MERIT RESEARCH JOURNALS
www.meritresearchjournals.org

Merit Research Journal of Education and Review (ISSN: 2350-2282) Vol. 3(10) pp. 299-303, October, 2015
Available online http://www.meritresearchjournals.org/er/index.htm

Original Research Article

Workers' remittances and household consumption volatility in South Asia

Sayyed Muhammad Bilal[1], Madeeha Rauf[2], Muhammad Nadeem*[3], Tauqeer Almani[4] and Muhammad Kamal Shah[5]

[1]Senior Instructor, Department of Economics, National University of Modern Languages, Multan Campus

[2]Ph.D scholar, National College of Business Administration and Economics, Lahore Campus

[3]Faculty of Management Sciences, National University of Modern Languages, Pakistan

[4]School of Economic Sciences, Federal Urdu University of Arts, Science and Technology (FUUAST), Islamabad

[5]Ph.D scholar, Imperial University, Lahore

***Corresponding Author's E-mail: muhammadnadeem19@gmail.com**

Abstract

Booming remittances inflow to south Asian economies have become significant source of foreign finance after Foreign Direct Investment (FDI). This paper presents the relationships between remittances and Household Consumption Volatility for five main south Asian economies India, Bangladesh, Pakistan, Nepal and Sri Lanka from 1975 to 2010. The Panel Generalized Method of Moments (GMM) has employed for control endogeniety of variables. The results show that remittances are responsible for diminishing consumption volatility. The main policy implication based on our finding is that financial sector should be improved for diminishing consumption volatility.

Key Words: Remittances, South Asia, Consumption Volatility, GMM, Financial Sector
JEL Classification: E01; F24; F43

INTRODUCTION

Migration from developing or less developed countries (LDC) to developed countries for the betterment of living standard is continued since centuries. The 3% (250 million) of world population are working outside their countries (Table 1) and one third of them are belonging to developing countries. Remittances inflow has been increasing to developing countries with the passage of time as it has increased from 221.3 (2005) billion dollar to 381(2011) billion dollar (World Bank, 2012) via 11.7% growth rate (Table 2).

The 23.34% (1.7 billion) population of the world is living in South Asia just covers 3% of land area of world, it has important in the world due to high population density as well as high population growth rate. Only 1.6% (26.7 million) migrant population belongs to South Asian region. International remittances inflow to South Asian economies have dynamic share in their GDP (Table 3).

Human resource of South Asia has been working almost all parts of the world but more than 90% of labor force are working four famous regions of the world that are oil producing Arabs States, Western Europe, North America and South East Asian regions. Actually these labor forces are playing a role of betterment of home economies. Remittances in South Asia mostly use are for consumption purposes.

Empirical literature explains that remittances inflow to South Asia play a significant role for their economies as better balance of payments, reduction in poverty, improve living standard via reduction in unemployment problem of recipients household. South Asia is performing an essential role for those countries which are facing labor shortage, South Asian labor force prevailing everywhere in the world. Remittances considered stable source as compared to FDI, Aid and foreign loan for developing economies {(Dilip Ratha (2003). Remittances inflows to South Asian perform a role of stability and have an effective contribution in their GDP (Dharshani and Deshal

Table 1. Emigration from different regions (2010)

Region	Emigrant (Million)	Percentage
All World	250	3%
Europe and Central Asia	43.1	10.7%
Latin America & Caribbean	30.2	5.2%
South Asia	26.7	1.6%
Sub Saharan Africa	21.8	2.5%
East Asia and Pacific	21.7	1.1%
Middle East & North America	18.1	5.3%

Source: Migration and Development Brief 19 (2012)

Table 2. Remittances inflow to different regions (2011)

Regions	Remittances (Billion $)	Growth rate
All World	435	11.1%
Developing economies	381	11.7%
East Asia and Pacific	106	12.3%
South Asia	97	17.7%
Latin America & Caribbean	62	7.3%
Middle East & North America	43	6.3%
Europe and Central Asia	41	13.1%
Sub Saharan Africa	31	6.8%

Source: Migration and Development Brief 19 (2012)

Table 3. Remittances share to GDP in South Asia Region

Country	1990	2000	2005	2010
Bangladesh	2.5	4.17	7.15	10.81
India	0.72	2.71	2.65	3.20
Nepal	1.41	2.02	14.90	21.65
Pakistan	5.04	1.45	3.90	5.47
Sri Lanka	4.98	7.13	8.15	8.38
South Asia	1.37	2.78	3.26	4.04
World	0.41	0.44	0.63	0.74

Source: World development Indices (2011)

(2009). It also has ability to compensate the shock in home countries. The central functions of remittances in developing countries are use for consumption or purchasing houses and private investment i.e. invested in real estate.

Main purpose of this study is to investigate the relationship between workers' remittances and household consumption volatility of South Asian countries Pakistan, India, Bangladesh, Nepal, and Sri Lanka from 1975 to 2010. Are remittances are responsible for stability in household consumption or not? This is the main concern of this paper.

Literature Review

Anupam and Murshid (2011) investigated the relationship between workers, remittances and GDP growth for 11 developing countries. They used the data of 11 economies from 1985 to 2009. The panel study has employed two main methodologies pooled mean group and panel cointigration. The study show that remittances have positive and significant impact on GDP growth on selected sample of 11 developing countries. The study also concluded that remittances have also positive impact on consumption.

Workers, remittances and saving attitudes have investigated by Rahila et al. (2011) for Pakistan. Time series data has used for this study from 1973 to 2007. They employed ARDL Bond test methodology. The study found that worker's remittances have positive and significant impact with private saving in short run and long run. This paper also found that remittances are not only used for consumption purposes but also used for investment purposes. The study concluded that remittances playing a beneficial role for those developing

economies which are facing unemployment problem such as Pakistan.

Impact of remittances with private investment and total consumption has examined by Kausar et al. (2011) for Pakistan. They used the time series data from 1984 to 2009 and Oridinary Least Squrae (OLS) methodology used for investigate the relationship. The study found that remittances have positive relationship with private consumption and also positive with total consumption due to these impact of remittances also drive economy to growth. The paper suggests that better and healthy policies are responsible for sustainable economic growth.

Ranathunga (2011) examined the relationship worker's remittances and household welfare in Sri Lanka. Survey data has used for a district of Sri Lanka that was conducted in January to April 2011. The study use Probit and Tobit model for analyzing the determinants of remittances. The study shows that married migrant workers send money to home regularly.

The study concluded that remittances are not just used for consumption purposes but also used for investment motives too.

Remittances and household consumption instability in developing economies has examined by Jeans-Louis and Christian Ebeke (2011). They used the data of developing countries from 1975 to 2004. The study shows that remittances are the factor that reduces consumption instability and also remittances are responsible for reduction other effects of various sources.

Impact of workers' remittances on household expenditure and investment has analyzed by Richard and Alfredo (2010) for Guatemala. The paper used survey data of 7145 household conducted by ENCOVI in July to December 2001. The paper indicates that positive and significant impact of remittances with economic development in case of Guatemala. More shares of remittances are used for Investment (i.e. education) motives as compared to consumption.

Remittances and consumption has examined by Munir et al (2007). They used the date of Pakistan for five selected years. The study indicates that remittances are mostly used for consumptions purposes in Pakistan. The estimated consumption function shows that remittances have a significant role in determination of private consumption in economy.

MODEL AND METHODOLOGY

Theoretical Model

The basic idea of this paper is to investigate the relationship between workers' remittances and household consumption volatility. Theoretically this paper based on three main equations (Moore et al 2008).

$$HHC\_VOL_{it} = \propto_0 + \propto_1 REM_{it} + V_{it} \quad \propto_1 \gtrless 0 \quad \text{..... (1)}$$

Where

HHC_VOL = Household consumption volatility

$\propto_0$ = Intercept

$\propto_1$ = Parameter has to estimated, that have no specific sign

REM = Remittances (ratio to GDP)

V = Error term

i = country in model

$$HHC\_VOL_{it} = \beta_0 + \beta_1 REM\_VOLT_{it} + \mu_{it}$$

$\beta_1 > 0$…….. (2)

Where

REM_VOL = Remittances Volatility

β_1 = Coefficient to be estimated

Several other factors that also consider the determinants of household consumption volatility are not taken in previous equation (Equation 1 and 2). Equations 1 and 2 are included in our study just to check the robustness of remittances and remittances volatility.

$$HHC\_VOL_{it} = \delta_0 + \delta_1 REM_{it} + \delta_2 REM\_VOLT_{it} + \gamma Z_{it} + \varepsilon_{it} \text{ ……..…… (3)}$$

Where

γ = parameter that estimates on the matrix of control variables,

Z = Includes control variables (Financial development (F.D), World growth volatility

(W_VOL), Inflation volatility (INF_VOL), Term of trade (TOT) and trade openness

(T_OPEN)

Variables construction and Data sources

All variables data are extracted from World Development Indices (2011) online except Term of Trade (unit value of export and import) are extracted from International Financial Statistics (IFS). We are analyzing five countries of South Asian (Bangladesh, India, Nepal, Pakistan and Sri Lanka) from 1975 to 2010. All variables (Appendix.1) are originally US million dollars at constant 2000 prices except Inflation, World GDP growth.

METHODOLOGY

Measurement of Volatility

Empirical literature reveals that several methods for measurement of volatility, some are discussing here which are prominent in literature.

Table 4. Dependent variable: Household Consumption Volatility

Variable	Coefficients	P- value	R-SQUARE
REM	-0.1362	0.000	0.13
REM_VOL	0.022	0.000	0.10

1- Measurement of volatility via standard deviation Blanford (1983), Mubarak (2005) and Moore (2007), three year or five year standard deviation of growth rate of variable are commonly use for measurement of volatility. The drawback of this method is that it consider sensitive to outliers in the series.
2- High- low values of data is also a procedure to measure volatility.
3- G/ARCH (Engel (1982) and Bollerslev (1986) frame work also used for measurement of volatility, this procedure consider best for measurement volatility and need high frequency data (minimum 300 observation), by simplicity we can claim that G/ARCH only entertain quarterly or monthly data.

We measure volatility via standard deviation of the residuals from autoregressive AR 1

First order process (Diego A. Comin, Thomas Philippon, 2006)

Dynamic panel GMM

Arellano and Bond (1991) first time introduce Generalized method of moment (GMM), We also employ dynamic panel GMM that is consider best methodology to control endogeniety problem and also covers country unobserved specific effects. GMM also considered best econometrics tool via handling many panel problem s as endogeniety, hetroskadasticity, serial correlation and identification. To control endogeniety 2SLS methodology used but it is inconsistent in our model due to not capturing correlation between error term of explanatory variables. Ordinary Least Square (OLS) is also inconsistent because it does not cover endogeniety problem.

Econometrics strongly recommended dynamic panel GMM and Instrumental Variable (IV) (Anderson and Hsio (1981). System GMM is not betters for our study due to its limitation as more number of observation and small number of countries.

We estimate all our equations of model (equations 1, 2 and 3) via dynamic panel GMM. We also use some other variables as instrumental variables (FDI, M2, Population and change in term of trade) beside explanatory and control variables. The study also employed variables in level lagged twice or more as instruments besides assuming that error term of the equation in level are not correlated. All estimation process has done via EVIEW 6 due to some advance methodologies for panel studies.

RESULTS AND DISCUSSION

The results (Table 4 and Appendix 2) indicates that remittances are responsible for minimize the volatility of household consumption (Jean-Louis and Christian Ebeke, 2011). Remittances play a role of beneficial for household for smooth consumption. Negative sign (Table. 4 appendix 2) reveals the stability and positive sign show volatility or instability. The results in Table 4 are only bivariate relationship between remittances (Equation. 1) and remittances volatility (Equation .2) with household consumption volatility, first two equations (equation 1 and equation 2) are included in this study just to check robustness of remittances (REM) and remittances volatility (REM_VOL). After inclusion of control variables (equation 3) the result of remittances (appendix 2) did not change, negative sign converge to stability, remittances volatility (REM_VOL) sign is positive that explain accountable for household consumption volatility.

Remittances perform a useful role in remittances recipients' economies as it reduces budget deficit and unemployment problem, poverty (Shahbaz and Naveed 2009) and consider a remarkable factor that drives economy to sustain economic growth. Remittances inflow to South Asia also deems a main source of financial development. Beside remittances financial sector development (F.D) also present essential job for mitigating household consumption volatility. Remittances volatility (REM_VOL), Trade Openness (T_OPEN) World growth volatility (W_VOL), Inflation volatility (INF_VOL) and Term of Trade (TOT) are accountable for household consumption volatility.

The value of R-square (appendix.2) is 0.421 explaining total variation (0.42) in household consumption volatility. To check the validity of instruments in GMM methodology, we employed Sargan test for validity of instruments. The results (appendix.2) explain the j-stat value 0.02 and j (prob) is 0.83 that prove instruments are valid because j stat accepts null.

CONCLUSION AND POLICY IMPLICATION

Workers' remittances and Household consumption volatility for selected South Asian economies (Bangladesh, India, Nepal, Pakistan and Sri Lanka) have examined from 1975 to 2010. Dynamic panel Generalized Method of Moments (GMM) has used to estimate the relationship between workers' remittances

and household consumption volatility. The GMM approach has explicated that remittances are responsible for reducing volatility in Household consumption volatility.

The coefficient of remittances (Table 3 and Appendix; 2) are -0.1362 and -0.160 respectively are highly significant and negative sign specify the stability in the economy, like this coefficient remittances volatility (REM_VOL) are 0.022 and 0.034 respectively explain when volatility examined in remittances it also bring volatility in household consumption volatility.

The main policy implications on the bases of our finding are specified brief here.

To avoid from volatility of household consumption government authorities should formulate vigorous policies that should discourage remittances volatility. Financial sector also perform a vital role in reducing volatility, so government authorities should improve financial sector for stability.

REFERENCES

Amjad, Rashid (2006(. "Remittances and development in South Asia*",* Online at http://mpra.ub.uni-muenchen.de/38296/ *MPRA Paper No. 38296,*

Anupam D, Murshed C (*2011*). "Remittances and GDP Dynamics in 11 Developing Countries: Evidence from Panel Cointegration and PMG Techniques" *The Romanian Economic Journal Year XIV, no. 42, December*

Arellano M, O Bover (1995). "Another look at the instrumental variable estimation of error- components models." *Journal of Econometrics*, 68, 29-52.

Blandford D (1983). ``Instability in world grain markets.'' *J. Agric. Econ.* 43(3):379-95.

Bollerslev T (1986), "Generalized Autorregressive Conditional Heteroskedasticity," J. Econometrics, 31, 307-327.

Christian N, Bichaka F (2011). "Remittances and economic growth in Africa, Asia, and Latin American-Caribbean countries: a panel unit root and panel cointegration analysis", *J. Econ. Fin. DOI 10.1007/s12197-011-9195-6,*

Dharshani and Deshal (2009). " Migaratition and Remittances in South Asia" Briefing paper No. 12, 2009

Diego A. Comin, Thomas Philippon (2006). "The Rise in Firm-Level Volatility: Causes andConsequences" URL: http://www.nber.org /chapters/c0072

Dilip Ratha (2003), "workers, remittances: An important and stable source of external development finance" global Development Finance 2003 ,World Bank

Engle R (1982). "Autorregressive Conditional Heteroskedasticity with Estimates of United Kingdom Inflation", Econometrica, 50, 987-1008.

Fayissa B, Nsiah C (2008). "The Impact of Remittances on Economic Growth and Development in Africa", *Middle Tennessee State University Working Paper Series,February*

Ghosh B (2006). "Migrants Remittances and Developments: Myths, Rhetoric and Realities", *International Organization for Migration, Geneva*.

January 2012 09:30 UTC

Jean-Louis Combes and Christian Ebeke, "Remittances and Household Consumption Instability in Developing Countries", *World Development Vol. 39, No. 7, pp.1076–1089, 2011*

Mayumi Ozaki (*2012*). " Worker Migration and Remittances in South Asia", *South Asia Working Paper Series, Asian Development Bank.*

Mazhar Yasin mughal and Farid Makhlouf, "Volatility of Remittances to Pakistan: What do the Data Tell?", *Economics Bulletin*, Vol. 31 no.1 pp. 605-612. 2011

Mobarak AM (2005). "Determinants of Volatility and its Implications for Economic Development" Review of Economics and Statistics 87, 348-361.

Munir Khan, Tariq Rahim, Yahya Bakhtiar and Badshah Nawab(2007). "Remittances as Determinant Of Consumption Function (An Empirical Evidence From Pakistan)" Sarhad J. Agric. Vol. 23, No. 4, 2007

Per-Olof Bjuggren (JIBS), James Dzansi, (JIBS) & Ghazi Shukur, "Remittances and Investment" *CESIS Electronic Working Paper Series*, Paper No. 216, 2010

Rahila Munir, Maqbool H. Sial and Ghulam Sarwar (2011), "Effect of Workers' Remittances on Private Savings Behavior in Pakistan" *Asian Economic and Financial Review, 1(3),pp.95-103*

Richard H. Adams Jr and Alfredo Cuecuecha (2010), "Remittances, Household Expenditure and Investment in Guatemala" World Development Vol. xx, No. x, pp. xxx–xxx, 2010

Sanjeev Gupta, Catherine A. Pattillo and Smita Wagh, "Effect of Remittances on Poverty and Financial Developmentin Sub-Saharan Africa" *World Development Vol. 37,No.1, pp. 104–115.2009*

Seetha P.B. Ranathunga (2011), "Impact of rural to urban labour migration and the remittances on sending household welfare: a Sri Lankan case study" Online at http://mpra.ub.uni-muenchen.de/35943/ MPRA Paper No. 35943, posted 27.

Shahbaz, Muhammad and Naveed Aamir (2009). "Determinants of Workers' Remittances: Implications for Poor People of Pakistan," *Eur. J. Sci. Res.* 25(1): 130-144.

Siddique A, Selvanathan EA, Selvanathan S (*2010*). "Remittances and Economic Growth: Empirical Evidence from Bangladesh, India and Sri Lanka", *University of Western Australia Discussion Paper 10.27,*

Sufian Eltayeb Mohamed and Moise G. Sidiropoulos, "Does Workers' Remittances Affect Growth: Evidence from Seven MENA Labor Exporting Countries", Int. Res. J. Fin. Econ. ISSN 1450-2887 Issue 46, 2010

Winston Moore, Roland Craigwell and Mahalia Jackman (2007), "Department of Economics, University of the West Indies, Cave Hill Campus, Bridgetown, BB11000, Barbados.

Yasmeen K, Anjum A, Ambreen S, Twakal S (2011). "The Impact of Workers' Remittances on Private Investment and Total Consumption in Pakistan", Int. *J. Account. Fin. Reporting 1 (1)*

Appendix:1
Variable construction and Data sources:

Variable	Description	Construction	Source
REM	**Remittances**	Remittances (ratio to GDP)	WDI
T_OPEN	**Trade openness**	Trade ((ratio to GDP))	WDI
F.D	**Financial Development**	Credit to private sector (Share to GDP)	WDI
TOT	**Term of trade**	Unit value of Export/Unit value of import	IFS
REM_VOL	**Remittances volatility**	standard deviation of residuals of autoregressive process	Author's calculation
W_VOL	**World growth volatility**	standard deviation of residuals of autoregressive process	Author's calculation
HHC_VOL	**Household Consumption volatility**	standard deviation of residuals of autoregressive process	Author's calculation
INF_VOL	**Inflation volatility**	standard deviation of residuals of autoregressive	Author's calculation

Appendix 2
Remittances and Household consumption volatility (with control Variables)
Dependent variable: Household Consumption Volatility (**HHC_VOL)**

VARIABLES		**HHC_VOL**
REM		**-0.160*** **(0.002)**
REM_VOL		**0.034*** **(0.000)**
T_OPEN		**0.024*** **(0.002)**
F.D		**-0.024*** **(0.1350)**
W_VOL		**0.023*** **(0.000)**
INF_VOL		**0.001*** **(0.005)**
TOT		**0.009** **(0.1871)**
C		**0.005** **(0.621)**
R-SQURE	0.421	
J-STAT (PROB)	0.0231 J-0.831	
OBSERVATION	170	

P value are given under parentheses are *, **, *** significant at 1%, 5% and 10% respectively