

# Empowering Progress: The Behavior of the Philippine Labor Force

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## Abstract

The socioeconomic development of a nation is significantly influenced by its labor force. Firms desire to obtain the skilled laborers to increase productivity while people want to land a job to satisfy their needs, particularly health care. Because the Philippines has a sizable workforce, it is essential to study its dynamics. Using the cointegration test, this paper intended to analyze the labor force's determinants over the last three decades, namely overseas Filipino cash remittances and per capita health expenditure. The findings could help stakeholders make well-informed decisions for strategies by offering insightful information about labor force behavior in the Philippines.

**Keywords:** labor force, health expenditure, remittances

## I. Introduction

One essential component that makes economic advancement possible is the labor force. For most people, it is their primary source of income. While people desire to find a job to meet their needs, firms seek to hire competent workers to boost efficiency. Remittances from overseas Filipino and per capita health spending are two of the many factors that affect the labor force. Per capita health expenditure plays an essential role in labor force (Rauf, Bashir, Asif and Saleem, 2018). A more stable labor force is achieved when people are healthy. Based on the Philippine Statistics Authority, health spending of individuals went up to Php 11, 083 in 2023.

Dey (2002) stated that overseas worker remittances have impact on the labor force. In India, the effect is significantly more powerful when it comes to remittances from abroad. Similarly, Murakami, Yamada and Sioson (2020) discovered the influence of remittances on labor force in Tajikistan; receiving remittances from overseas may result in the remaining household members working less. Figures show that in the Philippines, as of June 2024, remittances from overseas Filipinos reached to US\$ 3.21 Billion (Bangko Sentral ng Pilipinas, 2024).

Despite the fact that a number of studies have been conducted to understand the factors that affect labor force, these studies could be more complicated and sophisticated. Understanding the relationship between these variables is vital because it provides a greater comprehension of the elements that influence a country's labor market. Knowing what draws people to a place has an impact on its development. Creating the link enables for a more thorough analysis of what people need and how much they are ready to spend for health. In this light, the study attempts to determine the influence of remittances and per capita health expenditure to the labor force of the Philippines.

The study is structured as follows: Chapter 2 summarizes relevant research emphasizing policy, theoretical, and empirical issues; Chapter 3 looks at some theoretical framework of the paper; Chapter 4 presents the findings; Chapter 5 has the discussion of the results; and Chapter 6 offers a conclusion and recommendations.

### Statement of the Problem

Given the importance of analyzing the relationship between crime, macroeconomic, and demographic variables, international studies need to be contextualized into the Philippine context, the researcher aimed to answer the following questions:

1. To what extent can per capita health expenditure and overseas Filipino cash remittances influence the labor force in the Philippines from 1991 to 2023?
2. Are there long run effects of per capita health expenditure and overseas Filipino cash remittances on the total labor force in the Philippines from 1991 to 2023?

### Formulation of the Hypothesis

The following hypotheses will be tested in this study:

$H_0$ : There is no significant relationship between per capita health expenditure overseas Filipino cash remittances on the total labor force.

$H_a$ : There is no significant relationship between per capita health expenditure and overseas Filipino cash remittances on the total labor force.

$H_0$ : There is no long run effects of per capita health expenditure and overseas Filipino cash remittances on the total labor force.

$H_a$ : There is no long run effects of per capita health expenditure and overseas Filipino cash remittances on the total labor force.

### Scope and Limitation

This study aims to provide an analysis of the influences of per capita health expenditure and remittances in the Philippines. The scope of this study will include the 1991 to 2023 dataset. Figures on total labor force, total cash remittances of overseas Filipino workers and per capita health expenditure will be utilized and sourced from the Philippine Statistical Authority (PSA) and Bangko Sentral ng Pilipinas (BSP) statistical reports. Thus, the dataset of this study is a time series that features three decades, amounting to thirty-one observations. This would be primarily analyzed using a cointegration test.

### Significance of the Study

This study is primarily a product of the researcher's interest in contributing to expanding economics as a discipline. More importantly, the study aims to contribute to the following Philippine agencies and institutions:

**Small and Medium Enterprises.** The findings could be potentially significant in formulating strategies and policies toward sustainable development. More specifically, it can contribute by providing insights and recommendations relevant to the targets and indicators of SDGs 3 and 8.

**Local Government Units (LGUs).** The study on labor force behavior in local government is essential to developing a workforce that is adaptable, efficient, and sensitive to the changing requirements of the people they serve. The overall objectives of community development, worker's satisfaction, and service quality are all supported by this paper.

**Academe.** The study might be used as a guide for research writing. The findings of this study could be supported or challenged by more targeted papers that examine the relationship of per capita health spending and overseas Filipino cash remittances on the labor force.

## II. Theoretical Background

### 2.1 Theoretical Framework

Different theories explain the influence of remittances on labor. The labor-leisure theory states that remittances, when viewed as non-work income, can reduce non-migrant household members' inclination to engage in the labor market (Murakami Yamada and Sioson 2020). Remittances' impact on the labor market demonstrates that they may have a deterrent effect by raising the reservation wage or by creating issues with moral hazard. By lowering home budget and liquidity restrictions, it can also have an educational effect by encouraging more household members to pursue higher education, which will lower labor market involvement. The contrasting view is that labor market participation and supply cannot decrease when the substitution effect of the remittance income dominates the income effect. Furthermore, remittances can also loosen the budget constraints of the receiving individual who then reduce labor supply. It appears to dominate in the case of women in rural areas who seem to be using remittances to purchase time away from informal and non-paid work. Likewise, a higher remittance appears to be associated with reduced male labor supply in formal sector and urban self-employment (Ayalew and Mohanty 2022).

However, Becker's human capital theory (1964), contends that there is a positive relationship between the individual's health and productivity, acting as the basis of the majority of the work that examines the relationship between productivity and health. According to the life expectancy concept, preferences for work and leisure are influenced by one's health. In order to take care of their health, those in poorer health will choose leisure over employment. Their life expectancy will be impacted by this decision since it will compel them to abandon the workforce (Chirikos 1993).

### 2.2 Literature review

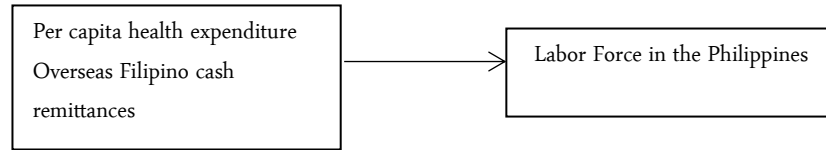
#### Remittances and Labor

Majority of the related literature found out that the presence of remittances reduces labor supply. Using economic modelling, the study of Azizi (2018) asserted that remittances decrease the female labor force participation rate but do not affect the male labor force participation. Similarly, according to the paper of Murakami et.al (2020), receiving overseas remittances can reduce the employment of the remaining household members. Moreover, Dey (2021) discovered that persistent remittances are found to increase labor force participation. In line with the other studies, Jadotte and Ramon (2015) ascertained that a reduction in labor supply is caused by remittances. But, the labor market response to remittances of female household heads is not as sensitive as the males. Additionally, remittances in Ethiopia decreased adult labor participation decisions but no impact of remittances on child labor participation decisions (Ayalew and Mohanty,2022). Contrary to the findings of the previous studies, Cox-Edwards and O-reggia (2008) argued that persistent remittances are found to increase labor force participation.

#### Health Expenditure and Labor

Studies show that health expenditure greatly affects labor force In South Africa,Nwosu and Woolard (2017) proved that there is a positive and significant effect of self-assessed health (SAH) on the labor force participation. Spending more on health care not only directly improves population health but also increases labor force productivity and efficiency. These benefits are amplified as health expenditures rise. Umair et.al. (2024). Rauf et Al (2018), VIju and Willianallur (2020) and Bayraktar et al. (2022) all revealed through their Researches that labor force participation is increased by an increased in health expenditure.

### 2.3 Hypothesized model



**Figure 1. Conceptual framework**

The conceptual framework illustrated the relationship between the variables utilised in this research. It provides a visual representation of how per capita health expenditure and overseas Filipino cash remittances influence the labor force in the Philippines.

### III. Research Method

A cointegration test is utilized to establish the correlation among the variables. The researcher used secondary data from the Philippines Statistics Authority (PSA) and Bangko Sentral ng Pilipinas (BSP), covering the periods from 1991 to 2023 with 33 observations. The population of people aged 15 and older who are either employed or jobless and willing to work is represented by the total labor force. Overseas Filipino cash remittances pertain to the entire amount of private income that overseas Filipinos send home to assist their families, per capita health expenditures reflect the amount that people spend on their health care needs. Mathematically the study can be depicted by an econometric model as follows:

$$LF = \beta_0 + \beta_1 He - \beta_2 Re + \mu$$

*LF* stands for labor force *He* pertains to per capita health expenditure while *Re* represents the overseas Filipino remittances. Betas correspond to the coefficients of the model while  $\mu$  is the error term that represents other factors that were not included in the model. Theoretically, the overseas Filipino cash remittances reduce the labor supply, thus, showing an inverse relationship between the two while of per capita health positively affects the total labor force.

### IV. Results

<i>Total Labor Force</i>		<i>Per Capita Health Expenditure</i>	<i>Overseas Filipino Cash Remittances</i>
Mean	36845.91	3897.808261	15700.27273
Standard Error	1193.263	539.1862544	1865.582989
Median	36213	2642	14450
Standard Deviation	6854.774	3097.389217	10716.95835
Range	25130	10506	31842
Minimum	25246	577	1649
Maximum	50376	11083	33491
Sum	1215915	128627.6726	518109
Count	33	33	33
Confidence Level (95.0%)	2430.597	1098.28646	3800.068195

**Table 1. Descriptive statistics results**

Table 1 shows the descriptive statistics with a total of 33 observations gathered from 1991 to 2023. Results show that the average per capita health expenditure amounted to Php 3,897.81 while the average labor force totaled 36,895. Also, the average overseas Filipino cash remittances reached Php 15,700.27

2023 had the highest per capita health expenditure at Php 11,083, labor force at 50,376 and overseas Filipino cash remittances at Php 33,491. Moreover, in 1991, it recorded the lowest per capita health expenditure at Php 577 in more than three decades, labor force at 25,246 and overseas Filipino cash remittances at Php 1,649.

Half of the total observations had labor force below or equal to the median which is 36,213. 50% of the per capita health expenditure values are less than or equal to 2,642 while half of the years observed had an overseas Filipino cash remittance below or equal to Php 14,450.

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Model 1: OLS, using observations 1991-2023 (T = 33)
Dependent variable: TotalLaborForce

-----+-----+-----+-----+-----
                coefficient   std. error   t-ratio   p-value
-----+-----+-----+-----+-----
const                27379.6         533.730     51.30     8.75e-031
PerCapitaHealthE~    0.593919        0.341093     1.741     0.0919
OFCashRemittances    0.455490        0.0985820    4.620     6.79e-05

Mean dependent var   36845.91   S.D. dependent var   6854.774
Sum squared resid    79939249   S.E. of regression   1632.373
R-squared             0.946835   Adjusted R-squared   0.943291
F(2, 30)              267.1418   P-value(F)           7.66e-20
Log-likelihood        -289.3794   Akaike criterion     584.7589
Schwarz criterion     589.2484   Hannan-Quinn         586.2694
rho                   0.762582   Durbin-Watson        0.353363
    
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**Table 2. Regression results**

A one unit increase in the per capita health expenditure adds 5,990 in the total labor force. In the same way a one unit increase in the overseas Filipino remittances expands the total labor force by 4,555 Both per capita health expenditure and overseas Filipino remittances show positive effects on the total labor force in the Philippines Overall, 95% of the variance in the total labor force can be explained by the model while the remaining 5% is due to other factors not included in the study.

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Rank Eigenvalue Trace test p-value Lmax test p-value
0 0.29843 11.756 [0.1710] 11.342 [0.1392]
1 0.012850 0.41386 [0.5200] 0.41386 [0.5200]
    
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**Table 3. Johansen cointegration test results**

Based on the cointegration test results, since the p-values of both per capita health expenditure and overseas Filipino cash remittances are 0.1392 and 0.5200 respectively, which is lower than the level of significance at 5%, therefore, we reject the null hypothesis that these two have long run relationship with the total labor force.

## V. Discussion

This study discussed the effects of per capita health expenditure and overseas Filipino cash remittances on the total labor force of the Philippines from 1991 to 2023. Results show that there is an increase in labor supply as more individuals spend on their health care needs as well as more remittances sent by Filipino abroad. It ascertained that for the last three decades, both per capita health expenditure and overseas Filipino cash remittances are rising. Health has become a priority of the many. Better health would allow people to perform well at work and increases productivity. Likewise, remittances boost

household income, fostering consumption and investment and eventually creating new employment opportunities. In the long run, both factors do not influence the labor force. Health spending may improve the quality of labor but it does not necessarily lead to an increase in the number of people entering the labor force. Additionally, any benefits that remittances may have for those who remain in their home country may be offset over time by outmigration, which might reduce the domestic labor supply.

## VI. Conclusion

Using the cointegration test, this paper intended to analyze the labor force's determinants over the last three decades, namely overseas Filipino cash remittances and per capita health expenditure from 1991 to 2023. Both of these factors display positive effects on the labor force; increases in the health spending of individuals result in a larger labor force.. Similarly, as more overseas Filipino cash remittances are received, the more people are encouraged to work. The factors examined in this paper deal with the macro-level effects on the labor force in the Philippines. Hence, future researchers may consider analyzing the impact of the factors examined in this study on male and female labor supply, thus, investigating and comparing the influences of overseas Filipino cash remittances and per capita health spending by gender. These could help stakeholders make well-informed decisions for strategies by offering insightful information about labor force behavior in the Philippines.

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