# Overseas Filipino Workers Remittances, Inequality and Quality of Life in the Philippines

Deluna, Roperto Jr and Pedida, Sunshine

University of Southeastern Philippines, School of Applied Economics

April 2014

# OVERSEAS FILIPINO WORKERS REMITTANCES, INEQUALITY AND QUALITY OF LIFE IN THE PHILIPPINES

**Sunshine B. Pedida and Roperto S. Deluna Jr.**

## Abstract

This study examines the relationship among OFW remittances, inequality and quality of life in the Philippines. The study covered the period from 1990 to 2011 and employed Vector autoregressive (VAR) analysis to examine the relationship among the variables. Over the years, Human Development Index (HDI) as a measure of quality of life and remittances showed a generally increasing trend while the case is opposite for the level of inequality. Remittances and HDI has an average growth rate of 15.32% and 0.55% respectively. Inequality in the country has reduced on the average of 0.07% from 1990 to 2011. This generally implies that even in the ever increasing OFW remittances it has a very minimal effect on enhancing human development and reducing inequality in the country. Empirical results revealed that remittances has no significant effect on income inequality, however it has a significant effect on enhancing quality of life. In specific, for every unit increase in last year's remittances, human development index will increase by 0.02. Results in granger causality revealed a bidirectional relationship between remittances and human development.

**Keywords:** VAR Model, HDI, Remittances, Inequality, Quality of Life

## Introduction

The Philippine government has always acknowledged the positive effect of overseas employment on the welfare of its citizens. The funds that these migrant workers transfer from their destination country to their country of origin are called remittances (Addison, 2004). According to Bangko Sentral ng Pilipinas (BSP), OFW remittances have contributed much to the country's GNP and foreign exchange earnings. Remittances from overseas Filipinos (OFs) coursed through banks rose in 2012 by 5 percent year-on-year to reach $1.7 billion. These remittances are used to deal with the country's foreign debt, and the export of labor is thus seen as a means to achieve or sustain economic development.

Remittances play a vital role in most economies. According to Cattaneo (2005), the volume of remittances has certain macroeconomic impacts particularly on development indicators, aside from the immediate benefits it provides to the recipients households. Remittances are also viewed as returns to migration, an investment in human capital of the migrant typically to provide a better present and a brighter future for the children or younger siblings (Pernia, 2008).Indeed, some observers now refer to remittances as the new development finance (Wimaladharma et al., 2004).

Remittances drive possibilities in improving quality of life. Generally, quality of life (QOL) is defined as the emphasis on the degree of choice, meaning the greater the degree of choice, the higher the QOL. For manydecades, national QOL measures have been defined by the level of the GNP per capita. Although GNP per capita is a significant part of a development strategy, it cannot capture all aspects of development. There is a systematic positive relationship between GNP per capita and social and human welfare (McGillivray, 1991), but the social and physiological aspect of QOL cannot be measured correctly by the income variable. Thus, a range of socio-economic indicators was considered to measure QOL. Through human development index (HDI). HDI is a broader measure of development beyond the simple income per capita measure. HDI is a composite index measuring average achievement in three basic dimensions of human development; a long and healthy life, knowledge and a decent standard of living (www.nationsonline.org).HDI is now composed of life expectancy, mean years of schooling, expected years of schooling and gross national income per capita (www.hdr.undp.org).

The remittances of money and goods by migrants to their origin countries can also have important impacts on the distribution of household income and welfare, and the average quality of life also depend on how equally or unequally income is distributed. This is especially the case in developing economies, where household earnings are low, inequality is often pervasive and domestic or international migration of family members can provide a major source of income through the remittances of wage earnings. Excessive inequality adversely affects people's quality of life, leading to a higher incidence of poverty and so impeding progress in health, education and contributing to crime. Much speculation has been made about the sources of income inequality in the developing world ever since Kuznets (1955) wrote about economic development and income inequality. Several empirical studies have decomposed the sources of income inequality by economic sector, such as urban and rural, family characteristics such as education and occupation of workers, as well as by income source particularly income from labor, capital and land (Adams and Alderman, 1992).

**Rationale**

Massive remittance flows have been a significant facet of the Philippine economy. Remittances to developing countries had been growing since 1990 and reached around US$300 billion in 2008 where the Philippines is one of the top recipient countries with $16 billion (Ratha, 2009). These remittances have a greater contribution to the country's income and economic development (Alcantara,2007). However despite the increasing size of remittances there has been a little effort to analyze its effect on the economy particularly on inequality and quality of life. The Philippines has one of the highest rates of income inequality in the world, and unless action is taken, the gap will continue to widen. According to the ASEAN Trade Union Council, the Philippines has the highest rate of economic and social inequality in Southeast Asia.

This problem is not limited to personal wealth. Land distribution, educational and vocational opportunities and basic welfare programs are also affected by the growing

disparity between the Philippines richest and poorest citizens (www.childfund.org). In view of this, remittances have the potential to play a large and positive role in national development. It helps boost growth in countries with less developed financial system as it provides an alternative way to finance investment and produce multiplier effects. To drive greater and more inclusive local growth that will help lessen inequality, reduce liquidity constraints and improving quality of life (Giuliano, 2008).

## Objectives of the study

The main objective of this study is to determine the relationship of OFW remittances, inequality and quality of life in the Philippines. Specifically this study aims:

1. To present the trends of OFW remittances, inequality, and quality of life from 1990 to 2011, and
2. to examine empirically the relationship among OFW remittances, inequality and quality of life in the Philippines.

# METHODOLOGY

## Theoretical Framework

*Developmental Optimistic Neo classical theory*

The general developmental theory views on migration which are all affiliated to the functionalist paradigm in social theory, predict the counter flows of capital, including remittances and knowledge from migration, to increase investment and subsequently stimulate development and modernization of an economy. In particular, remittance-developmental optimist argue that international migration leads to a North-South transfer of investment capital and accelerates the exposure of labor exporting communities to liberal, rational and democratic ideas, modern knowledge and education. In this regard, the increasing inflow of international remittances would, in the long run, contribute positively to stimulating capital-constrained economies to effectively take-off in a sustainable manner. (Beijer, 1970).

When it comes to the overall impact of remittances on income inequality, Ratha (2003) found out that evidences are mixed. Some find that remittances sharpen inequality (Stark et al. 1986; Adams 1991, 1998), while others claim that in the long run, the income distribution becomes more equal through the liquidity provided for capital accumulation, or through trickle down effects in the labor market (Taylor and Wyatt, 1996; Stark et al.1986). The effect on poverty seems much less controversial, as remittances per se do not lower anyone's income.

In the aspect of quality of life, Calero (2008) found out that remittances increases school enrollment and decrease the extent of child work. Moreover the study found out that remittances are used to finance education when households are facing aggregate shocks as these are associated with increased work activities.

**Conceptual Framework**

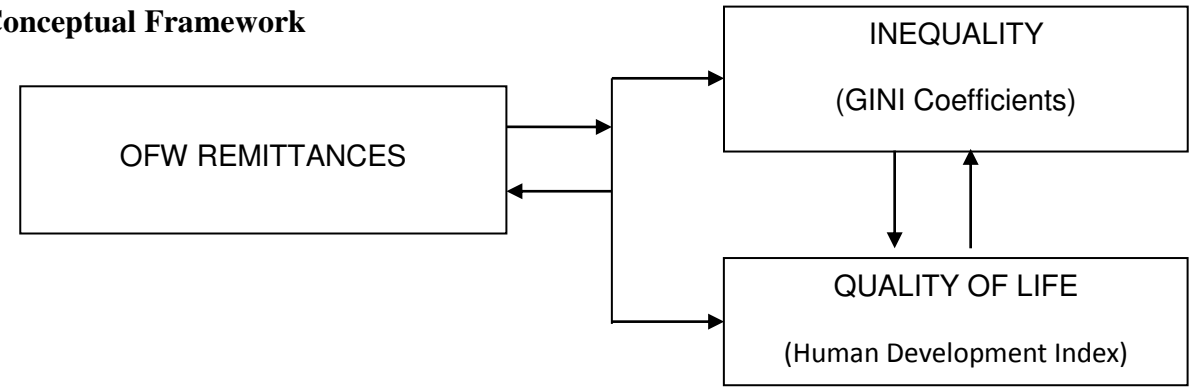


Figure 1.The possible relationship between OFW remittances, inequality and quality of life.

**The variables and data sources**

***OFW remittances*** - amount of money sent by foreign workers to their native homeland (Addison 2004). These data was taken from the World Bank data source.

***Human development index*** - is a composite index composed of life expectancy, mean years of schooling, expected years of schooling and gross national income per capita. These data was taken from the World Bank data source.

***GINI coefficient***- is a measure of the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. These data was taken from NSO and NSCB data source

**Statistical Method**

The statistical model is divided into two phases: The first phase is all about the trends of OFW remittances, inequality and quality of life in the Philippines and the second phase is the empirical estimation. Microsoft excel was used for graphical ppresentations of the trends of the variables from 1985 to 2011. Inequality, in this study is proxied by Gini coefficient similar to the studies of Bashir and Khan (2011) and Chaudhry et al. (2009)while quality of life is measured by Human Development index (UNDP, 1990).To examine the relationship of the variables, the study uses a time series analysis technique. Time series analysis involves methods that aims at understanding the underlying theory on the sequence of observation ordered in time or to make forecasts on the identified pattern based on past events (www.statsoft.com).

**Time Series Analysis**

Time series analysis is primarily concerned with the past behavior of a variance in order to predict its future behavior. It involves methods that aim at understanding the underlying theory on the sequence of observations ordered in time, or to make forecasts on the identified pattern based on past events. There are two main goals of time series analysis: (a) identifying the nature of the phenomenon represented by the sequence of observations, and (b) forecasting (predicting future values of the time series variable). Both of these goals require that the pattern of observed time series data is identified and more or less formally described. Once the pattern is established, it can be easily interpreted and integrated with other data. Regardless of the depth of the understanding and the validity of the interpretation (theory) of the phenomenon, the identified pattern can be extrapolated to predict future events (www.statsoft.com).

**Stationarity Test**

Stationarity is a critical assumption of time series analysis. The need to initially test the time series variables for stationarity to employ any regression analysis is a necessary condition since violations of some assumptions could be fatal (Gujarati, 1995).

A stochastic time series ($y_t$) is said to be weakly stationary or covariance stationary or simply stationary if, and only if, it satisfies the following requirements:

| | | |
|---|---|---|
| (a) | E ($y_t$) = $\mu$ | ($y_t$ has constant mean); |
| (b) | Var ($y_t$) = $\sigma^2 = y_0$ | ($y_t$ has constant variance); |
| (c) | Cov ($y_t, y_{t-k}$) = $y_k$ for all $k$ | (the covariance between any two of the terms of the series is a function only of the distance between them). |

The first and second requirements simply imply that the means and variances are constant over time. The third requirement implies that the covariance between observations in the series is a function of how far apart they are in time and not the time at which they occur (Greene, 2000). In other words, stationarity occurs in a time series when the mean, variance and autocorrelation structure do not change over time (www.statsoft.com). If the series does not satisfy one or more of the conditions, it would mean that the series is not stationary, and to proceed with regression analysis would lead to false results, where it is possible to obtain very high value for$R^2$ but insignificant estimates.

In the estimation process, it is important to conduct a standard unit root test on each variable if it exhibits a trending behaviour or non-stationarity in the mean. If this exists, then some form of trend removal is required (Danao, 2002).

Augmented Dickey-Fuller (ADF) test is used in testing for the presence of unit root and is applied to the data series. The specification is:

$$\Delta y_t = \beta_0 + \beta_1 + \delta y_{t-1} + \alpha_i \sum \Delta y_{t-1} + \varepsilon_t \qquad (1)$$

Where$\varepsilon_t$ is a white noise error term. The error term is assumed to be independent and identically distributed. If the ADF test fails to reject the null hypothesis, it indicates the presence of a unit root. In case of non-stationarity, achieving a stationary condition can be attained through differencing process. Differencing process is frequently employed to detrend the data and control autocorrelation by subtracting each datum in a series from its predecessor (www.stat.ucla.edu). If the results of the ADF test will reveal that the series are all stationary in level (I(0), then the time series analysis could not proceed to cointegration process, but could proceed to Vector Autoregression (VAR) modelling.

**Differencing**

Differencing means getting the changes between the time periods to transform it into stationary. The number of times that it must be done to obtain stationarity series is called the order of integration. If the data series are found to be integrated after differencing *p* times (i.e., series become stationary after differencing *p* times), then the series is integrated of order *p*(Saundres *et al*., 2001). If all the data are stationary after differencing, however at different order of integration, employment of VAR analysis will be applicable.

**Lag length determination**

A critical element in the specification of Vector Autoregressive models the determination of its lag length. The lag length specified using an explicit statistical criterion such as the Akaike Information criterion (AIC) and Schwarz Beyesian Criterion (SBC).
AIC's main idea is to select the model that minimizes the negative likelihood penalized by the numbers of parameters while SBC is one of the widely used information criteria (Schwarz, 1978). Both AIC and SBC have the main aim of identifying good models. In this case, we will choose the model which has the lowest AIC and SBC value (Enders, 1995). The AIC and SBC are given below:

$$\text{AIC} = T\log|\Sigma| + 2N \quad (2)$$
$$\text{SBC} = T\log|\Sigma| + N\log(T) \quad (3)$$

where:

$|\Sigma|$= the determinants of the variance/covariance matrix of the residuals;
N= total number of the parameters estimated in all equation; and
T= the number of the usable observations.

**Vector Autoregressive (VAR) Model**

In understanding VAR model, specification of correct lag order in VAR modelling is one of the important things to be considered and must be done first, since selection of inappropriate lag *p* will decrease the accuracy of the estimated coefficients in VAR(p) model. The vector autoregressive (VAR) model of Sims (1980) is one of the most successful, flexible, and easy-to-use models for the analysis of multivariate time series. It is an econometric model used to capture the evolution and the interdependencies between

multiple time series generalizing the univariate Autoregressive (AR) models (www.cadmus.eui.) The model describes the evolution of a set of k variables over the same sample period (t = 1, 2 …T) as a linear function of only their past evolution (Watson, 1994). Basically, Var (p) is an AR model with at least two time series having (p) as the number of lags and is expressed by Aktar (2009) as:

$$x_t = A_0 + A_1 X_{t-1} + A_2 X_{t-2} + ... + A_p X_{t-p} + e_t \quad (4)$$

where:

$x_t$ = an ($n$ x 1) vector containing each of the $n$ variables included in the VAR

$A_0$ = an ($n$ x 1) vector of intercepts

$A_t$ = ($n$ x $n$) matrices of short-run coefficients

$e_t$ = an ($n$ x 1) vector of error terms

with the following assumptions:

1) $E(\varepsilon_t) = 0$ ; the error has a mean 0,

2) $E(\varepsilon_t \varepsilon_{t-k}) = \Omega$ ; the contemporaneous covariance matrix of error terms is $\Omega$ (a nxn positive definite matrix), and

3) $E(\varepsilon_t \varepsilon_{t-k}) = 0$ ; for any non-zero k, there is no correlation across time; in particular there is no serial correlation in individual error terms.

Explicitly, the matrix form for the VAR model using OFW remittances, inequality and quality of life is expressed as:

$$\begin{bmatrix} REM_t \\ GINI_t \\ HDI_t \end{bmatrix} = \begin{bmatrix} A_{10} \\ A_{20} \\ A_{30} \end{bmatrix} + \begin{bmatrix} A_{11}(P) & A_{12}(P) & A_{13}(P) \\ A_{21}(P) & A_{22}(P) & A_{23}(P) \\ A_{31}(P) & A_{32}(P) & A_{33}(P) \end{bmatrix} \begin{bmatrix} REM..._{t-1} \\ GINI..._{t-1} \\ HDI..._{t-1} \end{bmatrix} + \begin{bmatrix} e_{1t} \\ e_{2t} \\ e_{3t} \end{bmatrix} \quad (5)$$

where:

$REM_t$ = OFW remittances at time $t$
$GINI_t$ = inequality measured by GINI coefficient at time $t$
$HDI_t$ = quality of life measured by Human Development Index at time $t$
$A_{i0}$ = intercept terms
$A_{ij}$ = polynomials in the lag operator $P$
$e_{it}$ = the white-noise disturbances, i.e., error term with mean and variance equals to 0
P = lag operator (1,2,3…)

In dealing with the series data, it is important to know whether changes in one variable will have an impact on the changes of another variable. Hence, this study proceeds to undertake Granger causality test.

**Granger Causality Test**

One of the main uses of VAR models is forecasting. The structure of the VAR model provides information about a variable's or a group of variables' forecasting ability for other variables. The intuitive notion of a variable's forecasting ability can be determined by Granger causality (Granger, 1969). If a variable, or group of variables, $y_{1,}$ is found to be helpful for predicting another variable, or group of variables, $y_2$ then $y_1$ is said to Granger-cause $y_2$; otherwise it is said to fail to Granger-cause $y_2$. In order to address this concern, the Granger-causality test is applied to test if past or historical values of one variable predict the future values of another. The test involves F-tests to examine whether lagged information on a variable x provides any statistically significant information about a variable y in the presence of lagged y. A test of causality is a test whether the lags of one variable enter into the equation for another variable. In a three-variable case, such as in this study, in which $A_{ij}(P)$ represents the coefficients of lagged values of variable j on variable i, variable j does not Granger cause variable i if all coefficients of the polynomial $A_{ij}(P)$ can be set equal to zero. Clearly, the notion of Granger causality does not imply true causality but only implies forecasting ability.Testing for Granger causality between OFW remittances inequality and quality of life (variables) consists of checking the significance of $a_{ij}$coefficients.

**RESULTS AND DISCUSSION**

**OFW remittances in the Philippines**

OFWs' remittances have been instrumental in helping the Philippine economy offset foreign exchange outflows, especially as a saving grace during periods of negative GDP growth, thus, maintaining a positive GNP. Figure 2 shows the behavior of OFW remittances in the Philippines from 1990 to 2011. OFW remittances appear to increase throughout the years. During the last decade, remittances, as a percentage of GNP increased three-fold, from 2.67 percent in 1990 to 8.42 percent in 1999. It is also worth noting that in 1991 and 1998 when the country's GDP registered negative growth, the economy still managed a positive, although slim, GNP growth. This is because of the strong net factor income through OFW remittances

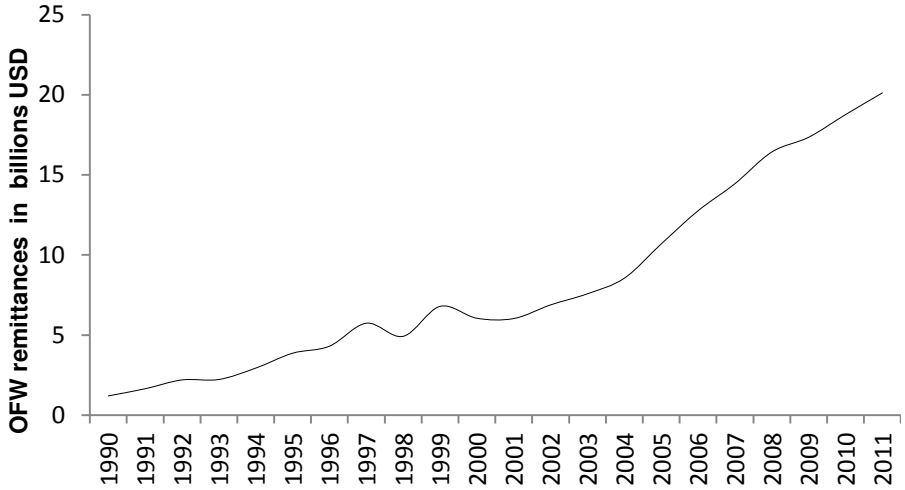


Figure 2. OFW remittances in the Philippines, 1990-2011
Source of data: World Bank Data Base (WDB)

In 2001 remittances increased 187 percent from US$ 6 billion to US$ 17.35 billion in 2009. The Philippines in 2009 was the world's fourth highest recipient of remittances from nationals, trailing only India (US$ 49 billion), China (US$ 48 billion), and Mexico (US$ 22 billion). By the end of 2009, remittances had increased by 5.65% year-on-year and Filipino workers abroad were often retained in preference to more expensive employees of other nationalities. In the first eight months of 2010 remittances grew 7.4% year-on-year.

**Income inequality in the Philippines**

Figure 3 illustrates the trends of income inequality in the Philippines. It was observed that income inequality is at height in 1997 during the Asian financial crisis. There was a decline in incomes across all income groups, from a low of 4.6 per cent for the highest income group to a high of 7.3 per cent for the poorest income group. Furthermore, the study indicated that the country's GINI coefficient, was already at a high of 0.49 in 1997 (an increase from 0.45 in 1994), further worsened to 0.50 in 1998, signaling a slight increase in income inequality.

The Annual Poverty Indicators Survey (APIS, 1998), a survey on household welfare undertaken to complement the triennial Family Income and Expenditure Survey (FIES), also indicated that income inequality had increased. The last FIES in 1997 showed that the poorest 40 per cent of households had a 14.1 per cent share of all incomes, in the 1998 APIS, this share had dropped to 10.6 per cent.

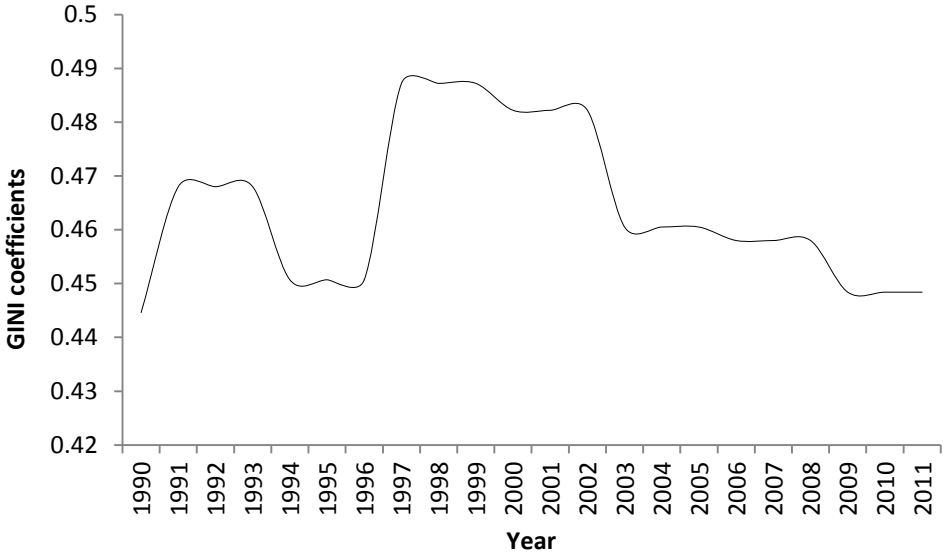


Figure 3.Inequality in the Philippines 1990-2011
Source of data: World Bank Database (WDB)

**Human development index in the Philippines**

Between 1990 and 2011, the pace of human development in the Philippines has been respectable but slow relative to the average of medium-HDI countries and countries in East Asia and the Pacific.

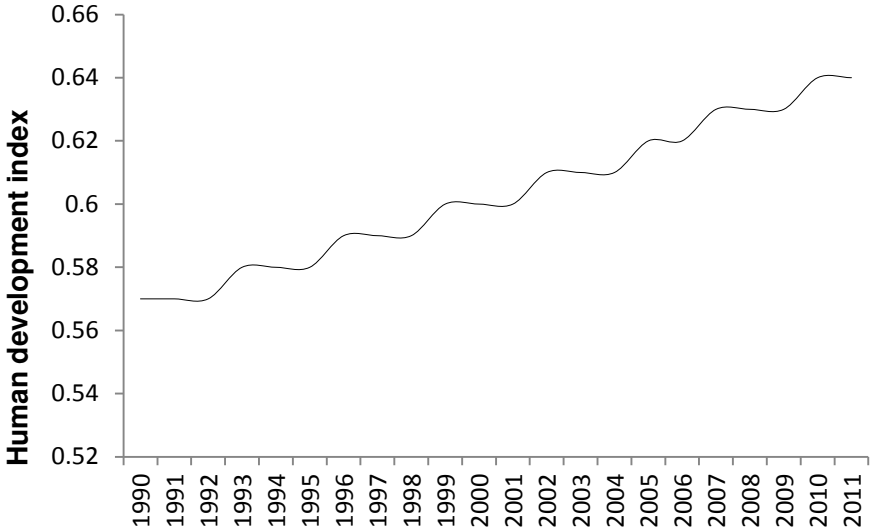


Figure 4.Human development index in the Philippines 1990-2011
Source of data: World Bank Database (WDB)

Figure 4 shows the behavior of human development index from 1990 to 2011. Human development index presents a slow increase. This may be due to weak implementation of various social security and social protection schemes in the country. The UNDP report noted that the various policies and significant investments in people's capabilities

through focus on education, nutrition and health, and employment skills can expand access to decent work and provide for sustained progress. It is evident from experience of many countries that there is a clear positive significant correlation exists between past public investment in social (which includes education, health, social security and social protection for socially and economically excluded) and physical infrastructure (which includes transportation and communication) and progress on the HDI(www.philstar.com).

***Stationarity Test***

In dealing with Vector Autoregressive (VAR) analysis, the stationarity of the series is important and must be done first. This is initially tested using correlogram on plots of autocorrelation functions (ACF) and partial autocorrelation functions (PACF). Appendices 2, 3 and 4 show the correlogram of the ACF and sample PACF for the variables of OFW remittances (REM) inequality (GINI) and quality of life (HDI). A correlogram is a commonly used tool for checking randomness in a data set.

Result of the ADF test is presented in Appendices 5, 6, 7 and 8. Table 1 presents the results of the test where values are tested at 10% level of significance. The ADF showed that only remittances (REM) and Quality of life (HDI) series is stationary in random walk, random walk with a drift and at mixed process, while the inequality (GINI) does not show stationarity in the testing. Therefore, the first differencing for GINI is made and the result is shown in Table 2.

Table 1. Augmented Dickey Fuller test results.

| Variable | Random Walk | Random walk with a drift | Mixed process |
|---|---|---|---|
| REM | 4.3823* | $2.0027^{ns}$ | $3.0211^{ns}$ |
| GINI | $0.14920^{ns}$ | $2.0806^{ns}$ | $2.3869^{ns}$ |
| HDI | 3.2540* | $0.30671^{ns}$ | $2.0174^{ns}$ |

*significant at 10% level
$^{ns}$ not significant at 10% level

Table 2. Augmented Dickey Fuller test after differencing $I$ (1)

| Variable | Random walk | Random walk with a drift | Mixed process |
|---|---|---|---|
| GINI | 4.8894* | 4.7731* | 4.6238* |

*significant at 10%level

***Lag Length Determination***

Since cointegration is not possible, the only alternative estimation would be the VAR modeling. The appropriate time lag of the variables is determined by the lowest values of Akaike Information Criterion (AIC) and Schwarz Information Criterion (SC). Table 3

shows the result of the lag order selection criteria of the VAR model used in the study. It can be seen that the AIC and SC have their lowest values at lag 1.

Table 3. VAR lag order selection criteria

| Lag | LR | AIC | SC |
|---|---|---|---|
| 0 | NA | -8.895898 | -8.746680 |
| 1 | 82.49963* | -12.89167* | -12.29480* |

*Indicates lag order of the criterion
LR: Sequential modified LR test statistics (each test at 5% level)
AIC: Akaike Information Criterion
SC: Schwarz Information Criterion

**Vector Autoregressive (VAR) Estimation**

A VAR model is a simultaneous system of equations that examines the economic inter-relationships of variables which provide a statistical representation of the variables past interactions. Within this framework, all variables are treated symmetrically without any distinctions as to which variables are exogenous and endogenous.

The study examined the relationship of OFW remittances, inequality and quality of life. Table 4 shows the VAR estimation outputs and the standard error of the variables with a lag order of 1.

Table 4. Estimates for the VAR(1) model.

| | REM | GINI | HDI |
|---|---|---|---|
| REM(-1) | 0.733587* | 0.017486$^{ns}$ | 0.022561* |
| | -0.13738 | -0.02853 | -0.00933 |
| GINI(-1) | -1.417614$^{ns}$ | 0.564999* | -0.048060$^{ns}$ |
| | -0.86247 | -0.17912 | -0.05857 |
| HDI(-1) | 4.273671$^{ns}$ | -0.602681$^{ns}$ | 0.507796* |
| | -3.00852 | -0.62482 | -0.20432 |
| C | 5.380186$^{ns}$ | -0.912973$^{ns}$ | -0.634047* |
| | -3.94461 | -0.81923 | -0.2679 |
| R-squared | 0.981299 | 0.519133 | 0.964982 |
| Adj. R-squared | 0.977998 | 0.434274 | 0.958803 |
| Akaike AIC | -1.406082 | -4.549568 | -6.785086 |
| Schwarz SC | -1.207126 | -4.350611 | -6.58613 |

Results revealed that remittances has no significant effect on income inequality, however, it significantly contributed to the improvement of human development in the country. This implies that human development index will improve by 0.02 for every unit increase of remittances last year. This significant effect can be explained by the similar study of Ustubici and Irdam (2012) on the impact of remittances on human development. It was found out that remittances have a positive correlation with the human development level and are indeed an effective way to enhance human development in countries with medium income, especially in the medium run.

Measure of the goodness of fit revealed that 98.12 percent of the variation of the current value of REM can be explained by the lagged values of itself. In particular, on GINI's current value of which the variation of the model comprises about 51.19 percent is significantly explained by its previous value. Further the current value of HDI is significantly explained by the lagged values of REM and itself. The variation of HDI explains about 96.49 percent of the model.

**Granger Causality Test**

Granger causality test was conducted to examine the short run predictability of the variables. Table 5 shows the results of test and parameters were evaluated at 10% level of significance. Table 5 presents the results of the Granger causality test of the VAR (1) model. Results revealed that there is a unidirectional relationship between GINI and REM that runs from GINI to REM. This means that in the short-run level of remittances can be predicted by GINI coefficients. In terms of remittances and HDI, it shows bidirectional causality which is also true with the study of Ustubici and Irdam (2012).

Table 5. Results of the Granger Causality test

| Null Hypothesis | Obs | F-statistic | Probability |
|---|---|---|---|
| GINI does not Granger Cause REM | 21 | 5.28975* | 0.03363 |
| REM does not Granger Cause GINI | | 2.05780$^{ns}$ | 0.16858 |
| HDI does not Granger Cause REM | 21 | 4.48146* | 0.04845 |
| REM does not Granger Cause HDI | | 5.27192* | 0.03390 |
| HDI does not Granger Cause GINI | 21 | 2.69821$^{ns}$ | 0.11782 |
| GINI does not Granger Cause HDI | | 0.00156$^{ns}$ | 0.96896 |

* significant at 10% level
$^{ns}$ not significant

**Summary and Conclusion**

This paper examined the relationship of OFW remittances, inequality and quality of life in the Philippines for the period 1990 to 2011. Standard time series procedures were conducted in order to examine the relationships of the variables. The trends of the time series are inspected and subjected to stationarity test using Shazam version 11, while Eviews package version 5.0 is used to check the linkage among the variables, and to estimate the parameters of the VAR equations. Granger causality test was also conducted.

The AIC and SC criteria shows that the correct lag order for VAR model is 1. VAR (1) model indicates that the current value of variables are affected by the previous values (1 year ago) of the series of the variables.

The graphical analysis of HDI and remittances showed a generally increasing trend over the years, while, the case is opposite for the level of inequality. Specifically, OFW remittances show an increasing trend for the inflows of funds from migrant workers; this recorded an average growth of 15.32%. While, inequality changes erratically depicting an increase in 1997 and shows improvement on the following years. Meanwhile despite the slow increase in HDI, it still represents development on the quality of life. HDI and Inequality recorded and average growth rate of 0.55 and 0.07 respectively. Results of the VAR(1) model revealed that remittances has no significant effect on income inequality, However it significantly contributes to human development of the country. Also the results on the current values of remittances, Income inequality and human development are significantly explained by their previous values.

The Granger causality test was also conducted to examine the short-run predictability of the variables under VAR(1) model. The results were evaluated at 10 percent level of significance. Results revealed that there is a unidirectional relationship between GINI and REM that runs from GINI to REM. This means that in the short-run, level of remittances can be predicted by GINI coefficients. In terms of HDI and remittances, it shows bidirectional causality of which this finding is supported by the study of Ustubici and Irdam (2012).

Generally, this study concludes that remittances has significantly contributed to improvement of quality of life, however the level of remittances are not sufficient to affect the level of inequality in the country.

**Recommendations**

The study mainly focused on the relationship of OFW remittances, inequality and quality of life in the Philippines. Remittances posed great contribution for development. Based on the findings of the study the following recommendations are formulated:

- Remittances sent through informal channels (in-cash or in-kind transfers through hand-carriage when visiting home, or through family members or friends, and transfers through cash carriers, unlicensed money transfer operators, travel agencies or call shops) are worth looking into. These remittances may be even larger than formal remittances and thus going unrecorded. In view of this, approved channels should be given emphasis by the government to attract higher migrant remittances. These will also reduce the cost of sending remittances and the household of the OFW will received more. These remittances can be of great help for the family to improve their life.

- Since remittances contributes to human development , the key to sustain the long-term development impact of these remittances is to implement better economic

and governance policies that support small enterprises especially those investment attractive to OFW families.

- Policies to reduce inequality, more efficient fiscal policy, which includes allocating more resources to public education and human development as general interventions to improve quality of life.

**List of References**


**Acosta, P., P. Fajnzylber and J.H. Lopez, 2007.***The impact of remittances on poverty and human capital:* Evidence from Latin American households surveys. World Bank Policy ResearchWorking Paper 4247.

**Adams, R. and J. Page 2005.***Do International Migration and Remittances Reduce Poverty in Developing Countries?*" World Bank. World Development Vol. 33, No. 10, pp.1645–1669.

**Alcantara, M.J. 2007.***Profile of overseas employment and remittance in the Philippines: 1998-2002.* Undergraduate Thesis Unpublished. School of Applied Economics, University of Southeastern Philippines-Obrero Davao City, Philippines.

**Amjad, R. Ed. 1989.** *To the Gulf and Back: Studies on the Economic Impact of Asian Labour Migration.* Geneva: ILO-ARTEP, 1989.

**Anyanwu, J.C. and A. E. Erhijakpor 2009.** *International Remittances and Economic Growth in Africa.* Global Development Studies (Special Issue on Global Labor Migration and Emerging Trends in Development Finance: An Assessment of the Economic and Social Impact of Migrant (Worker) Remittances in Sub Saharan Africa), Volume Five, Winter 2008-Summer 2009, Nos. 3-4.

**Balisacan, A. and S. F. Piza 2003** *Nature and Causes of Income Inequality in the Philippines.* Paper presented at the Conference on Comparative Analyses of East Asian Income Inequalities. Bangkok, 27 – 28 January, 2003.

**Beijer, G. 1970.***International and National Migratory Movements*. International Migration. 8(3): 93–109.

**Caballero, L.N. 2010***The effect of OFW remittances on poverty in the Philippines.*Undergraduate Thesis Unpublished. School of Applied Economics, University of Southeastern Philippines-Obrero Davao City, Philippines.

**Calero, C. 2008.***Remittances, Liquidity Constraints and Human Capital Investments In Ecuador.* World Development (www.elsevier/locate/worlddev).

**Catrinescu, N., M. Ledesma and B. Quillin. 2006.***Remittances, institutions and economic Growth.* Institute for the Study of labor (IZA) discussion paper No2139,May.http://www.iza.org/conference_files/worldb2008/piracha_m18.pdf.

**Cattaneo C. 2005.***International Migration and Poverty: Cross-Country Analysis*. www.dagliano.unimi.it/media/Cattaneo_Cristina.pdf.

**Fayissa, B. and C. Nsiah, 2008.***The impact of remittances on economic growth and Development in Africa*. Department of economics and finance working paper series.

**Ghosh, B. 2006.***Migrants Remittances and Development: Myths, Rhetoric and Realities*. International Organization for Migration (IOM).

**Giuliano, P. and M. R. Arranz 2008.***Remittances, financial development and growth.* Journal of Development Economics (www.elsevier.com/locate/econbase).

**Gupta, S., C. Pattillo and Smita Wagh 2009.***Effect of remittances on poverty and financial Development*. World Development Vol 37 No 1.

**Hyun, O. 1989**. The Impact of Overseas Migration on National Development: The Case of the Republic of Korea." To the Gulf and Back: Studies on the Economic Impact of Asian Labour Migration. Ed. Rashid Amjad. Geneva: ILO-ARTEP, 1989. 143 – 166.

**Iqbal, Z. and S. Abdus Sattar 2005.***The contribution of Workers Remittances to Economic Growth in Pakistan*. Research Report. Pakistan Institute of Development Economics.

**Jongwanic J. 2007.***International migration and economic development.* Lesson from low Income Countries, Edward Elgar Cheltenham UK}

**Kapur, D. 2003.** Remittances: the new development mantra, paper prepared for the G-24 Technical Group Meeting, 15–16 September (Geneva: Palais des Nations).

**Keely, C.B. and B.N. Tran 1989.** *Remittances from Labour Migration: Evaluations, Performance and Implications*," International Migration Review, 23(3): 500-525.

**Kuznets S.1955.***Economic growth and income inequality*. American Economic Review. No.45 pp 1 – 28.

**Lucas, R. 2005.***International Migration and Economic Development: Lessons from Low-Income Countries* (Cheltenham, UK: Edward Elgar).

**Ratha, D, 2003.***Workers remittances: An important and Stable Source of External Development Finance*. Global Development Finance, pp 157 – 172.

**Sorensen, N. and P. Pedersen 2002.***The migration and development Nexus: evidence and policy options*. Policy study, center for Development research (CDR), Copenhagen.

**Stark, O. J. E. Taylor, and S. Yitzhaki 1986.***Remittances and inequality*. Economic Journal. (96) pp 722 – 740.

**Stark, O and S. Yitzhaki 1982.***Migration, growth, distribution and welfare*. *Economics Letters*, 10(3-4), pp. 243-249.

**Taylor J. E., 1992.***Remittances and Inequality Reconsidered*. Direct Indirect and Intertemporal Effects", *Journal of Policy Modeling*, Vol. 14(2): 187 208.

**Ustubici, A. and D. Irdam 2012.***The impact of remittances on human development: a quantitative analysis and policy implications.* Economics & Sociology;Jun2012, Vol. 5 Issue 1, p74. Article, Academic Journal.

**Wimaladharma, J.P.Douglas and D. Stanton. 2004.***Remittances: the New Development Finance?*Small Enterprise Development(15): 12-19.

**Woodruff, C. and R. Zenteno 2004.***Remittances and microenterprises in Mexico.* University of California, San Diego, California.