is of much interest for migrants, especially in the less developed countries with less or poor employment opportunities [Todaro (1969)]. In Pakistan, financial business and telecommunication receive major FDI inflows, and cities are the places where services from these sectors are demanded the most. Table 3 presents share of the FDI in its two major heads namely, the financial business and telecommunication.

On average migrant employment in these two sectors grew in cities by 26.42 per cent approximately during 2005-06 to 2012-13. Individually, all cities showed positive growth of migrants being employed in these sectors, except for Lahore, Rawalpindi and Hyderabad. Multan had the highest growth of employment in these two concerned sectors while that in Faisalabad was least positive, as apparent from Table 4.

The present study uses the FDI by Foreign banks' branches and the foreign telecommunication companies' franchises for financial business and telecommunication, respectively. The telecommunication and banking service tends to be in access of people by locating as many locations as possible. The increasing FDI in financial business and telecommunication is more likely to increase the number of banks' branches and telecommunication franchises. As consequences of this expansion in service sector the migration inflows are growing in cities by generating more employment opportunities.

TABLE 3

Share of FDI Inflows in Financial Business and
Telecommunication from FDI in Services Sector

Year	Share in FDI out of Services Sector (%)		
	Financial Business	Telecommunication	Others
2006	47.99	30.86	21.15
2007	58.39	21.39	20.22
2008	50.49	31.52	17.99
2009	55.19	36.24	08.57
2010	51.58	31.50	16.92
2011	44.11	38.11	17.79
2012	52.76	33.09	14.16

Source: Authors' calculation from Labour Force Survey and Investment position of Pakistan, State Bank.

TABLE 4
Migrant Employment Growth in Financial and
Telecommunication Sectors between 2005-06 and 2012-13

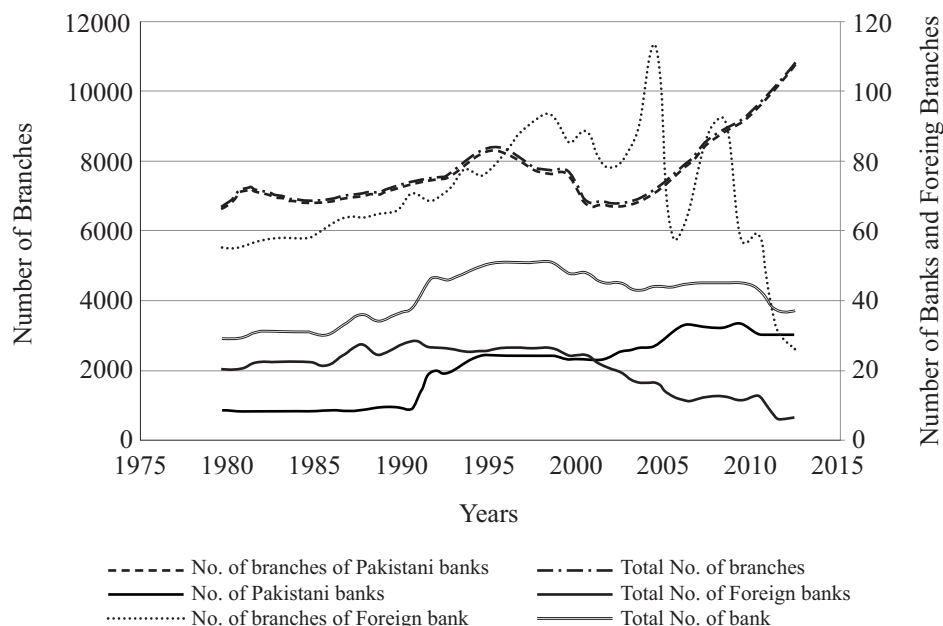
Migrant Employment in Banking & Telecommunication	
Names	Growth in both sectors between 2005-06 & 2012-13
Lahore	-5.85%
Faisalabad	9.36%
Rawalpindi	-22.11%
Multan	107.10%
Gujranwala	52.40%
Sargodha	21.32%
Sialkot	42.07%
Bahawalpur	41.42%
Islamabad	18.84%
Karachi	30.19%
Hyderabad	-13.19%
Sukkur	41.48%
Peshawar	26.97%
Quetta	19.91%
Cities Average	26.42%

Source: Authors' calculation from Labour Force Survey.

1. Banking Sector (Financial Business)

Figure 1 presents an understanding of the banking sector. There are two vertical axes: the primary axis for a number of local and total branches and, on the other hand the secondary axis which represents a number of local, foreign and total banks. The numbers of foreign branches were also scaled on the right hand scale because foreign banks' branches never crossed two digits, while local banks' branches were in 4 a digit number. Hence, if these were plotted on the same scale their fluctuation could not be seen.

In lower part of the graph (Figure 1) the number of both the foreign and local banks and their total is depicted while in the upper part the number of their branches



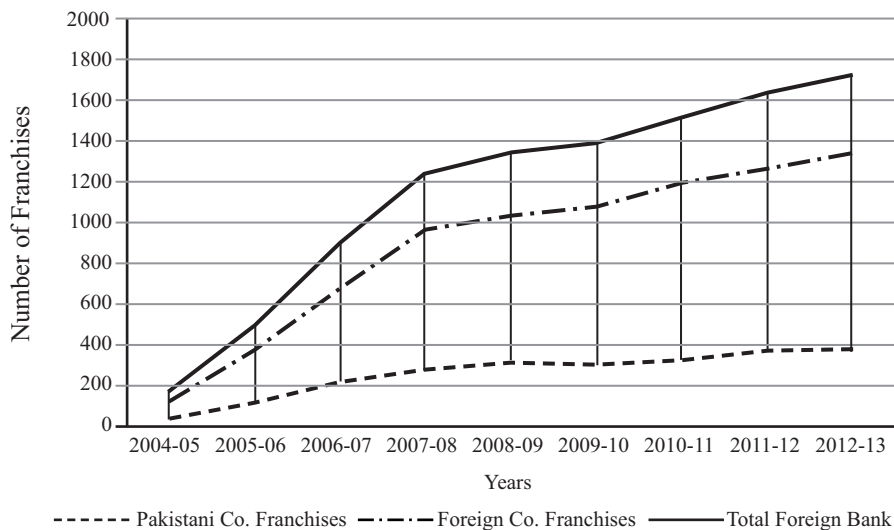
Source: Authors' graphing using data from the Banking Statistics of Pakistan and Statistics of Scheduled Banks, Pakistan State Bank.

FIGURE 1
Banks and their Branches

is graphed. Till mid-90's, despite their (almost) stagnant growth the total number of banks were increasing with foreign banks' dominance over the local ones. Though, the local banks' branches were far more than the foreign banks but later, following the world financial crises the foreign banks and their branches declined further and taking advantage of this the local banks out-ranged the foreign banks. Thus, the local banks' branches increased and foreign banks branches decreased. Later after 2010, the number of both the local and foreign banks also declined. This indicates that local investment aims at expanding banks' accessibility, even though following the financial crises few banks were closed or were at low demand for their services.

2. Telecommunication Companies and their Franchises

Currently there are five telecommunication companies operating in Pakistan. Among these Ufone is the only Pakistani company while Mobilink, Telenor, Zong and Warid are foreign companies. Figure 2 presents a number of franchises of all these companies.



Source: Authors' illustration using data from Pakistan Telecommunication Authority.

FIGURE 2
Telecommunication Franchises in Pakistan

Unlike banks, a numbers of foreign franchises of telecommunication compa-
nies are much larger than the Ufone - the gap between them is growing every
year. Ufone franchises are mostly located in major cities of Pakistan. For the cur-
rent year, out of 381 franchises 319 are located in 14 major cities which are con-
sidered in this paper. On the other hand foreign companies' franchises are
dispersed more geographically. Mobilink hold the highest number of franchises
among all the five.

This paper is designed to present both the descriptive as well as the empirical
analysis for investigating links between the growing investments, especially from
foreign sources in banking and telecommunication sectors as represented by
growth of bank branches and telecommunication franchises. The descriptive
analysis will be confined to a single year (2013) while regression analysis is
spread over a time span of eight years (2005 to 2013). After the Introduction in
Section I the review of the existing literature is presented in Section II, which is
followed by the model and methodology in Section III. Results are presented in
Section IV, with conclusion and policy recommendations.

II. Review of Literature

1. *Theoretical Foundation*

There exist a vast literature on relationship between migration and FDI to be substituted or complemented. Those who consider this relationship as substitutes are backed by the neo-classical theories where labour and capital are substitutes while the opposite thought was supported by composite factor concept within Ricardian framework where these two factors of production complement each other [Jayeth and Marchal (2015)]. The literature classifies the negative FDI-Migration relationship as substitutes in the sense that there exist trade off between these two factors (labour and capital). The rational for this was that countries with low labour productivity in turn have relatively low wages while capital returns in such developing countries are high. Thus, relatively low wages and relatively high capital returns on one side provide incentives for local labour to move towards relatively affluent countries and on the other side it attracts foreign investor to invest in locally more profitable high returning projects [Prochazka and Ilinitchi (2011)]. The economic activities in FDI receiving regions accelerate-more capital means with more investment, more labour demand and more migration especially if regional labour supplies short-length regional labour demand. Even increased probability of attaining a job or better job will motivate people to migrate to such regions. Foreign-firms pay relatively more than local firms along with other employment benefits as hiring labour from labour abundant region which is cheap. To avoid domestic competition they hire labour on a relatively higher wage and that is why people usually feel happy to be employed by foreign firms in their region. Many researchers have explored the idea that in addition to earnings differentials, migrants may move responding to a higher probability of obtaining a modern sector job and foreign-owned firms might have created such jobs. In addition to the employment effects described above, the relatively high earning opportunities in the foreign sector may be another reason as to why foreign firms attract migrants [Fukase (2013)].

The existence of a positive relationship between FDI and migrations is what the literature classified as complements. This implies that change in one will lead to a change in the other in the same direction, though the magnitude of the change may differ. It is the assumption of homogenous factors of production that permits labour-capital substitution effect in the neo-classical model. Further, in the neo-classical model, the geography of factor market integration is also assumed as not to affect this link. Reality holds none of these assumptions. Buch, et al. (2006) mentioned three possibilities under which the complementarities among factors of production could be justified. These justifications include:

1. Heterogeneity among factors of production as skilled and unskilled labour.
2. Advanced production technology differences among region, as two a region holds the same technology but one is relatively more productive because of the advanced and up-dated technology.
3. The agglomeration mechanism acting in a region generating firm or migrant clusters enjoying agglomeration benefits via network and cultural effects, labour pools, labour sharing, knowledge spillovers, minimizing unit cost, strong labour unions, etc.

The FDI affects migration, either by raising labour demand for all types of labours and boost demand-pull migration (the substitution effect) or complements it by reducing capital constraints in FDI receiving region for potential investors by network effects [Agosto, et al. (2006)]. In both ways, it generates better earning opportunities. Concluding the above literature, either both the FDI and migration are substitutes or complements at the international level and complement each other at national level. When a country receives more FDI she experiences more migrations, especially if FDI is directed towards some specific locations. This internal migration will be relatively greater if (at international level) inward FDI complements outward migration (emigration), than it may complement the inward migration (immigration) by increasing and decreasing the local labour demand.

2. *Empirical Literature*

Some empirical work conducted on both substitute and/or complement links between the FDI and migration flow is presented at various levels of geography. In China, a migration inflow was inclined towards provinces with greater foreign and domestic investment, such as in infrastructure development which resulted in demand pull migration. Increased labour demand for both the native and migrant workers accelerates demand pull migration in the destination province [Bao, et al. (2007), Foad (2012)]. Aroca and Maloney (2005) used the Mexico's state level data from 1995 to 1999, to conclude trade-off between the migration and FDI. According to them, Mexico-US migration declined on an average, by 1.5 to 2 per cent, if FDI inflows were two-fold.

Federici and Giannetti (2010) supports complement nature of migration and the FDI inflows relationship. They used temporary migrants defined as those who return back to their origin country. Such temporary migrants may have several visits abroad and on their return they are usually equipped with greater experience, knowledge and entrepreneurship abilities. Their visits can be viewed as a dynamic brain circulation process [International Organization for Migration (2006)]. As per Dayton-Johnson, et al. (2009) these returning migrants on one hand have better employment opportunities at home and on the other hand they are often self-employed which thus becomes a source of employment generation and growth. Federici and

Giannetti (2010) suggest that, considering such migrants, if policies are aimed to increase education level, the population at origin will benefit in two ways. First, it attracts the FDI inflows because of more educated and productive labour force and second, by enhancing the absorption capacity of those who spend part of their work life abroad as temporary migrants. However, this is not always the case with the returning migrants. There exist possibilities of their failure to adjust abroad and even at home when they return [OECD (2007)].

The analysis of 16 German states from 1991 to 2002 showed that states with greater FDI inflow stocks from a particular source country also have greater immigrant stocks from the same source country though such agglomeration effects are true for only the high income countries. At a given output level, they found an inverse relationship between the domestic and foreign inward capital, between FDI inflows from a particular country and FDI inflows from other countries in the same state; and also between the domestic labour and immigrants in a state. Moreover, state's domestic labour was found to affect inward FDI insignificantly [Buch, et al. (2006)]. During 1990 to 1999 the per capita FDI of 158 Chinese cities was significantly affecting the rural-urban migration especially by its job generating quality; while this was not the case with urban-urban migration. The reason for this could either be the controlled urban-urban migration by the government or not as much of influence of the labour market [Renard, et al. (2007)]. There are some other studies which provide empirical evidence on migration and the FDI to be substitutes [Agosto, et al. (2006)] and/or complements [Kugler and Rapoport (2006), Groznik (2003), Ivlevs and de Melo (2008)].

III. Model and Methodology

Regression analysis is performed, using software Stata SE 12 over a data range of 7 years and 14 cities totalling ($7 \times 14 = 98$) 98 observations with a degree of freedom of 4. This section will provide both the regression model and results of the regression. The data years are 2005-06 to 2012-13 except 2011-12, as the core survey data LFS was not conducted for this year. The 14 cities selected are also as per classification of cities by LFS. These cities include 9 cities from Punjab (Lahore, Faisalabad, Rawalpindi, Multan, Gujranwala, Sargodha, Sialkot, Bhawalpur, Islamabad), 3 cities from Sindh (Karachi, Hyderabad, Sukkur) and one each, city from KPK and Baluchistan (Peshawar and Quetta respectively).

1. Model Specification

The model to be regressed for cities migration inflow is a function of foreign banks' branches, telecommunication franchises by foreign companies, expected wages, informal sector, lagged unemployment rate, distance and lagged migration in the host cities from all over Pakistan. The model can be written as:

$$In_Mig_{it} = f(FB_{it}, FTF_{it}, EW_{it}, IFS_{it}, ED_{YR_{it}}, DR_{it}, InMig_{it-1}, UER_{it-1}, D_{ij})$$

Econometrically symbolized as:

$$In_Mig_{it} = \alpha + \beta_1 FB_{it} + \beta_2 FTF_{it} + \beta_3 ED_{YR_{it}} + \beta_4 EW_{it} + \beta_5 IFS_{it} + \beta_6 DR_{it} + \beta_7 InMig_{it-1} + \beta_8 UER_{it-1} + \beta_9 D_{it} + \mu_{it} \quad (1)$$

where, subscript i and t stands for number of cities and time (years): α and β are Intercept and partial slope coefficients, respectively. Symbols, description and expected signs of regressors with respect to regressand are presented in Table 5.

TABLE 5
Variable Symbols, Description and Expected Signs.

S. No.	Variable Name	Variable description	Expected Sign
1.	In_Mig_i	City's in-migration. (Regresand).	-
2.	FB_i	Foreign banks branches in city i .	Positive
3.	FTF_i	Foreign telecommunication franchises in city i .	Positive
4.	EW_i	Real average wage times probability of attaining employment in city I = (employed persons/city's labour force ³) *100.	Positive
5.	IFS_{it}	Employment in informal sector.	Positive
6.	$ED_{YR_{it}}$	Expected years of education.	Positive
7.	DR_{it}	Dependency ratio is calculated as ratio of dependent to employed person..	Positive
8.	UER_{it-1}	Lag of unemployment.	Negative
9.	D_{ij}	Average distance to city i .	Negative

2. Methodology

This analysis would be a dynamic regression analysis as it involves a lag dependent variable. The regression analysis is performed, using the generalised method of moments (GMM) following Arellano-Bover/Blundell-Bond linear dynamic panel-data approach which is especially designed to account for panels with n (cross-section) $> t$ (time). Equation (1) examines the impact of FDI on migration inflows in a panel data set of 14 cities for 7 years⁴ (2005-06 to 2012-13) but several that econometric problems may arise from estimating Equation (1).

³ City's labour force was estimated by adding employed and unemployed persons in the city.

⁴ LFS for the year 2011-12 was not published.

- Time invariant cities characteristics such as demographics and geography may correlate with exogenous variables. The fixed effects are contained in disturbance term of Equation (1), which consist of the unobserved cities specific effect and the observation specific error, e_{it} .

$$\mu_{it} = + v_i + e_{it} \quad (2)$$

- The lagged dependent variable ($InMig_{it-1}$) may give rise to autocorrelation.
- The panel data has less cross sectional units than the time period.

To solve the problem of fixed effect the system GMM first uses the difference to transform Equation (1) into

$$\begin{aligned} \Delta In_Mig_{it} = & \alpha + \beta_1 \Delta FB_{it} + \beta_2 \Delta FTF_{it} + \beta_3 \Delta ED_{YR_{it}} + \beta_4 \Delta EW_{it} + \beta_5 \Delta IFS_{it} + \\ & \beta_6 \Delta DR_{it} + \beta_7 \Delta InMig_{it-1} + \beta_8 \Delta UER_{it-1} + \beta_9 \Delta D_t + \Delta \mu_{it} \end{aligned} \quad (3)$$

By transforming the independent variables by first difference the fixed effect problem is removed, because it does not vary with time. Transformation of Equation (2) gives:

$$\begin{aligned} \Delta \mu_{it} = & + \Delta v_i + \Delta e_{it} \quad \text{or} \\ \mu_{it} - \mu_{i,t-1} = & (v_i - v_i) + (e_{it} - e_{i,t-1}) = e_{it} - e_{i,t-1} \end{aligned}$$

The first difference lagged dependent variable is also instrumented with its past level. The consistency of GMM estimator depends on validity of moment condition and can be tested by using the two specification tests. The Hansen test is a test of over identifying restrictions and, the joint null hypothesis test is that instruments are valid, i.e., uncorrelated with the error term and, that the excluded instruments are correctly excluded from the estimated equation and the Arellano-Bond test, for no second order serial correlation in the error term.

3. Data and Data Sources

The present study used the foreign banks' branches and telecommunication franchises owned by foreign companies as a proxy for FDI in 14 major cities in Pakistan. According to IMF and OECD,⁵ Foreign direct investment (FDI) is defined as an investment involving long-term relationship reflecting lasting interest controlled by resident entity in one economy (foreign direct investors or parent enterprises) in enterprises resident in an economy, other than that of the foreign direct investors. Further, the fifth edition of the IMF's Balance of Payments Manual (BPM5) and the OECD's Benchmark Definition of Foreign Direct Investment

⁵ Organisation for Economic Co-operation and Development, Detailed Benchmark Definition of Foreign Direct Investment, third edition (OECD, 1996), and International Monetary Fund, Balance of Payments Manual, fifth edition (IMF, 1993).

(Benchmark) state that inward and outward direct investment statistics should, as a matter of principle, cover all directly and indirectly owned subsidiaries, associates, and branches. City-wise data on migration inflows, informal sector employment, and dependency ratio, average years of schooling and wages were extracted from the LFS for the time period 2006-2013. Wages were converted into real wages by deflating them from consumer price index (CPI) obtained from the State Bank of Pakistan. The list of foreign banks' branches for the same period was gathered from the Banking Statistics of Pakistan, respectively. Current year data on telecommunication franchises and food outlets was taken from their individual websites which was then added at city level. For food, the outlet of five well known food brands was taken. These included KFC, Pizza Hut, McDonalds, Dunkin Donuts and Subway. Hardees, Dominos, Gloria jeans, burger king, etc., but were not considered as they do not have outlets in more than half the cities. As for the data on telecommunication franchises by various companies at city level for previous years, few calculations were done. First, the franchise data for the current year was gathered from each company's website and added to every city to have city-wise franchises in the total of all four foreign companies, namely Mobilink, Warid, Telenor and Zong. Then, the individual city share was obtained from the total franchises in Pakistan. For number of franchises previous years, the number of subscribers in previous years was divided by the current year's average subscribers per franchise. Data for the number of subscribers by individual telecommunication company was gathered from various issues of annual report published by the Pakistan Telecommunication Authority (PTA). Finally, city weights were applied to these calculated franchises. The data for average distance to major cities from various origin districts was calculated from the internet website.⁶

IV. Results

1. *Descriptive Analysis*

As already mentioned the study conducts a descriptive analysis only for one year 2012-13. The key reason for this is to estimate an FDI index including the third major head (food as well as websites) for the selected foreign food brands in Pakistan and upload data for their current outlets only. To calculate, the index variable needs to be weighted to make them more representative. For various reasons, special attention is paid to frequency of individuals consuming their availability and spreadness by location. Telecommunication was given the highest weight followed by banks and then food. It can be observed easily that individuals demanding foreign telecommunication companies' services stand far above those demanding services from foreign banks.

⁶ http://distancecalculator.globefeed.com/Pakistan_Distance_Calculator.asp.

Interestingly, one may not have a bank account these days, even in a local bank, but he/she will usually has a cell phone which again may be used for multiple SIMs. Foreign food brands were given the least weight, considering the fact which demanders for or those who prefer these constitute a relatively small proportion of total food demand. Cities with greater FDI indices reflect greater in-flow of FDI in to them generating more, better and diverse employment and earning opportunities raising living standards and eventually attracting migrants.

Symbolically, the formula for the index is

$$FDI\ Index_i = w_1 FB_i + w_2 FTF_i + w_3 FO_i \quad (4)$$

where, $w_1 = 2/6$, $w_2 = 3/6$ and $w_3 = 1/6$, are the weights given to foreign bank branches (FB), foreign telecommunication franchises (FTF), and foreign food outlets (FO), in city i ($i = 1, 2, \dots, 14$), respectively, depending on their degree of consumption, ease to access and spread spatially.

Calculated FDI indices along with city-wise in-migration and employment for 14 major cities (as per LFS) of Pakistan are tabulated in Table 6.

TABLE 6
City-Wise FDI Indices, Migration Inflows
and Employment for the Year 2012-13

S. No.	Cities	Migration in-flows	FDI Indicator Index	Employment
1.	Bhawalpur	68683	6.67	147004
2.	Faisalabad	401666	30.17	738173
3.	Gujranwala	180678	26.17	328416
4.	Hyderabad	108450	21.83	293450
5.	Islamabad	305617	18.5	188568
6.	Karachi	1658442	86.17	2821200
7.	Lahore	832993	73.67	1271622
8.	Multan	98107	36.17	302252
9.	Peshawar	254297	36	287342
10.	Quetta	21570	17.17	120630
11.	Rawalpindi	384726	22	359744
12.	Sargodha	27436	17.67	99190
13.	Sialkot	28505	10.33	105699
14.	Sukkur	25235	15.67	85081

Source: Authors' calculation using various data sources and official websites.

First, the Karachi city and then the Lahore hold the highest FDI index among all cities of Pakistan. These two cities are important when it comes to facilitating the other cities, hosting migrants and providing social, political and economic opportunities, as well. The index for Faisalabad was almost half of Lahore and so does its in-migration. Developments carried out in Peshawar and Multan might be contributing to increased employment, in-migration and better FDI indices. Also, there exists a possibility that cities with relatively low FDI indices might have some forces at work, such as receiving domestic investment, unfavourable conditions for living in other areas, political and/or social pressures, etc., which are creating employment or catching migrants.

2. *Empirical Results*

To examine the data, first its description was taken, which are presented at the end of the paper. Next the model was checked for any violation of the OLS assumptions, which if not controlled would lead to fallacious outcomes. Hence, a number of tests were conducted prior to and post estimation [see Appendix, Tables A-1 to A-5)]. Multicollinearity and autocorrelation was not found to be a problem though there was some evidence found for heteroscedasticity. To correct heteroscedasticity robust regression was performed. The model of the study is a dynamic model having a lagged dependant variable; hence estimation was performed following Arellano-Bover/Blundell-Bond linear dynamic panel-data estimation. The regression outcomes are presented in Table 7.

The results of this study are in line with the strands of theory and expectations of all variables bearing correct signs, except the distance (D). The positive sign of distance is justified on the basis of no barriers or control to move within the country. Partly and partially, on the basis that individuals value employment opportunities are more and people are willing to move across distances, if they expect to grab an employment opportunity at destination, especially when they face with a current sectarian violence and military operation in FATA and Balochistan. People are compelled to leave their native land and move towards areas with higher survival probabilities. As per Haris Todero (1970) people will migrate to places where they are more likely to attain a job despite of prevailing unemployment. Intercept co-efficient indicate that in absence of all explanatory variables, in-migration to cities will be negatively affected. As far as the FDI slope coefficients are concerned for a change in FB and FTF by one unit (branch or franchise) in-migration to cities will change by 12,570 and 41,81 migrants in the same direction; thus complementing the migration. Expected wages are also significant with unit increase in expected wages which leads to approximately unit increase in migration at destination. Years of education and dependency ratio at destination are in-significant while informal sector is highly significant indicating that larger informal sector tends to attract more migrants to cities. Lagged unemployment rate was negatively related with destination in-migration suggesting that high unemployment rate in previous year; discouraged in-migration in the current year. Finally, lagged migration in destination resembles the network effects that previous migrants would be a mean of information to prone migrants back at origin about destination opportunities.

TABLE 7
Linear Dynamic Panel-data Estimation Results

System dynamics panel-data estimation		
In_Mig	Coef.	Z
InMig _{it-1}	0.33346*	5.5
FB	12569.55*	3.37
FTF	4181.164*	3.33
EW	1.069667*	31.89
LFS	1.325325*	4.65
D	1384.194*	5.82
Ed_yr	43121.73	1.28
Dr	38948.36	0.58
UER _{it-1}	-2990.5*	-12.05
Constant	-930457*	-2.66

Instruments for differenced Equations

GMM-type: L(2/.).In_Mig.

Standard: D.FB, D.FTF, D.ew, D.ifs, D.ed_yr, D.dr, D.lagUER.

Instruments for level Equation

GMM-type: LD.In_Mig.

Standard: _cons.

Note: * Shows variable is significant at less than one per cent.

V. Conclusion and Policy Recommendations

The growing service sector in Pakistan enjoys almost 45 per cent of the FDI inflows; and the financial business and telecommunication bears about 80 per cent of the inflows. Spatially these inflows are demand driven and thus it moves towards areas with greater concentration of economic activities like urban areas - cities where there are greater economic, political and social opportunities generating greater demand for these services. More investment coming in a particular head, generate more employment in it, eventually more labour force is needed there - which either is to be met by native or migrated labour force. Employment generated by such foreign investment usually pay more and other facilities come in handy as well. Hence, they are ranked higher on a preference scale for labour supply. This is why expectedly more migrants rush towards areas offering such employment opportunities.

To analyse the said hypothesis this paper provides both the descriptive and regression analysis for 14 cities of Pakistan for the years 2006-2013. The descriptive results show that migration inflow is experienced by cities with greater FDI index values. The regression results are according to the expectations of this study as well, with all variables bearing correct signs. Intercept indicates that in absence of all the three explanatory variables migration inflows to cities will be negatively affected. As far as the FDI coefficients are concerned an increase in FB and FTF by one unit (banks and telecommunication) migration inflows to city will increase by 12,570 and 41,81 migrants in the same direction; thus, complementing migration. For a unit change in EW migration inflows will also change, approximately in the same proportion. As per LFS, employment in the informal sector is far more than employment in the formal sector and constitute about two-third of the total employment. For this reason the coefficient of informal sector appear highly significant to attract migrants. Moreover, positive significant coefficient of distance, support the argument that relatively high expected wage charm and improved means of transportation vanishes distance negative considerations. Also, sectarian violence and war against terrorism in FATA and Balochistan pushes individuals to leave their native land and move towards other areas with potential economic opportunities, irrespective of how far the destination is located.

Pakistan is a country with no barriers or control over movement across the entire geographical areas of its territory. Individuals can move/migrate freely wherever they can be benefited, ignoring the cost which the destination has to bear because of such regular migration flows. Cities are preferred destinations to migrants because of various economic, social and political reasons. But every destination has its optimal limit to absorb, beyond which its sustainability will be on stake. As mentioned in the descriptive analysis cities with more FDI tends to experience more migration inflows. Regular currents of migration increases population density at destination and thus it increases the pace of city growth towards attaining its optimum, and eventually the city's social and physical environment tend to deteriorate challenging its sustainable development. Hence, it is recommended that conscious efforts should be made by the government to formulate policies to divert the FDI towards other relatively less urbanised region for balanced economic growth of the country in general and of the regions in particular.

*Applied Economics Research Centre,
University of Karachi, Pakistan.*

Bibliography

- Agosto, E.D., N. Solferino and G. Tria, 2006, The migration and FDI puzzle: Complements or substitutes?, CEIS working paper 90.
- Ahmed, A., and H. Ahsan, 2011, Contribution of services sector in the economy of Pakistan, Working papers and research reports.
- Aroca, P., and W. Maloney, 2005, Migration, trade, and foreign direct investment in Mexico, *The World Bank Economic Review*, 19(3): 449-472.
- Bao, S., O. Bodvarsson, J. Hou and Y. Zhao, 2007, Interprovincial migration in China: The effects of investment and migrant networks, IZA discussion paper 2924.
- Buch, C., J. Kleinert and F. Toub, 2006, Where enterprises lead, people follow? Links between migration and FDI in Germany, *European Economic Review*, 50(8): 2017-2036.
- Comolli, P., and O. Lugovskyy, 2013, The co-movement of FDI and migration in OECD countries, Available at http://simpson.edu/wpcontent/uploads/2013/08/paper_revised_Nov22.pdf.
- Dayton-Johnson, J., A. GTZ, K. GTZ and J. Schwinn, 2009, Migration and employment, OECD, Available at <https://www.oecd.org/dac/povertyreduction/43280513.pdf>.
- Federici, D., and M. Giannetti, 2010, Temporary migration and foreign direct investment, *Open Economies Review*, 21(2):293-308.
- Foad, H., 2012, FDI and immigration: A regional analysis, *The Annals of Regional Science*, 49(1):237-259.
- Fukase, E., 2013, Foreign job opportunities and internal migration in Vietnam, World Bank Policy Research working paper 6420.
- Gormsen, C., and M. Pytlikova, 2011, Diasporas and foreign direct investments, 8th Danish International Economics Workshop paper.
- Groznik, P., 2003, Immigration and international financial flows, Indiana University working paper.
- Harris, J.R., and M.P. Todaro, 1970, Migration, unemployment and development: A two-sector analysis, *The American Economic Review*, 60(1): 126-142.
- F., Macha, A. MacDonald and D. Sriskandarajah, 2006, Migration and development: Opportunities and challenges for policymakers, IOM migration research series 22.
- Ivlevs and de Melo, 2008, FDI, The brain drain and trade: Channels and evidence, EUDN working paper 6.
- Jayeth, H., and L. Marchal, 2015, Complementarity and substitution between factor flows in a North-South framework, Lille Economie Management, LEM discussion paper.
- Kugler, M., and H. Rapoport, 2006, Migration and FDI: Complements or substitutes?, ESF-CEPR Conference paper.

- Pakistan Economic Survey, Various issues, Ministry of Finance, Government of Pakistan.
- Prochazka, D., and C. Ilinitchi, 2011, The theoretical relationships among foreign direct investments, migration and IFRS adoption, *European Financial and Accounting Journal*, 4: 85-100.
- Renard M., Z. Xu, N. Zhu and X. Zelai, 2007, Migration, urban population growth and regional disparity in China, 6th International Conference on Chinese Economy, CERDI, Etudes et Documents.
- Rizvi, S.Z.A., and Mohammad Nishat, 2009, The impact of foreign direct investment on employment opportunities: Panel data analysis: Empirical evidence from Pakistan, India and China, *The Pakistan Development Review*, 48(4): 841-851.
- Todaro, M.P., 1969, A model of labour migration and urban unemployment in less developed countries, *The American Economic Review*, 59(1): 138-148.

Websites

- http://www.pta.gov.pk/index.php?option=com_content&task=view&id=269&Itemid=658
- <https://www.ufone.com/about-us/sales>
- <http://www.telenor.com.pk/where-to-buy/telenor-franchise>
- <http://www.zong.com.pk/about-zong/customer-service-centers-and-franchises>
- <http://www.waridtel.com/cs/franchises.php?cid=46&id=1>
- <http://www.mobilink.com.pk/customer-care/find-us>
- <http://www.mcdonalds.com.pk/contacts/gmap>
- <http://www.hardees.com/locations>
- <http://www.pizzahut.com.pk/outlets.html>
- <http://w.subway.com/en-PK/FindAStore?zip=karachi>
- <http://www.dunkindonuts.pk/locations.html>
- http://www.gloriajeanscoffees.com.pk/store_locations.htm
- http://distancecalculator.globefeed.com/Pakistan_Distance_Calculator.asp

APPENDIX

TABLE A-1
Data Descriptive Summary

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
In Migration	98	374661.6	590775.4	10174	2798069
FB	98	4.357143	7.580836	0	32
FTF	98	38.35714	29.37783	4	136
EW	98	87451.41	43095.54	15144.41	225640.2
IFS	98	336588.1	428385.2	43786	1595665
D	98	631.5137	197.2297	456.5231	1069.154
ED_YR	98	5.763013	0.980423	3.870027	8.993373
DR	98	2.776972	0.354844	2.04065	3.927115
Lag_Unemp_Rate	84	18.51932	19.02819	0	81.97977

TABLE A-2
Heteroskedasticity Test Result

Breusch-Pagan Cook-Weisberg test for Heteroskedasticity		
Ho: Constant variance		
Variables:	Fitted values of in-migration	
chi2(1)	=	84.44
Prob > chi2	=	0

TABLE A-3
Model Specification Test Result

Davidson and Macanlon Test		
Model	Decisive Variable	Probability of Coefficient
Linear	(Ho: Log model is better) Fitted_log	0.96
Logarithm	(Ho: Linear model is better) Fitted_linear	0.073

TABLE A-4

Sargan Test Result

Sargan test of over identifying restrictions		
H0: Over identifying restrictions are valid		
chi2 (18)	=	4.901407
Prob > chi2	=	0.999

TABLE A-5

Autocorrelation Test Result

Arellano-Bond Test for zero autocorrelation in first-difference errors		
Order	Z	Prob > z
1	-2.8361	0.0403
2	1.0067	0.3141
H0: no autocorrelation		